

1973

1973-1974 Southern Illinois University Bulletin Carbondale Campus (Undergraduate Bulletin)

Southern Illinois University Carbondale

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1973 / 1974
Undergraduate
Catalog
Carbondale

Southern Illinois University Bulletin

SIU



This Issue

of the *Southern Illinois University Bulletin* covers in detail questions concerning the undergraduate program of Southern Illinois University at Carbondale. It supersedes Volume 14, Number 6.

The following issues of the *Southern Illinois University Bulletin* may be obtained free from University Graphics, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Graduate Catalog

Schedule of Classes. Please specify quarter (fall, winter, spring, or summer).

Undergraduate Catalog.

This publication provides information about Southern Illinois University at Carbondale. Primary attention is given to its academic programs, rules and regulations, and procedures. A student starting his collegiate training during the period of time covered by this catalog (Summer 1973 through Spring 1974) is subject to the curricular requirements as specified herein. Should these requirements subsequently be changed by the University, the student is assured that necessary adjustments will be made so that no additional time is required of him, because of these changes, in meeting his educational objectives. Where programs include requirements established by agencies external to the University, every effort will be made to follow this same principle so far as possible. Should subsequent curricular requirement changes work to a student's advantage, he may elect to meet the new requirements rather than those contained herein. This curricular requirement arrangement will extend for a seven calendar year period from date of entry for baccalaureate programs and three years for associate programs. If the student has not met his undergraduate educational objectives by that time, he will then become subject to current curricular requirements. Should the University find it necessary to discontinue an academic program, the effective date, unless otherwise dictated, will be such that the last regularly admitted class will be able to complete the program in regular time sequence. This means four years for baccalaureate and two years for associate programs. The University reserves the right to change information contained herein on matters other than curricular requirements without notice when circumstances warrant such action, and apply the change to all students without regard as to their date of entry into college.

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University Calendar

<i>SUMMER, 1973</i>	Quarter Begins	Monday, June 18 *
	Independence Day Holiday	Wednesday, July 4
	Quarter Ends	Friday, August 31
	Commencement	Friday, August 31
<i>FALL, 1973</i>	New Student Days	Sunday–Tuesday, September 23–25
	Quarter Begins	Tuesday, September 25 *
	Thanksgiving Vacation	Tuesday, 10 P.M.–Monday, 8 A.M., November 20–26
	Final Examinations	Wednesday–Tuesday, December 12–18
<i>WINTER, 1974</i>	Quarter Begins	Wednesday, January 2 *
	Washington's Day Holiday	Monday, February 18
	Final Examinations	Wednesday–Tuesday, March 13–19
<i>SPRING, 1974</i>	Quarter Begins	Wednesday, March 27 *
	Memorial Day Holiday	Monday, May 27
	Final Examinations	Wednesday–Tuesday, June 5–11
	Commencement (Carbondale)	Tuesday, June 11
<i>SUMMER, 1974</i>	Quarter Begins	Tuesday, June 18 *
	Independence Day Holiday	Thursday, July 4
	Commencement (Carbondale)	Friday, August 30

* Classes begin with the evening classes after 5:30 P.M.

Southern Illinois University at Carbondale

The year 1969 began the five-year long observance of the centennial of Southern Illinois University, which was chartered in 1869, and which initiated instruction in 1874. Since that time the University has sought to meet the educational needs of the times for the people whom it serves as a public institution. Consistent with the character of the University, the activities of the centennial period will stress the hopes and goals of the future in each of the major academic areas, rather than dwelling on the real accomplishments in the past history of Southern Illinois University.

Although the student population has increased to the point that Southern Illinois University was recently rated twentieth in the nation in enrollment of full-time resident students and twenty-third largest in total enrollment, the formation of schools, colleges, divisions, and departments within the University permits focus on the special interests of individual students. The University comprises the faculty and facilities to offer general and professional training ranging from two-year associate degree programs to doctoral programs.

Southern Illinois University is a single system with two universities: Southern Illinois University at Carbondale and Southern Illinois University at Edwardsville. Each of the two universities has multi-location campuses. Southern Illinois University at Carbondale also includes the School of Technical Careers which has its major operational base on a campus site near Carterville, Illinois; The Outdoor Laboratories located at Little Grassy Lake; and the School of Medicine with its major facilities in Springfield. Southern Illinois University at Edwardsville also has facilities in East St. Louis and Alton.

The University has maintained overseas operations in many parts of the world, and it continues to develop its international education dimensions.

The University is fully accredited by the North Central Association of Colleges and Secondary Schools. The University and its various academic components carry the following accreditation on the associate, baccalaureate, and higher levels: North Central Association, National Council for Accreditation of Teacher Education, Accrediting Council of the American Assembly of Collegiate Schools of Business, Inc., American Board of Funeral Service Education, American Chemical Society, American Council on Education for Journalism, American Dental Association, American Dietetics Association, American Institute of Architects, American Physical Therapy Association, American Psychological Association, American Speech and Hearing Association by American Board of Examiners in Speech and Hearing, Board of Vocational Education of the State of Illinois, Council on Social Work Education, Engineer's Council for Professional Development (B.S. program in engineering), Federal Aviation Administration, Illinois Department of Registration and Education, National Association of Schools of Music, United States Office of Education, and

State Board of Vocational Education for Vocational Home Economics.

Immediately south of the city of Carbondale, the University campus, comprising more than four thousand acres, has developed a three-hundred acre portion with woods and a lake as a site for its academic buildings and residence halls. The buildings are located in wooded tracts along two circular shaped campus drives, named for Lincoln and Douglas. Features that are located near the center of the campus complex are a wooded tract, preserved in the tradition of the native forests of Southern Illinois, and several buildings surrounding the site which formed the original campus almost a century ago. Among the recent additions to the campus skyline are the high-rise residence halls, the Morris Library with more than a million volumes, a multi-media classroom building, and the dome shaped S.I.U. Arena, seating more than 10,000 people for academic and recreational events.

The city of Carbondale is 100 miles southeast of Saint Louis, Missouri, in Jackson County, the western border of which is the Mississippi River. Immediately south of Carbondale begins some of the most rugged, picturesque terrain in Illinois. Sixty miles to the south is the historic confluence of the Ohio and Mississippi rivers, the two forming the border of the southern tip of Little Egypt, the fourteen southernmost counties in Illinois. The region immediately surrounding Carbondale is noted for its large peach and apple orchards. Within ten miles of the campus there are two state parks and four lakes. The largest of the lakes is Crab Orchard Lake, four miles east of Carbondale. It has a shoreline of 125 miles, and it is frequented by students for swimming, water skiing, boating, fishing, picnicking, camping, and hunting. Within the confines of the campus itself is the University's own Lake-on-the-Campus with facilities for swimming, boating, fishing, and picnicking.

Approximately seventy large permanent buildings and several hundred small temporary buildings are located on the campuses. Additional buildings now under construction, ready for early start on construction, or recently completed include:

Communications Building— Stage II	Center for the Advanced Study of Physical Sciences
James W. Neckers Building	Co Recreation Building
Life Science Building. II	Faner Hall
Student Center Addition	Vocational-Technical Institute
General Classroom-Office Building	

A campus for the School of Technical Careers is located ten miles east of Carbondale, and includes classrooms, library, and shop facilities for its academic program, in addition to residence halls. The part of its program related to aircraft technology is located adjacent to the Southern Illinois Airport. Several of its temporary buildings are to be replaced by buildings representing the first stage of a master plan for the campus.

The Little Grassy Lake Facility consists of nine square miles of land adjacent to Little Grassy Lake and approximately seventy permanent structures. Although the programs conducted at Little Grassy are primarily devoted to instruction and training in recreation and outdoor education, many units of the University utilize its facilities in various ways.

1 / Administrative Organization

OFFICE OF THE PRESIDENT

DAVID R. DERGE, *President*

The president of Southern Illinois University at Carbondale is the chief executive officer of that institution. As chief executive officer, he is directly responsible to the Board of Trustees for the academic, administrative, and business affairs of the institution, in order to accomplish its teaching, research, and service goals. He implements and carries out all board policies governing the internal and external affairs of the University as are assigned and delegated to him by the board.

The president has the authority to perform those duties and responsibilities delegated to him by the Board of Trustees which are consistent with the statutes of the State of Illinois and board statutes or policies for his University and is authorized and directed to take all actions necessary to the accomplishment of his duties.

The following officers report directly to the president: executive vice president and provost, vice president for administration and campus treasurer, vice president for development and services, and vice president for student affairs.

OFFICE OF EXECUTIVE VICE PRESIDENT AND VICE PRESIDENT FOR ACADEMIC AFFAIRS AND PROVOST

WILLIS E. MALONE, *Executive Vice President and Vice President for Academic Affairs and Provost*

Through delegation by the president, this office establishes priorities and formulates plans for the various academic missions of Southern Illinois University at Carbondale and stimulates and coordinates similar planning within the academic units. Additional responsibilities include the development of academic personnel policies, analysis and review of academic budgets and the preparation of an integrated academic budget for Southern Illinois University at Carbondale, review and monitoring of existing academic programs and the analysis of proposed new programs, coordination of the activities of all academic units, and the performance of additional duties as may be assigned by the president. The Executive Vice President and Vice President for Academic Affairs and Provost acts for the president in his absence.

General Studies Division

JOHN W. VOIGT, *Dean*

Man's Physical Environment and Biological Inheritance; Man's Social Inheritance and Social Responsibilities; Man's

*Insights and Appreciations; Organization and Communication
of Ideas; Human Health and Well-Being*

The General Studies curriculum at Southern Illinois University at Carbondale is one of unique quality, and accommodates many different levels of preparation for college. This philosophy permits the greatest possible number of persons an opportunity to reach their fullest potential while concurrently directing their efforts towards a stronger and happier democratic society.

A General Studies committee, composed of faculty, staff, and student representatives, is responsible for determining broad policies and approving specific courses and sequences of courses to be offered. The dean of the General Studies Division is responsible for the implementation of these policies. The individual courses are taught by the academic unit for which the courses were approved.

Added to its coordination and implementation functions, the General Studies Division is responsible for academic advisement and administrative accommodation for certain students.

Students who are uncertain of career objectives may take advantage of an extra period of time to make this important decision by remaining in the General Studies Division up to an accumulated total of 96 quarter hours. When a student reaches the 96 quarter hour total, transfer to a degree granting program must be made.

Freshmen who enter the University with clear-cut decisions on a career enter the unit offering the academic program with the exception of the College of Liberal Arts and the College of Science. Students who select a major within the College of Liberal Arts or the College of Science will enroll in the General Studies Division until they have passed 64 quarter hours and achieved a satisfactory grade point average at which time they may transfer to the appropriate college. Any student in another unit who has fewer than 96 quarter hours passed and has come to the realization that his original career choice is doubtful, is welcome to petition into the General Studies Division to have time to give further thought to the selection of a career.

Offices of the dean and of the academic advisers for students in General Studies are located on the ground floor of the south wing of Woody Hall.

School of Agriculture

WENDELL E. KEEPPER, *Dean*
Agricultural Industries; Animal Industries; Forestry;
Plant Industries

The School of Agriculture provides opportunity for the students to prepare themselves professionally through concentrating on study of agricultural and forest production and services and industries closely related thereto. Through teaching of formal courses, conducting research of significance to agriculture and forestry of the area, and providing consultation and service to the people of Southern Illinois in all phases of agriculture, forestry, and related occupations, the School of Agriculture strives to encourage better use of rural resources for the general welfare.

More than eighty-five percent of Southern Illinois University's graduates in agriculture have entered such major employment areas as agricultural business, advanced professional training for research and teach-

ing, agricultural education, and government services. About ten percent have gone into farming. Most forestry graduates have taken governmental or industrial positions. Graduates receive the Bachelor of Science degree.

Students entering the University expecting to major in one of the various areas in agriculture and forestry will be counseled and advised for registration in the School of Agriculture.

The Agriculture Building houses the offices, classrooms, and laboratories of the school.

School of Business

CHARLES HINDERSMAN, *Dean*

Accountancy; Administrative Sciences; Economics; Finance; Marketing; Secretarial & Business Education

The School of Business aims to prepare students to perform successfully in business and other organizations functioning within a changing social, economic, and political environment. Study provides the student with fundamental principles and practices of organizational behavior and allows the mastering of knowledge and skills for effective management. The curriculum provides a broad base for understanding business while simultaneously allowing in-depth study within an area of concentration. Students find that the professional education they receive in the school is desired by business, governmental units, and other public institutions. The advanced curriculum and related programs provide students not only with a meaningful education but with a means of relating that education to organizations and commerce.

The School of Business offices are located in the General Classroom Building, and the classes are conducted in various buildings throughout the campus.

College of Communications and Fine Arts

PHILLIP H. OLSSON, *Dean*

School of Art

School of Journalism

School of Music

Cinema & Photography; Radio-Television; Speech; Speech

Pathology & Audiology; Theater

The College of Communications and Fine Arts was formed in 1970 from the School of Communications and the School of Fine Arts. The schools and departments of this conglomerate provide students opportunity to study the mass communication media and the fine arts and to develop creative and professional skill in these fields.

Faculty of the college are engaged in research into mass communications and provide consulting and other services to area schools, newspapers, and radio and television stations. A number of special events are presented each year, including lectures by noted artists, musical ensembles, dance recitals, dramatic presentations, and art exhibitions.

University Galleries, a campus-wide activity for the showing of student and faculty work as well as traveling exhibitions is under the jurisdiction of the college.

Administrative offices of the college are located in the Communications Building, which includes the newest theater on campus along with broadcasting facilities, film production services, and the office of the *Daily Egyptian*.

College of Education

ELMER J. CLARK, *Dean*

Educational Administration & Foundations; Elementary Education; Guidance & Educational Psychology; Health Education; Higher Education; Home Economics Education; Instructional Materials; Occupational Education; Physical Education for Men; Physical Education for Women; Professional Education Experiences; Recreation; Secondary Education; Special Education

Preparation of teachers of all subjects taught in the public schools from kindergarten through high school is the special function of the College of Education. In its graduate offerings, however, it broadens its efforts to include professional work for prospective college teachers and several specializations in school administration and supervision. For most undergraduate students preparing to teach in high schools, the subject-matter courses will be taken in the other colleges and schools of the University, and the professional preparation for teaching, including the student teaching, will be taken in the College of Education.

Graduates of the College of Education receive the Bachelor of Science or the Bachelor of Music Education degree.

The College of Education, housed in the Wham Education building, is the oldest unit of the University, which was originally chartered as Southern Illinois Normal University.

School of Engineering and Technology

THOMAS B. JEFFERSON, *Dean*

Electrical Sciences and Systems Engineering; Engineering Mechanics and Materials; Technology; Thermal and Environmental Engineering

The School of Engineering and Technology provides instruction over a broad spectrum of engineering and technology. Through instruction, research, and consultative services, it serves Southern Illinois, the state, and the nation.

Baccalaureate and master's degrees in engineering are offered through the cooperative efforts of the three engineering departments. The Department of Technology has responsibility for baccalaureate degree programs of study in engineering technology and industrial technology.

Administrative offices of the school are located in the Engineering and Technology Building Complex near Campus Lake.

School of Home Economics

THOMAS M. BROOKS, *Dean*

Child & Family; Clothing & Textiles; Family Economics & Management; Food & Nutrition; Interior Design

The general objectives of the school, as established by the Home Eco-

nomics faculty, are: (1) to prepare men and women as professionals (generalists and specialists) in selected home economics areas of service; (2) to assist home economics majors (and non-majors who elect courses in the school) in their personal development and in their preparation for establishing homes and families; (3) to provide services at the regional, national, and international levels which promote the aim of home economics. The aim is to strengthen individual and family life through the application of relevant arts and sciences in the interaction of people with their near environment in a setting of continuous social and technological change. In addition to programs planned for students concentrating in home economics, a number of courses are offered to give men and women not concentrating in Home Economics an opportunity to study in areas related to home and family living.

Administrative and advisement offices, classrooms, and laboratories for the school are in the Home Economics building.

The School of Home Economics, except for the Department of Home Economics Education, will become a part of the College of Human Resources on July 1, 1973. The Department of Home Economics Education will move to the College of Education.

College of Human Resources

School of Home Economics

Child and Family, Clothing and Textiles, Family Economics and Management, Food and Nutrition, Interior Design

Black American Studies

The Rehabilitation Institute

The Department of Design

Community Development Services

The Center for Study of Crime, Delinquency, and Corrections

The Social Welfare Program

On December 15, 1972, the Board of Trustees approved the establishment of a College of Human Resources to be operational as of July 1, 1973. In accordance with procedural policy, the board's resolution is being submitted to the Illinois Board of Higher Education for information. As the establishment of the college is consistent with the goals established in the long range academic plans of the University and is in accord with the provisions of the Master Plan, Phase III, as adopted by the Illinois Board of Higher Education, the college is expected to be operational on July 1, 1973.

The college will provide a focus for various programs designed to train professionals to work with contemporary social problems. Its establishment brings together existing units possessing a common goal. There can be greater interdisciplinary efforts in instruction, research, and service.

School of Law

HIRAM H. LESAR, Dean

In response to the need for an additional legal education resource within the state, the Illinois Board of Higher Education's Master Plan Phase III, issued in May, 1971, recommended establishment of a law school with an enrollment of approximately 300 students at Carbondale. An appropriation for this purpose was passed by the Illinois legislature in June, 1972.

The University promptly employed a dean and is preparing to admit its first class in the fall of 1973.

The school will offer a three-year program leading to the Juris Doctor (J.D.) degree. Steps are being taken to see that the school receives approval from the Section on Legal Education of the American Bar Association during its first year of operation, so that all students enrolled will be eligible to take state bar examinations required for admission to the bar.

Two buildings in Small Group Housing are being remodeled to provide classroom, library, and office space for the law school pending completion of a permanent building. Other available facilities include an already extensive law library collection in excess of 66,000 volumes and a broadly based University with extensive law-related graduate divisions and other academic units. Because of space limitations, the entering class in 1973 will be limited to approximately 75 students.

The school is intended to be of the highest quality, and its curriculum is designed to inculcate fundamental legal concepts and skills which every lawyer must have and which are the hallmarks of the profession of the law. In addition to the Socratic-casebook method, other teaching methods, including clinical, will be utilized as the subject matter will require.

College of Liberal Arts

ROGER E. BEYLER, *Dean*

Anthropology; Computer Science; English; Foreign Languages and Literatures; Geography; Government; History; Linguistics; Mathematics; Philosophy; Psychology; Religious Studies; Social Welfare; Sociology

The College of Liberal Arts provides (1) instruction in basic subject matter courses of General Studies; (2) opportunity for concentration in a variety of subject areas; (3) electives not available in other instructional units of the University; (4) courses offered through the Division of Continuing Education; (5) graduate-level instruction for students pursuing higher degrees than the baccalaureate; (6) preprofessional training needed for admission to specialized schools such as law and theology.

The diversified offerings of the College of Liberal Arts are designed to help the students develop: the ability to seek and weigh evidence and to think critically and independently; a fundamental understanding of the ever-changing social, political, and physical environment; and a deeper understanding of mankind, of cultures past and present, and of man's artistic and literary creations. Students in the college may prepare for teaching at the secondary level by including in their studies certain professional courses offered by the College of Education. The Bachelor of Arts or Bachelor of Science degree is granted to students who fulfill requirements for graduation from the College of Liberal Arts. The courses of study outlined by the departments determines the degree awarded.

School of Medicine

RICHARD H. MOY, *Dean*

Southern Illinois University School of Medicine was established in 1970 in response to a need in Illinois for increased opportunities for education in the health fields and the more encompassing need for improvements in

the health care delivery system. To have the broadest impact possible on health care in central and southern Illinois, the school will be deeply engaged in training men and women who will become physicians; it will emphasize continuing education; and it will be a center of health care planning and expertise.

The first class of forty-eight students will be admitted for instruction beginning at Carbondale in July 1973. Preference will be given to applicants from central and southern Illinois who intend to practice medicine in the state. Inquiries on admissions should be addressed to Committee on Admissions, Southern Illinois University School of Medicine, P.O. Box 3926, Springfield, Illinois 62708.

The curriculum will run twelve months a year for three years; the first year program will be conducted on the campus of Southern Illinois University at Carbondale; it will have primarily a laboratory or pre-clinical orientation, but with significant clinical input from the beginning. The second year at Springfield will be about equally divided between laboratory and clinic; and the third year, also at Springfield, will be almost exclusively clinical.

Available facilities include the extensive and well-equipped laboratories of Southern Illinois University at Carbondale; the public and private clinical facilities of Carbondale; and St. John's Hospital and Memorial Hospital in Springfield, each of about 700 beds. A new medical school building in Springfield is scheduled for completion in 1974 in time for the first class transferring from Carbondale.

College of Science

ELBERT H. HADLEY, *Dean*

Botany; Chemistry and Biochemistry; Geology; Microbiology; Physics and Astronomy; Physiology; Zoology

The College of Science was established January 1, 1973, to provide basic training in the life sciences and physical sciences. Included in the curriculum of each department are survey courses that provide an introduction to the subject matter of that discipline while fulfilling the General Studies requirements of Southern Illinois University at Carbondale. These courses assist all students to develop an understanding and appreciation of the impact of science on one's daily life. Elementary and advanced courses are provided to prepare students for professional employment or entrance into professional and graduate schools. Graduate training is also provided by each of the science departments leading to the M.S. or Ph.D. degree. The research interests of the faculty are extremely diverse.

Students in the College of Science may prepare for teaching at the secondary level by fulfilling the additional requirements of the College of Education. A Bachelor of Arts or a Bachelor of Science degree is granted to students who fulfill the requirements for graduation as given in chapter 2 and the requirements of the departments in which the students declare their majors.

School of Technical Careers

ARDEN L. PRATT, *Dean*

On February 9, 1973, the Board of Trustees approved a change of name for

the Vocational-Technical Institute to the School of Technical Careers to be effective July 1, 1973.

Educational opportunities offered to students by the School of Technical Careers combine the associate degree, career-entry programs which have been offered since 1952 with many additional alternatives, some of them new to the University.

The School of Technical Careers includes these general areas of instruction: Allied Health and Public Services, Eleanor Jane Bushee, chairman; Applied Technologies, M. H. Dallman, chairman; Aviation Technologies, E. A. DaRosa, chairman; and Graphic Communications, James A. Robb, chairman.

The general educational objectives of the School of Technical Careers are:

1. To provide associate degree programs with basic career or occupational objectives.
2. To provide specialty occupational programs for graduates of associate degree programs.
3. To provide maximum credit to individuals for competencies gained outside the institution through such activities as work or military experience.
4. To provide non-certificated, pre-service, and in-service preparation of occupational education teachers for secondary and post-secondary educational institutions, proprietary institutions, manpower training programs, and industrial on-the-job training programs.

Presently the classrooms, laboratories, clinics, shops, and offices of the School of Technical Careers are variously located on the Vocational-Technical Institute campus near Carterville, at the Southern Illinois Airport between Carbondale and Murphysboro, and on the Carbondale campus. Plans are presently under way to move all programs to the Carbondale campus except those of the aviation technologies. Additional information is obtainable from the office of the dean of the School of Technical Careers at 908 South Wall Street in Carbondale.

Allied Academic Agencies

Office of Admissions and Records

ROBERT A. McGRATH, *Dean*

The Office of Admissions and Records might be called the University's academic accounting office. Its responsibilities span the admitting of undergraduate and international students, the registering of all students, and the maintenance of their official academic records. The office has the following functional areas: central office, admissions office, registration division, records division, and microfilm division.

Representative functions performed by the office are (1) central office: determination of study residency status for tuition and fee assessment purposes, undergraduate catalog preparation, and final examination schedule preparation; (2) admissions office: admission of undergraduate and international students, coordination of student recruitment activities and preparation of general University publications used in student recruitment; (3) registration division: registration of students including the assessment of tuition and fees, verification of enrollment status for external agencies, preparation of quarterly schedule of classes, and maintenance of

the official listing of University approved courses; (4) records division: maintenance of the official student academic records, evaluation of transfer credit presented for acceptance, verification and certification of academic status for various purposes such as intercollegiate athletics and honor societies, and graduation clearance; and (5) microfilm division: maintenance of student academic files on microfilm and issuance of transcripts.

Aerospace Studies—Air Force ROTC

COL. J. R. FENN, *Adjunct Professor Aerospace Studies*

Aerospace Studies offers a two-year and a four-year program leading to a commission in the United States Air Force. Both programs are open to women. The four-year program is divided into the General Military Course (GMC), covering the freshman and sophomore years, and the Professional Officer Course (POC), covering the last two years. Students qualify to enter the two-year program at the POC level by attending a six-week field training course during the preceding summer.

The GMC prepares the student for the POC and provides him with an education for space age citizenship of long range value whether he remains a civilian or becomes an officer in the U.S. Air Force. The courses of the POC are designed to provide the basic knowledge, understandings, and experiences which are required to become an effective junior officer in the modern air force. The student learns about the wide range of USAF career specialties open and has an opportunity to request duty in those fields where he is qualified. Those qualified as pilots, who do not already fly, receive 36½ hours of flying training plus ground school instruction during their final year before graduation.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for full scholarships for their remaining years at the university. In addition to full tuition and fees, the scholarship provides a monthly tax-free subsistence allowance.

In addition to the courses offered for academic credit, Aerospace Studies sponsors related extracurricular activities. The Aerospace Club is open to all members of the student body. The Arnold Air Society, a national honorary service organization, is open to selected AFROTC cadets. Membership in the Angel Flight, an auxiliary of the Arnold Air Society, is open to selected undergraduate women. Angel Flight assists with community and campus service-oriented projects. The wives of married cadets are eligible for the Cadet Ladies Club which prepares wives and fiancées for participation in military family life.

Further information may be obtained from Aerospace Studies, 807 South University Avenue.

Black American Studies

WALTER G. ROBINSON, JR., *Director*

The Black American Studies program is designed to foster an awareness and understanding of contemporary developments respecting black Americans by virtue of new historical and cultural perspectives. The program acts as a clearing house for the collection and effective dissemination of information about black America and for collation of opinions, critical evaluations, and assessments of the need for new curricular material.

A reference center in the former Doyle dormitory is stocked with

books, journals, and other documents, by, about, and significant to black Americans. Recordings of speeches and music by famous black Americans are provided in the program's media room.

Black American Studies will become a part of the College of Human Resources on July 1, 1973.

Center for English as a Second Language

The Center for English as a Second Language (CESL) is staffed by especially trained members of the University faculty and is designed to teach English intensively to students from other countries who intend to study in American colleges and universities. The program is open, however, to any mature person who wishes to learn English. For additional information write: Director, CESL, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Center for the Study of Crime, Delinquency, and Corrections

CHARLES V. MATTHEWS, *Director*

Founded in 1961, this unit offers programs of education, research, and service consistent with the positive development of criminal justice in our nation. Degrees are offered at the undergraduate and graduate level in the administration of justice. Other academic opportunities are offered through joint programs at the graduate level, and an undergraduate special concentration in applied criminology through the Office of the President. A special research unit in criminal justice is part of center operations. Short-term training institutes for various criminal justice roles are offered as part of center full-range programming.

Center faculty, many sharing joint appointments with other academic units, have extensive backgrounds of experience and research in criminal justice and law enforcement settings.

The Center for the Study of Crime, Delinquency, and Corrections will become a part of the College of Human Resources on July 1, 1973.

Clinical Center

The Clinical Center is staffed by professional and supervised student diagnosticians, therapists, and counselors. It offers diagnostic and treatment services to faculty, staff, University students, and other individuals in the community. Cooperating in this clinic are the Departments of Elementary Education, Guidance and Educational Psychology, Psychology, Secondary Education, Social Welfare, Special Education, Speech Pathology and Audiology, Physical Therapy, the Counseling and Testing Center, and the University Health Service.

Services include diagnostic assessment of psychological, speech, hearing, reading, and general education problems, and therapy services such as various forms of counseling and behavior modification, social casework, speech and audiological therapies, physical therapy, and educational remediation.

Consultant services are also available to professional persons and organizations.

Community Development Institute

RICHARD M. THOMAS, *Director*

The Community Development Institute has been established for students

seeking training in work with individuals and groups striving to develop a more satisfactory life within the community setting. The Institute's purposes also include training of adults concerned with improving their community leadership, and cooperating with academic units of the University and other agencies in research undertakings to investigate community processes and social change. Research findings from these undertakings become invaluable to the communities in their development. Offices of the institute are in College Square B.

The Community Development Institute will become a part of the College of Human Resources on July 1, 1973.

Division of Continuing Education

RAYMOND H. DEY, *Dean*

The Division of Continuing Education is an all-University agency. Its major function is to impart knowledge to persons not in regular attendance at the University. This is done in three ways: (1) through the extension college credit class program, (2) through the adult education non-credit class program, and (3) through the educational conference program.

Extension classes, which offer college credit and are identical to similar classes offered on the campus, are scheduled in the various communities of the geographical area served by Southern Illinois University at Carbondale, or are offered by radio or television or other electronic media for southern Illinois residents, where there is a need for them. Classes are also scheduled in foreign countries where there are definite advantages to having them offered there, with cheap trans-ocean transportation being made available through the chartering of planes for our exclusive use from the larger American airlines.

The adult education program consists of non-credit courses in various vocational, technical, and general education fields designed to provide a wide variety of educational opportunities for adults. Adult education courses are taught by regular staff members obtained from the various departments of the University, as well as carefully selected specialists from the ranks of business, industry, and the professions.

The educational conference program is conducted on the campus of the University or in various off-campus cities and towns if this will make the conference more accessible to those persons most interested. Conferences are given not only for local groups of persons but increasingly for state and national organizational groups. The conference medium allows the many highly trained specialists on the faculty, as well as state, national, and international authorities to bring the latest research knowledge in their fields to the people of southern Illinois for immediate practical application.

A new program this year, continuing education for women, is designed to provide services of great variety to women in all walks of life. This program will assist women by furnishing professional counseling, providing direction and assurance for enrolling in our formal credit or noncredit class program, furnishing information concerning examinations providing college credit for various life experiences, and providing child care facilities for children when their mothers wish to attend specific campus events.

The major new area of operation for the division will be in the offering

of post-professional training to those who have completed formal educational requirements. The development of professional schools in law and medicine will provide particular stimulus for the division in this field.

Additional information may be obtained from the office of the dean of the Division of Continuing Education located at 315 West Grand Street, Southern Illinois University at Carbondale.

Office of International Education

BASIL C. HEDRICK, *Dean*

The Office of International Education has as its responsibility, policy, and goal the reshaping and strengthening of international programs throughout the University, including, but not limited to the following areas of concern: faculty and student involvement in international matters; improvement of communication between international education (and the reporting units described below) and the University's colleges, schools, and departments; international research and service projects and programs, inter-institutional cooperation and intercultural understanding.

UNIVERSITY MUSEUM

CARROLL L. RILEY, *Director*

The University Museum is a multidisciplinary and interdisciplinary, independent academic and service unit with official recognition at both the graduate and undergraduate levels, serving campus, community, state, national, and international interests. The museum functions as a comprehensive entity within the University framework carrying out its own academic, research, and service programs while simultaneously existing symbiotically with the orthodox disciplines, or joining them in cooperative effort when and where indicated.

Temporary exhibits, covering the entire museum field to the extent possible, are located in satellite areas about campus and in the Mobile Exhibit Hall. There presently are no central exhibit halls, but Faner Hall, now under construction, will have museum exhibit areas as well as offices and laboratories.

It is both the policy and responsibility of the University Museum to educate through the acquisition, preservation, study, research, exhibition, and circulation of objects and artifacts of many and diverse genres, the printed texts as collections being generally excepted.

LATIN AMERICAN INSTITUTE

A. W. BORK, *Director*

In order to provide a special course of study for students interested in Latin America, the Latin American Institute offers an undergraduate major in inter-American studies leading to the Bachelor of Arts degree in the College of Liberal Arts. (See Inter-American Studies, major, in Chapter 4.) The institute is located in the International Center in Woody Hall.

CENTER FOR VIETNAMESE STUDIES

NGUYEN DINH-HOA, *Director*

The Center for Vietnamese Studies is designed to provide an intellectual climate and a physical location in which scholarly knowledge about Vietnam in particular, and Indochina in general, can be developed. The center's foci are the stimulation, encouragement, and support of scholarly re-

search about Vietnam and its environs, the bringing together of faculty and students interested in the area, the development of appropriate academic courses, and the acquisition of library and other research and teaching materials. The center was authorized as an integral academic unit of the University in spring 1969. It is funded by the University itself, and other grants from the Department of Health, Education, and Welfare, and a (211-d) institutional development grant from the Agency for International Development.

The Center for Vietnamese Studies is headed by a director, who reports to the dean of International Education and is guided by an advisory committee which includes representatives from various academic departments and units of the University.

INTERNATIONAL STUDENT AND FACULTY AFFAIRS

This office, administered through the Office of International Education, attends to the special needs of students from abroad by assisting them with matters of immigration, passport problems, contacts with sponsors, foundations, agencies governments, academic matters and problems of financial and personal urgency. Questions regarding study abroad programs may also be addressed to this office.

AREA STUDIES COMMITTEES

At present there are five officially recognized area studies committees reporting to the Office of International Education. These interdisciplinary committees function to develop research programs in specialized geographical regions, and some committees have developed special curriculum and degree programs on this campus. Responsibility for curricula matters lies in the College of Liberal Arts.

African Studies Committee; *Chairman*, Raymond O. Silverstein of the Linguistics Department

(see African Studies, Minor)

Asian Studies Committee; *Chairman*, Jnan Bhattacharyya in the Community Development Institute

(see Asian Studies, Minor)

European and Soviet Studies Committee; *Chairman*, Donald S. Detwiler of the History Department

(see European and Soviet Studies)

Middle East Studies Committee; *Chairman*, Earl Hanson of the Government Department

Pacific Studies Committee; *Chairman*, Phillip J. C. Dark of the Anthropology Department

The Library

Morris Library contains approximately 1,500,000 volumes and 10,600 current periodicals, plus collections of textbooks, newspapers, maps, films, framed art works, and phonograph records. With the exception of volumes in the rare book room, all books are arranged on open shelves available for browsing.

Recognizing the importance of libraries in a college education, the University has given special attention to both quantity and quality of library development. More than 130,000 volumes were added to the library during the past year, placing Southern Illinois University high

in growth among the nation's libraries. Reference librarians throughout the library are available to assist in locating materials. A handbook on library use is available from the library. Those wishing further instruction may enroll in a course on library research methods.

Morris Library houses four subject libraries (Education, Humanities, Science, and Social Studies), a Reserve Reading Room, the Learning Resources Service, and the Textbook Rental Service. Microtext reading equipment is available in each subject library; hi-fidelity phonograph listening equipment is provided in the Humanities library. A central card catalog of the entire collection is located on the first floor; books may be borrowed from a central circulation desk using an automated charging system. Inexpensive coin operated photocopying equipment is available to students on every floor.

An undergraduate library was opened for service the fall quarter of 1971. Located on the first floor, the new facility has a collection of about 50,000 volumes that are considered basic to the undergraduate curriculum. There is a professional staff to give special attention to the needs of the undergraduate and spare him some of the frustrations of finding what he wants in a universe of books as large and complex as a research library, although he is welcome to use it when his wants cannot be satisfied by the smaller collection.

Within the library system the Learning Resources Service makes films and other audio-visual materials available to students as individuals and in small groups in much the same way as books are available through the reserve system. There are about 3,000 film showings per week on this basis. The service supports the full range of instructional activity with the design, making, and use of graphics and audio-visual aids.

A facility of the Learning Resources Service is the central Self-Instruction Center, described under *Student Services* in this chapter. There are also self-instruction mini-centers placed at convenient locations over the campus.

Outdoor Laboratories

PAUL A. YAMBERT, *Dean*

The outdoor laboratories became a National Environmental Education Landmark in 1972 when it was registered and certified by the Secretary of the Interior. It was started in 1950 and now covers more than 3,900 acres of University land with 43,000 acres of Crab Orchard National Wildlife Refuge land available for cooperative environmental studies programs. The headquarters is at Little Grassy Lake with field stations at Lusk Creek and Pine Hills.

A variety of programs are conducted offering opportunities for academic and research involvement. Environmental studies range from high school workshops to graduate research and include programs for handicapped children and adults.

President's Scholar Program

ALLAN L. LANGE, *Director*

The President's Scholar Program is designed to enable academically talented students to profit from an association with each other; to achieve maximum flexibility within the framework of the general University curriculum; and to take fullest advantage of the talents and resources in the University. The President's Degree Program, an option available to stu-

dents interested in pursuing interdisciplinary studies, is also important for maximizing curricular flexibility (See Program Flexibility, chapter 2.)

A council of President's Scholars works with a faculty committee and the program staff to further the purposes of the program and to initiate and develop special courses and activities of interest. The staff assists the scholars individually and in groups to obtain the best curricular and extra-curricular conditions for excellent and rewarding academic work. The program has no set format or curriculum; it is intended to provide opportunities for the individually styled education particularly appropriate to superior students.

Test scores and high school standing provide the basis for inviting entering freshmen to participate in the program. Invitations to other students result from high academic performance at Southern Illinois University. Participants retain the prerogatives of President's Scholars throughout their undergraduate years as long as they meet minimum standards of academic performance and fulfill other limited conditions. Participation in the President's Scholar Program is inscribed in the student's official record.

Inquiries about the program should be addressed to the director, President's Scholar Program.

Special Meetings and Speakers

R. P. HIBBS, *Coordinator of Special Programs*

The Office of Special Meetings and Speakers brings to the campus professional speakers, performers, and groups to enrich the cultural milieu of the University and Southern Illinois.

The Convocation Series is a series of free, professionally produced programs which any student, staff, faculty, or community member may attend. It covers a wide range of entertainment, from ethnic, popular, and classical music and dance to well-known personalities, performers, and speakers on current, important, and popular subjects.

The Celebrity Series offers opportunities to attend professional Broadway plays, musical theater, ballet, symphony orchestras, and opera. Approximately ten such shows are booked each year at prices much lower than are charged for the same productions in metropolitan areas.

The office also allocates funds to other university departments and divisions to bring prominent authorities to speak to the students, faculty, and general public on specialized subjects related to their fields, from the scientific and technical to the personal, social, artistic, or economic. A hundred or more such special sessions are sponsored each year, open to everyone free of admission charge.

VICE PRESIDENT FOR ADMINISTRATION AND CAMPUS TREASURER

DANILO ORESCANIN, *Vice President for Administration and
Campus Treasurer*

Within designated parameters set by the president, this office and offices reporting to it are responsible for administering and supervising all the business and fiscal functions of Southern Illinois University at Carbondale.

These functions include serving as official custodian of all assets, establishing and administering personnel policies, developing and maintaining an appropriate accounting and fiscal control system to record financial

transactions, and preparing and approving the necessary reports and analyses to ensure that the University operates within its budgetary limitations.

Within limits prescribed by state law and the by-laws and statutes of the Board of Trustees, this office formulates and administers Southern Illinois University at Carbondale's budgetary process of preparing and substantiating requests for funds and of overseeing their disbursement.

Additionally, this office supervises the day-to-day activities of all departments engaged in any type of business affair, whether it be a revenue producing, service, or disbursing facility.

Airport Operations

C. GENE SEIBERT, *Director*

Airport Operations (Air Institute and Service) has responsibilities in both the academic and service areas.

The flight training unit offers up to twenty-four quarter hours, which may be used as electives in several degree programs.

The air transportation unit provides aircraft charter for administration, academic and student groups, and the general public. An additional responsibility is to provide general airport services and management for Southern Illinois Airport. All flight and ground courses and services are provided at the airport, which is located between Carbondale and Murphysboro on Airport Road.

Auxiliary and Service Enterprises

CARLTON F. RASCHE, *Director*

Auxiliary and Service Enterprises is charged with the responsibility of providing University departments, students, faculty, and staff with various services that might be purchased from commercial sources, but that, for reasons of convenience, cost, or control, are more effectively provided by this unit.

The several entities which comprise Auxiliary and Service Enterprises are Travel Service, Telephone Service, University Laundry, Civil Defense, Textbook Rental Service, Vending Service, Military Property Custodian, Saluki Stables, Printing Service, Copy/Duplicating Service, Coin-op Copiers, Campus Machine Service, and Campus Mail Service.

Bursar

THOMAS J. WATSON, *Acting Bursar*

The bursar's responsibility includes receiving, safeguarding, and depositing all funds due Southern Illinois University at Carbondale.

Payments for registration, housing, charges resulting from unpaid accounts with other departments, and note payments are collected in the Bursar's Office.

Services are provided for cashing checks; money orders and travelers checks are sold; also student checks for work, NDSL loans, guaranteed loans, and scholarships are distributed from the office. Short term loans granted by student financial assistance, as well as refunds authorized by

the Office of Admissions and Records, are convertible to cash at the Bursar's Office.

Payroll Office

JAMES D. HAMILTON, *Director*

The primary function of the Payroll Office is to assemble data and prepare payrolls for all Southern Illinois University at Carbondale faculty, civil service, and student employees in the proper amounts at the scheduled time and to provide internal and external reports in support of these payrolls. It is responsible for providing information for proper distribution of checks to all employees.

Sabbatical leave notes are prepared and executed in this office. It is also the Payroll Office's responsibility to provide information relating to individual pay matters and to release certain payroll data to authorized offices.

Personnel Services

DONALD W. WARD, *Acting Manager*

Civil Service Personnel Services; Personnel Benefits; Personnel Information; Personnel Safety; Personnel Training and Development

The role of Personnel Services is carried out through the coordination, review and control of all functions that affect human relations, selection of personnel and working terms and conditions of those persons employed under the University Civil Service System of the State of Illinois. These responsibilities are met by providing leadership in personnel policy formulation, establishment of standards, training for staff development, and the design of methods to bring management and employees together for joint action.

The University employs approximately 2,000 persons under the Civil Service System to support student relations and instructional and research programs. Personnel Services is the central function through which all such employees can express concerns regarding their employment status.

Physical Plant

A. W. Blass, *Director*

The physical plant functions as a maintenance and service organization, with the responsibility of maintaining and operating all physical facilities utilized in support of the University. This includes the maintenance, repair, and operation of buildings, utilities, distribution systems, equipment, grounds, streets, and sidewalks and the operation of the power plant. The maintenance of buildings includes providing custodial services as well as security of academic facilities.

A secondary, but highly important, responsibility is the rendering of services to various University departments where physical plant manpower, equipment, and other related facilities can help further their academic endeavor. This includes repairing and maintaining departmental equipment such as chairs, desks, and window air conditioners, and constructing free standing units such as bookcases, tables, and display boards.

Purchasing

GEORGE A. TOBERMAN, *Director of Purchases*

Purchasing, General Stores, Central Receiving, Surplus Property

The Purchasing Office is responsible for the procurement of all supplies, services and equipment for the University. Within the limits prescribed by the Illinois Purchasing Act and the By-Laws and Statutes of the Board of Trustees, it is the responsibility of the Purchasing Office to provide a continuing and timely flow of the goods and services needed to achieve the goals and objectives of the University.

General Stores Service is the warehousing function created to permit a planned anticipation of need for items used repetitively to the end that University departments are assured instant response to need at minimum cost.

Central Receiving is the focal point of all inbound and outbound merchandise. This department has the responsibility for determining that all items received are in accord with the quantities and specifications expressed in the purchase order.

Surplus Property Service is the department established to assure that all items made available to the University through state and national surplus property programs are obtained when such items satisfy a definite need. This department is also responsible for the disposal of any surplus or obsolete equipment through sale or condemnation prescribed by the State Property Control Act.

Student Center, SIU Arena, Shryock Auditorium

CLARENCE G. DOUGHERTY, *Director*

The Student Center is the community center of the University, and as such, is a building, an organization, and a program. Together they represent a well-considered plan for the community life of the University.

The Student Center provides services, conveniences, and amenities to the members of the University in their daily life on campus and for getting to know and understand one another through informal association outside the classroom. It provides facilities for dances, movies, banquets, receptions, gallery exhibits, recreation, and meetings. Located in the building are eating facilities including a restaurant, cafeteria, snack bar, vending machines, and private meeting and dining rooms; a bookstore, 16 bowling lanes, a billiard area, auditorium, ballrooms, a self service postal station, information service, ticket sales office, activities area, lounges for study, TV viewing, and general use; locker storage, and offices for student activities and the Student Center staff.

The SIU Arena is designed to accommodate athletic events, meetings, musical programs, stage performances and similar activities that demand a large indoor participant area or facilities to accommodate large audiences. The facilities and staff are available to help meet the requirements of the educational program, the needs of the intercollegiate athletics program and the needs of the intramural and recreation program, as well as those of Area Services, the Division of Continuing Education and Student Activities. The SIU Arena also provides a popular entertainment series to help fulfill the educational, cultural, social and entertainment needs of the University community.

Shryock Auditorium, located amid "old campus" of Southern Illinois University at Carbondale, stands as one of the fine and performing arts centers of Southern Illinois. The auditorium is equipped to handle almost any type of event, from the performing arts on a grand scale such as opera and ballet, to large group meetings and conferences. The auditorium, seating over 1200 guests, includes a dressing room complex capable of accommodating up to 70 performers, lighting and sound reinforcement systems incorporating some of the most advanced designs, and an enlarged stage area. Air conditioned throughout the guest areas, the facilities provides the utmost in audience comfort.

University Housing

SAMUEL L. RINELLA, *Director*

University Housing is dedicated to creating and maintaining in its residential facilities a physical environment conducive to study and academic excellence; friendly interchange of ideas among students; providing a sensitiveness to the needs and aspirations of students living together in small and large groups; providing conditions which meet the health and safety standards of the University and civil authorities; providing quality food service at reasonable cost by offering appealing, nutritious, and wholesome food in quantity adequate for the physical requirements of young men and women. Because of this concern and interest, University Housing seeks continually to improve on-campus housing in a variety of ways.

University Housing also seeks continually to influence both the availability and quality of off-campus housing for students in terms of meeting as fully as possible the educational and economic needs of students living off-campus as these needs relate to housing and the objectives of the University.

University Housing provides on-campus housing for approximately 5,600 single, undergraduate students. Furnished and unfurnished apartments are available for 576 married students. Numerous accepted living centers for freshmen and sophomore students off-campus aid in the relationship between the student's living environment and his progress toward the attainment of his educational goals at the University.

VICE PRESIDENT FOR DEVELOPMENT AND SERVICES

T. RICHARD MAGER, *Vice President for Development and Services*

The vice president for development and services is responsible for developing and administering institutional development and relations programs. Units reporting to the vice president coordinate both internal and external programs and activities to meet these objectives. These units are Alumni Services, Broadcasting Services, Campus Architect, Facilities Planning, Information Processing, Institutional Research, Intercollegiate Athletics, Legal Counsel, Master Planner, Photographic Service, Security, Southern Illinois University Foundation, University Exhibits, University Graphics, University News Service, and University Press.

Specific activities for which these units are responsible, either as individual units or cooperatively in task groups are external fund raising, news and information programs, capital budget planning, long-range facility planning, planning and administering a university data base, providing electronic data processing services, providing a publishing outlet for

scholars, coordinating all publications in the name of the University, developing and administering the institutional identity program, and developing and conducting an effective public relations program through all of the above activities and services to both internal and external publics.

VICE PRESIDENT FOR STUDENT AFFAIRS

The vice president for student affairs has the responsibility, within the guidelines established by the president, to see that students are provided every opportunity to benefit in the fullest manner from their college experiences and to provide a coordinated program of student services and welfare. It is the students' responsibility to seek these services and to use the facilities provided according to his needs.

Vice President for Student Affairs Office

GEORGE MACE, *Dean of Students*

The dean of students coordinates the student service areas under the jurisdiction of the vice president for student affairs office: Student Life, Student Services, Student Work and Financial Assistance, and Health Service. The dean of students works closely with these areas, with other university services and faculty in planning and implementing an integrated program of activities and services for students. The dean of students along with the staff in Student Life also works closely with student government in the development of policies concerning students and the student code. All students should be cognizant of university requirements and regulations.

Health Service

SAM MCVAY, *Administrative Director*

DON KNAPP, *Medical Director*

The Health Service is basically an outpatient service plus 24-hour emergency room, ambulance service and a twelve bed inpatient infirmary. Minimal charges are applied to certain services.

A new health program is planned at Southern Illinois University at Carbondale which would be comprehensive in nature providing a full range of medical services including a prevention program. This program would, of course, include hospitalization, specialty care, full range of outpatient services as well as major coverage.

The services described above are available to students who pay the full Health Service fee.

Student Life

EMIL SPEES, *Dean*

The dean of student life coordinates and gives administrative direction to the units of Student Activities, Resident Housing area deans, Recreation and Intramurals, and the Student Life Office. Services provided by these units include recognition of student organizations, liaison with student governments, orientation for new students and parents, meaningful student/faculty contacts via various student activities, recreational and in-

tramural programs, coordination of a disciplinary system, and the coordination and evaluation of educational programming in the University residence halls.

Student Services

TERENCE BUCK, *Dean*

The dean of student services coordinates and provides direction and administrative support for the programs and activities of the Counseling and Testing Center, Placement Services, and the Specialized Student Services Office. Primary objectives of the office are to assure maximum utilization and evaluation of existing services, planning and development of new services and programs which meet student needs and contribute to the mission of the University.

Counseling and Testing Center

The Counseling and Testing Center provides a variety of psychological services for students, staff and their spouses. Personal counseling: psychologists provide assistance with a variety of personal problems ranging from severe psychological emergencies to brief, mild stress. Vocational-educational counseling: assistance in exploring vocational and educational aptitude and interests, choosing an academic major and choosing a career. Developmental counseling: personal development groups are available for individuals who want to become more fully functioning individuals; these may be organized as sensitivity groups, interpersonal skills groups, leadership skills groups, or discussion groups. Testing: the center administers pre-admission, graduate school, and preprofessional examinations as well as a wide range of academic proficiency tests.

Specialized Student Services

The Office of Specialized Student Services provides specialized services and adapts general services to assist physically handicapped, disadvantaged, and underrepresented students obtain maximum academic, social and cultural benefits within the University community.

The developmental skills program is designed to assist the educationally disadvantaged student to improve basic learning skills and general academic achievement. The Handicapped Student Services program provides counseling and specialized services (bus service, wheel chair repair, special activities), orientation for prospective and admitted students who are physically handicapped.

Placement Services

Placement Services provides a comprehensive service to assist students and alumni in making career choices, identifying employment alternatives, and assisting the individual to secure employment which is compatible with his abilities, experiences and aspirations. The office maintains current information about employment opportunities and has continuing contact with potential employers in industry, government, business, and education.

To receive maximum benefits from the service, students should plan to register with Placement Services three quarters prior to graduation. Placement Services will forward employment applications and resumes to potential employers as well as arrange interviews with employment recruiters who regularly visit the campus.

Student Work and Financial Assistance

FRANK C. ADAMS, *Director*

The primary aim of the Student Work and Financial Assistance Office is to provide an opportunity for students to enter and continue in higher education without excessive financial burdens. The programs function as an integral part of the total educational experiences of students who may lack financial resources, who may excel scholastically, or who may wish to develop skills in practical work situations. The student work and financial assistance programs include part-time work on and off campus, cooperative work-study and summer employment, various forms of federal and state assistance (work-study, loans, grants, scholarships, awards, prizes, and private agency awards and loans).

2 / Academic Requirements and Procedures

ADMISSION POLICIES, REQUIREMENTS, PROCEDURES

In order to attend classes at Southern Illinois University at Carbondale, one must gain official admission to the University and must complete the enrollment process, which includes advisement, registration, and payment of fees.

Applications for admission to the University are accepted any time during the calendar year but should be initiated in ample time to permit the necessary work of processing to be completed.

University entrance examination scores must be furnished by all beginning freshmen and transfer students who have fewer than 42 quarter hours (28 semester hours) of acceptable transfer work prior to their being considered for admission to the University. Currently ACT (American College Testing Program) is the required entrance examination.

All students seeking undergraduate admission to the University follow the same procedures and submit the same admission documents. These procedures and required forms are presented below as are the admission requirements which do vary somewhat.

Admission of Freshmen

To be eligible for admission, applicants must be either graduates of recognized high schools (graduates of nonrecognized high schools may be admitted by the director of admissions by examination), or must have passed the General Educational Development Test. Persons seeking admission through the latter procedure will be considered only after their high school class would have graduated.

All admissions granted students while in high school are subject to the completion of high school work and maintenance of rank upon which the admission was made.

Students entering the University as freshmen are enrolled in the schools or colleges within the University that offer the academic programs they indicate they plan to pursue. The only exceptions to this are for students who plan to major in programs within the College of Liberal Arts or the College of Science and for students who are undecided about their major field of study. These students are admitted to the General Studies Division.

Early Admission Policy for Freshmen

Exceptionally capable high school students who (a) have completed their junior year, (b) are recommended by their high school principals, and (c) are approved by the director of admissions of the University will be permitted to enroll for University courses to be taken concurrently with

their senior year of high school work. Such students will also be permitted to enroll for University courses offered during the Summer Quarter between their junior and senior years of high school, without being concurrently enrolled in the secondary school. Enrollment during the summer for students participating in this early admission program is limited to twelve quarter hours.

It is expected that high school principals will judge each case on its individual merits, but that in making their selections and recommendations they will consider such things as:

- (a) the rank held by the students in their high school class;
- (b) the results of any standardized test which the students may have taken;
- (c) the opinion of the students' teachers regarding their aptitude for college level work; and
- (d) the opinion of the students' teachers regarding the students' having attained sufficient maturity to adjust to the social and emotional interactions involved.

Admission of Freshmen to Baccalaureate Programs

In-state high school graduates who rank in the upper half of their graduating class based upon class rank or by score on the University entrance examination are eligible for admission to any quarter. Graduates who rank in the lower half of their graduating class are admissible to the summer quarter on a conditional basis for the purpose of demonstrating their capability to continue their education.

Out-of-state high school graduates who rank in the upper forty percent of their graduating class based upon class rank or by score on the University entrance examination are eligible for admission to any quarter. Out-of-state high school graduates who rank in the upper half of their graduating class, but not the upper forty percent, are admissible to the summer quarter on a conditional basis.

Both in-state and out-of-state students admitted to a summer quarter on a conditional basis can qualify for fall quarter attendance by carrying a minimum academic load of eleven quarter hours and completing them with at least a *C* average. Otherwise, the next earliest time that they might enter will be the following summer and under the same conditions.

Students meeting the standards making them eligible for admission to any quarter will be considered for admission after completion of the sixth semester of high school. Students who do not meet these standards will be considered for summer quarter admission.

Admission of Freshmen to the School of Technical Careers

In-state high school graduates who rank in the upper two-thirds of their graduating class based upon class rank or have a composite ACT standard score of 18 are eligible for admission to any quarter. Graduates who rank in the lower one-third of their graduating class are admissible to the summer quarter on a conditional basis.

Out-of-state high school graduates who rank in the upper half of their graduating class based upon class rank or by score on the University entrance examination are eligible for admission to any quarter. Out-of-state high school graduates who rank in the upper two-thirds of their graduating class but not in the upper half are admissible to the summer quarter on a conditional basis.

Both in-state and out-of-state students admitted for the summer quarter on a conditional basis can qualify for fall quarter attendance by enrolling for a minimum academic load of eleven quarter hours and completing them with at least a *C* average. Otherwise, the next earliest time that they might enter will be the following summer and under the same conditions.

Students who did not meet the University baccalaureate admission requirements to enter as freshmen from high school during the regular academic year and elected to enter the School of Technical Careers will not be considered for admission to a four-year program until they have completed 42 quarter hours and have an overall *C* average.

Because selected programs at the School of Technical Careers offer courses on a sequential basis, students may be admitted to these programs only for certain quarters. Programs that begin only during the fall are Dental Hygiene and Physical Therapy Assistant.

Admission of Transfer Students

For academic purposes undergraduate applicants for admission to the University are considered to be transfer students when they present twelve quarter hours or more of graded work for transfer consideration; otherwise, they are considered for admission as new freshmen.

In the event transfer students' grade point averages cannot be determined their admission may require, in addition to a review of their college performance, standardized examinations and secondary school records.

Transfer students who have been suspended for any reason other than academic failure must be cleared by the Student Life Office before admission will be granted by the director of admissions.

Transfer students who have fewer than 64 quarter hours of acceptable transfer work and plan to major in a field of study in the College of Liberal Arts or the College of Science will be admitted to the General Studies Division. All other transfer students will be admitted directly to the school or college in which their major fields of study are offered. Students who are undecided about their major fields of study will also be admitted to the General Studies Division.

Transfer students from non-baccalaureate programs will ordinarily be placed in the upper division unit in which they plan to continue their studies. Students admitted to the School of Technical Careers will be enrolled in that academic unit.

Admission of Transfer Students to Baccalaureate Programs

Students who have an overall *C* average, 3.0 on a 5.0 scale, (all institutions) and are in good academic standing at the last institution of attendance will be eligible for admission for any quarter. In addition, students transferring with fewer than 42 quarter hours (28 semester hours) of acceptable credit must also meet the requirements established for beginning freshmen.

Students who have less than a *C* average, 3.0 on a 5.0 scale, and at least 60 acceptable semester hours or 90 acceptable quarter hours and who are eligible to continue at the last school attended may be considered for admission for the summer quarter on scholastic probation provided tangible evidence can be submitted that additional education can be successfully completed. Tangible evidence might include: (1) an interruption of schooling, (2) military experience, and (3) previous academic performance.

Students who have been suspended for poor scholarship from the last institution attended may be considered for admission only for the summer quarter provided they have at least 60 semester or 90 quarter hours of acceptable transfer credit, there has been an interruption of schooling for at least one year, and there is tangible evidence that additional education can be successfully completed.

Students who have graduated with an associate degree in a baccalaureate-oriented program from a two-year institution may enter Southern Illinois University at Carbondale any quarter without regard to their average provided they have not taken additional college-parallel work since their graduation. If they have, their admission will be considered on the basis of their conformity to the University's regular transfer admission standards.

Students applying for admission to the University to pursue baccalaureate programs from programs not so oriented will be considered for admission as follows: (1) students from regionally accredited institutions will be considered on the basis of their conformity to the University's normal transfer admission standards, and (2) students who have completed a two-year or equivalent program with a *C* average in an institution which has not been accredited by a regional accrediting association will be admitted if the institution is (a) one falling within the normal purview of a regional accrediting association or (b) one recognized by an accrediting body which itself is recognized by the National Commission on Accrediting or the U. S. Office of Education. Students who have attended institutions as outlined in (2) above and who have not completed two-year programs or equivalent or who have less than a *C* average are considered for admission as entering freshmen.

Admission of Transfer Students to the School of Technical Careers

Students with an overall *C* average, 3.0 on a 5.0 scale, and in good academic standing at the last school attended may enter the School of Technical Careers any quarter. Those students whose grade point average is less than a *C*, 3.0 on a 5.0 scale, and who are eligible to continue at the school of last attendance may be considered for admission for the winter, spring, or summer quarters.

Students who have been suspended for poor scholarship may be considered for admission only for the summer quarter provided: (1) there has been an interruption of schooling for at least one semester or two quarters and (2) there is tangible evidence that additional education can be successfully completed.

Students who are admitted to the School of Technical Careers as transfer students and then decide at a later date to enter a four-year program must meet the University's baccalaureate admission requirements at the time of transfer.

Because selected programs at the School of Technical Careers offer courses on a sequential basis, students may be admitted to these programs only for certain quarters. Programs that begin only during the fall are Dental Hygiene and Physical Therapy Assistant.

Evaluation of Transfer Credit

Transfer credit for students admitted to baccalaureate programs from baccalaureate programs is evaluated for acceptance toward University and

General Studies requirements by the Office of Admissions and Records after the admission decision has been made. The evaluation toward satisfaction of specific curriculum requirements is done by the department or agency directing the specific curriculum. General principles governing the acceptance of transfer work are as follows:

1. All transfer work is entered on the students' official records of academic work maintained in the Office of Admissions and Records.

2. Credit transferred on or after June 1, 1967, from an accredited two-year institution is limited only by the provision that students must earn at Southern Illinois University at Carbondale or at any other approved four-year institution at least 96 quarter hours required for a degree, except that students must meet the residence requirements for a degree from the University. These requirements can be found elsewhere in this catalog. Conditions governing the acceptance of credit from four-year higher educational institutions also apply to acceptance of credit from two-year institutions.

3. Completion of an associate degree based on baccalaureate-oriented sequences transferred from an accredited two-year institution is considered to provide the student with (a) junior standing and; (b) completion of lower division general education requirements.

Further information on the application of transfer work toward satisfying General Studies and graduation requirements may be found elsewhere in this catalog.

Transfer credit evaluation from educational programs not baccalaureate oriented and to be applied to baccalaureate programs will be subject to the general conditions listed above and to the additional following points:

1. Credit presented by students who have completed associate or equivalent programs with a *C* or better average in regionally accredited institutions will be evaluated. Applicable credit will be posted to the students' educational record cards without condition.

2. Credit presented from regionally accredited institutions when the students have not completed associate or equivalent programs, or who have less than a *C* average, will be evaluated so that the students may receive advice regarding registration and remaining requirements, but the credit will not be posted to the students' educational record cards until they have established a *C* average in their first 36 calculated quarter hours at the University.

3. Credit presented from institutions not regionally accredited but which fall within the normal purview of regional accrediting associations or from institutions recognized by accrediting bodies recognized by the National Commission on Accrediting or the U. S. Office of Education will be evaluated as in point 2 above provided the student has completed a two-year program or its equivalent. Otherwise no credit will be considered for transfer.

Transfer credit for students admitted to the School of Technical Careers is evaluated by the chairman in charge of the program the student plans to follow at the school.

Admission of International Students

In general, international students must meet the same academic standards for admission as those required of native students. As there is considerable variation between educational systems throughout the world, precise comparative standards are not always available. Therefore, inter-

national students are selected upon the basis of the excellence of their former academic work, personal recommendations of former teachers and colleagues, the judgment of the University as to whether it has academic programs of benefit to the students and the students' financial arrangements for support during the normal period of time required to reach the objectives of their studies.

In addition to submitting copies of secondary school records and, when applicable, college transcripts, international students must also submit scores from TOEFL examination (Test of English as a Foreign Language). TOEFL scores are required of all international students who (1) have completed their secondary education in a country where English is not the native language, (2) have completed fewer than two years study in a United States high school, (3) have completed fewer than two years (90 quarter hours) of collegiate training in an accredited United States college or University. Students who have completed their secondary education in a country where English is the native language are required to submit scores from either the American College Test or the Scholastic Aptitude Examination.

International students whose secondary school and college records are acceptable for admission purposes must also receive high enough TOEFL scores for unconditional admission. Students with a TOEFL score of 525 or higher will be granted unconditional admission. Applicants whose TOEFL score is between 475 and 524 will be admitted contingent upon completion of an English re-test administered by the Center for English as a Second Language.

International students interested in making application to Southern Illinois University at Carbondale should address their inquiries to the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. At that time they will receive a copy of the *Information for Prospective International Students* booklet which outlines in greater detail information about the University and admissions procedures of particular interest to international students.

Admission of Former Students

Former students of Southern Illinois University at Carbondale not in attendance on a campus of the University at the close of the quarter preceding application for admission must apply to the Office of Admissions and Records for re-entrance prior to registration.

Former students who are not in good standing must clear their status before the admissions office will prepare their registration permit. It is advisable for such students to initiate re-entrance clearance with the Office of Admissions and Records early so that all inquiries may be answered and so that the applicants can find time to complete any requirements that may be imposed upon them. (See Scholastic Probation and Suspension System elsewhere in this bulletin for further information.)

Admission of Special Categories of Students

Several types of students are given special consideration when seeking admission to the University. These are described below.

Admission of Veterans

Veterans seeking admission or re-admission to the University are admitted regardless of their previous academic record provided no additional educa-

tion has been attempted following their separation from active duty. In the event their educational records do not qualify them for admission in good standing, they will be admitted in good standing-scholastic warning.

Developmental Skills Program

The University is currently operating an experimental program through which a selected number of educationally and socially disadvantaged students are admitted to the University each fall who would otherwise not meet the University's regular admission standards. These students, in addition to submitting the regular academic credentials, must also submit three letters of recommendation. The students who enter this experimental program are admitted in good standing.

Admission of Adults as Unclassified Students

Adults who have never enrolled in an institution of higher education may enroll for courses regardless of their ability to qualify for admission under the present admission policies. Students in this special category are assumed to be non-degree applicants and are not required to submit all of the academic records required for admission to a degree program. Persons interested in seeking admission as adult unclassified students are encouraged to write to the Office of Admissions and Records.

Applying for Admission

High school students are urged to initiate the admission application process during the seventh semester in high school. Transfer students should initiate the process during the last semester or quarter of attendance at the previous school if they plan to transfer without interruption. Students who delay their admission processing until near the start of the quarter which they wish to enter may find that they are unable to do so because all necessary documents required before the admission decision will be made have not been received. It is particularly important for transfer students to initiate the admission application process well before the starting date of the quarter. Otherwise delay in getting started, undesirable class schedules, or inability to attend the desired quarter may result. Documents required in the admission process are listed later in this chapter.

The admission process is started by writing the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, indicating a desire to apply and requesting admission materials. The materials that are sent contain the application and related forms that need to be completed along with procedural instructions. Information is also included relative to housing and financial assistance.

Documents Required for Admission

Among the items required by the University before an admission decision is made are the following:

1. The completed application form from the students.
2. Transcripts of previous educational experience. For high school students the request is for two copies of the high school transcript. For transfer students the request is for an official transcript from each institution previously attended sent directly to this University from the previously attended school. In addition, transfer students presenting fewer than 42 quarter hours (28 semester hours) of

completed work must provide to the University a copy of their high school transcript.

3. University entrance examination scores. All students applying for admission directly from high school and all transfer students who have completed fewer than 42 quarter hours (28 semester hours) must have their official ACT scores sent to the University from the American College Testing Program, Box 451, Iowa City, Iowa 52240.
4. Physical examination form. New students admitted as full-time undergraduate students are requested to have a physical examination performed by a private physician recorded on the form provided by the University. This must be done prior to registration in the University. The completed form is to be sent directly to the University Health Service. In case of a religious belief which is in conflict with the plan, special arrangements may be made with the University Health Service.

Applications for housing and financial assistance are separate from the admission process and directions relating thereto are contained in the brochures on these subjects which the students receive as part of the admissions process.

ORIENTATION, ADVISEMENT, REGISTRATION

Through a carefully designed system of orientation, academic advisement, and registration the University attempts to assure entering students an efficient and effective introduction to the University prior to the time they start class attendance. A more extensive program is provided for those students entering during the fall quarter while abbreviated activities are in operation for the other quarters.

For many years the University has used an advance registration system through which all continuing students and most new students are expected to be academically advised and registered for a quarter well before its actual start. The advance registration period for fall quarters ordinarily runs from the middle of April through the end of May and then from the early part of July to the latter part of August.

During July and August several weeks are set aside for new freshman and transfer student orientation, advisement, and registration. Students are invited to have their parents accompany them so that they too may obtain a better understanding of the University and its operation than might otherwise be the case. The orientation program on these days is of necessity an introductory type in which questions about admission, housing, financial assistance, etc., can be answered. Later, at the start of the fall quarter new students participate in three days of orientation activities during which time they receive a well rounded introduction to university life.

Starting in May and extending through June the University's Admissions Office contacts new students admitted to arrange appointment dates for them to come to the campus. Through this process only the number of students that can be efficiently handled are involved each day. Students who cannot come to the campus during the summer or who delay applying for admission beyond the advance registration period may register at the start of the fall quarter but are required to come to campus a few days before those who have registered during the summer period.

Similar procedures are followed at the start of each of the other quarters. Admitted students are kept informed of orientation, advisement, registration procedures, and the times when they occur by the Office of Admissions and Records in cooperation with the Student Activities Office. The latter office is the University's administrative agency that assists the large number of volunteer students who actually operate the New Student Days activities at the start of each quarter.

Academic Advisement

Academic advisement is administered by the academic units. Each unit employs a selected group of trained advisers devoting part-time directly to this function. They operate under the supervision of a chief adviser who is responsible to the dean of the academic unit.

The University accepts the importance of the academic advisement function. Insistence on receipt of transcripts and ACT scores prior to admission serves not only to determine admission but later provides suitable educational information to the advisers upon which decisions can be made relative to the proper courses to advise the students to take. On the basis of this information the advisers can make intelligent decisions relative to students who should receive advanced standing in courses or who should be urged to take proficiency examinations in courses about which they appear to be already well informed.

Registration

Registration for any session of the University is contingent upon being eligible for registration. Thus advance registrations, including the payment of tuition and fees, are considered to be invalid if the students are later declared to be ineligible to register due to scholastic reasons. Students may also be considered ineligible to register because of financial or disciplinary reasons if this is certified to the registrar by the appropriate University office.

Detailed information about the dates and procedures for advisement and registration appears in each quarter's Schedule of Classes, which is available from University Graphics and Publications.

There are several basic principles governing registration for classes as follows:

1. Students are officially registered for only those courses which appear on their schedule of classes. Changes therefrom can be made only through the processing of an official program change.
2. Registration ends at the close of the first week of school. This includes the registration into new courses or the changing of sections through the program change process.
3. Students may not drop a course merely by stopping attendance. To do so results in an ABS grade. A course may be dropped through the program change route through the first four weeks without a letter grade being assigned. Thereafter, a passing or failing grade will be assigned in keeping with the students' status at the time of withdrawal.
4. There is a terminal date near the end of each quarter after which program changes or withdrawal from school are not permitted except under exceptional conditions. This date is usually one week before

final examinations begin. The specific date appears in each quarter's Schedule of Classes.

Withdrawal from the University

Students who find it necessary to withdraw from the University after school has started and are on campus should contact the Office of Admissions and Records in person to initiate the withdrawal process. If they are unable to come to campus they may write the Student Life Office asking that it process a withdrawal.

Students who advance register, including the paying of fees, and who then find that they cannot attend school must process an official withdrawal the same as do those who withdraw after school starts. In this case the process is the same as outlined in the paragraph above. Students who advance register but do not clear fees by the announced deadline date are automatically cancelled.

Refer to the section *Payment and Refunding of Fees* later in this chapter for information about the refunding of tuition and fees when withdrawing from the University. Refer to that section, also, relative to special considerations extended to students withdrawing from school for extended military service.

COSTS AND HOUSING ACCOMMODATIONS

It is difficult to indicate the specific cost of attending the University because of the differences in personal spending habits. However, the following information can be helpful.

Tuition and Fees

The types and amounts of tuition and fees charged students are established by the Board of Trustees and are subject to change whenever conditions make changes necessary. Listed below are the tuition and fees assessed students per quarter.

	Not more than 5 hrs.	More than 5, less than 11	11 or more
Tuition Fee—Illinois Resident	\$ 48.00	\$ 95.00	\$143.00
Tuition Fee—Out-of-State Resident . . .	(143.00)	(286.00)	(429.00)
Student Welfare and Recreation			
Building Trust Fund Fee	5.00	10.00	15.00
Student Activity Fee	3.50	3.50	3.50
Student Medical Benefit Fee	4.00	7.50	11.50
Student Center Fee	5.00	10.00	10.00
Athletic Fund Fee	3.00	6.50	10.00
<i>Total</i> —Illinois Resident *	\$ 68.50	\$132.50	\$193.00
<i>Total</i> —Out-of-State Resident *	(163.50)	(323.50)	(479.00)

In addition to the above fees, there is a graduation fee of \$6.00 for undergraduate degrees and \$9.00 for graduate degrees.

Students holding valid state scholarships are exempt from the above tuition and fees to the extent provided by the terms of the specific scholarship held. An Illinois State Scholarship may cover all tuition and

* Effective with the 1973 fall quarter, the University will no longer operate a Textbook Rental Service except for General Studies courses. Students taking General Studies courses will be charged a specific textbook rental charge for each General Studies course. Textbooks for all other courses will be on a purchase basis.

fees or the scholarship may be a partial award. Also, honorary scholarships, which have no monetary value, may be awarded. An Illinois State Teacher Education Scholarship, Illinois Scholarship for Dependents of Prisoners of War, Illinois Bilingual Scholarships, an Illinois Military Scholarship, an Illinois General Assembly Scholarship, or an Illinois County Scholarship exempts the student from the paying of tuition, the student activity fee, and the graduation fee.

Faculty members and university civil service employees taking courses are not charged tuition and activity fees. However, they pay all other appropriate fees. A civil service employee claiming this tuition and fee remission must receive approval of his department head and director of the Personnel Office prior to enrolling for courses.

Extension course fees are \$10.00 per hour plus a \$1.05 book rental fee per General Studies course.

Adult education course fees are computed on the basis of approximately sixty cents per contact hour.

Other charges which students may incur are those for departmental field trips, library fines, and excess breakage. Also, students taking a course involving use of materials, as distinct from equipment, will ordinarily pay for such materials.

Students registering for courses on an audit basis pay the same tuition and fees as though they were registering for the courses for credit.

Students are entitled to a free transcript of their university record each time they have added academically to their record through work taken at this University, provided they have fulfilled all their financial obligations to the University. There is a charge of \$1.00 for each additional transcript up to a total of five when lower multiple-copy rates become effective.

Out-of-state students will find the official University regulations governing determination of residency status for assessment of tuition later in this chapter.

Payment and Refunding of Fees

Fees are payable quarterly during the academic year. Students who register in advance receive a fee statement and may pay either by mail or in person at the Bursar's Office, by the deadline date, in accordance with instructions accompanying the fee statement. Otherwise their advance registration is cancelled and they must register again later. Students who register at the start of a quarter must pay fees at the time of registration.

Students who process a program change which places them in a different tuition and fee category than the one for which they originally registered will be billed additional tuition and fees when appropriate. If the change places them in a smaller tuition and fee category and if they have processed the program change within the first two weeks of the quarter, they should make application for a refund at the Office of Admissions and Records after the fourth week of the quarter. Mail requests for a refund will be honored.

A refund of fees will be made to students who officially withdraw from school by the deadline which occurs within the first two weeks of the quarter. Specific withdrawal deadlines are printed in each quarter's Schedule of Classes and students are subject to those printed deadlines. If the students withdraw in person, they will receive an immediate cash refund.

If they withdraw by mail, they will receive a refund by check in approximately four weeks after the withdrawal has been received by the Office of Admissions and Records. No refunding of fees is made for a withdrawal occurring after the first two weeks, except as described in the next paragraph. The specific deadline dates for each quarter appears in that quarter's Schedule of Classes.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). Students will be refunded full tuition and fees paid if they enter military service during the first four weeks of school. If students withdraw during the fifth through eighth week of school, they will be refunded half of the paid tuition and fees, and they will receive one-half credit without letter grades for the courses in which they were receiving a passing grade at the time of withdrawal. When the withdrawal occurs after the eighth week, students will receive no refund, but will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits students must remain in school to within ten days of their military reporting date.

Housing Costs and Accommodations

The housing rates are subject to change from time to time. Students interested in housing both on-campus and off-campus will receive housing information including housing policies during the admission procedure.

On-Campus

The current rate for board and room in residence halls for men and women is \$385 per quarter or \$1,115 per academic year (fall, winter, and spring). The University provides all room equipment and linen; the student must furnish his towels, blankets, and bedspreads. Housing facilities for married students include furnished efficiency apartments renting for \$113 per month; furnished one-bedroom apartments renting for \$123 per month; furnished two-bedroom apartments renting for \$128 per month; two-bedroom unfurnished apartments renting for \$110 per month; and unfurnished three-bedroom apartments renting for \$123 per month.

Inquiries about on-campus housing should be directed to the supervisor of contracts, University Housing, Building D Washington Square.

Off-Campus

The Off-Campus Housing Office maintains a list of University approved housing. Rates for facilities for freshmen range from \$385 to \$410, which provides room and board, and for sophomores \$100 to \$300 per month depending upon whether board is included or not.

Inquiries about off-campus housing should be directed to the Off-Campus Housing Office in Building C Washington Square.

Estimated Total Expenses

Because of the wide range in personal spending and in living costs, it is difficult to make an estimate of total expenses. Illinois residents living in on-campus residence halls would spend approximately \$1,800 for board, room, tuition, and fees for an academic year while out-of-state

students would need approximately \$2,600 for the same purposes. Miscellaneous expenses need to be added to these figures to determine the total cost.

GRADING, SCHOLASTIC REGULATIONS AND CREDIT

Grading System

Grades are expressed in letters as follows:

	GRADE POINTS PER HOUR
A, Excellent	5
B, Good	4
C, Satisfactory (this is intended to be the average grade)	3
D, Poor, but passing	2
E, Failure	1
P, Pass. Hours earned apply towards graduation but do not affect student grade point average. Used only in Pass-Fail system. See Pass-Fail Grading System below.	
F, Fail. Hours do not apply towards graduation and do not affect student grade point average. Used only in Pass-Fail system. See Pass-Fail Grading System below.	
W, Authorized withdrawal with no basis for evaluation established. Work may not be completed. Approved grading symbol on graduate level only except for unusual circumstances where an academic unit dean recommends a change in grade from ABS to W for an undergraduate student.	
WP, Authorized withdrawal with passing grade.	
WE, Authorized withdrawal with failing grade. Counts same as an E for grade average purposes.	
WF, Withdrawal with failing grade. Does not affect student's grade point average. Authorized grade only for students taking courses on Pass-Fail basis. See Pass-Fail Grading System below.	
INC, Incomplete. Has permission of instructor to be completed. See explanation below regarding failure to complete.	
DEF, Deferred. Used only for graduate courses of an individual, continuing nature such as thesis or research.	
PR, Work in progress. Grade is not included in grade point average. Final grade will be assigned at conclusion of instructional period.	
ABS, Unauthorized withdrawal. Counts same as an E for grade average purposes.	
S, Satisfactory. Used for noncredit courses except Spring Quarter, 1970, when it was used to indicate satisfactory completion of credit courses as well. Effective Fall, 1970, the S and U grades were used for the	

grading of thesis and dissertation credit on the graduate level and for certain other individually approved 500-level courses.

U, Unsatisfactory. Used for noncredit courses except Spring Quarter, 1970, when it was used for credit courses as well. (See also *S* grade)

CR, Credit. No letter grade assigned.

AU, Audit. No grade or credit earned.

Grades given at the end of a course are final and may not be raised by additional work.

The grades of *A*, *B*, *C*, *D*, *E*, *WE*, and *ABS* are included in determining student grade point averages.

Authorized course withdrawals made through the program change process do not receive grades when made during the first four weeks of a regular quarter. Thereafter, authorized withdrawals receive WP for withdrawal with a passing grade, WE for withdrawal with a failing grade, or W (for graduate students only) when no basis for evaluation has been established. The grade of WF is used in lieu of WE when students withdraw from a course for which they registered on the Pass-Fail system. Deadlines for short session courses are printed in the Schedule of Classes and students are subject to these printed deadlines.

A *DEF* grade for course work of an individual nature such as research, thesis, or dissertation is changed to a completed grade when the project has been completed.

The grades of *S* and *U* are used to indicate satisfactory or unsatisfactory completion of a noncredit course. (See also *S* grade.)

Students registering for a course on an *audit* basis receive no letter grade and no credit. Auditors registration cards must be marked accordingly, and they pay the same fees as though they were registering for credit. They are expected to attend regularly and to determine from the instructor the amount of work expected of them. If auditing students do not attend regularly, the instructor may determine that the students should not have the audited course placed on their record cards maintained in the Office of Admissions and Records. Students registering for a course for audit or credit may change to a credit status or vice versa through the official program change method during the first four weeks of a quarter. Thereafter the change may not be made.

Unauthorized course withdrawals which are made through failure of the students to continue in attendance receive a grade of *ABS*. *ABS* grades for students may be changed to *W*'s in unusual circumstances upon the recommendation of the head of students' primary academic unit.

An *INC* grade may be changed to a completed grade within a time period to be designated by the instructor, not to exceed one year from the close of the quarter in which the course was taken. Prior to the 1973 summer quarter the grade remained an *INC* and is not included in grade point computation. For *INC* grades given for that quarter and thereafter, an *INC* must be changed to a completed grade within a time period to be designated by the instructor, not to exceed one year from the close of the quarter in which the course was taken. If the grade is not changed within this period, it automatically becomes an *E*, or *F* in *P/F* courses, and is to be included in grade point computation, except in the case of the *F*.

Prior to the 1971 Summer quarter courses in which *D*'s or *E*'s were

received could be repeated and the last grade was used in computing students' grade point averages. The repeating of a course does not remove the previous grade from students' official academic record cards. Effective with the 1971 Summer quarter all earned grades carrying grade point values are considered when computing students' grade point averages, including each earned grade in a repeated course.'

The official records of students' academic work are maintained in the Office of Admissions and Records.

Pass-Fail Grading System

Effective with the 1968 Fall quarter the various undergraduate academic units at their discretion permitted their students to take a limited amount of course work on a Pass-Fail basis rather than on the regular letter grade basis.

The purpose of the Pass-Fail grading system is to encourage students to broaden their education by undertaking intellectual exploration in elective courses outside their area of specialization without having to engage in grade competition with students specializing in those courses.

The present Pass-Fail grading system for undergraduate students in good academic standing is governed by the conditions listed below effective Summer quarter, 1972:

1. There be two types of Pass-Fail courses: *mandatory* Pass-Fail courses, in which all students will receive either a *P* or an *F*; and *elective* Pass-Fail courses, in which students could elect either the traditional grading system or the Pass-Fail option.

2. No course be available under the Pass-Fail option without prior designation by the department or program in which the course is offered, and that current authorization procedures be followed.

3. The Pass-Fail grade be *mandatory* in courses in which, in the judgment of the department or program, the traditional grading system is inappropriate.

4. Pass-Fail grades be *mandatory* for all proficiency examinations.

5. The number of *elective* Pass-Fail credits be limited to 24 quarter hours overall, and to 12 quarter hours in any general studies area.

6. Formal permission of the major department or program be required before students are permitted to elect Pass-Fail for a major or minor requirement.

7. Students who earn an *A* or *B* in an *elective* Pass-Fail course be allowed to have their grade changed to an *A* or *B* by requesting this change at the Office of Admissions and Records before the end of the following term.

8. Neither the *P* nor the *F* be counted in calculating the GPA.

9. Instructors who teach *elective* Pass-Fail courses not be informed which students are taking these courses on a Pass-Fail basis.

10. A grade of *D* or higher be required for students to receive a *P*.

11. The Pass-Fail option be evaluated by institutional research prior to the end of the second year and that a report be made to the Joint Standing Committee on Undergraduate Education Policy at the end of the second year.

Students follow usual registration procedures when registering for courses on a Pass-Fail basis. They may change their course registration status from Pass-Fail to the regular grading system and vice versa only during the first four weeks of a quarter.

Scholastic Standing

The matter of scholastic standing is quite often of importance to students both while in school and later when they present a transcript of their educational record in support of their application for employment or additional schooling.

At the end of each quarter of attendance a grade report is prepared for each student showing, in addition to the grades earned that quarter, what his scholastic standing is and what his grade point average is for the quarter, and for his over-all record. It is important that students understand the University's system for computing grade point averages and the various grade point average requirements.

Effective with the summer quarter, 1972, transferred grades are not to be used in determining students' calculated grade point average, except that transfer students who are admitted on probationary status will be required to earn a 3.0 average quarter by quarter until a total of 12 quarter hours has been earned, before students are removed from probation.

The significance of the above should be clearly understood by transfer students when studying the general baccalaureate degree requirements. A 3.00 (C) average is required for the work taken at this University.

In computing students' grade point averages all grades of *A*, *B*, *C*, *D*, *E*, *WE*, and *ABS* are included in determining the number of *calculated* hours. Each hour of these grades (1 hour of *A* is worth 5 grade points) is given its numerical grade points, and the total number of calculated hours is then divided into the total number of grade points to determine the student's grade point average.

Effective with the 1971 summer quarter all earned grades carrying grade point values are considered when computing students' grade point averages, including each earned grade in a repeated course that is taken during the 1971 summer quarter and thereafter. When computing averages through the 1971 spring quarter the policy contained in the 1970-71 Undergraduate Catalog is followed.

Scholastic Probation and Suspension System

Students are expected to make satisfactory progress toward a degree, certificate, or other approved objective in order to be eligible to continue attendance in the University. Students making a 3.000 average for a quarter are eligible to continue in attendance for the subsequent quarter.

To ensure that students make satisfactory progress towards their educational objectives they are required to maintain both a 3.000 average on a quarter-to-quarter basis, and a progressively improving grade point average as they accumulate specified numbers of hours to their records. Otherwise, they will be placed in categories other than Good Standing and may be required to discontinue attendance at the University for a period of time. The provisions relative to scholastic good standing, probation, and suspension effective with the 1972 Summer Quarter are outlined below.

Students who are on Good Standing will be placed on Good Standing-Scholastic Warning at the end of any quarter in which they fail to make a 3.000 term average, and they have:

- a. Fewer than 90 hours and a grade point average below 3.000.
- b. 90 but fewer than 138 hours and a grade point average below 3.100.
- c. 138 or more hours and a grade point average below 3.150.

Students on Good Standing-Scholastic Warning who fail to earn a 3.000 average for a quarter are placed on Scholastic Probation. Students who do earn a 3.000 or better quarter average will remain on Good Standing-Scholastic Warning until their grade point averages meet the minimal requirements specified in a, b, or c, above.

Students on Scholastic Probation who fail to earn a 3.000 average for their next quarter of attendance are placed on Scholastic Suspension, and may be subject to suspension from the University for scholastic reasons. An exception to this rule shall prevail for those students in categories b and c above whose over-all grade averages at Southern Illinois University at Carbondale have not fallen below the 3.000 average. They will remain on Scholastic Probation until their averages rise above the minimal levels specified, in which case they will move to Good Standing. If their averages fall below 3.000 they will be placed on Scholastic Suspension. Students on Scholastic Probation will remain on Scholastic Probation so long as they continue to earn 3.000 or better quarter averages until such time as their over-all averages move above the minimal requirement as specified in a, b, or c, above, in which case they move to Good Standing.

Students placed on scholastic suspension may seek reinstatement after a minimum of two quarters interruption but must furnish tangible evidence that additional education can be successfully undertaken.

Transfer students who are admitted on probationary status will be required to earn a 3.0 average quarter by quarter until a total of 12 quarter hours has been earned, before they may be removed from probation.

While on Scholastic Probation students are subject to certain conditions that do not prevail when they are in Good Standing. These are as follows:

- a. They may not enroll for more than 14 hours per quarter unless approved to do so by the dean of their academic unit.
- b. They may not participate in extracurricular activities or hold a major office unless special permission is granted. Petitions for permission to do so are filed with the coordinator of the Student Activities Center.
- c. Other limitations may be established by the appropriate officials of the campus of the University which the students attend or by the academic unit within which the students are enrolled.

Credit

Unit of Credit

Southern Illinois University at Carbondale operates on the quarter system. Therefore, references to hours of credit mean quarter hours rather than semester hours. One quarter hour of credit is equivalent to two-thirds of a semester hour. One quarter hour of credit represents the work done by a student in a lecture course attended fifty minutes per week for one quarter, and, in the case of laboratory and activity courses, the stated additional time.

Class Standing

Southern Illinois University at Carbondale requires students to earn at least 186 quarter hours of acceptable credit in order to receive a baccalaureate degree. For academic classification purposes a freshman is a student who has completed fewer than 42 hours; a sophomore, from 42 through 89; a junior, from 90 through 137; and a senior, 138 or more.

Academic Load

The normal academic load for students is 16 hours. The maximum is 18 hours.

Students with a 4.25 grade point average or above for the preceding quarter may be allowed by the head of their academic units to take as many as 21 hours. In no case may students carry, or be credited with, more than 21 hours in any quarter. This 21 hour restriction applies in all cases regardless of whether students would desire to take more hours at the University only or through a combination of institutions.

Students on scholastic probation may not take more than 14 hours without approval of the head of their academic unit. Students employed full-time may not register for more than 8 hours.

The question of what constitutes full-time attendance is one that is often asked but for which there is no single over-all answer. For enrollment reporting purposes, 12 or more quarter hours distinguishes between full- and part-time attendance. However, a number of situations call for different hourly classifications. For example, students registered for 11 hours pay full tuition and fees. Also, students attending the University under a scholarship, loan, or other type of program requiring full-time enrollment should check with the office administering the program to make certain that they are meeting the requirements of their specific program. For example, Public Law 358 requires 12 hours on the undergraduate level for full time, 9 to 11 is considered three-quarter load, and 6 to 8 hours, half load. Students concerned with Selective Service on the undergraduate level need to carry 12 hours to be considered full time. However, for Selective Service purposes, students must also be making satisfactory progress. Therefore, they need to accumulate 48 passing hours each year. Because of this, they must consider 12 hours as only a minimum load for full-time purposes with 16 hours per quarter as the average load they must maintain throughout the year. Further information on Public Law 358 is available at the Student Work and Financial Assistance Office and on Selective Service at the Office of Admissions and Records.

Extension and Correspondence Credit

The University accepts credit earned through extension or correspondence programs towards the bachelor's degree. A maximum of 96 quarter hours may be so earned. Of the total, not more than 48 quarter hours may be taken in correspondence work.

Southern Illinois University at Carbondale does not operate a correspondence program. Correspondence work is accepted when taken from institutions which are regionally accredited if the grade is of C quality or better.

The University offers extension courses throughout Southern Illinois whenever (1) it is apparent that there is a need and potential enrollment to justify scheduling a class, (2) it is possible to obtain a faculty member to host the class, and (3) adequate laboratory and library facilities are available.

Three quarter-hour extension classes meet weekly for a period of twelve weeks, each meeting being two and one-half hours in length unless otherwise stated. Four quarter-hour extension classes meet weekly for twelve weeks with four extra meetings being arranged for by the instructor

and the group. The 500-level courses meet for a total of twelve weeks with no extra meetings.

Registration in extension courses is permitted during the first and second class meetings. Students must have their social security numbers with them and a university identification number (if previously registered at Southern Illinois University) in order to register. Students are billed for tuition and fees after their registration information has been processed.

Tuition is \$10.00 per quarter hour of credit. An additional \$1.05 textbook rental fee is charged for each General Studies course taken by extension. The instructor may require the purchase of additional books or other material. Scholarships issued by the State of Illinois, except the Illinois Military Scholarships are not usable for extension courses. Therefore, holders of such scholarships must pay tuition and, if they are undergraduate, the book rental fee when applicable. Illinois State Military Scholarships holders do not pay tuition for extension courses but must pay the textbook rental fee when applicable. Students attempting to waive tuition and textbook rental fee through other types of grants or waivers must provide verification of entitlement along with their registration materials or they need to indicate status and show that a record of their entitlement is on file in the Office of Admissions and Records before the waiver can be permitted.

Persons may enroll for extension work on an audit basis provided facilities are available. They must receive permission of the instructor to do so and they must pay the same tuition and fees as though they were registering for credit.

Further information may be obtained from the Division of Continuing Education.

Credit for Military Experience

Students who have served one year or more of active duty and who have received an honorable discharge may receive 3 hours of aerospace credit, 3 hours of physical education credit, and 3 hours of health education credit. Service of six months to one year may result in 3 hours of freshman aerospace credit; less than six months of active service does not allow any college credit. Credits previously earned in college in these areas may result in reduced credit granted from that stated above.

Credit will be accepted for USAFI courses within the limitations enforced for extension and correspondence work. No credit is allowed for college-level G.E.D. tests. In evaluating credit possibilities based upon formal service-school training programs, the recommendations of the American Council on Education as set forth in the U.S. Government bulletin, *Guide to the Evaluation of Educational Experiences in the Armed Forces*, are followed.

In order to receive credit for military service a veteran must present a copy of his discharge or separation papers to the Office of Admissions and Records.

GRADUATION PROCEDURES

The academic requirements for the various baccalaureate degrees are listed in Chapter 3. Presented here are the procedures that a student expecting to graduate must follow.

Every degree candidate *should* signify his intention to graduate by making application for graduation no later than the first week of his last quarter in attendance before the desired graduation date. Therefore, persons desiring to graduate in the June commencement who will be in school during the spring quarter should make application for graduation during the first week of the spring quarter. If they finish their work during the preceding winter quarter, they should apply during the first week of the winter quarter. Similar arrangements should be followed by students completing their work during the fall quarter. The application forms are available in the Office of Admissions and Records.

Every candidate for a degree *must* file written application with the Office of Admissions and Records not less than five weeks before the date on which the degree is to be granted. The application process includes the clearance of the graduation fee at the Bursar's Office prior to its filing with the Office of Admissions and Records. He must order his cap and gown through the University Bookstore and should register with the Placement Service.

In addition to completing the steps for application for graduation, students are responsible for determining that they are meeting all graduation requirements and that they have no outstanding financial obligation to the University. To assure that students are meeting the academic requirements, each academic unit provides a graduation check-up service through its academic advisement process, through which the satisfying of academic requirements can be verified. Even though the University does provide an academic check on graduating students, this is done primarily to be sure that it is graduating students who have met the requirements. The advising of individual students as to their progress is a service provided them and does not relieve students of their responsibility to make certain that they are meeting the requirements. Students should check with their academic adviser as to the procedures they should follow in this matter as they approach graduation.

Graduation exercises are held each year at the end of the spring and summer quarters. Students must attend commencement to graduate, unless they have obtained permission to be graduated *in absentia*. Students can request the latter either through the Office of Admissions and Records or their dean.

Diplomas are mailed to students shortly after the commencement date. Students who have not satisfied all academic requirements will not be graduated even though they participate in the commencement exercises. Also, students who have a financial obligation to the University will not receive their diploma or be entitled to transcripts until those obligations are satisfied.

The University has a Graduation Appeals Committee whose function it is to hear students' petitions to be permitted to graduate even though they have not satisfied all University graduation requirements. The committee hears only those cases involving University requirements for a baccalaureate degree. Appeal relative to a major or academic unit requirement is through the appropriate administrative official.

Ordinarily, the Graduation Appeals Committee will give consideration to an appeal only if there is tangible evidence that the matter at issue is of an unusual nature and that it has resulted due to conditions beyond control of the student. Appeal is initiated through the Office of Admissions and Records.

UNIVERSITY RECOGNITION OF HIGH SCHOLASTIC ACHIEVEMENT

In recognition of high scholarship, a Scholastic Honors Day convocation is held each spring. Candidates for a bachelor's degree in June or August who have maintained a grade point average of 4.25 or more for all of their work through the winter quarter of their senior year receive special honor. Juniors having a 4.25 grade point average and sophomores and freshmen having a 4.50 grade point average are also honored at the convocation. Except in the case of graduating seniors, students must be attending full time to be eligible. Transfer students must have earned the average indicated for work at Southern Illinois University at Carbondale.

Graduating students with scholastic averages of 4.90 or higher receive University highest honors; those with 4.75–4.89 averages receive University high honors; and those with 4.50–4.74 graduate with University honors. This is recorded on the commencement program, on the students' academic record cards and on their diplomas.

Successful participation in all-campus honors programs which requires maintenance of appropriate minimal scholastic standards, such as the President's Scholars, receives recognition by notation on the students' academic records and on the diplomas. Honors courses, individual honors work, and honors curricula, all designed to serve students with high scholastic potential, are offered by the School of Home Economics and by departments in the School of Agriculture, the College of Liberal Arts and the College of Science. A departmental or unit honors program consists of no fewer than 9 nor more than 21 quarter hours in research or independent study which is counted toward the student's major. Some honors programs require a comprehensive examination at the end of the junior year and again at the end of the senior year. Grades may be deferred at the end of the first and second quarters, but not from one school year to the next.

A variety of professional, departmental, and fraternal honorary organizations offer recognition and membership based upon scholastic achievement. Election or selection to most honoraries is noted at the Honors Day Convocation.

PROGRAM FLEXIBILITY FOR THE STUDENT

Through various methods the University permits students to develop flexibility in their college education so that they may follow a pattern different from that pursued by other students. Students who must interrupt their attendance on campus may find it possible to continue their educational training through extension or correspondence work.

Three-Year Baccalaureate Program

It is possible for students to complete the regular four-year baccalaureate degree program in three years by utilizing proficiency examinations. The equivalent of one year of credit (48 quarter hours) may be earned by this method. Students who desire to follow the three-year program should make that fact known to their academic advisers at the earliest possible date so their eligibility can be determined. A combination of testing programs may be employed to accumulate these 48 hours as described below.

High School Advanced Placement Program

Through the High School Advanced Placement Program high school students who are qualified through registration in an advanced placement course in their high school or through other special educational experience may apply for advanced placement and college credit through the Advanced Placement Program of the College Entrance Examination Board, 475 Riverside Drive, New York, New York 10027. To receive credit, a person must earn the grade of 3, 4, or 5. Interested high school students should write to the University's admissions office to learn the current listing of courses for which credit may be earned through this program.

Ordinarily, the maximum credit granted through advanced placement examinations is 16 hours. It is nonresident credit, does not carry a grade, and is not used in computing the student's average grade. Credit granted at another accredited college or university under this plan is transferable to this University up to a maximum of 16 hours. Students may appeal to academic deans to be granted more than 16 hours.

College Level Examination Program

Through the General Examination of the College Level Examination Program, students may apply for credit which will substitute for general studies courses. With a score of 480 or higher on the appropriate examination, students may possibly receive nine quarter hours of credit in each of the four fields of natural sciences, social sciences and history, humanities, and mathematics. Nine quarter hours may be received in English Composition as well. In all, forty-five quarter hours of credit may be received through CLEP. The credit received equates to 100-level general studies credit. The amount of credit actually received through CLEP will be reduced by whatever 100-level general studies course work, or its equivalent in the case of transfer students, is taken either prior or subsequent to the taking of the CLEP examination. In the case of mathematics, a reduction in CLEP credit will occur for course work taken below calculus. An exception to this reduction of credit is permitted for the taking of elementary foreign languages on the 100 level.

CLEP examinations should be taken at one of the national testing centers and the results sent to the local CLEP coordinator. The results are then forwarded to the Office of Admissions and Records for evaluation.

Proficiency Examinations

Through its proficiency examination program the University recognizes the importance of providing encouragement for academically talented students. Such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Application forms are available at the departmental offices.

The following general rules govern the proficiency examinations for undergraduate credit.

1. Students who believe they are qualified to take a proficiency examination should check with the department offering the course to determine their eligibility to do so; students scoring in the top ten percent of ACT are particularly encouraged to avail themselves of this opportunity.

2. Credit not to exceed 48 hours (24 hours toward an associate degree), including credit through the College Entrance Examination Board, Advanced Placement Program, and the College Level Examination Program may be earned through proficiency examinations. Credit will be nonresident.

3. Upon passing proficiency examinations students are granted course credit and receive a Pass grade. Their records will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination." Students who fail a proficiency examination receive a Fail grade. This results in no penalty to the students. They will not receive credit and their records will show nothing regarding the proficiency examination. However, the proficiency examination grade report form will be filed in the students' folder for reference purposes.

4. Students may not take proficiency examinations for the same course more than one time. Neither may they take a proficiency examination in a course in which they have previously received a grade.

5. No credit granted by proficiency examinations will be recorded until the student has earned at least 14 hours of credit of C grade or above in residence at Southern Illinois University.

President's Degree Program

The President's Degree Program is responsible for working with the colleges and their departments to provide a distinctive educational experience for those students of high motivation and talent who are interested in pursuing interdisciplinary studies on the undergraduate level. The basic objective of this program is to provide the opportunity to create the learning environment which optimally suits such students' needs and talents.

To help accomplish the above objective two special provisions are made for students admitted to the program. Upon submission of the College Level Examination Program General Examinations (with scores consistent with the University's acceptance of CLEP credit) all requirements for graduation other than the total number of credits may be waived. Also, program members will choose an appropriate faculty adviser to help them plan logical and challenging curricula enabling them to attain their personal academic goals. Students may remain in the program as long as they are able to (a) show they are receiving some benefit from membership consistent with the objectives of the program, and (b) maintain a 4.0 grade point average. Degrees will be awarded through the regular degree granting units.

Those students who are in the top 7% on national test scores and rank in the top 10% of their high school class are eligible to apply for admission as freshmen. Continuing and transfer students should have a 4.5 grade point average to warrant serious consideration for membership.

Inquiries about the President's Degree Program should be addressed to the director, President's Scholar Program.

Special Major

Individual students with academic needs not met in any of the existing majors within the University may arrange a program of courses more suited to their special requirements. See the description of the Special Major in Chapter 4.

REGULATIONS GOVERNING THE DETERMINATION OF RESIDENCY STATUS FOR ADMISSION AND ASSESSMENT OF STUDENT TUITION

For the purpose of these regulations an adult is considered to be a student eighteen years of age or over; a minor student is a student under eighteen years of age. The words he or his also apply to a female unless otherwise stated or clearly indicated. The term the State means the State of Illinois. Except for those exceptions clearly indicated in these regulations, in all cases where records establish that the person does not meet the requirements for resident status as defined in these regulations the nonresident status shall be assigned.

Residency Determination

Evidence for determination of residence status of each applicant for admission to the University shall be submitted to the director of admissions at the time of application for admission. A student may be reclassified at any time by the University upon the basis of additional or changed information. However, if the student is classified in error as a resident student, the change in tuition shall be applicable beginning with the term following the reclassification; if the student is classified in error as a nonresident, the change in tuition shall be applicable to the term in which the reclassification occurs, provided the student has filed a written request for review in accordance with these regulations.

Adult Student

An adult, to be considered a resident, must have been a bona fide resident of the State for a period of at least twelve consecutive months immediately preceding the beginning of any term for which he registers at the University, and must continue to maintain a bona fide residency in the State, except that an adult student whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a resident student.

Minor Student

The residence of a minor shall be considered to be, and to change with, and follow:

a. That of his parents, if they are living together, or the living parent if one is dead; or

b. If the parents are separated or divorced, that of the parent to whom the custody of the person has been awarded by court decree or order, or, in the absence of a court decree or order, that of the father unless the person has continuously resided with the mother for a period of at least twelve consecutive months immediately preceding his registration at the University, in which latter event his residence shall be considered to be that of his mother; or

c. That of the adoptive parents, if the person has been legally adopted and, in the event the adoptive parents become divorced or separated, that of the adoptive parent whose residence would govern under the foregoing rules if that parent has been a natural parent; or

d. That of the legally appointed guardian of the person; or

e. That of the natural guardian, such as a grandparent, adult brother or adult sister, adult uncle or aunt, or other adult with whom the person has resided and by whom he has been supported for a period of at least twelve consecutive months immediately preceding his registration at the University for any term if the person's parents are dead or have abandoned him and if no legal guardian of the person has been appointed and qualified.

Parent or Guardian

No parent or legal or natural guardian will be considered a resident of the State unless he (a) maintains a bona fide and permanent place of abode within the State, and (b) lives, except when temporarily absent from the State with no intention of changing his legal residence to some other State or country, within the State.

Emancipated Minor

If a minor has been emancipated, is completely self-supporting, and actually resides in the State, he shall be considered to be a resident even though his parents or guardian may reside outside the State. An emancipated minor who is completely self-supporting shall be considered to actually reside in the State of Illinois if he has maintained a dwelling place within the State uninterrupted for a period of at least twelve consecutive months immediately preceding the beginning of any term for which he registers at the University. Marriage or active military service shall be regarded as effecting the emancipation of minors, whether male or female, for the purposes of this regulation. An emancipated minor whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a resident student.

Married Student

A nonresident student, whether male or female, or a minor or adult, or a citizen or noncitizen of the United States, who is married to a resident of the State, may be classified as a resident so long as he continues to reside in the State.

Persons Without United States Citizenship

A person who is not a citizen of the United States of America, to be considered a resident, must have permanent resident status with the United States Immigration and Naturalization Service and must also meet and comply with all of the other applicable requirements of these regulations to establish resident status.

Armed Forces Personnel

A person who is actively serving in one of the armed forces of the United States and who is stationed and present in the State in connection with that service and submits evidence of such service and station, shall be treated as a resident as long as the person remains stationed and present in Illinois. If the spouse or dependent children of such member of the

armed forces also live in the State, similar treatment shall be granted to them.

Minor Children of Parents Transferred Outside the United States

The minor children of persons who have resided in the State for at least twelve consecutive months immediately prior to a transfer by their employers to some location outside the United States shall be considered residents. However, this shall apply only when the minor children of such parents enroll in the University within five years from the time their parents are transferred by their employer to some location outside the United States.

Definition of Terminology

To the extent that the terms bona fide residence, independent, dependent, and emancipation are not defined in these regulations, definitions shall be determined by according due consideration to all of the facts pertinent and material to the question and to the applicable laws and court decisions of the State of Illinois.

Voter registration, filing of taxes, proper license and registration for the driving or ownership of a vehicle, and other such transactions may verify intent of residency in a state. Neither length of University attendance nor continued presence in the University community during vacation period shall be construed to be proof of Illinois residence.

Procedure for Review of Residency Status or Tuition Assessment

A student who takes exception to the residency status assigned or tuition assessed shall pay the tuition assessed but may file a claim in writing to the appropriate official for a reconsideration of residency status and an adjustment of the tuition assessed. The written claim must be filed within 10 school days from the date of assessment of tuition or the date designated in the official University calendar as that upon which instruction begins for the academic period for which the tuition is payable, whichever is later, or the student loses all rights to a change of status and adjustment of the tuition assessed for the term in question. If the student is dissatisfied with the ruling in response to the written claim made within said period, he may appeal the ruling to the legal counsel by filing with the appropriate official within twenty days of the notice of the ruling a written request.

These regulations shall become effective for the winter quarter, 1972, and shall remain in full force and effect unless and until subsequently amended or repealed by action of the Board of Trustees.

Applications for residency status are available at the Office of Admissions and Records.

RELEASE OF STUDENT INFORMATION

Because of the amount of information about students which is contained in University records, the University has a formal policy concerning the release of this information. Copies of the statement of policy covering the release of student information may be obtained upon request at the Office of Admissions and Records. Some information collected about students is considered to be public in nature and is issued without the students' consent. Items of this type include whether or not students are in attend-

ance, their current schedules of classes, their classifications, majors, academic units, dates of attendance, degrees earned and dates, addresses and telephone numbers, veteran status, social security numbers, and parents' names and addresses if the student is under 18. Other items of information are considered to be confidential and are released only with students' consent or to responsible persons and agencies having a legitimate interest in the material and demonstrating a need to know. Scholastic status and grades earned are samples of the kinds of information which are considered confidential.



3 / Academic Programs

DEGREES OFFERED

SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE grants the following degrees.

Associate

Associate in Art
Associate in Applied Science

Advanced

Master of Arts
Master of Business Administration
Master of Fine Arts
Master of Music
Master of Music Education
Master of Science
Master of Science in Education
Specialist Degree
Doctor of Philosophy

Baccalaureate

Bachelor of Arts
Bachelor of Science
Bachelor of Music
Bachelor of Music Education

In addition to the above degrees, Southern Illinois University at Carbondale offers undergraduate courses in preprofessional areas.

The School of Law and the School of Medicine will be offering professional programs effective in 1973. Information about the School of Law may be obtained by writing the dean, School of Law, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. Information about the School of Medicine may be obtained by writing the dean, Southern Illinois University School of Medicine, P.O. Box 3926, Springfield, Illinois 62708.

For information concerning academic programs on the advanced degree level, refer to the Graduate Catalog or write the dean, Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

DEGREE REQUIREMENTS

Associate Degree

Each candidate for an associate degree must complete a minimum of 96 hours of credit in approved courses. Each student must maintain a C average. In addition to the technical courses each program requires certain General Studies courses to be taken. The degree granting unit for the associate degree is the School of Technical Careers.

Baccalaureate Degree

Every bachelor's degree candidate must meet the University's requirements and the requirements of his academic unit. The specific requirements in General Studies and in each college and school are listed later.

Each candidate for the degree must complete a minimum of 186 hours of credit in approved courses. The General Studies requirements total 68 hours although there are methods available to reduce the number as listed in this chapter under General Studies. Each student must have an overall *C* average, and a *C* average in the major.¹ These averages are required in work taken at Southern Illinois University at Carbondale.

To receive a bachelor's degree from Southern Illinois University at Carbondale a student must either present a total of three years work (144 hours) earned at Southern Illinois University at Carbondale or complete the last year in residence. The last year shall be considered as 48 quarter hours. Twelve of the 48 may be earned in extension at Southern Illinois University at Carbondale.

A student who desires a second bachelor's degree must complete 48 hours in addition to those required for the first degree and must fulfill the requirements for the second degree. Of these 48 hours, a minimum of 16 must be taken in residence at the University, and a maximum of 16 may be acquired in extension and correspondence courses. If a student received his first bachelor's degree from another university, 48 hours in residence are required to fulfill the requirement for the second bachelor's degree.

The state of Illinois requires that American patriotism and the principles of representative government, as enunciated in the American Declaration of Independence, the Constitution of the United States of America, and the Constitution of the State of Illinois, and the proper use and display of the American flag shall be taught in all public schools and other educational institutions which are maintained in whole or in part by public funds, and that no student shall receive a certificate of graduation without passing a satisfactory examination upon such subjects. Courses currently offering this instruction are GSB 212 and 300A; Government 200, 232, 305, and 330; History 330 and 409a,b, or c.

Students preparing to teach must satisfy the certification requirements of the state in which they plan to teach. Illinois requirements are satisfied by completion of programs in elementary and secondary education described in the next chapter.

Preprofessional Programs

Preprofessional students may, subject to certain conditions, obtain a bachelor's degree after three years' work (144 quarter hours) at Southern Illinois University at Carbondale and one or more year's work in a professional school. During their three years of residence at Southern Illinois University at Carbondale they need to have completed all requirements other than elective hours for the bachelor's degree which they are seeking.

In some cases the completion of major requirements is possible by their taking certain courses at the professional school, but this is permitted only upon the prior approval of the appropriate divisional head. Also, there needs to be completion of at least one year of professional work with acceptable grades in a Class A medical school, a Class A dental school, a Class A veterinary school, an approved law school, an accredited physical therapy or medical technology school, a hospital plan approved by the University or an accredited school of osteopathy. In all cases, all University graduation requirements must be met. It is advisable for a

¹ The majors are described in the next chapter.

student interested in this program to make his decision to seek a bachelor's degree before entering the professional school so that any questions may be clarified at an early date.

*General Studies Requirements*¹

The General Studies curriculum for the baccalaureate degree is divided into five major areas which are listed below with the numbers of hours required.

Area A	Man's Physical Environment and Biological Inheritance . .	16
Area B	Man's Social Inheritance and Social Responsibilities	16
Area C	Man's Insights and Appreciations	16
Area D	Organization and Communication of Ideas	14
Area E	Human Health and Well-Being	6

Within each of Areas A, B, and C students must complete work in a minimum of three fields. There is a further limitation in Area C: A maximum of six quarter hours of elementary foreign language can be counted in Area C. Within Area D the following are required: 6 hours of English composition; 3 hours of speech or other oral or written communications as offered in Area D; and 5 hours of college algebra.

These requirements may be met by any combination of the following, subject to the rules and limitations appropriate to each means:

- Completion of appropriate General Studies courses (listed at the beginning of the next Chapter) with a passing grade;
- Completion of departmental courses approved as substitutes for General Studies courses;
- Transfer credit for courses evaluated as equivalent to courses from (a) or (b);
- Proficiency credit by examination for General Studies courses or approved substitutes; and
- Advanced standing granted on the basis of ACT subtest scores and previous record, or on the basis of placement tests.

General Studies offers courses at the 100, 200, and 300 levels. A student may enter a given level when he determines his readiness. Integrated sequences and combinations of related courses are encouraged.

The student who has selected his major at the time he takes the General Studies courses is assisted in determining the proper courses to take by consulting the curriculum guides which he may obtain from his academic adviser.

Some upper division academic units have specific requirements for demonstration of competence in composition. A student may determine which units have this requirement by referring to college and school requirements listed later in this chapter.

MEETING GENERAL STUDIES REQUIREMENTS

Considerable latitude is permitted the student in meeting General Studies course requirements. The University believes in a strong, well rounded general education program but does not accept the idea that every student must take the same courses or program in meeting the objective. Alter-

¹ Students who entered Southern Illinois University at Carbondale prior to Summer, 1962, and who have not completed the old general degree requirements as of the end of Summer, 1974, will be required to complete the current General Studies requirements. For additional information, consult the academic adviser.

nate routes are, therefore, provided within the General Studies framework.

Accommodations to differences in student background, interest, and aspirations include: (1) *Substitution* of approved departmental courses for the required General Studies courses; (2) *Proficiency examinations* are offered regularly for many General Studies courses; students have the opportunity to complete these exams during their initial registration period; and (3) *Advanced standing* recognizes the student's high school contribution to his general education.

Other features include the following: (1) *A Developmental Skills Program* for disadvantaged students or underachievers is in operation; (2) *Remedial mathematics* (non-credit) exists for students with insufficient mathematics training in high school; (3) *A writing clinic* exists providing assistance to students in English composition; (4) *Self advisement* exists for qualified students; and (5) *A Learning Resources Center* is both an acceleration and an enrichment. Students may review or prepare for proficiency examinations, make up work missed, or sharpen their skills through self study.

THE TRANSFER STUDENT AND GENERAL STUDIES

A transfer student who expects to graduate from Southern Illinois University at Carbondale with a baccalaureate degree must meet the General Studies requirements as outlined above. He should experience little difficulty in doing so. A student who graduates with an associate degree in a baccalaureate-oriented program from a class I Illinois two year institution or one regionally accredited will be considered as having met the General Studies requirements.

Additional information concerning admission of a transfer student and the evaluation of transfer credit can be found in the sections of this catalog pertaining to those specific subjects.

ACADEMIC PROGRAMS

School of Agriculture

The School of Agriculture offers the following majors leading to the Bachelor of Science degree.

Agricultural Education	Animal Industries
Agricultural Industries	Forestry
Agriculture, General	Plant Industries

As precollege preparation of high school students for study of agriculture and forestry, it is recommended that the following be included: four units of English, two to four units of mathematics (algebra, geometry, advanced mathematics); two to three units of science (biology, chemistry, physics); and two to three units of social studies. Remaining units might well include agriculture.

For transfer students wishing to pursue a major in one of the agricultural or forestry areas, courses taken prior to entering Southern Illinois University at Carbondale should include a distribution in the physical and biological sciences, social sciences, and humanities. In addition a course in speech and appropriate sequences in English composition and college algebra should be included.

A student planning to take preprofessional courses in veterinary science

should register in the School of Agriculture's four-year curriculum in animal industries.

The School of Agriculture has no school-wide requirements other than the University requirements.

Black American Studies

A minor is offered in Black American studies. There are two options available—a general minor and one taken as part of the teacher education program. It is expected that Black American Studies will become part of the College of Human Resources on July 1, 1973.

School of Business

The School of Business offers the following majors leading to the Bachelor of Science degree.

Accounting	Finance
Administrative Sciences	Marketing
Economics	

Pre-College Preparation. High school and preparatory school students who are planning to enroll in the School of Business are advised to follow a college preparatory program which includes three (preferably four) units of both English and mathematics. It is also suggested that a substantial portion of the remainder of their study programs include courses in basic academic subject areas such as foreign languages, humanities, the sciences, and social studies.

General Studies Requirements for Business Students. Business majors are required to complete GSB 202-4, GSB 203-4, Mathematics 111a-5 (or GSD 107-5 and Mathematics 108-3), and one course to be chosen from the following list: GSC 201-3, GSC 202-3, GSC 209-3, GSC 210-3, GSC 317-3, GSC 325-3, or GSC 365-3. These hours count toward partial satisfaction of General Studies requirements of 68 quarter hours.

Professional Business Core. The professional business core, required of all school of business students, is comprised of the following courses.

Accounting 251a,b	8
Computer Science 202	4
Economics 214, 215, and 308	12
Finance 320, 370	8
GSD 110	3
Administrative Sciences 340, 481	8
Marketing 301	4
Administrative Sciences/Marketing 303	4
Mathematics 150a or, alternately, Mathematics 140a and Mathematics 140b or, alternately, Mathematics 140a and Mathematics 321	5-6
Total	56-57

Center for the Study of Crime, Delinquency, and Corrections

The Center for the Study of Crime, Delinquency, and Corrections offers a major in Administration of Justice leading to the Bachelor of Science degree. The major is planned to meet career objectives of students in law

enforcement, courts, corrections, and other components of the criminal justice system. It is expected that the Center for the Study of Crime, Delinquency, and Corrections will become part of the College of Human Resources on July 1, 1973.

College of Communications and Fine Arts

The College of Communications and Fine Arts offers the following majors leading to the Bachelor of Science degree: journalism, cinema and photography, radio-television, speech, speech pathology and audiology, theater.

A student with special personal and professional goals, which cannot be met by one of these traditional majors, is encouraged to design his own special major. The specific requirements for the various majors and for special majors are listed in the next chapter.

In the communications fields listed above a C average in GSD 101 and 102 or an approved equivalent is required.

The Bachelor of Arts degree is offered for a major in the School of Art. The Bachelor of Music degree is offered for a major in the School of Music.

There are specific requirements for admission to the major in the School of Art. Students considering enrolling in the school should make appointments with the chief academic adviser to determine eligibility for the studio and studio crafts specializations for the designated major.

Department of Design

The Department of Design offers a major leading to the Bachelor of Arts degree. It is expected that the Department of Design will become part of the College of Human Resources on July 1, 1973.

College of Education

The College of Education offers the following programs¹ leading to the Bachelor of Science degree.

Agricultural Education

Art

Biological Sciences

Botany

Business Teacher Education

Chemistry

Dance³

Driver and Safety Education³

Early Childhood Education

Economics

Elementary Education

English

French

General Science

Geography

German

Government

Health Education

History

Home Economics Education

Instructional Materials³

Language Arts and Social Studies

Latin (Classical Studies)

Mathematics

Music

Occupational Education

Physical Education for Men

Physical Education for Women

Physics

Recreation

Russian

Secondary Education²

Social Studies

Spanish

Special Education

Speech

Speech Pathology and Audiology

Zoology

The College of Education also grants the Bachelor of Music Education degree.

Supervised student teaching is conducted in cooperating public schools. The College of Education requires 16 hours of student teaching for the Bachelor of Science degree.

Students who wish to become principals or supervisors in the public schools take graduate work in the Department of Educational Administration and Foundations. The department's major emphasis is on graduate work, but it also participates in providing background for elementary and high school teachers. Likewise, students wishing to pursue a career in teaching or administration in colleges and universities take graduate work in the Department of Higher Education. The department does not offer an undergraduate major in higher education, but it provides courses for undergraduate credit providing a broad background in higher education for elementary and high school teachers.

Students planning to teach on the early childhood level or on the elementary level in the public schools of Illinois register in the College of Education. Requirements for the State of Illinois standard elementary certificate may be met through the completion of the early childhood education program or the elementary education program. For further information concerning these programs see the section of this catalog titled elementary education and the section titled professional education experiences.

Requirements for the State of Illinois standard high school certificate and for the standard special certificate may be met in the manner outlined in the section of this catalog titled secondary education. It is possible for a student to be registered in one of the colleges or schools other than the College of Education and to meet the state requirements for a standard high school certificate or the standard special certificate by using as his/her electives certain prescribed professional education requirements in the College of Education. Teaching fields for which the standard special certificate is issued include physical education for men, physical education for women, music, art, and speech pathology and audiology at Southern Illinois University at Carbondale.

Students qualifying for teaching certificates in Illinois should also know that no certificate issued after July 1, 1953, will be renewed for the first time unless the person holding the certificate passes an examination to the satisfaction of the certificating authority upon the provisions and principles of the Constitution of the United States and of the state of Illinois.

¹ In addition to programs offered almost entirely within the College of Education, certain programs are offered in cooperation with the College of Liberal Arts (e.g., mathematics, economics) or with the College of Communications and Fine Arts (e.g., art, music). Other programs are offered in cooperation with still other schools and colleges. The latter is the case with the agricultural education program offered with the School of Agriculture, and the business teacher education program offered with the School of Business.

² This is not an academic major. Persons planning to teach in secondary schools should refer to the secondary education section of this catalog for a listing of academic majors and minors.

³ Minor only.

Teacher Education Program

The teacher education program is viewed as an all-university function guided by the Teacher Education Council and administered by the dean of the College of Education. The Teacher Education Council is composed

of faculty and students from throughout the university and is empowered to set the policy for all programs.

Southern Illinois University at Carbondale is fully accredited by the National Council for Accreditation in Teacher Education (NCATE) and by the State Teacher Certification Board, Springfield, Illinois. It offers programs in elementary education, early childhood education, special education, and secondary education. Three specializations included in special education are: education of the behaviorally disordered, education of the mentally retarded, education of the learning disabled. In addition, a Bachelor of Science degree in Speech Pathology and Audiology is offered through the College of Education.

The secondary education teaching majors are as follows:

Agricultural Education	Home Economics Education
Art	Language Arts and Social Studies
Biological Sciences	Latin (Classical Studies)
Botany	Mathematics
Business Teacher Education	Music
Chemistry	Occupational Education
Economics	Physical Education for Men
English	Physical Education for Women
French	Physics
General Science	Russian
Geography	Social Studies
German	Spanish
Government	Speech
Health Education	Zoology
History	

The goals for each program in teacher education deal with the total development of the individual prospective teacher. The coursework and experiences are concerned with general personal characteristics, the learning environment, teaching abilities, and professional development.

ADMISSION TO THE TEACHER EDUCATION PROGRAM

Admission to the University does not insure admission into the teacher education program. In spring quarter, 1972, quotas were set for each teaching field in the teacher education program. Certain of the teaching fields are overcrowded and the quotas established reflect this fact. Once a teaching field quota has been reached in a certain quarter, students seeking admission into that particular field will have to wait until a later time, consider an alternate teaching field in which the quota has not been filled, or consider an alternate occupational goal. Students are encouraged to investigate the feasibility of applying for a particular teaching field early in their undergraduate career by contacting their adviser or the major department in which they wish to specialize.

(a) A student may apply for admission to the teacher education program with a minimum of 48 quarter hours of academic work. Admission into the teacher education program requires submission of a formal application, approval from the department which offers the desired teaching specialty, and approval from the assistant dean for student personnel services in Room 108 of the Wham Education Building. The application

blank must be submitted in person (no applications are accepted by mail), and must be accompanied by the applicant's most recent grade report.

(b) If the applicant has an overall grade point average of 3.15 (5.00 scale) or better the application is reviewed and the applicant is interviewed by the assistant dean for student personnel services. The applicant may then be admitted into the teacher education program on a pending status. Each new applicant who meets the basic criteria will be placed in a pending status for at least one quarter. A pending status permits the applicant to take the first course in the sequence of professional education requirements and introductory courses in the academic major field.

(c) At the end of the first quarter each applicant's department recommends advancement to a provisional status, to unconditional status, or to continued pending status. At that time each applicant will be notified whether he/she has been provisionally or unconditionally admitted into the teacher education program or has been rejected for such admission.

Provisional admission to the teacher education program may be conferred when the applicant's overall grade point average reaches a minimum of 3.15 (5.00 scale). Provisional admission will be conferred by the department offering the teaching specialty and by the assistant dean for student personnel services.

Assuming quotas and other criteria are satisfactory, unconditional admission to the teacher education program may be conferred when the applicant's overall grade point average reaches a minimum of 3.5 (on a 5.00 scale) and the applicant has reached junior standing. Unconditional admission will be conferred by the department offering the teaching specialty and by the assistant dean for student personnel services.

Continued pending status is indicated when the department to which the student has applied recommends such action. Continued pending status will prevail for no more than one quarter. At the end of the continued pending status quarter, the student is advanced to provisional or unconditional status or is not permitted to continue in the teacher education program.

CERTIFICATION

When the student is nearing completion of his teacher education program (usually during the last quarter) he can secure appropriate forms for entitlement to certification for the state of Illinois from the dean's office of the College of Education, Wham Education Building, Room 115. Upon completion of the appropriate application forms by the student, the dean's office staff will process the forms with the State Teacher Certification Board and entitlement cards will be sent to this office. When the student's program is completed, the office will send the cards to the student for his use in applying for certification through his future educational service region superintendent.

STUDENT TEACHING

Student teaching experiences are offered through the Department of Professional Education Experiences. Refer to the section of this catalog titled Professional Education Experiences for information concerning specific requirements for professional education experiences including student teaching experiences.

School of Engineering and Technology

The School of Engineering and Technology offers the following majors leading to the Bachelor of Science degree.

Engineering	Industrial Technology
Engineering Technology	

Specific requirements are listed for the various majors offered by the school in the next chapter.

The application of transfer credit from senior institutions to program requirements in the School of Engineering and Technology must be approved by the dean or his designated representative.

School of Home Economics

The School of Home Economics offers the following majors leading to the Bachelor of Science degree.

Child and Family	Food and Nutrition
Clothing and Textiles	Home Economics Education
Consumer Studies ¹	Interior Design
Family Economics and Management	

The specific requirements for each of these majors appear in the next chapter. Students in all majors must meet the following requirements for the School of Home Economics: the student must take at least three courses representing three departments other than his own major from the following list:

- Child and Family 227-3, 237-3
- Clothing and Textiles 127a-2, 329-3, 340-4
- Family Economics and Management 323-3, 331-3, 340-3, 341-4
- Food and Nutrition 100-3, GSE 236-3
- Home Economics Education 111-2, 306-2
- Interior Design 131-3, 327-3

It is expected that the School of Home Economics will become part of the College of Human Resources on July 1, 1973, except for the Department of Home Economics Education which will transfer to the College of Education.

¹ Minor only

College of Human Resources

Information concerning the establishment of the College of Human Resources may be found in Chapter 1 of this bulletin. It is anticipated that the college will be operational on July 1, 1973. The college will offer the following majors leading to the Bachelor of Arts or the Bachelor of Science degree: administration of justice, Black American studies,¹ child and family, clothing and textiles, consumer studies,¹ design, family economics and management, food and nutrition, interior design, social welfare.

¹ Minor only

College of Liberal Arts

The College of Liberal Arts offers the following majors leading to the Bachelor of Arts and Bachelor of Science degrees. Minors are possible in most of these areas. For exceptions, see the next chapter.

African Studies ¹	Classical Studies	Linguistics ¹
Anthropology	French	Mathematics
Asian Studies ¹	German	Music ²
Comparative Literature ¹	Latin ¹	Philosophy
Computer Science ¹	Russian	Psychology
Earth Science ¹	Spanish	Religious Studies ¹
Economics ²	Geography	Social Welfare ³
English	Government	Sociology
Foreign Languages and Literatures	History	Speech ²
	Inter-American Studies ²	Theater ²

College Requirements Effective Fall 1968

Students who began their collegiate education prior to fall 1968 should consult with an adviser. Those who began fall 1968 and thereafter at Southern Illinois University at Carbondale or at any accredited institution must satisfy the following requirements to receive a degree from the College of Liberal Arts.

1. Competency in English as demonstrated by having completed GSD 102 with a grade of *C* or better. Transfer students should consult the Liberal Arts advisement office regarding this requirement.

2. Successful completion of two years of a foreign language and one year of mathematics or two years of mathematics and one year of a foreign language, as demonstrated by the following:

Foreign Language—The one year foreign language requirement can be met by one of the following: (a) passing a 9-hour 100-level sequence in one language; (b) completing two years in one language in high school with no grade lower than *C* and achieving a satisfactory score on a standardized test in that language; or (c) completing three years in one language in high school with no grade lower than *C*. Tests administered during advisement of new students will determine whether proficiency credit is allowable. The two year requirement can be satisfied by (a) passing a 9-hour 200-level sequence in one language; or (b) completing three years of one language in high school with no grade less than *C* and achieving a satisfactory score on a standardized test in that language; or (c) completing four years in one language in high school with no grade below *C*. Credit may be earned by passing proficiency tests which are scheduled at various times during the year.

A student whose native language is not English may use the native language to satisfy part or all of the liberal arts foreign language requirement at Southern Illinois University at Carbondale. If the language is presently taught at Southern Illinois University at Carbondale, academic credit may be earned. If the language is not presently taught at Southern

¹ Minor only

² Liberal arts major, not professional major

³ It is expected that the social welfare major will become part of the College of Human Resources on July 1, 1973.

Illinois University at Carbondale, no credit is given, but partial or full satisfaction of the liberal arts foreign language requirement may be granted if the student's major department so recommends. A student whose native language is English but who has learned another language not taught at Southern Illinois University at Carbondale may qualify without credit for partial or full satisfaction of the liberal arts foreign language requirement under certain circumstances, including formal recommendation by the student's major department and availability of an examiner and examination materials within the Department of Foreign Languages. For information, the student should consult either the Liberal Arts Advisement Center or the proficiency examination coordinator of the Department of Foreign Languages.

Mathematics—The one year mathematics requirement can be met by (a) passing Mathematics 111-10; (b) passing other freshman level mathematics courses as approved by the Department of Mathematics; or (c) completing three years of high school mathematics with no grade less than C and achieving a satisfactory score on the University's Mathematics Placement Test. The two year requirement can be satisfied by (a) passing Mathematics 150-10; or (b) passing a sequence of mathematics courses, including calculus, as approved by the Department of Mathematics.

Students should consult with their major department to determine whether they should elect two years of mathematics or two years of foreign language to satisfy the requirement of the college.

3. Successful completion of requirements in an approved major.

College Requirements Effective January 1972

Due to the change in General Studies requirements occurring in spring 1971, the college has adopted the following interim requirements, beginning January 1972:

1. Proficiency in English composition as demonstrated by successful completion of one 200-level or one 300-level General Studies English course with a grade of at least C after completion of the General Studies requirements of GSD 101 and 102.

2. The present 2:1/1:2 mathematics-foreign language requirement is retained. No course submitted in partial satisfaction of the foreign language requirement for the college may be used to fulfill the requirement in Area C of General Studies.

3. At least 64 hours of the student's 186 hours for graduation must be at the 300- or 400-level. For transfer students submitting only the last year (48 hours) in residence, at least 36 of these must be at the 300- or 400-level.

4. Successful completion of requirements in an approved major.

Preprofessional Courses

A student planning to attend a professional school of law or theology should consult with an adviser at an early stage in his college career. The particular major and elective courses needed for these professions may vary somewhat according to interests of the student, but a carefully planned curriculum, with courses of depth and rigor, is needed for admission to professional schools.

College of Science

The College of Science offers majors and minors leading to the Bachelor

of Arts and Bachelor of Science degrees in the following fields of study: biological sciences, botany, chemistry, computer science,¹ earth science,¹ engineering biophysics, geology, mathematics, microbiology, physics, physiology, zoology.

Each department has specific requirements for students to major in the selected field of interest, but the College of Science has some general requirements listed below.

1. Proficiency in English composition as demonstrated by successful completion of one 200-level or one 300-level General Studies English course with a grade of at least *C* after completion of the General Studies requirements of GSD 101 and 102.

2. Successful completion of 2 years of a foreign language and one year of mathematics or 2 years of mathematics and one year of foreign language. Students should consult with the department of their major to determine whether they should elect two years of mathematics or two years of foreign language to satisfy the requirement of the college. No course submitted to fulfill the foreign language requirement for the College of Science may be used to fulfill the requirement in Area C of General Studies.

Foreign Language—The one year foreign language requirement can be met by one of the following: (a) passing a 9-hour 100-level sequence in one language; (b) completing two years in one language in high school with no grade lower than *C* and achieving a satisfactory score on a standardized test in that language; or (c) completing three years in one language in high school with no grade lower than *C*. Tests administered during advisement of new students will determine whether proficiency credit is allowable. The two year requirement can be satisfied by (a) passing a 9-hour 200-level sequence in one language; or (b) completing three years of one language in high school with no grade less than *C* and achieving a satisfactory score on a standardized test in that language; or (c) completing four years in one language in high school with no grade below *C*. Credit may be earned by passing proficiency tests which are scheduled at various times during the year.

A student whose native language is not English may use the native language to satisfy part or all of the science foreign language requirement at Southern Illinois University at Carbondale. If the language is presently taught at Southern Illinois University at Carbondale, academic credit may be earned. If the language is not presently taught at Southern Illinois University at Carbondale, no credit is given, but partial or full satisfaction of the science foreign language requirement may be granted if the student's major department so recommends. A student whose native language is English but who has learned another language not taught at Southern Illinois University at Carbondale may qualify without credit for partial or full satisfaction of the science foreign language requirement under certain circumstances, including formal recommendation by the student's major department and availability of an examiner and examination materials within the Department of Foreign Languages. For information, the student should consult either the College of Science advisement center or the proficiency examination coordinator of the Department of Foreign Languages.

Mathematics—The one year mathematics requirement can be met

¹ Minor only

by (a) passing Mathematics 111-10; (b) passing other freshman level mathematics courses as approved by the Department of Mathematics; or (c) completing three years of high school mathematics with no grade less than *C* and achieving a satisfactory score on the University's Mathematics Placement Test. The two year requirement can be satisfied by (a) passing Mathematics 150-10 or (b) passing a sequence of mathematics courses, including calculus, as approved by the Department of Mathematics.

3. At least 64 hours of the student's 186 hours for graduation must be at the 300- or 400-level. For transfer students submitting only the last year (48 hours) in residence, at least 36 of these must be at the 300- or 400-level.

Preprofessional Courses

A student planning a professional career in any of the following fields should register in the College of Science after completing the General Studies requirements of the University: dentistry, medical technology, medicine, occupational therapy, pharmacy, physical therapy, public health, veterinary science.

School of Technical Careers

The School of Technical Careers offers the following majors leading to the Associate in Art and Associate in Applied Science degrees.

- Architectural Technology
- Automotive Technology
- Aviation Technology
- Avionics Technology
- Commercial Graphics—Design
- Commercial Graphics—Production
- Construction Technology—Building
- Construction Technology—Civil
- Correctional Services
- Dental Hygiene
- Dental Laboratory Technology
- Electronic Data Processing
- Electronics Technology
- Law Enforcement
- Media Technology (Library Assistant)
- Mortuary Science and Funeral Service
- Physical Therapy Assistant
- Tool and Manufacturing Technology (Numerical Control)
- Secretarial and Office Specialties

Specific requirements for the various majors offered by the School of Technical Careers are listed in the next chapter. There are no school-wide requirements for an associate degree.

Third year post-associate specializations are offered in several fields related to the majors listed above.

The School of Technical Careers fully cooperates with a number of University units to offer special majors to meet individual students' educational and career needs and interests.

4 / Undergraduate Curricula and Courses

The undergraduate fields of study offered by Southern Illinois University at Carbondale follow in alphabetical order rather than by college or school. Unless otherwise noted, the curriculum in each field listed below leads to a bachelor's degree. Associate degree curricula are marked with an asterisk.

Accounting	Construction	Geology
Administration of Justice	Technology—Building *	German ³
Administrative Sciences	Construction Technology—Civil *	Government
African Studies ¹	Consumer Studies ^{1,4}	Health Education
Agricultural Education	Correctional Services *	History
Agricultural Industries	Dance ^{1,5}	Home Economics Education
Agriculture, General	Dental Hygiene *	Industrial Technology
Animal Industries	Dental Laboratory Technology *	Instructional Materials ¹
Anthropology	Design	Inter-American Studies
Architectural Technology *	Driver and Safety Education ^{1,2}	Interior Design
Art	Early Childhood Education	Journalism
Asian Studies ^{1,6}	Earth Science ¹	Language Arts and Social Studies
Automotive Technology *	Economics	Latin ^{1,3}
Aviation Technology *	Electronic Data Processing *	Law Enforcement *
Avionics Technology *	Electronics Technology *	Linguistics ^{1,6}
Biological Sciences	Elementary Education	Marketing
Black American Studies ^{1,6}	Engineering	Mathematics
Botany	Engineering Biophysics	Media Technology (Library Assistant) *
Business Teacher Education	Engineering Technology	Microbiology
Chemistry	English	Mortuary Science and Funeral Service *
Child and Family	European and Soviet Studies ⁶	Music
Cinema and Photography	Family Economics and Management	Occupational Education
Classical Studies ³	Finance	Philosophy
Clothing and Textiles	Food and Nutrition	Physical Education for Men
Commercial Graphics—Design *	Forestry	Physical Education for Women
Commercial Graphics—Production *	French ³	Physical Therapy Assistant *
Comparative Literature ^{1,6}	General Science	Physics
Computer Science ¹	Geography	Physiology

Plant Industries	Social Studies	Audiology
Psychology	Social Welfare	Theater
Radio-Television	Sociology	Tool and
Recreation	Spanish ³	Manufacturing
Religious Studies ^{1,6}	Special Major	Technology
Russian ³	Special Education	(Numerical
Secretarial and Office	Speech	Control)*
Specialties*	Speech Pathology and	Zoology

Preprofessional Programs

Dentistry	Nursing	Public Health
Law	Occupational Therapy	Theology
Medical Technology	Pharmacy	Veterinary Science
Medicine	Physical Therapy	

¹ Minor only

² Described under Health Education

³ Described under Foreign Language and Literatures

⁴ Described under Family Economics and Management

⁵ Described under Physical Education for Women

⁶ A special major may be developed in this field of study.

Abbreviations Used in this Chapter

Three-digit numerals are used to identify specific courses. The first numeral of the three indicates the level of that course. A letter following an identification number indicates a *part* of a course (*a* means first part, *b* means second part, etc.). A numeral separated from the identification number by a dash indicates the number of hours of credit received in the course. For example, Forestry 365-7 indicates a third-level course of 7 hours in the Department of Forestry, and Forestry 365a,b indicates the two parts of the course.

The five areas of General Studies are referred to as GSA, GSB, GSC, GSD, and GSE. The three-digit numerals following these abbreviations function similarly to those noted above.

Numerals in parentheses in columns of figures pertain to quarter hours which satisfy more than one requirement. They are in parentheses to avoid their being added into the total of the column, which would be a duplication of hours required. For example, under Botany, below, GSA 115-8 satisfies part of the General Studies requirements and contributes 8 hours toward the 68 hours required. It also satisfies four hours for the major in botany but does not contribute to the printed total of 60 hours.

Course Descriptions

The first entry for each course is a three-digit numeral which, together with the subject area, serves to identify the course. The first digit indicates that the course is for freshmen, sophomores, juniors, seniors and graduate students, or graduate students only, depending on whether the digit is 1, 2, 3, 4, or 5, respectively.

Following the identification number are a dash and another number, which indicates the maximum credit allowed for the course. The maximum may be variable, such as Art 393-4 to 12. Some courses do not terminate at the end of one quarter, as evidenced by two or more nu-

merals in parentheses indicating the credit allowed for each quarter of participation in the course, such as Acct. 251-8 (4,4).

Next is the title, followed by a description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites.

Not all of the courses described here are offered every quarter or even every year. To determine when and where a course is to be offered, consult the Schedule of Classes obtainable from University Graphics and Publications, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. When requesting a schedule, please specify *quarter*.

General Studies Courses

Man's Physical Environment and Biological Inheritance (GSA)

Courses

101-4 Physics in Our Environment. Selected topics in physics are presented with a view toward enabling the student who is not majoring in science to acquire some appreciation of physics for understanding the problems and the solution of problems encountered in our physical environment. Lectures and demonstrations make minimal use of the student's background of high school mathematics; laboratory is available, is encouraged, but is optional.

106-4 Chemistry for Non-Science Majors. Selected discussions of inorganic, organic and biological chemistry and their relationship to our standard of living and quality of our health and environment. Four lectures and one voluntary help session per week.

110-4 Earth Science. Earth and its major domains with Earth's substances and processes emphasized. Lecture, laboratory. Laboratory manual \$3.00. Elective Pass/Fail.

115-8 (4,4) Introductory Biology. Lecture and laboratory on the fundamentals of biological science: the cell and protoplasm, development, inheritance, structure and function of animals and plants, evolution and ecology. Must be taken in a,b, sequence. Purchase of materials in the range of \$7.00 for each course.

202-4 Introduction to Space Science. The solar system, our galaxy, and the universe beyond. Fundamental concepts of the physical sciences as applied in astronomy to our space environment. Lectures will be supplemented by demonstrations and by occasional hours of individual or supervised astronomical observations. Not open to students who have had Physics 302 or GSA 102b. Prerequisite: None; H.S. physics or one of GSA 101, Physics 111a, 206a, or 211a recommended. Elective Pass/Fail.

209-4 Principles of Physiology. Aims to provide a working knowledge of animal physiology as applied to human function. A background in biological science is recommended.

220-8 (4,4) Survival of Man. (Same as GSB 220 and GSC 220.) Complex problem of man's relationship with the world in which he lives. Emphasis on the interrelated scientific, technological, sociological, moral, and ethical questions that must be understood and solutions rendered if man is to survive. Should be taken in a,b sequence. Elective Pass/Fail.

299d-4 Interdisciplinary Science—A Process Approach. Stresses processes of science: observing, using numbers, measuring, using space-time relationships, communicating, predicting, inferring, defining, operationally, formulating hypotheses, interpreting data, controlling variables, and experimenting.

302-3 Biological Psychology. Review of the biological bases for the behavior of animals and humans. Does not count toward a psychology major. Prerequisite: Not to be taken after or concurrently with Psychology 314; Biology is recommended.

303-3 Ferns, Trees, and Wild Flowers: The Pleasure of Recognition. Field studies of local plants.

312-3 Conservation of Natural Resources. A study of man's use and misuse of natural environment.

313-3 Evolution. Principles and processes of the evolution of living things, including man.

314-3 Genetics of Man. Principles of heredity as related to man, with emphasis on the effects of environment on his biological inheritance. Prerequisite: GSA 115a,b, or equivalent recommended.

322-3 Introduction to Rocks and Minerals. The course is specifically designed to acquaint the nonprofessional with the origin, distribution, character, and value of the common minerals and rocks in the earth's crust. Purchase of lab manual and student-financed field trips. Elective Pass/Fail.

330-3 Weather. Weather elements basic to understanding the various atmospheric happenings, with application of agriculture, industry, recreational resources. Purchase of materials in the range of \$3.00.

335-3 Environmental Pollution, Chemical Aspects. Consideration of the processes involved in the formation of pollutants, their action on the environment, and the means of controlling pollution. Knowledge of chemistry equivalent to GSA 106 is needed.

340-3 Ecology and Man. Analysis of basic principles and concepts of ecology to provide an understanding of man's impact on ecosystems and ecological processes. Elective Pass/Fail.

356-4 Creativity in Science and Technology. Evolution from need to knowledge, and from analysis to synthesis. The social dimension of science and its role in the advancement of humanity. Evolution of scientific thought and technology.

361-3 Acoustics of Music. Nature, propagation, sources and receptors of sound; acoustic phenomena; physics of musical instruments; mathematics of music; ears and hearing; physiology and psychology; transmission, storage, and reproduction. Purchase of book (\$1.50-\$2.00) required.

Man's Social Inheritance and Social Responsibilities (GSB)

103-4 Geography of Man's Environment. Explores man's impact on the geographic environment and vice versa. Current problems such as cultural change, economic development, human health and natural resource scarcity are investigated in their geographic context. Purchase of workbook in the range of \$3.00.

104-4 Man and His World: Anthropology. The nature of man and his relationship to his physical and social environment today and in the past; a survey of biological and cultural anthropology.

105-4 The Contemporary World. An examination of fundamental problems of the contemporary era as seen in historical perspective. No credit toward the major in history. Purchase of books and materials in the range of \$7.00.

109-4 Introduction to Black America. Contributions of Blacks to American civilization. Historical and present-day perspectives. Lectures, guest lecturers, small discussion sections, sensitivity laboratory methods, and extensive use of audio-visual and other new provocative materials.

202-4 Introduction to Psychology. An examination of the variables related to the origins and modification of human behavior using the viewpoints and techniques of contemporary psychology. Purchase of syllabus or workbook in the range of \$3.50.

203-4 The Sociological Perspective. An examination of the variables related to the acquisition of human behavior and social interaction in human institutions. Elective Pass/Fail.

211-4 Political Economy. A study of the basic economic problems confronting America and the World today. This course gives students a broad latitude in the structuring of topics to be discussed. Problems are discussed from the point of view of public policy as well as theory. Elective Pass/Fail.

212-4 American Government and Politics. An introduction to American government including the cultural context, structure and functions of the national political system, and some attention to subnational politics. Elective Pass/Fail.

220-8 (4,4) Survival of Man. (See GSA 220.)

299c-4 The Changing World of Work. An interdisciplinary course exploring future manpower requirements for a changing society. Special emphasis on society's needs, factors influencing the individual's job preference, and probable employment opportunities. Mandatory Pass/Fail.

300-9 (3,3,3) History of the United States. A general survey of the political, social, and economic development of the United States. (a) 1492 to 1815, (b) 1815 to 1900, (c) 1900 to the present. Purchase of books and materials in the range of \$6.00 per quarter per segment.

306-3 Child Development. Interdisciplinary study of the changes that take place in a child as he passes from birth to maturity. Not open to students with credit in Child and Family 237.

310-1 to 6 (1 or 2, 1 or 2, 1 or 2) Current Events. Contemporary events in the Modern world and their treatment in the newspaper and periodical press. May not be counted toward the journalism major. May be repeated to a maximum of six credit hours, but only 3 hours of credit may apply to GSB requirements.

311-4 Economic Development of Western Civilization. Emphasizes the underlying trends and forces that have led to the present economic structure of the developed world. The application of modern growth concepts to development of the Atlantic community. Elective Pass/Fail.

312-3 Comparative Economic Systems. A comparative study of the goals, structure, and operation of the major economic systems, such as capitalism, socialism, communism, and fascism. Emphasis upon basic systems of organization and control, and upon mixed economies, rather than upon the traditional compartments within which economic systems are sometimes put. Prerequisite: 211a or 215. Elective Pass/Fail.

321-3 Socialization of the Individual. A study of the emergent social process in which the native capacities of the infant are shaped and developed through interaction with significant others during infancy and childhood. Elective Pass/Fail.

325-3 Race and Minority Relations. An analytical study of the status of racial, ethnic, and religious minorities in the United States. Elective Pass/Fail.

331-3 The American Educational Systems. A comprehensive study of the nature and purpose of education in the United States and of how our schools are organized, financed, and conducted.

341-3 Marriage as a Social Institution. A sociological examination of interpersonal relationships in contemporary American dating, courtship and marriage, with an historical and cross-cultural perspective. Elective Pass/Fail.

345-3 Introduction to American Foreign Policy. An investigation of the means by which American foreign policy is formulated and executed and an analysis of the most significant challenges confronting America abroad. Elective Pass/Fail.

346-3 Consumer Choice and Behavior. Analysis and overview of consumer behavior, historical as well as present day, theories related to the choices.

355-3 Geography of the United States. Discusses how man's culture has influenced utilization of resources in United States with attention given to physical environment. Primary focus on how aboriginal Americans utilized the landscape, how European colonizers made their imprint on the land, and how the present cultural landscape developed.

377-3 to 4 Issues of Today. Interdisciplinary treatment of social problems of issues of current interest. Offered once or twice per year. May be repeated for a maximum of eight quarter hours provided registrations cover different topics. Elective Pass/Fail.

385-3 Contemporary Political Ideologies. A survey of recent political ideologies: Nationalism, Socialism, Communism, Liberal Democracy, Conservatism, Christian Socialism, Fascism, Contemporary Liberation Movements. Elective Pass/Fail.

390-4 Introduction to Comparative Government. A general introduction to the comparative study of political systems with focus on selected contemporary states. Elective Pass/Fail.

Man's Insights and Appreciations (GSC)

100-3 Music Understanding. Criteria for discriminative music listening as an asset to general culture. An examination of basic materials, techniques, and forms. Purchase of materials in the range of \$2.00. Elective Pass/Fail.

101-3 Art Appreciation. Generalized survey of art with emphasis on interdisciplinary and contemporary concerns.

102-3 Problems of Moral Decision. An introduction to contemporary and peren-

nial problems of personal and social morality, and to methods proposed for their resolution by great thinkers of past and present. Elective Pass/Fail.
107-3 Man, Leisure, and Recreation. The meaning, challenge, problems, and opportunities of leisure in relation to man's work, education, recreation, and relaxation. Insights into underlying philosophies, basic principles, and practices.
120-9 (3,3,3) Elementary Chinese. Emphasis on development of reading, writing, speaking, and listening skills. No previous knowledge of Chinese required. Must be taken in a,b,c sequence.

123-9 (3,3,3) Elementary French. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of French required. Must be taken in a,b,c sequence. Purchase of a workbook is required.

126-9 (3,3,3) Elementary German. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of German required. Must be taken in a,b,c sequence. Purchase of a laboratory workbook is required.

130-9 (3,3,3) Elementary Classical Greek. (a) Grammar emphasized. (b,c) Reading of a text, usually the New Testament. Must be taken in a,b,c sequence.

131-9 (3,3,3) Elementary Japanese. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Japanese is required. Must be taken in a,b,c sequence.

133-9 (3,3,3) Elementary Latin. No prior knowledge of Latin required. Must be taken in a,b,c sequence. Emphasis on reading Latin as Latin. Basic grammar and vocabulary learned from context.

135-9 (3,3,3) Elementary Portuguese. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Portuguese required. Must be taken in a,b,c sequence.

136-9 (3,3,3) Elementary Russian. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Russian required. Must be taken in a,b,c sequence.

140-9 (3,3,3) Elementary Spanish. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Spanish required. Must be taken in a,b,c sequence. Purchase of a laboratory workbook is required.

144-9 (3,3,3) Elementary Italian. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Italian required. Must be taken in a,b,c sequence.

200-4 The Oral Interpretation of Literature. Students participate in a dynamic analysis of literature stressing the creative role of the oral interpreter. Emphasis is on individual problems in understanding and communicating significant literary works. Additional cost possible in the range of \$2.00 per student.

201-3 Introduction to Drama. Not a history of the drama. The class will read about a dozen plays, modern and ancient, and consider how various dramatic conventions and devices are used to give form and meaning to human experience. Prerequisite: GSD 101 and 102 or equivalent.

202-3 Introduction to Poetry. A variety of poems, from the simpler to the more complex, are read and discussed. Emphasis is upon enjoyment and upon heightened insight into human experience. Devices of artistic form, such as imagery and meter, are discussed as they are involved with the substance they express, human actions, feelings, and attitudes, including the poet's satisfaction in giving artistic form to his material. Prerequisite: GSD 101 and 102 or equivalent.

203-3 Drama and the Arts of the Theater. The study of drama as a literary type: the relationship with the theater audience, the role of the theater in Western culture and its relation to other creative arts.

204-3 Meaning in the Visual Arts. The relationship of the visual arts to the history of ideas and to contemporary concerns.

205-4 Man's Contemporary Environment. Creative problem-solving used to familiarize students with the design process and its procedural logic. Workbook, \$3.60.

206-4 The Nature of Musical Experience. Direct student involvement in the experimental creation and performance of music, and in active, critical listening. Consideration and discussion of musical meaning, musical judgment, and musical criticism. No performing experience or musical training necessary. Extra costs in the range of \$2.00. Elective Pass/Fail.

207-3 Philosophy of the Beautiful. A study of the structure and importance of the beautiful in nature, society, personality, and the arts. Elective Pass/Fail.

208-4 Logic and Meaning. A critical study of expressive, informative, and other modes of discourse, with emphasis on their roles in rational process. Elective Pass/Fail.

209-4 Modern Literature: Form and Idea. Designed to give the student an interest in and an understanding of the forms, themes, and values of modern American, British, and Continental literature. Prerequisite: GSD 101 and 102 or equivalent. Elective Pass/Fail.

210-3 Introduction to Fiction. A study of the chief techniques of fiction and of some of the acceptable criteria for judging fiction. Readings in some of the masterpieces among American and European short story and novel writers. Prerequisite: GSD 101 and 102 or equivalent.

215-4 Types of Religion. The major kinds of religious behavior and faith in the east and the west, in ancient and modern times, in social and individual forms, and in ecclesiastical and secular settings. Elective Pass/Fail.

220-8 (4,4) Survival of Man. (See GSA 220.)

250-15 (5,5,5) Elementary Uncommon Languages. Introduction to the basic skills of listening, speaking, reading, writing, and the fundamentals of grammar. No previous knowledge of the languages required. Must be taken in sequence. (a-c) Arabic. (d-f) Swahili. (g-i) Vietnamese. (m-o) Persian. (p-r) Lao. (s-u) Cambodian.

317-3 Recent American Literature. Prerequisite: GSD 101 and 102 or equivalent. Elective Pass/Fail.

325-3 Black American Writers. Poetry, drama, and fiction by black American writers. Prerequisite: GSD 101 and 102 or equivalent. Elective Pass/Fail.

330-3 Classical Mythology. Study of the classical myths and their literary value. Elective Pass/Fail.

332-3 Classical Drama. Study of selected plays read in English translation from Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, Terence and Seneca. Attention given to the origins of tragedy and comedy as well as to the dramatic art of the individual playwright. Elective Pass/Fail.

335-3 The Short Story. The short story as a flexible and experimental response to the social and psychological challenges confronting modern man and joy in reading. Prerequisite: GSD 102 or equivalent. Elective Pass/Fail.

348-3 Photography as Communication and Art. The development and significance of still photography, with emphasis on photography as an art and communications medium. Study of factors making for photographic excellence to provide a basis for evaluation and discrimination of photographic images and the use of the camera as a communicative tool. Students enrolling should have a still camera available. Not open to Cinema and Photography majors. Elective Pass/Fail.

349-3 The Cinema. The cinema as a communicative and expressive medium. Study of film types. Showings of selected films, \$5.00 screening fee. Not open to Cinema and Photography majors. Elective Pass/Fail.

363-4 Philosophy of Science. Analysis of alternative answers to questions about scientific method such as: How are scientific hypotheses discovered? How are they confirmed or falsified? What is a scientific explanation? Are explanation and prediction equivalent? What is determinism? What is a theory? Elective Pass/Fail.

365-3 Shakespeare. The major works of William Shakespeare. Prerequisite: GSD 101 and 102 or equivalent. Elective Pass/Fail.

371-3 Evolution of Jazz. Stylistic characteristics of jazz at various stages of its evolution. Societies and cultures from which it evolved. Elective Pass/Fail.

393-3 to 9 Studies in Literature. Study of the relationship between literature and other subjects of human inquiry. Subjects are wide-ranging and normally vary from quarter to quarter. Prerequisite: GSD 102 or equivalent. Elective Pass/Fail.

Notes pertaining to GSC 120 through 144:

1. Sections of conversation for one hour of credit are available on an elective basis for most of these languages. See Foreign Languages for conversation listings.

2. Students having had high school French, German, Latin, Russian, or Spanish and wishing to continue with the same language in college should see their academic advisers for information and referrals relative to placement.

Students with prior background in other languages should arrange for placement with the Department of Foreign Languages.

Organization and Communication of Ideas (GSD)

101-3 English Composition. Basic rhetorical principles in expository writing. Purchase of handbook in the range of \$4-\$5.

102-3 English Composition. Basic rhetorical principles in expository writing. Purchase of book in the range of \$5-\$6. Prerequisite: GSD 101 or appropriate ACT score.

104-3 Grammar in Language. Description and explanation of the grammatical structures of English and other languages. Gives a sense of universal grammatical concepts.

106-0 Intermediate Algebra.

107-5 Basic College Mathematics. Elementary college algebra and mathematical concepts. Prerequisite: one year of high school algebra or GSD 106.

109-3 Elements of Probability. Probability with some applications from statistics. Prerequisite: 107.

110-3 Economic and Business Statistics. Elementary statistical concepts, including the nature of statistical methods, sampling, probability, frequency distributions, estimations and hypothesis. Elective Pass/Fail.

152-3 Interpersonal Communication. Communication behaviors in the face-to-face spontaneous interaction of people.

153-3 Public Communication. Examination of the major variables of public communication—communicator, message, audience, climate of opinion, cultural contexts; its functions and effects. Emphasis on one-to-many speech-communication situations rather than small group and one-to-one. Course includes practice in public speaking.

160-3 Mass Communication in Society. The purpose of this course is to acquaint non-journalism students with the interrelationships between the mass media and other aspects of American society, and to explore these relationships and examine the operation and potential development of the mass media, as well as the important roles of the mass media in our society.

Human Health and Well-Being (GSE)

Courses numbered 100-104 are for men; 110-114 are for women.

100-5 (1,1,1,1,1) Restricted Physical Education (Men). For physically handicapped students as recommended by the Health Service. Elective Pass/Fail.

101-6 (1,1,1,1,1,1) Swimming (Men). (a) Beginning swimming. (b) Intermediate swimming. (c) Diving. (d) Skin diving. Prerequisite: consent of instructor. (e) Scuba diving. Section d must be taken before section e. (f) Life saving. Prerequisite: pass swimming test. Elective Pass/Fail.

102-2 Physical Fitness (Men). Elective Pass/Fail.

103-7 (1,1,1,1,1,1,1) Dance (Men). (a) Square. (b) Folk. (c) Social. (d) Beginning contemporary dance. (e) Intermediate contemporary dance. Prerequisite: 103d. (f) Beginning techniques of ballet. (g) Intermediate techniques of ballet. Elective Pass/Fail.

104-(1 per activity) Individual and Team Activity. (Men). (a) Archery. (b) Badminton. P.E. equipment required.* (c) Basketball. P.E. equipment required.* (d) Bowling. Lane fee required; shoe rental. (e) Golf. Three golf balls required. (f) Soccer. P.E. equipment required.* (h) Tennis. P.E. equipment,* (tennis shoes), 3 tennis balls required. (i) Volleyball. P.E. equipment required.* (j) Softball. P.E. equipment,* baseball glove required. (k) Horseback riding. (m) Fencing. (n) Cross country. P.E. equipment required.* (q) Fly and bait casting. Students furnish own rod and reel. (r) Stunts and tumbling. P.E. equipment required.* (s) Gymnastics. P.E. equipment required.* (t) Touch football. P.E. equipment required.* (u) Wrestling. P.E. equipment required.* (w) Judo. Judo uniform; lock, towel required. (x) Handball. P.E. equipment,* gloves, ball required. Elective Pass/Fail.

105-1 Weight Control. For students who are overweight, to learn and practice the principles of weight control. P.E. equipment required.* Prerequisite: consent of instructor. Elective Pass/Fail.

106-1 University Orienteering (Concepts and Techniques). Basic skills and knowledges for cross country running and hiking. Emphasis on basic tool skills, and a variety of outdoor practice and meet participation. Orienteering is a new and "now" activity in the physical education offering. Four field trips (transportation to Little Grassy required.) Elective Pass/Fail.

110-1 to 5 (1,1,1,1,1) Restricted Physical Education (Women). For physically handicapped students as recommended by the Health Service. Elective Pass/Fail.

111-6 (1,1,1,1,1) Swimming (Women). (a) Beginning swimming. (b) Intermediate swimming. (d) Skin diving. Prerequisite: consent of instructor. (e) Scuba diving. Section d must be taken before section e. (f) Lifesaving. Prerequisite: pass special swim test. (g) Canoeing. Fee required for boat rental. Bathing cap required for a, b, and f. Elective Pass/Fail.

112-1 Exercise for Fitness (Women). Physical education uniform and tennis shoes required. Elective Pass/Fail.

113-8 (1,1,1,1,1,1,1) Dance (Women). (a) Square. (b) Folk. Physical education uniform and tennis shoes required. (c) Social. (d) Beginning Contemporary. Physical education uniform and tennis shoes required. (e) Intermediate Contemporary. Section d must be taken before section e. Physical education uniform required. (f) Ballet. Physical education uniform and ballet shoes required. (g) Intermediate techniques of ballet. (h) Tapdancing. Physical education uniform and taps required. Elective Pass/Fail.

114-(1 per activity) Individual and Team Activity (Women). (a) Archery. Physical education uniform and tennis shoes required. (b) Badminton. Physical education uniform and tennis shoes required. (c) Basketball. Physical education uniform and tennis shoes required. (d) Bowling. Bowling lane fee and shoe rental fee required. (e) Golf. Physical education uniform and tennis shoes required; purchase of rule book required. (h) Tennis. Physical education uniform and tennis shoes required. (i) Volleyball. Physical education uniform and tennis shoes required. (k) Horseback riding. Stable fee required. (m) Fencing. Physical education uniform and tennis shoes required. (p) Gymnastics and tumbling. Physical education uniform and tennis shoes required. (r) Track and field. Physical education uniform and tennis shoes required. (s) Intermediate bowling. Bowling lane fee and shoe rental fee required. Prerequisite: 114d. (t) Intermediate Tennis. Physical education uniform and tennis shoes required. Prerequisite: GSE 114h or PEW 115m. Elective Pass/Fail.

201-3 Healthful Living. Personal and community health. Presents scientific health information as a basis for helping the student develop wholesome health attitudes and practices.

236-3 Nutritional Ecology of Man. Interaction between man and his environment. Emphasis on nutritional implications of our social, biological, and physical surroundings. Purchase of supplies ranging from \$4 to \$5. Elective Pass/Fail.

240-3 Human Relations Between the Sexes. Explores concepts and issues including development of sexuality, selection of a life partner, premarital sex experience, modern morality and the development of sexual mores, marriage, family planning, reproduction, varieties of sexual expression, and sex education.

245-3 Plants for Man. Study of man's dependence upon plants; their domestication, historical importance, production, processing and relationship to man's health.

246-3 Meat in Man's World. Relationship between man and meat animal technology. Emphasis on retail consumer yield and effect on natural resources and man's health and well-being. Elective Pass/Fail.

* Note: Physical Education equipment includes the following items: T. Shirt, Shorts, Supporter, Socks, Gym shoes, Lock, Towel.

Accountancy

Department

Accounting is the process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information. Such information is required and used by parties external to the business and by management within the business.

The curriculum is designed to prepare a student to assume a professional position as a certified public accountant or to join the management team in industry or government. The curriculum provides a basic understanding of all phases of accounting and permits the student to elect courses to prepare for a particular area of interest.

The various state laws prescribe the requirements for certification as a certified public accountant. In general, the accounting curriculum prepares the student educationally to meet these requirements.

Accounting

Major, Courses

Bachelor of Science Degree, SCHOOL OF BUSINESS

<i>General Studies Requirements</i>	68
For detailed description see School of Business information page 57.	
<i>Professional Business Core</i>	56-57
See page 57.	
<i>Requirements for Major in Accounting</i>	36
Accounting 331, 341, 351-8, 456	20
Accounting 432, 442, 453 (choose at least one)	4
Accounting 455, 458, 475, 477 (choose one unless two are chosen above)	4
Economics 315	4
Finance 372	4
<i>Electives</i>	25-26
<i>Total</i>	186

Courses

Some of the courses offered by this department may require expenses by students for books, workbooks, or other items.

250-4 Accounting Principles and Control. Prevalent accounting principles and practices employed in business organizations. Accumulation of data and usefulness of reports are considered. Tax implications of business studied. Not open to students with a major in the School of Business. Elective Pass/Fail.

251-8 (4,4) Financial Accounting. Concepts, principles, and uses of accounting for control and decision making in a corporate structure. The accumulation process and analysis of data into usable information, financial reports, through the accounting cycle. Asset, liability, and owners' equity valuation methods. Financial statement analyses extended to alternate measures of flows and financial ratios. Cost analysis, budgeting, and cost-volume-profit analysis. Must be taken in a,b, sequence. Prerequisite: sophomore standing.

261-4 Management Accounting. Emphasizes the use of accounting information for planning, control, and decision making through budgeting models, cost-volume-profit analysis, variance analysis, responsibility accounting, relevant costing procedures, and quantitative techniques. Prerequisite: 251b, GSD 107.

309-2 Individual Income Tax. Preparation of income tax returns. Federal income tax law as applied to individuals. Not open to those with a major in accounting.

315-4 Electronic Data Processing in Business. Modern data processing techniques and their business applications. Includes functions and limitations of existing data processing equipment and various input, output, storage, memory, and communication devices. Batch processing versus real time processing concepts, and introduction to programming and system analysis. Prerequisite: 251b.

331-4 Tax Accounting. Background, principles, and procedures for meeting re-

quirements of current laws and regulations which relate to federal income tax. Laboratory tax problems with emphasis on the individual taxpayer. Prerequisite: 251b.

341-4 Cost Accounting. Interpretation and managerial implications of material, labor, and overhead for job order, process and standard cost systems, cost-volume-profit relationships, and budgeting. Accounting for complex process production flows, joint and by-products, spoilage, and scrap. Responsibility accounting and reporting. Prerequisite: 251b.

351-8 (4,4) Intermediate Accounting. Current accounting principles and procedures relating to elements of financial reporting. Emphasis on asset valuation, significant aspects of liabilities and corporate capital, and income determination. Analysis and interpretation of statements; preparation and use of special statements. Must be taken in a,b, sequence. Prerequisite: 251b.

410-4 Accounting Concepts. Interpretation and critical analysis of reports, statements, and other accounting data from the viewpoint of users of financial information. Restricted to graduate students.

432-4 Problems in Federal Taxation. Study of income tax problems which arise from partnership, corporation, estate, and trust types of organization. Brief study of social security, federal estate, and gift taxes. Student does research in source materials in arriving at solutions of complicated tax problems. Prerequisite: 331.

442-4 Advanced Cost Accounting. Managerial decision-making, profit planning and control through direct and relevant costing, nonmanufacturing costs, return on investment and transfer pricing, capital budgeting, inventory models, subjective probabilities, statistical methods, and operations research. Prerequisite: 341.

453-4 Advanced Accounting. Accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, fiduciaries, international operations, branches, and business combinations. Prerequisite: 351b.

455-4 Accounting for Public Organizations. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations, such as governmental units, institutions, and charitable organizations. Includes the conventional budgetary-appropriation process, as well as some of the more recent accounting developments related to public decision making. Prerequisite: 251b or equivalent.

456-4 Auditing. Objectives, standards, and procedures involved in examining and reporting on financial statements of business organizations. Prerequisites: 341, 351b.

458-4 Accounting Systems. Accounting systems design and installation. Examination of existing systems and practice in systems design. Designing reports for management. Prerequisites: 341, 351b.

459-4 Internship in Accounting. Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and approval of department and firm. Mandatory Pass/Fail.

475-4 Budgeting and Systems. Concepts, methods, and tools used in the design of management information systems. Techniques developed to identify problems in coordinating and controlling business activities. Prerequisite: 251b.

477-4 Current Developments in Accounting Theory. Critical analysis of current developments in accounting theory, especially as reflected in the publications of major accounting association. Prerequisite: 351b and consent of instructor.

Administration of Justice

Major, Courses

The Bachelor of Science degree with a major in administration of justice meets the career objectives of students in law enforcement, courts, corrections, and other components of the criminal justice system. Within a broad framework of social and behavioral science, an interdisciplinary approach is stressed. A philosophy of service, and involvement in settings and issues experienced by policy makers, administrators, and practitioners is emphasized. An opportunity for internship placement rounds out student's program.

Bachelor of Science Degree, COLLEGE OF HUMAN RESOURCES

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Administration of Justice</i>	52
Core Courses	24
Administration of Justice 200, 201	8
Guided Electives	28
(With his adviser, the student selects courses from GSB 212, 321, 325, Administrative Sciences 301, 340, 341, 385, Black American Studies 360, Community Development 401, Government 232, 302, 315, 360, 361, 440, 461, Philosophy 345, 415, Psychology 101, 305, 307, 322, 323, 330, 431, Rehabilitation 420, Social Welfare 383, 481, Sociology 306, 312, 332, 372, 406, 424).	
<i>Minor</i>	24
(With his adviser, the student selects 24 hours of courses constituting a systematic sphere of study relevant to his interests and needs. In some instances, the 24 hours may not be an approved minor.)	
<i>Electives</i>	42
<i>Total</i>	186

Courses

- 200-4 Introduction to Criminal Behavior.** Multidisciplinary study of the etiology and patterning of offender behavior.
- 201-4 Societal Responses to Offenders.** Survey of institutionalized patterns of society's responses to crime: probation, parole, community-based corrections, correctional establishments; underlying ideologies and recurrent procedures.
- 259-3 to 60 Administration of Justice.** Designated for credit earned in technical or occupational proficiency when credit is to be established for work above the high school level. Prerequisite: transfer from two-year program.
- 300-4 Diagnosis and Evaluation of Offenders.** Introduction to the procedures and issues in identifying and evaluating individual differences in offenders and classes of offenders; typical diagnostic methods.
- 301-4 Human Relations in Criminal Justice Agencies.** Major interactive patterns among staff members, between staff and clients, and among clients of probation and parole agencies and correctional agencies. Problems of communication, bureaucracy, and leadership.
- 302-4 Community-Based Corrections.** Relationships of the contemporary prison with the outside community; issues and practices of contemporary programs operating in the community; factors involved in integrating correctional programs into the structure of society.
- 303-4 Criminal Investigation and Behavior Science.** Principles of behavioral science applied to the recurrent patterns of criminal investigation as a social and fact-finding process; survey of criminalistics.
- 304-4 Law Violation, Law Enforcement, and the Community.** Behavioral and social control within the local community; problems raised by social change, assessment of issues: traffic control, civil disturbances, vice control, and crime prevention.
- 305-4 Legal Aspects of Law Enforcement.** Analysis of relationships between legal codes and patterns in administration of criminal justice. Includes seizure, entrapment, informers, civil rights, wiretapping, interrogation, evidence, and the role of policing in court procedures.
- 383-4 to 12 Supervised Internship in the Administration of Justice.** Under supervision of faculty and adjunct staff, the intern assumes a student-participant role in a criminal justice agency. Prerequisite: 16 hours of administration of justice courses and consent of academic coordinator.

396-1 to 4 Readings in Administration of Justice. Areas not covered in other courses. Students must submit a statement describing his topic and relevant reading materials to his adviser for approval before registering for this course. Prerequisite: consent of academic coordinator and A. J. adviser.

411-4 Critical Issues in Criminal Justice. Emergent phenomena in the system of criminal justice investigated to demonstrate the pertinence of theory to practice. Includes role conflicts in law enforcement and corrections, police professionalism its place and function, the offender as a client, and the juvenile court.

416-4 Introduction to Research in Administration of Justice. Philosophy, theories, and methods of research. Principles of scientific inquiry contrasted with the constraints and demands of the criminal justice community. Prerequisite: consent of instructor.

417-4 Research Practicum in Administration of Justice. Review of alternative research models for measuring dispositional concepts. Interpretation of research. Construction and analysis of tools appropriate to some aspect of the administration of justice. Prerequisite: 416 or consent of instructor.

472-4 The American Correctional System. (See Sociology 472.) A survey of the correctional field, covering probation, institutional treatment, and parole. Historic development, organizational structure, program content, and current problems. Prerequisite: consent of instructor.

473-4 Juvenile Delinquency. (See Sociology 473.)

474-3 Law Enforcement Administration. (See Government 474.)

483-4 Current Problems in Corrections. An exploration of contemporary problems in control and treatment of sentenced offenders, and a review of research trends in corrections. Prerequisite: 472 or consent of instructor.

489a-4 Probation, Classification, and Parole. An introduction to the structure and function of those elements of the correctional process primarily concerned with the evaluation, treatment, and control of offenders with particular attention to the casework components of the process. Prerequisite: consent of instructor.

489e-2 to 4 Independent Study in Corrections. Supervised readings or independent investigative projects in the various correctional aspects of crime control, institutional management, and specific correctional programs. Prerequisite: written permission of center academic coordinator.

501-12 (4,4,4) Criminal Behavior—Problems and Characteristics.

515-4 Crime Prevention and Control.

561-4 World Criminal Justice Systems.

572-4 Seminar in Criminology. (See Sociology 572.)

578-1 to 6 Seminar in Correctional Rehabilitation Counseling.

580-4 Design, Planning, and Management in Administration of Justice.

582-4 Criminal Law and the Correctional Process.

583A-6 Supervised Field Work (Internship).

583B-6 Supervised Field Work (Internship).

584-4 Seminar in Correctional Program Management.

591-1 to 5 Supervised Readings in Selected Subjects.

599-1 to 9 Thesis.

Administrative Sciences

Department, Major, Courses

Administrative sciences is concerned with decision making with respect to the allocation of an organization's resources. The resources which are allocated are human or physical. The administrative sciences program provides an understanding of the factors necessary for effective decision making. The list of required courses reflects the philosophy that a student majoring in administrative sciences needs a balanced interdisciplinary program. The specialization courses should be taken only after consultation with a faculty member in administrative sciences.

Bachelor of Science Degree, SCHOOL OF BUSINESS

General Studies Requirements 68

For detailed description see School of Business information page 57.	
<i>Professional Business Core</i>	56-57
(See page 57.)	
<i>Requirements for Major in Administrative Sciences</i>	35-36 *
(Effective Fall, 1972)	
Administrative Sciences 479 or Economics 440	4
Administrative Sciences 341, 345, 361, 385, 452, 474	24
Specialization (Choose either A or B)	7-8
A. Management Systems—Quantitative Methods	
I Systems	
Administrative Sciences 456	4
Select one: Administrative Sciences 380, 382, 483, Accounting 475, Computer Science 414	3-4
II Production	
Administrative Sciences 380	4
Select one: Administrative Sciences 382, 483	4
B. Behavioral Science—Personnel Management	
(Choose one from A and one from B or C below.)	
A. Administrative Sciences 382, 431, 485 ...	4
B. Economics 411, Psychology 465, Administrative Sciences 480, 460	4
C. Administrative Sciences 431, Sociology 332, 338, 438, Psychology 307, 461, 465, Government 461, Speech 311	4
<i>Electives</i>	25-27
<i>Total</i>	186

* For information regarding requirements for major in administrative sciences effective through Summer, 1972, consult the department or the academic advisement center, School of Business.

Courses

170-4 Introduction to Business Administration. Survey of business. General knowledge of the modern business world, the composition and functions of the business organization, as well as business as a social institution. Open only to freshmen and sophomores. Does not satisfy a School of Business requirement. Elective Pass/Fail.

300-4 Internship in Administrative Sciences. Supervised work experience that relates to the student's academic program and career objectives. Not repeatable for credit. Prerequisite: Prior approval of the department. Mandatory Pass/Fail.

301-4 Management and Supervision. Functions of management, requisites for effective supervision, and human relations training. For non-business majors who expect to assume a supervisory position. Concentrates upon means of dealing with employees as human beings. Not open to students enrolled in School of Business. Prerequisite: GSB 202, or equivalent, or consent of instructor. Elective Pass/Fail.

302-4 Administrative Communications in Business. Creating and managing interpersonal business communications. Analysis, planning and practice in composing different types of internal and external communications in the various business contexts. Prerequisite: 170 or 340, or equivalent, GSD 102, or Accounting 250 or 251a, or consent of instructor.

303-4 Behavioral Science in Business. An examination of the underlying determinants of human behavior in business settings. Prerequisite: GSD 110 or equivalent, GSB 202, GSB 203, or equivalent, or consent of instructor. Elective Pass/Fail.

340-4 Business Organization and Management. An examination of the basic concepts of organization and management. Emphasis is on executive action in the development of administrative policy, direction, and control. A recognition

of the production function is also stressed. Prerequisite: GSB 202 and 203 or equivalent and junior standing or consent of instructor. Elective Pass/Fail.

341-4 Organizational Behavior I. The study of human problems in administration; individual, group, intergroup, and organizational behavior under dynamic environment conditions. Theory and case analyses. Prerequisite: 340, GSD 110 or equivalent, or consent of instructor. Elective Pass/Fail.

345-4 Introduction to Management Information Systems. Integrates topics of management and organization, computers, information and the systems approach. Emphasizes planning, design, and implementation of information systems to aid management decision making. Prerequisite: 340, or Finance 320, or Marketing 301; Computer Science 202. Elective Pass/Fail.

351-6 (2,2,2) Methods of Quantitative Analysis. An introductory survey of basic quantitative methods necessary for graduate study in business; designed for students with deficiencies in methods of quantitative analysis. The course consists of three components with each component offered for two hours credit. Extensive use is made of business examples. (a) Calculus. (b) Linear Algebra. (c) Probability and Statistics. May be taken singly. Elective Pass/Fail.

361-4 Research in Business Administration. Design of research to assist managerial decision-making. Concepts, tools, sources, and methods of business research. Planning, collecting, organizing, evaluating, and presenting research data. Prerequisite: 340, Economics 308. Elective Pass/Fail.

380-4 Production Management. Plant location, design, and construction; internal organization for operations, production control, stores control, routing of materials, job analysis, and time study; wage systems, subdivision of executive responsibilities and duties; methods of coordination and planning. Prerequisite: 340, 345, Mathematics 140a or equivalent, or consent of instructor. Elective Pass/Fail.

382-4 Performance Standards and Methods Improvement. Concepts, methods, and principles for analyzing industrial operations with the objective of simplifying, improving, and reducing the cost of these operations. Use of process charts to increase productivity. Development of industrial performance standards. Prerequisite: 340 or consent of instructor. Elective Pass/Fail.

385-4 Personnel Management. Development, application, and evaluation of policies, procedures, and programs for the recruitment, selection, development and utilization of human resources in an organization. Prerequisite: 340, GSD 110 or equivalent, or consent of instructor. Elective Pass/Fail.

402-1 Personal Adjustment to Business. The job placement process and the work environment from the viewpoint of the applicant. Emphasis on career planning, manpower analysis, placement and interviewing techniques with a stress on the transition from the academic community to the business and professional environment. Not offered for graduate credit. Prerequisite: senior standing.

431-4 Organizational Behavior II. A study of classical and modern theories concerning complex organizations. Particular emphasis on processes and issues of dividing work, achieving coordination, and organizational change and adaptation. Prerequisite: 341, or consent of instructor. Elective Pass/Fail.

440-4 The Management Process. Analysis of management theories and the administrative process. Specific managerial activities are analyzed and discussed. Functional relationships in administered organizations are explored. Restricted to graduate students who have not taken 340 or equivalent.

452-4 Business Operations Analysis. Analysis of business operations and management problems emphasizing problem formulation, performance measures, decision criteria and various mathematical models and their application; linear programming, game theory. Prerequisite: 340; Mathematics 140a or equivalent; GSD 110 or equivalent; or consent. Elective Pass/Fail.

456-4 Management Information Systems. Organizational activities and informational requirements of management viewed as systems modeled for systematic investigation leading to effective management and decision making. Representative management systems studied, charted, and manipulated. Prerequisite: 340, 345, 452. Elective Pass/Fail.

460-4 Work Measurement for Wage and Salary Control. Research design and methodology for wage and salary administration in an organization; fundamental considerations in evaluating jobs and positions; compensation methods and wage incentive systems. Prerequisite: 385. Elective Pass/Fail.

474-4 Management Responsibility in Society. Analysis of the political, social, and economic environments in which the manager must function and the manner in which the executive has both adapted to and influenced his en-

vironment. Prerequisite: 340, senior standing, or consent of instructor. Elective Pass/Fail.

479-4 Problems in Business and Economics. Application of economic theory and tools of analysis to practical business problems. Cost and demand functions are analyzed from a policy standpoint. Prerequisite: 340; Economics 215, 308, or equivalent; Marketing 301 or equivalent; senior standing; or consent of instructor. Elective Pass/Fail.

480-4 Recent Problems in Labor Law. Social, economic, and legal evaluations of recent labor problems, court decisions, and legislation. Concern is on long-run legislative impact on manpower planning, dispute settlement, and utilization of employment resources. Prerequisite: 385 or consent of instructor. Elective Pass/Fail.

481-4 Administrative Policy. Integration and analytical application of business core courses to comprehensive business cases. Emphasis on policy issues in the identification and resolution of business problems. Methods of providing simulated experience such as business gaming will be used where appropriate. Prerequisite: 340, Finance 320, Marketing 301 or equivalent and senior standing. Elective Pass/Fail.

483-4 Advanced Production Management. Internal problems of managerial control of production including recent developments in theory and techniques: case material will be utilized for the development of analytical ability. Prerequisite: 380. Elective Pass/Fail.

485-4 Problems in Personnel Management. Analysis of problems in personnel administration arising from current developments in organization; case problems and special reports; and personnel practices. Prerequisite: 361, 385. Elective Pass/Fail.

499-1 to 8 Special Topics in Management. Utilizes special faculty resources. Prerequisite: 16 hours in business and consent of department chairman.

Aerospace Studies

Department, Courses

Aerospace Studies is a voluntary course sequence leading to a commission as an officer in the United States Air Force. When commissioned, all officers must have at least a baccalaureate degree; hence completion of the program is contingent upon maintaining satisfactory progress toward graduation. Enrollment in the first two years (general military course) is unrestricted and no military obligation is incurred. Special students who do not intend to obtain a commission are welcome.

Acceptance into the last two years (professional officer course—300 level) is competitive and requires qualification on the Air Force Officer Qualifying Test and a physical examination. While the emphasis is on obtaining pilots and navigators, there is an opportunity to compete for non-flying positions. The particular field of concentration for potential flying officers is not a factor in selection. For non-flying officers, however, the field of concentration must be related to one of the wide range of officer specialties in the air force. Students in the professional officer course do incur a military obligation. They are paid a monthly tax-free subsistence allowance and have a draft deferment. Graduate students who have six quarters remaining at SIU, not counting summers, are eligible.

Qualified students may enter directly at the 300 level without completing the general military course by attending a six-week field training course during the summer prior to entrance. Four year students attend a four-week field training course. Field training is conducted at air force bases and students are paid while attending.

Courses

100-0 (0,0,0) Corps Training. (a) Supervised training laboratory taken concurrently with 101. (b) Taken with 102. (c) Taken with 103. Required of

regular students. Designed to develop the student's leadership potential and knowledge of customs and courtesies of the U. S. Air Force.

101-1 United States Air Force. Evolution of modern aerospace power and concepts on which it was developed. Introduction to aerospace support forces. Includes airlift, research and development, logistics, and education and training.

102-1 Military Forces for Limited War. Introduction to U.S. general purpose forces and the support of our commitments to allied nations. Includes army, navy, and marine forces with emphasis on tactical air power.

103-1 Aerospace Offensive and Defensive Forces. Introduction to strategic offensive forces and the constraints involved in the use of modern weapons. Introduction to concepts, organization, equipment, and procedures involved in strategic defense of the United States.

200-0 (0,0,0) Corps Training. (a) Leadership laboratory taken concurrently with 201. (b) Taken with 202. (c) Taken with 203. Required of regular students. Continues development of the student's leadership potential. Prerequisite: 100.

201-1 United States Defense Policy. The military factor of national power and the organization of the Department of Defense. The changing nature of war and current military strategies of the U. S.

202-1 Military Strategies: USSR and China. The policies pursued by these countries and implications for the United States and its allies. Policies and capabilities of the USSR and China compared for their impact on security arrangements of the free world.

203-1 Formulating Defense Policy. The interaction of U.S. government agencies and Congress in formulating policy. The role of the Department of Defense and the military man as an adviser. U.S. Alliances considered.

300-0 (0,0,0) Corps Training. (a) Leadership laboratory taken concurrently with 301. (b) Taken with 302. (c) Taken with 303. The student participates as a cadet officer to develop the skills of leadership and team work required of a young officer. Prerequisite: GMC or field training.

301-3 Development of Air Power. Airpower development in the United States from 1903 to 1961. Emphasis on doctrine, organization, and technology. Prerequisite: satisfactory completion of General Military Course or six-weeks field training.

302-3 Aerospace Power Today. The Air Force in a changing defense environment, aerospace concepts and doctrine, and the future of manned aircraft. Prerequisite: satisfactory completion of the General Military Course or six-weeks field training.

303-3 Astronautics and Space Operations. Space vehicle systems, space operations, and future developments in space. Prerequisite: satisfactory completion of General Military Course or six-weeks field training.

340-0 (0,0,0) Corps Training. (a) Leadership laboratory taken concurrently with 351. (b) Taken concurrently with 352. (c) Taken with 353. Develops skills of leadership and teamwork required of a young officer. Prerequisite: 300 or consent of instructor.

351-3 Air Force Leadership. Leadership in command staff roles, human relations, professionalism as related to the air force, imposed and self discipline, and the military justice system. Oral and written assignments. Prerequisite: 301, 302, 303, or consent of instructor.

352-3 Military Leadership and Management. The trait, situational, and interactional approach to leadership. Theory and practice of military management and the planning and organizing functions of management, with special reference to the air force and the junior officer. Prerequisite: 351 or consent of the instructor.

353-3 Military Management. The coordinating, directing, and controlling function of management, with special reference to the air force and the junior officer. Participation in problem situations and oral and written assignments required. Prerequisite: 352 or consent of the instructor.

African Studies

Minor

African area studies is the concern of the African Studies committee, which is an interdisciplinary group of faculty who specialize in various aspects of Africa. The committee promotes African studies on campus by encouraging cultural activities (lectures, films), research, teaching, and academic

programs, and by providing information on African subjects. Although there is no major in African studies, the committee administers an undergraduate minor in African studies. For further information, address inquiries to chairman, African Studies committee, Department of Linguistics, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Minor (28 hours)

A. Required Core Courses (20 hours): Anthropology 313a-3, Geography 365-4, Government 391-4, and History 349a,b,c-9.

B. Electives (Minimum of 8 hours): GSC 250d,e,f,-5-15, Agricultural Industries 417-4, Anthropology 470-3 (only when an African language is studied), Government 452-4, History 449a,b-3-6, Linguistics 450-4 (only when African languages are studied, or 3-4 hours of reading courses on Africa sponsored by the above departments).

C. Suggested Related Courses (no credit toward minor): Anthropology 313b-3, 315-3, 404b-3, 471a-3, Economics 422-4, 462-4, or Government 459-4.

Agricultural Education

Major

In agricultural education, completion of a four year course of study leads to certification as a teacher of agricultural occupations. A student has the opportunity of specializing in one of the following areas: agriculture business, agricultural mechanization, ornamental horticulture, plant production, soil conservation, parks and recreation, forestry and conservation, and animal production. Courses in both the School of Agriculture and the College of Education are included. A student may receive the Bachelor of Science degree and take at least part of the additional courses at the graduate level to qualify to teach.

For a number of courses taken in the major there will be an additional charge for field trips, laboratory manuals, or supplies.

Bachelor of Science, SCHOOL OF AGRICULTURE

<i>General Studies Requirements</i>	68
GSA 106 or chemistry substitute	4
GSA 115a,b	8
GSB 202 and 212	8
GSB 211 or Ag. Ind. 204	4
GSD 107 or College Algebra	5
<i>Requirements for Major in Agricultural Education</i>	72

	<i>Production (applied biology and agriculture)³</i>	<i>Ag-Occupations (Specialty)</i>
Agricultural Industries 204, 350 (ag. economics)	12	9
Agricultural Industries 373, 375, 412 (ag. mechanics)	12	12
Animal Industries 121, 122, 315	12	9
Plant Industries 109, 301	12	9
Option in Agriculture speciality ¹	—	18
Other Agricultural electives	12	3
Other electives ²	12	12
<i>Professional Education Requirements</i>		31-32
Agricultural Industries 309, 312		16

Two of the following: Agricultural Industries 311, Education Administration and Foundations 355, Guidance 422, Instructional Materials 417, Occupational Education 493, Secondary Education 312, 340, 407, 495	7-8
Guidance 305	4
Secondary Education 310	4
<i>Electives</i>	14-15
<i>Total</i>	186

¹ Agricultural Occupations Specialty. The student may select one of eight agricultural specialty options for major emphasis. Information about these specialties may be secured from an agricultural education counselor.

² These electives may be taken in the areas of guidance, occupational administration, special needs, and extension for greater breadth, or in additional agriculture courses.

³ The hours listed in Production include elective courses as well as the required.

Agricultural Industries

Department, Major, Courses

Work is offered in agricultural industries in two major specializations. (a) Agricultural economics and (b) agricultural mechanization. In specialization (a) there are two options: (i) 60 hours in agriculture and (ii) 48 hours in agriculture. The 60-hour option provides a broad training in agriculture. The 48-hour option provides a minor in either economics or business.

In agricultural economics courses are offered in the following fields: farm management, farm credit, agricultural prices, agricultural marketing, cooperatives, and farm policy.

In farm mechanization courses are offered in four areas: farm power and machinery, rural electrification, farm structures, and soil and water conservation.

For a number of courses taught in the department there will be an additional charge for field trips, laboratory manuals or supplies.

Bachelor of Science Degree, SCHOOL OF AGRICULTURE *Agricultural Economics Specialization*

Requirements for Major in Agricultural Industries 80
Two options are available:

	60 HOURS	48 HOURS
<i>General Studies Requirements</i>	68	68
GSA 106 or equivalent	4	4
GSA 115a,b or equivalent	8	8
GSD 107	5 ¹	5 ¹
<i>Agricultural Requirements</i>	60	48
Agricultural Industries 204	4 ²	4 ²
Agricultural Industries 314, 350, 354	12	12
Other Agricultural Industries	16	12
Animal Industries	8	8
Plant Industries	8	8
Electives in Agriculture	12	4
<i>Business and Economics Requirements</i>	20	32
Economics 214, 215	8	8
Accounting and quantitative methods	7	7
Other business and economics courses	5	17

<i>Electives</i>	38	38
<i>Total</i>	186	186

¹ Mathematics 111a, 111b highly recommended.

² Agricultural Industries 204 substitutes for GSB 211.

Agricultural Mechanization Specialization

<i>General Studies Requirements</i>		68
GSA 101 and 106, or chemistry equivalent	8	
GSD 107 or College Algebra	5	
<i>Requirements for Major in Agricultural Industries with a Specialization in Agricultural Mechanization</i>		85
Accounting 250	4	
Agricultural Industries 204 ² , 215, 306a,b, 350, 373, 375, 460, 473, 478	38	
Animal Industries 121, 122, 315	9	
Plant Industries 109, 301	9	
Electives in Agriculture	10	
Engineering Technology 102a	3	
Business Electives	12	
<i>Electives</i>		33
<i>Total</i>		186

¹ Mathematics 111a and b strongly recommended.

² Ag. Ind. 204 substitutes for GSB 211.

Courses

204-4 Introduction to Agricultural Economics. Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture. Elective Pass/Fail.

210-2 Introduction to Agricultural Education. An introduction to the history and philosophy of agricultural education. Elective Pass/Fail.

215-4 Introduction to Farm Structures and Electrification. An introduction to the basic concepts of structures and electricity as they apply to agriculture. Includes farm structures, and farm electrification. Elective Pass/Fail.

306-5 (3,2) Soil and Water Conservation. (Same as Plant Industries 306.) (a) The study of the theoretical factors affecting soil erosion and excessive water run-off, including practices of water management and soil conservation. Prerequisite: one course in soils. (b) Laboratory. Practical structural methods of controlling water run-off and soil erosion. Prerequisite: 306a or concurrent enrollment. Elective Pass/Fail.

309-4 Agricultural Education. Methods of teaching agriculture in secondary schools. Take concurrently with 312 in a professional quarter. Field trip estimated cost \$5.00. Prerequisites: 311, and 48 hours in agriculture, Secondary Education 310.

311-4 Agricultural Education Programs. Nature and scope of the different programs involved in teaching agricultural occupations and methods of developing them. Prerequisite: Guidance and Educational Psychology 305 and junior standing. Elective Pass/Fail.

312-12 Student Teaching in Agricultural Education. Teaching a complete program in agricultural occupations in an approved center. Taken concurrently with 309.

314-4 Economic Analysis of Food and Rural Development Policies. An economic analysis of the structure, problems and alternative public policies of the food production industry. The dimensions and causes of rural poverty and alternatives for rural development. Elective Pass/Fail.

350-5 Farm Management. Efficient organization and management of a farming operation. Emphasis on crop and livestock selection, management of farm resources, farm budgets and records analysis, and farm leases. Prerequisite: 204 or one course in economics. Elective Pass/Fail.

351-4 Farm Financial Management. Analysis of the capital structure of agri-

- culture and sources of capital. Credit analysis of farm business employing financial statements. Prerequisite: 350 or equivalent. Elective Pass/Fail.
- 352-3 Agricultural Prices.** Measurement and interpretation of factors affecting agricultural prices. Construction of index numbers, trend analysis, seasonal and cyclical price movements, and the measurement of relationships between price and other variables. Prerequisite: 204 or one course in economics. Elective Pass/Fail.
- 354-3 Agricultural Marketing.** Principles and practices of agricultural marketing. Market organization, marketing costs, futures markets, factors affecting price and governmental influence. Prerequisite: 204 or one course in economics. Elective Pass/Fail.
- 359-1 to 10 Intern Program.** Supervised work experience program in either an agricultural agency of the government or agri-business. Limited to not more than 5 hours per quarter. Prerequisite: junior standing and approval of department. Elective Pass/Fail.
- 361-3 Skills in Home Maintenance and Repair.** Common home related maintenance and repair activities. Units include safety and developing the home shop; construction skills related to masonry concrete, plumbing and painting; basic electricity and practical home wiring; and lawn, garden and recreational equipment maintenance and operation.
- 362-4 Country Living Management and Information.** Managing a small acreage as an avocation. Types of decision problems and sources of information.
- 364-4 Distribution in Agribusiness.** The nature of agribusiness distribution, opportunities to improve the effectiveness of the distribution system through an understanding of the function involved. Prerequisite: 204 or equivalent.
- 373-5 Agricultural Power Units and Field Machinery.** The application, construction, principles of operation, maintenance, adjustments and management of common power units and field machinery. Prerequisite: college algebra. Elective Pass/Fail.
- 375-3 Basic Agricultural Mechanization.** Basic shop equipment, operation, and processes. Shop organization, equipment usage and application, construction materials, arc and oxy-acetylene welding, metal working, and wood working.
- 381-1 to 6 Agricultural Seminar.** Discussion of special topics and/or problems in the fields of agricultural industries. Prerequisite: junior standing and consent of department. Elective Pass/Fail.
- 390-1 to 6 Special Studies in Agricultural Industries.** Assignments involving research and individual problems. Field trips. Prerequisite: consent of chairman. Elective Pass/Fail.
- 391-1 to 6 Honors in Agricultural Industries.** Completion of honors paper or comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Prerequisite: junior standing, GPA of 4.0 with 4.25 in major, approval by faculty member and department chairman.
- 410-2 to 4 Problems in Agricultural Services.** Discussion, assignments, and special workshops on problems related to in-service training programs in agriculture. Prerequisite: consent of instructor. Elective Pass/Fail.
- 411-3 Agricultural Extension.** A study of the history, organization, objectives, programs, and methods of agricultural extension work. Prerequisite: junior standing. Elective Pass/Fail.
- 412-4 Principles of Agriculture Mechanization.** Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories. Prerequisite: Secondary Education 312 and 8 hours of mechanization or equivalent. Elective Pass/Fail.
- 417-4 Agricultural Development in Emerging Countries.** Principles and practices in improving agriculture in areas with limited capital and low levels of technology. Prerequisite: 204 or GSB 211. Elective Pass/Fail.
- 418-3 Marketing Practices and Problems in Developing Countries.** Types of markets, assembly of products, storage, transportation, quality determination, and pricing practices which are peculiar to the developing countries. Market organization and practices for the major export products and the principal domestic foods and fibers in such countries. Methods of progressively improving such markets. Prerequisite: 354 or Economics 215. Elective Pass/Fail.
- 420-2 to 6 Knowledge and Skills Related to Agricultural Education.** Designed to improve the techniques of agricultural education workers in the field. Emphasis on new technical developments and the most effective method of presenting these developments.
- 450-4 Advanced Farm Management.** Application of linear programming to

farm planning including enterprise selection, resource allocation and least cost ration formulation. Farm decision making under uncertainty and analysis of farm expansion alternatives. Prerequisite: 350. Elective Pass/Fail.

451-4 Agriculture Business Management. Functions of top management, such as: determining objectives; developing sound and consistent policies for achieving objectives; organizing the administrative personnel to carry out the plans; guiding and maintaining the administrative organization. Prerequisite: senior standing. Elective Pass/Fail.

456-11 (3,2,2,2,2) Agricultural Marketing Problems and Practices. (a) Cooperatives. Development of the agricultural cooperative movement, agricultural cooperative organization, legal requirements, principles and practices of agricultural cooperative associations. (b) Livestock. Problems and their solutions in marketing livestock. (c) Field Crops. Problems and their solutions in marketing field crops. (d) Dairy and Poultry. Problems and their solutions in marketing dairy and poultry products. (e) Horticultural crops. Problems and their solutions in marketing horticultural crops. Field trips cost \$5. Prerequisites: 354 or consent of instructor. Elective Pass/Fail.

460-4 Agricultural Law. Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. Prerequisite: senior standing or consent of instructor.

471-4 Land Resource Economics. (Same as Forestry 471 and Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; and land utilization as related to institutional arrangements. Prerequisite: Economics 215 or equivalent. Elective Pass/Fail.

473-4 Advanced Agricultural Power Systems. Detailed study of the mechanics of internal combustion engines and component systems. Prerequisite: 373 or equivalent. Elective Pass/Fail.

478-4 Agricultural Materials Handling Systems. Arrangement of feed handling, storage, and processing systems for agricultural products. Includes cleaning, sorting, and drying. Prerequisite: 215, 350, or equivalent.

482-3 Seminar on International Agricultural Problems. Discussion of methods by which foreign students can adapt information and training obtained in U.S. oriented courses to the solution of important agricultural problems in their home countries. May be supplemented by work experience and research on the University farms, in laboratories, and in the library. Prerequisite: consent of instructor.

483-3 Introduction to Communicating Technology in Rural Areas. For field and administrative personnel preparing for or working in rural economic development. Examines ecology and cultural elements of rural populations affecting the communication/adoption of technology. Basic forms common to the flow/communications of new technology. Develops alternative communication strategies for specific programs. Prerequisite: junior standing.

485-3 Principles and Philosophies of Vocational and Technical Education. (See Occupational Education 485.)

505-3 Agricultural Industries Research Methodology.

512-2 to 6 Agricultural Occupation Internship.

520-1 to 6 Readings.

525-4 Cooperative Vocational-Technical Education.

550-4 Resource Allocation in Agriculture.

552-2 Advanced Agricultural Prices.

554-4 Advanced Agricultural Marketing.

575-1 to 6 Individual Research.

581-1 to 6 Seminar.

588-1 to 12 International Graduate Studies.

599-1 to 9 Thesis.

Agriculture

Courses

259-3 to 60 Technology in Agriculture. For credit earned in technical or occupational proficiency above the high school level (by departmental evaluation).

333-3 Agriculture and Forestry Environmental Problems. An overview course directed at the environmental problems of food, fiber and forest products pro-

duction and processing and their potential solutions. A team taught course within the School of Agriculture.

Agriculture, General

Major

General agriculture, intended for students seeking broad backgrounds in agriculture, is probably the best agricultural plan for students who have not chosen a professional area for emphasis.

Students gain basic preparation for many of the agricultural careers: general farming, agricultural services, agricultural extension, agricultural communications, agricultural business, agricultural industry, and agricultural production. Students who initially enroll in general agriculture may transfer to other agricultural majors or they may continue in general agriculture and select courses from various fields.

Bachelor of Science Degree, SCHOOL OF AGRICULTURE

General Agriculture

<i>General Studies Requirements</i>	68
GSA 106, 115a,b	(12)
Elective GSA	(4)
GSB 211 or Ag. I. 204	(4)
Elective GSB	(12)
GSC	(16)
GSD 101, 102, 107, 153	(14)
GSE	(6)
<i>Requirements for Major in General Agriculture</i>	60
Animal Industries	12
Agricultural Industries	12
Plant Industries	12
Agricultural and Forestry Electives	24
<i>Electives</i>	58
<i>Total</i>	186

Students interested in working with plants in the urban environment should consider the Urban Land Management program. The student may elect to concentrate his training in either the Urban Forest Management option or the Urban Landscape Management option. The program is interdepartmental in nature, with students electing the Urban Forest Management option being advised in the Department of Forestry, and with students electing the Urban Landscape Management option being advised in the Department of Plant Industries.

Bachelor of Science Degree, SCHOOL OF AGRICULTURE

Urban Land Management

<i>General Studies Requirements</i>	68
GSA 101, 106, 115a, 115b	(16)
GSB 202, 203, 212, 211 or Ag. I. 204	(16)
GSC	(16)
GSD 101, 102, 153, Math 111a	(14)
GSE	(6)
<i>Requirements for Major in General Agriculture with a Specialization in Urban Land Management</i>	

Required Courses in Curriculum	77-78
Mathematics 111b	5
Accounting 250	4
Administrative Sciences 301, 340	8
Biology 307	4
Botany 456 or 457	4-5
Finance 271	4
Forestry 221, 350a, 450, 451a, 451b, 483	22
Government 360	4
Plant Industries 301, 304a, 304b, 404, 410	18
Recreation 301	4
Required Courses in Option	47-48
<i>Urban Forestry Management</i>	
GSE 106-1	
Forestry 365a-4, 466-3	
Geology 220-3	
Government 440-4	
Electives 32-33	
<i>Urban Landscape Management</i>	
GSC 205-4	
Botany 308-5	
Geography 470a-4, 470b-4	
Plant Industries 264-4, 303-3	
Electives 23-24	
Total	192-194

A country living specialization is available in General Agriculture. This area of study provides the student with a background to more effectively manage and enjoy an acreage in the country.

This specialization requires work in a minimum of two departments in the School of Agriculture, a total of 24 hours. Suggested courses are: Agricultural Industries 361-3, 362-3; Animal Industries 319-3, 301-4; Forestry 360-4; Plant Industries 360- , 347-3, 304a-3, 304b-2.

The selection of these courses or others in the School of Agriculture should be made by the student jointly with a staff member in the school.

For a country living specialization in General Agriculture the requirements are the same as for General Agriculture but the specific courses selected by the student and his or her counselor would be consistent with the student's educational and professional objective.

Animal Industries

Department, Major, Courses

Instruction, research, demonstration, and consultation are provided in dairy, horse, livestock and poultry production, animal behavior, meats, laboratory animal science, and animal hygiene. Courses are offered in all phases of animal production and management.

The student has opportunity to select courses in other areas of agriculture or related fields, such as business, biology, or physical sciences. This selection allows the student to include in his studies the agronomic, agricultural economic, and agricultural engineering phases of agriculture or business as related to animal production.

The department offers a two-year and a three-year curriculum in pre-veterinary medicine, preparing the student for application to one of the accredited colleges of veterinary medicine. The three-year program allows the student to acquire a Bachelor of Science degree in Animal Industries by completing his requirements for a major in an additional year of study. This additional year of study may include courses in the area of veterinary medical technology.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, SCHOOL OF AGRICULTURE

<i>General Studies and Substitutes</i>	72
Substitute Chemistry 110 and 240 or equivalent for GSA 100 series	(8)
GSA 115a,b	(8)
GSA 209	(4)
<i>Requirements for Major in Animal Industries</i>	60
An. Ind. 121, 122, 315, 311a, or 318, 332 and 381	(17)
An. Ind. electives	(19)
Ag. electives (excluding An. Ind.)	(12)
Science electives (a maximum of 2 additional courses in GSA)	(12)
<i>Electives</i>	54
<i>Total</i>	186

Courses

121-4 Science of Animals That Serve Mankind. An overview of animal agriculture as related to human needs. Prerequisite: concurrent enrollment in 122. Elective Pass/Fail.

122-1 Science of Animals That Serve Mankind—Laboratory. Livestock facilities, demonstration, and discussion of management practices and processing of animal products. Elective Pass/Fail.

301-4 Care and Management of Pets. Principles and practices of proper selection, feeding and care of companion animals. Emphasis is placed on the dog and cat, but other species are considered. Nutrition, health care, behavior, training and reproduction are discussed. Elective Pass/Fail.

311-7 (3,2,2) Evaluation and Selection of Farm Animals and Animal Products. (a) Comparative selection and evaluation of livestock, dairy, and poultry, and their products. (b) Grading and selection of breeding and production animals, livestock, dairy, or poultry. (c) Comparative grading and selection of live animals and evaluation of products. Field trips. These courses are not required for participation in SIU judging team activities. Elective Pass/Fail.

315-4 Feeds and Feeding. Principles of domestic animal nutrition and feeding. Balancing rations. Elective Pass/Fail.

318-3 Meat Animal and Carcass Evaluation. Carcass quality, grade and cutability of beef, pork, and lamb in relation to live and animal evaluation. Factors affecting growth, development, and body composition of meat animals. Field trip. Prerequisite: 121. Elective Pass/Fail.

319-3 Horses. Selection, care and management of light horses. Elective Pass/Fail.

321-4 Processing and Grading of Poultry Products. Skills required in price determination, processing, grading, storage, merchandising, and distribution of poultry products. Prerequisite: 121. Elective Pass/Fail.

327-4 Poultry Management. Principles and practices of incubation, brooding and rearing, and disease prevention, control, and diagnosis. Prerequisite: 121. Elective Pass/Fail.

332-4 Animal Breeding and Genetics. The application of the basic principles of genetics and breeding systems to the improvement of farm animals. Prerequisites: 121; GSA 115b or equivalent. Elective Pass/Fail.

337-4 Animal Hygiene. Contagious, infectious, and nutritional diseases and parasites of animals; their prevention and control. Field trip. Prerequisite: 121. Elective Pass/Fail.

359-3 to 5 Intern Program. Work experience program in either an agricultural agency of the government or agri-business. Prerequisite: junior standing. Mandatory Pass/Fail.

381-1 to 2 Animal Science Seminar. Discussions of problems and recent developments in animal science. Maximum of one hour per term. Prerequisite: junior or senior standing. Elective Pass/Fail.

390-1 to 6 Special Studies in Animal Industries. Assignments involving research and individual problems. Approval of department chairman required. Juniors and seniors only. Mandatory Pass/Fail.

391-1 to 6 Honors in Animal Industries. Independent undergraduate research

sufficiently important to require three hours per week of productive effort for each credit hour. Prerequisite: junior standing, GPA of 4.0 with a 4.25 in the major and consent of departmental chairman. Mandatory Pass/Fail.

415-9 (5,4) Animal Nutrition. (a) Physical and chemical properties of nutrients and their uses and principles involved in determination of nutrient requirements. (b) An integration of the basic facts concerning the nature of nutrients and their metabolism. Must be taken in a,b sequence. Prerequisite: 315 and a course in chemistry. Elective Pass/Fail.

419-4 Stable Management and Horsemanship. Lectures and laboratory experience. Routines of stable operation, horse care, training, and management. Field trips. Prerequisite: 319. Elective Pass/Fail.

420-4 Commercial Poultry Production. Broilers, layers, and turkeys as adapted to poultry specialty farms. Field trips. Prerequisite: 121. Elective Pass/Fail.

421-3 Animal Production in Developing Countries. World animal production, practices, and institutions which affect productivity. The adaptability of animals to serve mankind. Prerequisite: one year biological science. Elective Pass/Fail.

430-5 Dairy Cattle Management. Application of principles of genetics, nutrition, physiology, and economics to the management of the dairy herd. Field trip required. Prerequisite: 315 and 332. Elective Pass/Fail.

431-4 Reproductive Physiology of Domestic Animals. Comparative physiology of reproduction in farm animals and the principles of artificial insemination. Prerequisite: 121 and one course in physiology. Elective Pass/Fail.

432-3 Quantitative Inheritance of Farm Animals. A review of the principles underlying the influence of mutation, selection, migration, and random drift in animal breeding populations; estimation and interpretation of heritabilities and genetic correlations; effects of variances of quantitative traits of farm animals. Prerequisite: 332. Elective Pass/Fail.

433-3 Dairy Cattle Nutrition. Application of the latest knowledge of digestion and metabolism in ruminants, and their nutritional requirements to dairy herd feeding. Prerequisite: 315.

434-3 Physiology of Lactation. Anatomy of the mammary gland, hormonal control of development and secretion, milk synthesis, physiology and mechanics of milking. Prerequisite: organic chemistry and physiology. Elective Pass/Fail.

456-4 (2,2) Agricultural Marketing Problems and Practices. (b) Livestock. Problems and their solutions in marketing livestock. (d) Dairy and poultry. Problems and their solutions in marketing dairy and poultry products. Prerequisites: GSB 211, Agricultural Industries 354 or consent of instructor. (See also Agricultural Industries 456.) Elective Pass/Fail.

465-5 Swine Production. Breed selection, breeding, feeding, management, and marketing of swine. Field trip. Prerequisites: 315, 332. Elective Pass/Fail.

479-4 Animal Behavior. (See Zoology 479.)

480-4 Sheep Production. Breeding, feeding, and management of sheep. Field trip. Prerequisites: 315. Elective Pass/Fail.

485-4 Beef Production. Breeding, feeding, and management of beef cattle as applied to cow and calf production. Field trip. Prerequisites: 315. Elective Pass/Fail.

487-4 Commercial Livestock Feeding. Consideration of principles and problems in fattening beef cattle and sheep for market. Field trip. Prerequisites: 315. Elective Pass/Fail.

502-3 Surgical Research Techniques in Farm Animals.

505-4 Research Methods in Agricultural Science.

506-4 Instrumentation Methods in Agricultural Science.

515-4 Nutrient Utilization in Domestic Animals.

516-4 Minerals and Vitamins in Animal Nutrition.

520-1 to 6 Readings in Animal Industries.

575-1 to 6 Individual Research.

581-1 to 6 Seminar.

588-1 to 12 International Graduate Studies.

599-2 to 9 Thesis.

Anthropology

Department, Major, Courses

All the major divisions of anthropology are covered, viz. archaeology,

ethnology, linguistics, physical anthropology, and social anthropology. Faculty members of the department have had field experience in North, South, Central America, the Caribbean, Europe, Africa, and the Pacific. Faculty specialization and field experience in the Greater Southwest, Mesoamerica, Midwest, Africa, and New Guinea are particularly strong.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i> (Includes GSD Math. 5.)	68
<i>Supplementary Two Years College Requirement in FL/Mathematics</i>	
FL: GSC FL-9 and FL 201-9, Math. 3	21 *
<i>Requirements for Major in Anthropology</i>	46
46 hours of anthropology, at least 24 of which are on the 400-level.	
Consult department for recommended courses.	
<i>Minor</i>	24
<i>Electives</i>	27
<i>Total</i>	186

* GSC foreign language does not satisfy GSC requirements for a major in the College of Liberal Arts.

Although there are no specific course or distribution requirements, the major is urged to take at least one course each in the following subfields: applied anthropology, archaeology, art and technology, ethnology, history of anthropology, linguistics, physical anthropology, and social anthropology. The student who contemplates going on to do graduate work in the field is advised to take a broadly based curriculum, in order to increase his chances of admission into a graduate program.

The prospective graduate student is also advised to gain reading knowledge of one of the foreign languages containing a substantial anthropological literature, e.g. French, German, Russian, Spanish, and to obtain elementary knowledge of statistics or computer science.

Minor in Anthropology

A minor in anthropology is available to students who desire a minor or who are required to complete a minor. Major departmental or university advisers should be consulted before selecting this field as a minor.

The minor in anthropology consists of GSB 104, or its equivalent, with at least nine of the required 24 hours at the 300-level and at least nine of the required 24 hours at the 400-level. The remaining three hours may be at either the 300- or 400-level.

Students are advised to consult the department before selecting courses.

Honors Program in Anthropology

An anthropology student who wishes to receive honors in anthropology is expected to participate in both his junior and senior years in departmental honors courses. The minimum number of hours required is 15 and the maximum, 21. The student must have and maintain an overall g.p.a. of 4.00 and an anthropology g.p.a. of 4.25.

Courses

275-1 to 18 Individual Study. Anthropological topics studied on an individual, or other, basis not provided by GSB 102. The academic work may be done on the campus or in conjunction with approved off-campus (normally field research) activities. Prerequisite: consent of department.

300-3 Physical Anthropology. Man as a biological being, his relationships to

other living things. Human origins and development. Concept of race and the races of mankind. Human genetics and normal human variation. Prerequisite: consent of department for undergraduates.

301-3 Linguistics in Anthropology. Introduces the concept of culture as revealed through human language. Prerequisite: consent of department for undergraduates.

302-3 Introduction to General Archaeology. Theories and methods of anthropological archaeology. For beginning archaeologists and non-archaeologists. Prerequisite: consent of department for undergraduates.

303-3 Old World Prehistory. A survey of man's earliest cultural beginnings. Paleolithic and Neolithic periods in Europe, Africa, the Near East, and Asia. Prerequisite: consent of department for undergraduates.

304-3 The Origins of Civilization. A study of the complex environmental and cultural factors that led to the rise and fall of early high-cultures in both the Old and New Worlds. Prerequisite: consent of department for undergraduates.

310-3 Introduction to Social Anthropology. Ways in which humans organize themselves for action. Emphasis on terminology of social anthropological analysis. Comparative and functional aspects of kinship, economic, political, religious, and legal systems of non-Western peoples. Prerequisite: consent of department for undergraduates.

311-9 (3,3,3) Peoples and Cultures of the World I. The biological and cultural history of man. (a) North America. (b) Meso-America. (c) South America. Prerequisite: consent of department for undergraduates.

312-9 (3,3,3) Peoples and Cultures of the World II. The biological and cultural history of man. (a) Europe. (b) Caribbean. (c) Oceania. Prerequisite: consent of department for undergraduates.

313-6 (3,3) Peoples and Cultures of the World III. The biological and cultural history of man in: (a) Sub-Saharan Africa. (b) The Near East and North Africa. Prerequisite: consent of department for undergraduates.

314-6 (3,3) Peoples and Cultures of the World IV. The biological and cultural history of man in: (a) Eastern Asia. (b) South Asia. Prerequisite: consent of department for undergraduates.

315-4 Peoples and Cultures of the World V. Survey of the world's peoples and cultures through the medium of ethnological and documentary films. Prerequisite: consent of department for undergraduates.

376-2 to 11 Independent Study in Classical Studies Program. (Same as Art, Foreign Languages, History, Philosophy, and Religious Studies 376.) Taken in junior and senior years to a total of at least eight hours. At end of senior year level work, student submits a research paper.

399-3 to 9 Honors Tutorial. Individual or seminar work. Introduces the student to research. Must have and maintain 4.000 overall gpa and 4.25 gpa in anthropology. Prerequisite: consent of department.

400-4 Man and Culture. The nature of culture and cultural process. Relationships of culture and man as an individual and as a group. Emphasis on "the anthropological point of view." Prerequisite: consent of department for undergraduates.

401-4 Language in Culture. Language as a part of culture. Linguistics and the study of culture. Prerequisite: consent of department for undergraduates.

403-3 to 4 General Archaeology. Theory and methodology. The basic concepts underlying anthropology interpretations of man's past. Prerequisite: 302 or consent of instructor.

404-6 (3,3) Technology, Art, and Anthropology. The development of man as an art-loving and tool-using being. Technological and artistic traditions of non-western peoples, past and present. (a) Technology and anthropology. (b) Art and anthropology. Sequence a,b recommended. May be taken b,a, or a or b only. Prerequisite: consent of department for undergraduates.

407-3 General Ethnology. Ethnology as a major sub-field of anthropology, including interest in ethnohistorical studies as well as the more traditional aspects of the field. Prerequisite: consent of department for undergraduates.

408-3 History of Anthropological Thought. The growth of anthropology as an academic discipline to about 1940, with emphasis upon the concepts and ideas since 1860. Prerequisite: consent of department for undergraduates.

409-3 Applied Anthropology. The applications of anthropological principles to the solution of problems of the modern world. Contributions of anthropology to the work of the educator, social worker, administrator, business man, government official, and other specialists dealing with man in Western and non-Western cultures. Prerequisite: consent of department for undergraduates.

- 410-3 Current Problems in Social Anthropology.** Current problems in the description and analysis of non-Western social systems. Emphasis on kinship and social structure. Prerequisite: for undergraduates, 310 or consent of department.
- 413-3 General Linguistics.** Philosophical, with attention to linguistic theory, origin of language, acquisition of language, language change, dialectology. Undergraduate. Prerequisite: 301 or consent of department.
- 415-3 Logic of the Social Sciences.** (Same as Philosophy 415.) Logical and epistemological examination of the social studies as types of knowledge. Basic problems in philosophy of science with major emphasis upon social science; relationship of theory to fact, nature of induction, nature of causal law, testability, influence of value judgments, etc. Intended for students with considerable maturity in a social science or in philosophy.
- 418-4 Languages of the World.** Attention given to language families, focusing on studies of linguistic history, genetic relationships, and typological classification. Of interest to specialists in fields other than linguistics. Prerequisites: consent of department.
- 430-3 Archaeology of North America.** Introduction to methods of archaeology and survey of prehistoric Indian cultures north of Mexico, with emphasis on cultures of the Mississippi Valley. Prerequisite: consent of department for undergraduates.
- 441-3 Comparative Economics.** A comparative study of economic systems, with emphasis upon those found in primitive societies. Studies of systems which fall outside the conventional systems such as capitalism, socialism, and fascism. Prerequisite: consent of department for undergraduates.
- 442-3 Comparative Folklore.** A comparative study of the role of folklore in various cultures of the world, with emphasis upon non-literate societies. Analysis of motifs, themes, and other elements; comparisons between non-literate and literate groups. Prerequisite: consent of department for undergraduates.
- 443-3 Comparative Law.** Legal premises upon which societies are based; systems of the non-literate world; case studies of instances where these systems come into contact with those of literate, technologically advanced cultures. Prerequisite: consent of department for undergraduates.
- 444-3 Comparative Religion.** Comparative study of religious systems, with emphasis upon those of non-literate societies. Examination of basic premises and elements of these belief systems, normally excluded from discussions of the "Great Religions." Case studies of acculturation between these two categories, the "primitive" and the "Great," or "World," religions. Prerequisite: consent of department for undergraduates.
- 445-3 Cross-Cultural Studies of Personality.** Similarities and differences in personality structures including the historical development of this as an anthropological subdiscipline. Basic and modal personality, national character, culture change and personality, culture-bound reactive syndromes, and cognitive anthropology discussed. Prerequisite: consent of department for undergraduates.
- 465-6 (2,2,2) Museum Methods.** Practical experience and associated philosophical-educational context of museum methods in exhibition/display, processing, cataloging, preservation, etc. Prerequisite: junior standing.
- 466-2 Museum Administration.** Problems and policies associated with museum administration, either as a specialist in large organizations or as general museologist when the director serves as a multi-purpose staff member. Prerequisite: junior standing.
- 470-9 (3,3,3) Special Studies of World Languages.** Specific languages or language families focusing on history and structure. Any one quarter will concentrate on language of a major geographical area. Prerequisite: 413, Linguistics 401a or b, or consent of department.
- 471-6 (3,3) Ethnomusicology (See Music 471).**
- 483-1 to 18 Individual Study in Anthropology.** Guided research on anthropological problems. Consent of department required to enroll, unless required and scheduled with another anthropology course.
- 497-1 to 18 Honors Individual Research.** Honors students participate in graduate seminar work with the consent of the instructor. Prerequisite: consent of department for undergraduates.
- 499-3 to 12 Honors Thesis.** Work on a directed research problem. The topic of the thesis may be simple or complex, depending on the time expended on it. Paper to be of publishable quality. Prerequisite: 399 and consent of department.
- 510-3 to 9-Seminar in New World Archaeology.**

- 511-3 to 9 Seminar in Mesoamerican Archaeology.
 512-3 to 9 Seminar in Old World Archaeology.
 520-3 to 9 Seminar in New World Ethnology.
 521-3 to 9 Seminar in the Ethnology of Mesoamerica.
 522-3 to 9 Seminar in the Anthropology of Oceania.
 523-3 to 9 Seminar in the Anthropology of Africa.
 545-3 to 9 Seminar in Linguistics.
 550-3 to 9 Seminar in the Native Cultures of Latin America.
 560-3 to 9 Seminar in Comparative Social Organization.
 562-3 to 9 Seminar in the Anthropology of Contemporary Peoples.
 565-3 to 9 Seminar in Cultural Change and Development.
 567-3 to 9 Seminar in Anthropological Theory and Method.
 570-3 to 9 Seminar in Art and Technology.
 575-3 to 9 Seminar in the Individual and Culture.
 581-3 to 9 Seminar in Anthropology.
 582-1 to 27 Problems in Archaeology.
 584-1 to 27 Problems in Cultural Anthropology.
 585-1 to 27 Readings in Anthropology.
 595-6 (3-3) Field Methods in Ethnology.
 596-6 (3-3) Field Methods in Archaeology.
 597-1 to 27 Fieldwork in Anthropology.
 599-1 to 9 Thesis.
 600-1 to 36 Dissertation.

Architectural Technology

Program, Major, Courses

The technically-trained person who is able to work in the area between the draftsman who simply reproduces another's ideas and the licensed architect who creates will find a variety of positions available to him within the architectural profession.

The graduate of architectural technology will have basic knowledge and skills for entry into this broad field, where he may advance into such specific areas as project coordination, specifications writing, architectural design, structural and mechanical engineering, and architectural supervision.

During his two years of study, the student will gain an understanding of the architectural and design professions and other components of the building industry, the design and production process, and the historical, mathematical, and physical factors involved. He will be enabled to prepare and interpret technical communications such as two- and three-dimensional models, charts, and architectural delineations.

Architectural classes make several field trips each year to nearby cities to study historical and contemporary architecture. The student should make allowance in his budget to cover the expense of these trips and for the purchase of small amounts of equipment and supplies.

The faculty consists of architects who hold professional degrees and who have many years of professional and teaching experience. The program is certified by the American Institute of Architects.

The student should expect to spend approximately \$150 for drafting instruments and materials.

An advisory committee whose members have been chosen for their understanding of current needs in the architectural profession and their interest in education helps to assure that students have the benefit of an up-to-date curriculum. Members often serve as guest lecturers. Current members are: Edward Bartz, Hellmuth-Obata and Kassabaum, Inc., Belleville; Frederick W. Salogga, Spangler-Beall-Salogga-Bradley, Decatur;

William E. Gramley, Phillips-Swager and Associates, Peoria; and William Stein, Hans Fischer and Associates, Inc., Carbondale.

A minimum of 105 credit hours is required for this major.

Associate In Applied Science Degree, SCHOOL OF TECHNICAL
CAREERS

Requirements for Major in Architectural Technology

GSA 101	4
GSB 202	4
GSD 101, 102	6
Mathematics 111a	5
Vocational and Technical Careers 105	3
Architectural Technology 110a,b, 121, 146a,b, 147, 150, 151, 152, 153, 221a,b,c, 250a,b,c, 254, 258, 283, 285, 290a,b	83
Total	105

Courses

110-8 (5,3) Architectural Drafting. On completion of the course, the student will have knowledge, understanding and skills in the use of the drafting instruments. (a) Lettering, orthographic projections, intersections of surfaces, isometric and oblique drawing, and shades and shadows. Lecture 2 hours. Laboratory 9 hours. (b) Perspective drawing including visual ray method, two point and three point perspective, direct measurement perspective, reflections and shades and shadows in perspective. Lecture 2 hours. Laboratory 4 hours. Must be taken in a,b sequence.

121-5 Architectural Design. On completion of the course the student will have knowledge, understanding and skills in the principles of architectural design, composition, and delineation as applied to structures of a simple nature. Lecture 3 hours. Laboratory 6 hours. Prerequisite: 110b and 146b or consent of adviser.

146-6 (3,3) Architectural Freehand Graphics. On completion of the course, the student will have knowledge, understanding and skills in freehand drawing from life, sketching techniques in (a) pencil and ink and the use of the pencil as a means of architectural expression; (b) theory of color and delineation techniques in various color media. Lecture 1 hour. Laboratory 5 hours. Must be taken in a,b sequence.

147-3 History of Architecture. On completion of the course, the student will have a knowledge and understanding of the history of architecture from the prehistoric to the present time as it relates to the environmental and cultural setting of man. Lecture 3 hours.

150-3 Basic Materials of Construction. On completion of the course the student will have a knowledge and understanding of materials of construction with emphasis upon those materials not specifically regarded as structural. Lecture 3 hours. Must be taken concurrently with 151 or have consent of the adviser for variance.

151-5 Materials and Methods of Construction. On completion of the course the student will have a knowledge, understanding and skills in light frame construction including foundations; framing systems; the physical nature, adaptability and limitations of light frame materials; and the development of construction details and working drawings. Lecture 3 hours: Laboratory 6 hours. Prerequisite: 110a or consent of the adviser.

152-2 Site Engineering. On completion of the course, the student will have knowledge, understanding and skills in site selection, survey computations, contours, and the use of the level and transit. Lecture 1 hour. Laboratory 3 hours. Prerequisite: 110a and Math 111a or consent of the adviser.

153-3 Mechanics and Strength of Materials. On completion of the course the student will have knowledge and understanding of elementary force systems, centroids, movement of inertia, deformation, flexure, combined stress, shear and moment diagramming and computation. Lecture 3 hours. Prerequisite: GSA 101 and Math 111a or the consent of the adviser.

221-15 (5,5,5) Architectural Design. On completion of the course, the student will have knowledge, understanding and skills of architectural planning; design, composition and delineation as related to (a) small commercial and residential structures with limited areas; (b) more complex low-rise structures and building groups; (c) continuation of b with selected individual projects of a more complex nature. Lecture 3 hours. Laboratory 6 hours. Must be taken in a,b,c sequence. Prerequisite: 121 or consent of the adviser.

246-3 Architectural Delineation. On completion of the course the student will have knowledge, understanding, and skills of architectural delineation of a more complex nature, using water color, designers colors, ink, pastel and other media; and the use of air-brush techniques as they apply to architectural delineation. Lecture 1 hour. Laboratory 5 hours. Prerequisite: fifth term status in major or consent of the adviser.

250-15 (5,5,5) Materials and Methods of Construction. On completion of the course, the student will have knowledge, understanding and skill of current materials and methods of construction, and the description of these materials and methods both graphically and by written specification; their physical nature, adaptability and limitations as they pertain to (a) semi-fire-proof construction. (b) Fire-proof construction. (c) Combination construction methods. Lecture 3 hours. Laboratory 6 hours. Prerequisite: 151 or consent of the adviser.

254-3 Mechanical Equipment of Buildings. On completion of the course, the student will have a basic knowledge and understanding of the mechanical equipment of buildings including code requirements, specifications, design and installation of plumbing, heating and air-conditioning equipment, electrical wiring and illumination. Lecture 3 hours. Prerequisite: fourth quarter status in major or consent of the adviser.

258-4 Structural Elements. On completion of the course the student will have knowledge, understanding and skills of the analysis of building loads, theories of shear, flexure, and deflection and their application to steel and timber structural members. Lecture 4 hours. Prerequisite: 153 or consent of the adviser.

283-3 Construction Cost Estimating. On completion of the course, the student will have a basic knowledge, understanding and skills of making preliminary estimates, quantity surveys, materials lists, construction schedules, and working estimates. Lecture 3 hours. Prerequisite: 250a or consent of the adviser.

285-2 Special Problems in Architecture. On completion of the course, through special problems, the student will have a knowledge and understanding of the architectural profession and its social and cultural contribution to man in the Twentieth Century; orientation in architectural office procedures including public relations, procedures, information retrieval, and documentation by architectural photography. Lecture 2 hours. Prerequisite: fifth term status in major or consent of the adviser.

290-6 (3,3) Theory of Structures. On completion of the course, the student will have a knowledge and understanding of the basic theory of structural design and the use of the standard handbooks as they pertain to (a) Reinforced concrete design, (b) Graphic analysis of force systems, structural members, and trusses of wood and steel. Lecture 3 hours. Prerequisite: 258 or consent of the adviser. Must be taken in a,b sequence.

Art

School, Major, Courses

Undergraduate offerings in art provide introductory and specialized experiences. The course of study offered, leading toward the Bachelor of Arts degree in art, requires 111 hours in art with an emphasis on a professional degree.

Candidates for the Bachelor of Arts degree may select a specialization in painting, sculpture, printmaking, drawing, metalsmithing, ceramics, weaving, art history, or art education. Electives, courses outside of degree requirements, are provided so that the student may encounter additional areas of concern beyond his major.

Minor

A total of 24 hours constitutes a minor. A total of 12 hours must be taken

in Art 100. The student then may elect to take any Art 200 or Art History 225 offerings. He also may elect to take any 300-level craft course to complete the 24 hour requirement.

*Bachelor of Arts Degree, COLLEGE OF COMMUNICATIONS AND
FINE ARTS*

A student majoring in art should select one of the following fields of specialization by the end of his sophomore year: painting, prints, sculpture, drawing, metalsmithing, ceramics, weaving, art education, and art history. He must complete a minimum of 18 hours in art history, unless he specializes in art education.

Studio Specialization

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Art</i>	111
Art 100, 200	24
Art 225, electives in art history	18
Art 341	8
Art Electives	29
Art specialization	32
Drawing—341, 441	
Painting—320, 401	
Prints—358, 410	
Sculpture—393, 405	
<i>Electives</i>	7
<i>Total</i>	186

Studio Crafts Specialization

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Art</i>	111
Art 100, 200	24
Art 225, electives in art history	18
Art electives	37
Art specialization	32
Metalsmithing—332, 430	
Ceramics—302, 420	
Weaving—385, 440	
<i>Electives</i>	7
<i>Total</i>	186

Art Education Specialization

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Art</i>	90
Art 100, 200, 302, 332, 385 (Studio)	36
Art 225, 340 (History)	15
Art 365, 307, 308 (Education)	10
Art Electives	29
<i>Professional Education Requirements</i>	28
Guidance 305	4
Secondary Education 310, 352	20

Education Electives	4	<u> </u>
<i>Total</i>		186

Art History Specialization

<i>General Studies Requirements</i> (Including GSC 207)	68	
<i>Requirements for Major in Art</i>	56	
Art 225	9	
Art 340	9	
Art 483	15	
Art 471, 481	12	
GSC FL (French or German)	(6) + 3*	
Philosophy 360, 460	8	
<i>Secondary Specialization in Studio</i>	36	
Art 100		
Upper level studio courses		
24 hours beyond the 100 level		
<i>Electives</i>	26	<u> </u>
<i>Total</i>		186

* Six hours of French or German may be counted toward GSC requirements. A second foreign language is strongly recommended and electives should be taken in anthropology, fine arts, history, philosophy, and religion.

Courses

Art Education Courses: 300, 307, 308, 365, 408, 460, 466, 560, 566, 599.

Art History Courses: 225, 309, 340, 350, 356, 369, 380, 445, 449, 471, 483, 571, 573, 599.

Studio Courses: 100, 200, 259, 302, 325, 332, 341, 343, 358, 393, 401, 403, 405, 410, 420, 430, 440, 441, 501, 504, 511, 520, 530, 540, 541, 599.

100-4 to 12 Basic Studio. Introduction to fundamental technical process and conceptual experiences in art. (a) Sculpture. (b) Crafts. (c) Painting. (d) Graphics. (e) Drawing. Incidental costs in Art 100 will be at least \$15 per quarter.

200-12 (4,4,4) Studio Disciplines. (a) Sculpture (b) Drawing (c) Painting. Incidental costs will be at least \$15 per quarter. Prerequisite: 100-12.

225-9 (3,3,3) Introduction to Art History. The student is acquainted with the nature of art as a human activity in order to gain an understanding of its significance now and in the past through three distinct sequential courses: (a) the nature of visual art and history, (b) classification of art in major historical periods, and (c) representative problems in the history of art.

259-4 to 24 Studio. Credit established by departmental evaluation.

300-12 (4,4,4) Art Education. (a) For Elementary Education majors. An introduction to experiences with art media, methods of teaching, and philosophies in art education, applicable to grades K-6 and which lead to an understanding of curriculum and concept skill teaching in art for the elementary school. (b) Follows 300a in greater depth and emphasizes experimentation with art media, creative lettering and calligraphy, 3-D processes, and library research involving media and processes as well as team demonstration of art processes. (c) The course includes observations of art programs for the exceptional child, development of curriculum for the exceptional child, and involvement with materials and methods applicable to use in this area. Costs for incidental supplies in Art 300 will be at least \$10 per quarter.

302-12 (4,4,4) Pottery. (a) Beginning pottery, (b) Intermediate pottery, (c) Advanced pottery. Must be taken in a,b,c sequence. Incidental expenses will be at least \$8 per quarter. Lab fee will be an additional \$15. Prerequisite: 12 hours 100-level courses or consent of instructor.

307-3 Theory and Philosophy of Art Education. Survey of art education theory

providing the art education student with an introduction to theoretical studies in his field. Prerequisite: 100-12.

308-3 Curriculum and Administration in Art Education. Provides experience in dealing with problems of planning, organizing, introducing, and administering art curricula in grade and high school. Includes comparative study of published material and preparation of a working file on the subject. Prerequisite: 100-12.

309-3 Oriental Art. A survey of Asiatic arts.

320-2 to 12 Studio Painting. Costs for paints and incidental supplies will be at least \$20 per quarter. Prerequisite: 200-12.

325-2 to 15 Studio. Prerequisites: 8 hours in medium of choice (except where such courses do not exist) and consent of instructor.

332-12 (4,4,4) Jewelry and Metalsmithing. (a) Beginning jewelry and metalsmithing. (b) Intermediate jewelry and metalsmithing. (c) Advanced jewelry and metalsmithing. Must be taken in a,b,c sequence. Incidental expenses will be at least \$15 per quarter. Lab fee will be an additional \$10.

340-9 (3,3,3) Art of the 19th and 20th Centuries. A survey of modern art history from the French revolution to the present. (a) Art from the beginning of the Romantic period through Impressionism. (b) Post Impressionism and the early 20th century. (c) Art since the first world war. Prerequisite: 225.

341-2 to 12 Drawing. Costs for incidental supplies will be at least \$15 per quarter. Prerequisite: 200-12.

343-3 Experimental Art Studio for Non-Art Majors. For non-art majors. Creation of a variety of art forms. Content meets the needs, interests, and backgrounds of individual students.

350-6 (3,3) American Art. A survey of American painting, sculpture, and architecture from the early 18th century to the present.

356-3 Theory of Art.

358-4 to 36 (4 to 12, 4 to 12, 4 to 12) Printmaking. (a) Etching. (b) Lithography. (c) Silkscreen. Costs for incidental supplies will be at least \$10 per quarter. Lab fee will be an additional \$15. Prerequisite: 200-12.

365-4 Art Education Methods for Elementary and Secondary Schools. For students who will teach art in elementary and secondary schools. Included are: readings and discussion of literature, lesson planning, observation-participation programs in local schools, and studio projects designed to develop understanding of artistic and technical needs of children and adolescents. Incidental expenses will be at least \$8 per quarter. Prerequisite: 100-12.

369-3 Primitive Art. A study of the arts of "Primitive" peoples of Africa, the Pacific, and the Americas. Characteristic works are interpreted in context with the general conditions of primitive society. The significant influences of primitive art on modern painting and sculpture are considered.

380-4 Theory and Appreciation of Art.

385-12 (4,4,4) Weaving. (a) Beginning weaving. (b) Intermediate weaving. (c) Advanced weaving. Must be taken in a,b,c sequence. Incidental expenses will be at least \$15 per quarter. Prerequisite: 100-12.

393-4 to 12 Sculpture. Problems in modeling, carving, casting, and construction. Incidental expenses will be at least \$25. However, it is not unusual for an individual student to spend substantially more depending upon the size and nature of his project. Prerequisite: 200-12.

401-2 to 24 Painting I.

403-2 to 24 Drawing I.

405-2 to 24 Sculpture I.

410-2 to 24 Printmaking I. Prerequisite: 358-12.

415-2 to 24 Weaving I.

420-2 to 24 Ceramics I.

428-2 to 24 Glassblowing I. An in-depth studio experience exploiting the use of glass as an artistic medium. Prerequisite: restricted to art majors only, graduate standing or 8 hours ceramics and permission of instructor.

430-2 to 24 Metalsmithing I.

445-9 (3,3,3) Modern Art. (a) 19th century, (b) Early 20th century (c) Mid 20th century.

447a-3 The Art of Ancient Egypt and The Near East. A survey of principal monuments and archeological evidence relevant to an appraisal of the origins and development of art in the early civilizations of Africa, Western Asia, Europe, and the Aegean from prehistoric times to the rise of the Persian Empire.

447b-3 The Art of Ancient Greece. A study of the origins, development and

influence of art produced in Greece and its colonies from the Bronze age to the Roman Empire.

447c-3 The Art of the Ancient Romans. An appraisal of the natural culture and art of the Roman civilization, its debt to other ancient civilizations and achievements in architecture, sculpture and painting from its foundation until the reign of Constantine.

448a-3 Early Christian and Byzantine Art. A survey of problems related to art and architecture produced in Christian communities and under the aegis of the Byzantine Empire until the fall of Constantinople.

448b-3 Early Medieval and Romanesque Art. A study of the development of architecture and art in Europe from the fall of the Roman Empire to the formulation of the Gothic style.

448c-3 Gothic Art. A survey of major developments in Architecture, Sculpture and Painting in Europe from the earliest formulation of Gothic style to its decline in the Renaissance period.

449a-3 Art of the Renaissance in Europe. A study of developments in art during the 15th century in Italy and the Lowlands leading to the High Renaissance and its impact on European painting, sculpture and architecture of the 16th century. Prerequisite: 225-9.

449b-3 Baroque Art in Europe. A study of the formation of national styles in the arts of Italy, Spain, Austria, Germany, France, Flanders and Holland from the 16th to the 17th centuries with particular attention to major masters.

449c-3 The Art of 18th Century Europe. A study of architecture, sculpture and painting in European countries and colonies from the end of the seventeenth century to the French Revolution with particular emphasis on the Rococo Art of Italy, England, Spain and France.

455-15 (3,3,3,3,3) Advanced Art History. In depth analysis of the inception, development, and decline of art of the following periods: (a) Ancient, (b) Middle Ages, (c) Renaissance, (d) Early American, (e) Modern. Prerequisite: 225.

458-6 (3,3) Methodology of Art History and Criticism. Lecture, discussion and presentation of (a) the research tools of art history and (b) history of art criticism with practical experience in both areas.

459-6 (3,3) Museology—Seminar. A survey of gallery and museum techniques.

460-2 to 12 Research in Art Education. Students demonstrate via class presentations, term papers, and answers to written examinations knowledge of basic research techniques, findings and applications; important literature of art education; and broad research meanings. Prerequisite: 307.

461-4 Art Education for Elementary Teachers II. Follows the Art 300 sequence in greater depth with emphasis on correlating art involvement with art history, intercultural understanding, experience with team teaching and more mature self-assigned studio experiences adaptable to the elementary art curriculum. Prerequisite: 300a and b.

466-2 to 12 Studio in Art Education. Students demonstrate via individual studio projects, term papers and class critiques understanding of individual teacher-directed self-evaluative teaching methods.

501-2 to 24 Painting II.

503-2 to 24 Drawing II.

504-2 to 24 Sculpture II.

511-2 to 24 Printmaking II.

515-2 to 24 Weaving II.

520-2 to 24 Ceramics II.

530-2 to 24 Metalsmithing II.

558-2 to 5 Readings in Art History.

559-3 to 12 Problems in Art History.

560-2 to 12 Seminar in Art Education.

566-2 to 12 Research in Art Education.

573-3 to 12 Problems in Art History.

599-4 to 9 Thesis in Art Education.

Asian Studies

Minor

The Asia program includes a variety of courses on the languages, civilizations, and contemporary issues of Asia. Thirty faculty members conduct

teaching and research on Asia. The program is intended to prepare a student for a number of career options with Asia interests. Through this program, a student may prepare for more advanced work on another campus, may develop a teaching specialty, or broaden his repertoire of skills and knowledge which would be useful for his professional and occupational interests in Asia.

A minimum of thirty credit hours is selected from the list of courses approved by the committee on Asian studies. Not more than 12 hours taken in any one department may be counted toward the 30 hours.

A student may major in Asian studies by means of the Special Major program of the University for the Bachelor of Arts degree. The student in this program has to meet University, General Studies, and the College of Liberal Arts requirements.

395-8 (4,4) Cultural Traditions of Indo-China. Development of cultural traditions in the Indo-Chinese peninsula from early to modern times. Emphasis on the literary, social, historical, religious, and philosophical traditions that have shaped the cultures of Vietnam, Laos, and Cambodia. Section (a) deals with Vietnam, and Section (b) deals with Laos and Cambodia.

Automotive Technology

Program, Major, Courses

Because so few of those currently employed in the automotive service field have had formal training, the individual who has both technical knowledge and mechanical skills finds opportunities in a wide range of areas. He might become a manufacturer's service representative, operate an agency, work in a research laboratory, or fill a faculty position in a secondary or post-secondary school.

The graduate of automotive technology will have much higher technical knowledge than the conventional mechanic and more manual skills than an engineer. He will be capable of performing scientific and sound diagnosis and servicing any component of a modern automobile. He will have the ability to apply principles and theory he has previously learned to any new development, and he will be able to master new applications of principles and techniques of service with a minimum of training.

The automotive technology student will spend his two years of study working under controlled laboratory conditions with faculty who are specialists in their areas and who emphasize "why" more than "how." The student will find that this combination of classroom theory and laboratory experience helps him to progress in an orderly sequence as he gains knowledge of automotive components. It is only after laboratory instruction in engines, chassis and brakes, ignition and carburetion, power options, transmissions, and other systems that the student will be assigned to "live" vehicle diagnosis and repair.

Additional expertise in the field is available to students through members of an advisory committee chosen for their knowledge of the field and interest in education. Current members are: Al Bradshaw, supervisor of service training, Chrysler Training Center, Hazelwood, Mo.; Eric Swansstrom, United Motors resident instructor, and Kenneth James, Buick resident instructor, General Motors Training Center, St. Louis; James Racz, Eddie Ruch Pontiac, Inc., Wheaton; and Don Vogler, Vogler Motor Sales, Carbondale.

The student should expect to spend about \$175 for his basic set of tools.

A minimum of 99 hours credit is required for this major.

*Associate In Applied Science Degree, SCHOOL OF TECHNICAL
CAREERS*

Requirements for Major in Automotive Technology

GSB 202, 212	8
GSD 101, 153	6
Vocational and Technical Careers 102, 105, 107, 108	13
Automotive Technology 101a,b,c, 115, 125a,b,c, 201a,b,c, 220a,b,c ...	63
<i>Electives</i>	9
<i>Total</i>	99

Courses

101-15 (5,5,5) Basic Automotive Laboratory. (a) The student will disassemble "live" lab engines, make inspection of parts for wear or damage, learn to properly use necessary measuring and machining tools and reassemble strictly according to manufacturers standards. Laboratory 15 hours. Must be taken concurrently with 125a. (b) The student will apply those principles and knowledges acquired in theory 125b to make all necessary repairs and corrections on power steering units, power brakes, steering mechanisms, differential assemblies and drive lines as well as proper use of wheel balancers. Laboratory 15 hours. Must be taken concurrently with 125b. (c) The student will be able to diagnose and service automotive fuel, charging, starting, ignition and lighting systems. Laboratory 15 hours. Must be taken concurrently with 125c. May be taken in a,b,c; a,c,b or b,a,c sequence.

115-3 Related Shop Laboratory. The student will demonstrate his ability to make minor repairs on threads, brass and copper fittings, fasteners and also be able to do simple welding operations and fabricate small parts.

125-15 (5,5,5) Basic Automotive Theory. (a) The student will master the principles of internal combustion, engine design, power measurements, engine reconditioning methods, logical diagnosis of malfunctions and those basic D.C. electrical circuits required for competency in 101a. Lecture 5 hours. Must be taken concurrently with 101a. (b) The student will master the theory of wheel balancing, brake and steering operation both power assisted and conventional, drive line angles, steering geometry also differential set-ups both by gauge and tooth pattern. Lecture 5 hours. Must be taken concurrently with 101b. (c) The student will learn the theory of operation and several applications of starting lighting, ignition, D.C. and A.C. charging and control systems both solid state and vibrating as well as fuel supply, mixing and distribution. Lecture 5 hours. Must be taken concurrently with 101c. May be taken in a,b,c; a,c,b or b,a,c sequence.

201-15 (5,5,5) Advanced Automotive Laboratory. (a) The student will achieve competency in the following areas: testing, diagnosis and repair of those power units such as heaters, signaling units, automatic light and speed controls, power windows, power seats, windshield washer-wiper combinations and air-conditioning units consisting of both the various after-market and the major factory installed types. Laboratory 15 hours. Prerequisite: 101c and taken concurrently with 220a. (b) The student will acquire the skill necessary to properly disassemble, inspect and repair all three and four speed synchromest transmissions and all automatic transmissions currently used in American built passenger cars. He will be required to apply those principles of operation learned in 220b theory to diagnose all malfunctions occurring in those units. Laboratory 15 hours. Prerequisite 101c and taken concurrently with 220b. (c) Upon successful completion of the Automotive Diagnosis Laboratory the student will be able to use an oscilloscope or any device that visually records an electrical wave and other necessary test equipment to diagnose vehicle malfunctions under simulated load conditions while on the dynamometer. Laboratory 15 hours. Prerequisite: taken concurrently with 220c.

220-15 (5,5,5) Advanced Automotive Theory. (a) The student will master those principles of operation pertaining to accessory motors, solenoid and thermal clutching devices, multiple contact relays, thermo-electric instrumentation as related to comfort and safety options and air-conditioning operation and diagnosis of malfunctions. Lecture 5 hours. Prerequisite: 125c and taken concur-

rently with 201a. (b) The student will learn the theory required to completely understand the operation, testing, gauging and repair of all synchromesh and automatic transmissions. A distinct effort is made to implant theory so firmly that as manufacturing changes occur and old recognizable principles find new applications, retraining will be simple or even unnecessary. Lecture 5 hours. Prerequisite: 125c and taken concurrently with 201b. (c) In this program of studies the student uses and adds to those knowledges gained in 125a and 125c to improve vehicle performance and maintain efficiency of the various clean air packages. Much emphasis is placed on correct interpretation of oscilloscope patterns. Lecture 5 hours. Prerequisite: 125a and 125c and must be taken concurrently with 201c.

Aviation Technology

Program, Major, Courses

Skilled technicians are in demand in the rapidly-growing aviation industry, both in airlines and general aviation. The industry demands men who possess a wide range of knowledge and ability provided by general education as well as special technical training.

The student learns reciprocating and jet powerplants, hydraulics, fuel systems, ignition-starting systems, carburetion and lubricating systems, instruments, and powerplant testing in coordinated classroom and laboratory work. The program is fully accredited by the Federal Aviation Administration, and the graduate is qualified to obtain the FAA airframe and powerplant certificate.

Instruction is conducted at the Southern Illinois Airport between Carbondale and Murphysboro in a combination laboratory-classroom-hangar facility. The student should plan to spend about \$150 for a basic tool kit.

Executives in the aviation industry constitute an advisory committee which serves the program. Current members are: Sidney D. Carter, manager, Pratt and Whitney Aircraft, St. Ann, Mo.; Raoul Castro, manager, aviation department, MARCOR Flight Operations, Chicago; John P. Davis, assistant vice president, maintenance, Delta Air Lines, Atlanta, Ga.; Roy S. Davis, general foreman, maintenance, TransWorld Airlines, Chicago; Joseph Goetz, senior captain, TransWorld Airlines, New York; Howard D. Gould, management consultant, Personnel and Industrial Relations, Chicago; Robert J. Graham, supervisor of production control, American Airlines, Chicago; A. E. Jordan, vice president, technical services, TransWorld Airlines, Kansas City, Mo.; Frank P. McAnulty, mid-west region personnel manager, United Air Lines, Chicago; Frank G. Mitchell, manager, air age education, Cessna Aircraft Co., Wichita, Kan.; Philip G. Rogers, technical representative, Rolls-Royce, Inc., St. Louis; Robert J. Villaire, sales director, Pan American World Airways, St. Louis; John S. Winter, president, Systron Donner Corp., Berkeley, Calif.; F. W. Wood, aircraft maintenance foreman, United Air Lines, Chicago.

A minimum of 105 hours credit is required for this major.

Associate In Applied Science Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Aviation Technology

GSB 202	4
GSD 101, 102, 153	9
Vocational and Technical Careers 105 and 232	7
Aviation Technology, 110, 111, 112, 113, 114, 201, 202, 203, 204, 205, 206, 207, 210, 211, 212, 214, 215, 216, 220	85
<i>Total</i>	<u>105</u>

Courses

110-6 Aircraft Structure-Fabrication and Repair. The student will be able to identify and select materials employed in aircraft construction. Using appropriate FAR's, he will demonstrate competence in repair of honeycomb, fiberglass, welded, wood, or fabric aircraft members. The student will inspect aircraft members for defects and, if necessary, inspect completed repairs for airworthy condition. Lecture 5 hours. Laboratory 6 hours.

111-5 Materials & Process. The student will be able to identify, select, and inspect aircraft hardware and materials. He will be able to select and apply appropriate cleaning materials and to implement corrosion controls. He will become proficient in the use of precision measurement equipment and related inspection tools. Lecture 5 hours. Laboratory 6 hours.

112-6 Aircraft Electricity. The student will have a basic knowledge of electricity generation, AC and DC circuitries, and controls. He will be able to solve problems associated with electrical measurement (AC and DC), circuit interpretation and inspection, aircraft electrical load analysis, circuit malfunctions, and circuit or component servicing. He will have as an introduction, a basic knowledge of aircraft electronics. Lecture 4 hours. Laboratory 6 hours.

113-4 Aircraft Instruments. The student will have a knowledge of operation, installation, marking, and interpretation of aircraft and powerplant instruments. He will be able to install, adjust, and calibrate these instruments within the scope of field maintenance in accordance with FAA and manufacturers recommendations. Lecture 4 hours. Laboratory 2 hours.

114-5 Aircraft Weight and Balance. The student will fully understand and solve problems of aircraft weight and balance. He will be able to perform weighing, computation of C.G. and establishing of equipment list. He will be able to select and use FAA technical and legal publications in order to safely perform the duties of an aircraft technician. Lecture 5 hours. Laboratory 2 hours.

201-4 Applied Science. A general coverage of applied science and the physical principles of sound, fluid and heat dynamics. Identification of proper use of aircraft drawing symbols and schematic diagrams. Sketches of FAA major repairs and alterations to aircraft. Use of aircraft blueprints, graphs, charts and tables as applied to aircraft performance and engine power requirements. Lecture 4 hours.

202-4 Aircraft Electrical Systems. The student will have a knowledge of the operation, repair, inspection and service of aircraft electrical systems and components. Using schematic diagrams, he will determine the operation and troubleshoot AC and DC electrical systems, position, and warning systems. Lecture 3 hours. Laboratory 4 hours. Prerequisite: 112.

203-5 Aerodynamics. The student will have a knowledge of flight theory and factors affecting aircraft in flight. He will explain and compare aircraft design features in subsonic, transonic, and supersonic aircraft. He will be able to assemble and rig various aircraft control systems, analyzing and correcting faculty flight characteristics. Lecture 3 hours. Laboratory 4 hours.

204-4 Hydraulics (Aircraft). The student will have a knowledge of fluid theory and applied physics which relates to aircraft hydraulics. He will know the theory of operation, maintenance requirements, and adjustments of various hydraulic components and systems. He will be able to test, inspect, troubleshoot, and service hydraulic systems and overhaul malfunctioning components in accordance with FAA and manufacturers specifications. Lecture 3 hours. Laboratory 4 hours.

205-3 Cabin Environmental Systems. The student will understand the atmospheric variables at different altitudes and the basic equipment required to cope with these variables. He will be able to operate, identify, adjust and locate common causes of malfunction in the cabin pressurization and air conditioning systems. Lecture 3 hours. Laboratory 2 hours.

206-5 Metal and Processing. The student will be able to make appropriate sheet metal repairs using correct repair procedures, tools, and materials. He will be required to demonstrate correct use and interpretation of structural repair diagrams and correct interpretation of charts and tables from AC 43.13-1 pertaining to materials and methods. Lecture 3 hours. Laboratory 6 hours.

207-2 Aircraft Inspection. The student will be able to perform a 100 hour annual inspection of an aircraft. He will demonstrate his knowledge of FAR's by checking appropriate AD's, classifying repairs, and pinpointing specific service problems. He will also complete the required maintenance forms, rec-

ords, and inspection reports required by federal regulations. Lecture 1 hour. Laboratory 9 hours.

210-4 Aircraft Ignition. The student will understand the basic knowledge of electricity generation. He will be able to identify and understand components for reciprocating and jet powerplant ignition systems and reciprocating starting systems. He will be able to time, overhaul, and troubleshoot the various components of each system. Lecture 3 hours. Laboratory 6 hours.

211-5 Reciprocating Powerplant. The student will have a knowledge of construction, operation, and timing mechanisms associated with aircraft reciprocating powerplants. He will be able to disassemble, clean, measure, inspect, and reassemble a powerplant to airworthy condition in accordance with appropriate FAA and manufacturers regulations and practices. Lecture 3 hours. Laboratory 9 hours.

212-5 Carburetion and Lubrication. The student will be able to demonstrate his competence in identifying fuel and oil system components and carburetors, understanding the operating principles of each. He will be able to inspect, adjust, troubleshoot, and overhaul these components according to manufacturers and federal regulations. He will be able to identify the grades of aviation fuels and lubricants and understand the characteristics and uses for each. Lecture 3 hours. Laboratory 6 hours.

214-4 Propellers. The students will have a knowledge of the physical laws and design characteristics governing propeller operation. He will be able to identify components, troubleshoot, and adjust fixed and variable pitch propellers. He will maintain fixed pitch propellers, and the governor system for variable pitch propellers in accordance with FAA and manufacturers standards. Lecture 3 hours. Laboratory 4 hours.

215-4 Powerplant Testing. The student will have an understanding of the correct procedures and precautions to be observed during engine installation, ground operation, and fuel and oil servicing. He will be required to inspect and troubleshoot reciprocating and jet engines for airworthy condition and interpret engine instrument readings to diagnose engine malfunctions. Lecture 3 hours. Laboratory 9 hours.

216-6 Jet Propulsion Powerplant. The student will be able to apply and understand Physics Laws related to Jet powerplants. He will be able to identify and understand the operation of jet engine components; apply knowledge in troubleshooting and adjustments; and learn the techniques of inspection repair, and overhaul of turbo-jet powerplants. Lecture 5 hours. Laboratory 6 hours.

220-4 Jet Transport Systems and FF DO. The student will have knowledge of the maintenance troubleshooting and parts information available to them as an airline mechanic. Using the available information and mockups, he will understand the operation of and identify the components of flight control systems, landing gear systems, PAC systems, anti-ice system, fuel systems, and fire detection systems. He will have knowledge of procedures for aircraft ground handling, APU operation and system servicing. Lecture 3 hours. Laboratory 2 hours.

Avionics Technology

Program, Major, Courses

Avionics, or aircraft electronics, is a rapidly growing field requiring highly skilled technicians for work in the development, installation, and maintenance of the sophisticated avionics systems required for effective utilization of modern day aircraft by the aviation industry.

The avionics technician finds opportunities for employment with the airline industry, general aviation and in aircraft manufacturing, where you will install, maintain, test and repair airborne communications and navigation systems, airborne radar systems, and related equipment.

The avionics technology program combines resources of programs in electronics and aviation technologies. As a rule, the student will be enrolled for the first three quarters in electronics courses, offered on the School of Technical Careers Campus, and for the final four quarters in courses offered in the facilities of aviation technology at the Southern Illinois Airport.

All instruction is programmed in a balanced combination of classroom lecture and actual hands on laboratory experiences under the supervision of instructors who have extensive experience and expertise in their respective fields.

The student will have courses in basic direct current, alternating current, electrical power systems, airborne auxiliary power systems, electrical generation and distribution, load transfer, solid state devices, aircraft communications and navigation systems, aircraft radar systems, aircraft flight control and instrumentation systems, aircraft integrated flight systems, UHF transmitters, receivers, and transceiver (including single sideband principles), pulse and microwave systems (including Doppler and inertial navigation systems), antenna types, wave propagation and transmission lines, and Federal Aviation Administration and Federal Communication Commission regulations.

Enrollment in the program is limited, so the prospective student should plan to make application well in advance of the quarter in which he plans to begin his studies.

In addition to regular University tuition and fees, the student is required to purchase his own basic electronics tool kits and volt-ohm multi-meter at an approximate cost of \$125.

A minimum of 105 hours credit is required for this major.

Associate In Applied Science Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Avionics Technology

GSB 202	4
GSD 101, 102, 153	9
Mathematics 111a	5
Vocational and Technical Careers 232	4
Avionics Technology 251, 252, 253, 254, 255, 256, 259, 260	33
Electronics Technology 101a,b,c, 125a,b,c, 127, 129, 201d, 255d ...	42
<i>Electives</i> *	8
To be chosen from among Avionics Technology 257, 258, 301, 302, 303	
<hr/> <i>Total</i>	<hr/> 105

* To meet standards for the industry as recommended by the Federal Aviation Administration, the student should take all 21 hours of electives available.

251-4 Aircraft Communication and Navigation Systems Theory. VHF transmitters, receivers, selcal and transceiver circuits. H. F. transmitters, receivers, transceiver circuits, and single sideband principles. Emergency locator transmitters, including UHF circuits. Passenger address, crew intercom systems. Antenna types, wave propagation, and transmission lines. L. F. and M. F. navigation receivers. VHF VOR navigation receivers. Instrument landing systems, glide slope, localizer and marker beacon. Magnetic compass system, directional gyros, principles of gyro operation. Principles of inertial navigation systems. Lecture 4 hours. Must be taken concurrently with 252.

252-5 Avionics Laboratory I. Laboratory work includes study and operation of communications and navigation equipment, trouble shooting, repair and use of specialized test equipment, and technical publications. Laboratory 12 hours. Must be taken concurrently with 251.

253-3 Aircraft Integrated Flight Systems Theory. Flux gate compass and transmitter, amplifiers and repeaters, polar path compass, RMI repeater, gyrosyn directional indicator, system schematic, flight director computer, and various integrated systems such as Sperry, Bendix, Collins, and Kollsman. Lecture 3 hours. Must be taken concurrently with 254.

254-4 Avionics Laboratory II. Laboratory work includes study and operation

of aircraft integrated flight systems, maintenance, troubleshooting, and calibration. Use of specialized test equipment and technical publications. Laboratory 8 hours. Must be taken concurrently with 253.

255-4 Aircraft Flight Control and Instrumentation Systems Theory. Resolvers, attitude and rate gyros, yaw damper, automatic trim stabilizers and automatic pilot principles as pertain to Lear, Federal, Factair, Mitchell, Sperry, Bendix, and Collins autopilots. Automatic stabilization systems for small aircraft. Lecture 4 hours. Must be taken concurrently with 256.

256-6 Avionics Laboratory III. Laboratory work includes study and operation of aircraft flight control and instrumentation systems. Trouble shooting, calibration, repair, and use of specialized test equipment and manufacturers' technical publications. Laboratory 6 hours. Must be taken concurrently with 255.

257-4 Specialized Test Equipment Calibration and Repair Theory. ADF test set, VOR, ILS test set, navigation test set, HF transceiver function test box, single side band bench test set, antenna simulator, coupler control test set, electrical dummy load, DME bench test set, transponder test set, signal generators, instrument zeroing panel, synchro simulator, flight control test set, auto pilot test set, airborne radar test set. Lecture 4 hours. Must be taken concurrently with 258.

258-8 Avionics Laboratory IV. Laboratory work includes study and operation of specialized test equipment, trouble shooting, calibration and repair, use of manufacturers' maintenance manuals and technical publications. Laboratory 8 hours. Must be taken concurrently with 257.

259-5 Aircraft Radar Systems Theory. Weather radar, antennas, wave guides, transmit-receive units, and Doppler radar systems. Radio and radar altimeter systems. Distance measuring equipment. ATC transponders. Pulse characteristics and echo suppression. Lecture 5 hours. Must be taken concurrently with 260.

260-12 Avionics Laboratory V. Laboratory work includes study and operation of airborne radar systems, trouble shooting, calibration, repair, use of specialized test equipment, and manufacturers' maintenance manuals and technical publications. Laboratory 12 hours. Must be taken concurrently with 259.

301-5 Aircraft Electrical Power Distribution Theory. Generation and distribution systems, batteries and battery charging systems, A. C. and D. C. generators, motors, and starter-generator combinations. Protective devices, warning systems, load transfer, and fault clearing. Airborne auxiliary power units. Ground power units. Lecture 5 hours. Must be taken concurrently with 302.

302-10 Avionics Laboratory VI. Laboratory work will include load analysis, trouble shooting and repair, experiments in electrical load management and distribution. Protective devices and limiters. Use of manufacturers, maintenance manuals and technical publications. Laboratory 10 hours. Must be taken concurrently with 301.

303-3 FAR and FCC Regulations. FAR 1, definitions and abbreviations. FAR 43, aircraft inspection and repair. FAR 65, certification, airmen other than flight crew members. FAR 91, general operating and flight rules. FAR 145, repair stations. Pertinent advisory circulars. FCC operator's licenses, aircraft station licenses, aeronautical ground station licenses. Lecture 3 hours.

Biological Sciences

Major

The course of study is designed to give the student a broad, yet intensive, education in the biological sciences preparatory for various professions, especially the teaching of biology at the secondary level. This work may be taken in either the College of Science or the College of Education. The science requirement for this major is the same in both colleges.

The biological sciences curriculum consists of courses selected from General Studies Area A and the Departments of Botany, Microbiology, Physiology, and Zoology. A student selecting biological sciences as his major does not need to take a minor. Core courses required in the biological sciences are Biology 305, 306, 307, and 308. In addition, work in chemistry and mathematics is required. Students should consult with their adviser for additional information.

Bachelor of Arts Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Biological Sciences</i>	60
GSA 115a,b	(8)
GSA 209	4
Biology 305, 306, 307, 308	16
Botany 300, 301	9
Microbiology 301, 302	10
Zoology 317a,b	10
Biological Sciences electives at 400 level	11
<i>Electives</i>	58 *
<i>Total</i>	186

Minors in mathematics and the physical sciences are recommended.

* Students in the College of Science must complete the supplementary two-year college requirement in FL/Mathematics by taking one year of foreign language and two years of mathematics or two years of foreign language and one year of mathematics. GSC foreign language does not count as a part of the GSC requirement for students in the College of Science.

Students in the College of Education should take GSB 202 as a part of the General Studies requirements. Refer to the section of this bulletin titled secondary education for courses which must be taken to receive the Bachelor of Science degree in the College of Education.

Minor

A minor in biological sciences consists of a minimum of 36 hours and may be taken in the College of Education, the College of Liberal Arts, or the College of Science. It must include Biology 305, 306, 307, 308 (16 hours), plus 20 hours of the following courses: GSA 209, 303, 312, 313, Botany 300, 301, Microbiology 301, 302, Physiology 460a,b, or c, and Zoology 317a,b. Attention is called to the fact that Chemistry 122a,b is a necessary prerequisite to some of these biology courses.

Biology*Courses*

305-4 Genetics-Classical and Molecular. Broad principles of genetics, including Mendelism, chromosomal behavior, genetic mapping and mutation, allelism, genes and development, polygenic systems, inbreeding and outbreeding, and genetic applications. Prerequisite: GSA 115b, or advanced standing in biology.

306-4 Developmental Biology. Basic principles including cell concepts, reproduction from the macromolecular to the cellular level, transmission of developmental information, evolutionary compensation phenomena, and aging. Prerequisite: GSA 115b, or advanced standing in biology.

307-4 Environmental Biology. Broad principles of ecology on the organismic level, the population level, and the community level. Includes environmental factors, adaptations, energy and material balance, succession, and human ecology. Prerequisite: GSA 115b, or advanced standing in biology.

308-4 Organismic Biology. Structural and functional organization of organisms including reproduction, biological clocks, hormones, and transport, respiratory, skeletal, and secretory systems. Prerequisite: GSA 115b, or advanced standing in biology.

401-4 Ecology. Course designed to present principles and methods of present-day ecology.

Black American Studies*Minor, Courses*

Any student wishing to plan a program with a special major in Black

American Studies must contact the academic counselor in the department in order to plan and receive approval for a program.

A general minor in Black American Studies consists of a minimum of 30 hours, 15 hours to be selected from the following courses: GSB 109, 325; GSC 325, 371; English 417; Government 425; History 309, 349a,b,c; Philosophy 345; Rehabilitation 417; Sociology 452. Additional courses to complete the minimum of 30 hours total may be elected from the following courses: GSC 371; GSC 250d,e,f; Anthropology 275, 313a, 483; Educational Administration and Foundations 360; Government 321, 391; History 309a,b, 401a,b,c, 449a,b; Philosophy 345, Rehabilitation 417; Sociology 335, 452, 396. For the readings courses in the preceding list, the specific topic should be approved by the Black American Studies program.

A student wishing to use a minor in Black American Studies as part of a teacher education program should select from the lists of courses below. For this purpose a minor shall consist of 30 to 36 hours, with a minimum of 20 hours from list A and the remaining hours from the courses in list A or B.

List A: GSB 109, 325; GSC 325; Child and Family 408; Educational Administration and Foundations 360; Government 425; History 309, Psychology 495; Rehabilitation 417; Sociology 396.

List B: Anthropology 275, 483; English 417; Government 321, 391; History 349, 410; Music 482; Philosophy 345; Sociology 335.

Courses

200-1 Black American Studies Choir. Designed for students who wish to actively participate in a choral group devoted to Black American music, past and present. Prerequisite: consent of instructor.

309-3 Introduction to Black Studies. Survey including an interdisciplinary and Pan-African orientation. Prerequisite: GSB 102 and 109.

318-2 to 12. Seminar in Black Studies. Analysis of "The Black Experience" directed toward practical contributions in the area studied. Prerequisite: GSB 109, or GSC 325, or consent of instructor.

320-2 to 6 Seminar in Group Leadership. Advanced analysis and exercises in problems of articulating "The Black Experience." Designed for learning group leaders. Prerequisite: GSB 109 or consent of instructor.

322-4 Methods of Black Studies. Theories and operations of current Black American studies programs. Develops a continuing approach to the methodological problems of Black studies programs. Prerequisite: GSB 109 or consent of instructor.

340-4 Blacks in the Performing Arts. Dance companies, ballet, folk dance, and black dramatists; cinema, in all its forms; radio and television; and music (spirituals, jazz, opera, classics.) Prerequisite: GSC 325, History 309 and 349, or consent of department.

360-4 Black Americans and The Law. Criminal deviancy and its consequences among Blacks and other American minorities. Includes social history, immigration to America, and life conditions here. Prerequisite: 309, GSB 109, or consent of department.

409-8 (4,4) Black American Social Problems. Comparative study of the social problems which afflict black Americans and their consequences, including crime and delinquency, mental and emotional disorders, drug addiction, housing conditions, poverty and unemployment, and labor conditions. Must be taken in a,b sequence. Prerequisite: consent of instructor.

Botany

Department, Major, Courses

Botany is a broad science that includes many specialties. For example, a person who has a quantitative turn of mind and enjoys mathematics or chemistry might find genetics or biochemistry exciting, whereas a person

who has always enjoyed outdoor activity might be attracted to systematic botany or ecology. Plant morphology might appeal to a person who enjoys observation and interpretation, but plant physiology might have more appeal for a person who prefers experimentation. The exact courses that should be selected by a student who wishes to prepare for a career in botany or for graduate study will vary somewhat depending on the area of plant science in which he intends to specialize. As a general rule, a student who intends to apply for admission to a graduate school to study for an advanced degree in botany should include the following in his undergraduate program: inorganic and organic chemistry, mathematics through calculus, a modern European language, and as many botany and biology courses as time and scheduling will permit. Core courses required for major in botany are Biology 305, 306, 307, and 308. Students planning to major in botany should consult with the chairman of the department.

An honors program is available to those juniors and seniors in Botany who have an overall grade point average of 4.00 or better and an average in Botany courses of 4.25 or better. The honors student should enroll in Botany 392 during some quarters of both his junior and senior year for a total of no fewer than nine hours and no more than 21 hours.

Bachelor of Arts Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i>	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	21-25
1 year Mathematics	(5) + 3 to 5
GSC Foreign Language	9 *
2nd year Mathematics or Foreign Language 201a,b,c	9 to 11
<i>Requirements for Major in Botany</i>	60
GSA 115-8 (4 hours credited toward major)	(8)
GSA 303	3
Biology 305, 306, 307, 308	16
Botany 300-4, 301-5, 320-5, 335-2, 337-2, 338-2	20
Botany electives to complete 48 hours	6
Chemistry 122a,b and 123a,b-10, 305-5	15
<i>Electives</i>	<u>33-37</u>
<i>Total</i>	186

* GSC foreign language does not satisfy GSC requirements in the College of Science.

Bachelor of Science Degree, COLLEGE OF EDUCATION

If the degree is to be in the College of Education, the student must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for a major are the same in both colleges.

Minor

A minor in botany consists of a minimum of 24 hours, including GSA 115-8 (which contributes only 4 hours) and excluding Botany 390 and 391.

Courses

300-4 Morphology of Non-Vascular Plants. Introduction to the structure, development, and relationships of the algae, fungi, and bryophytes. Prerequisite: GSA 115b.

301-5 Morphology of Vascular Plants. Introduction to the structure, development, and relationships of the fern-allies, ferns, gymnosperms, and angiosperms. 3 lectures, 2 laboratories. Prerequisite: GSA 115b.

GSA 303-3 Ferns, Trees, and Wild Flowers: The Pleasure of Recognition.

308-5 Taxonomy of Cultivated Plants. A study of the classification of woody and herbaceous cultivated plants, both exotic and native. Prerequisite: consent of instructor.

320-5 Elements of Plant Physiology. A study of the functions of plants and their relation to the various organs. Three lecture and 4 laboratory hours per week. Prerequisite: GSA 115b, Chemistry 305, or a minor in chemistry.

321-3 to 5 Elementary Botanical Microtechnique. Methods of preservation and preparation of plant materials for examination by the light microscope. One lecture and 4 laboratory hours per week. Prerequisite: GSA 115b.

335-2 Genetic Methods. Study of selected organisms and techniques illustrating genetic principles. Two 2-hour laboratories per week. Prerequisite: Biology 305 or equivalent.

337-2 Ecology Laboratory. Four hours of laboratory per week to complement Biology 307. Techniques and principles of measuring environmental factors, plant-environment interactions, and vegetation structure. Prerequisite: Biology 307 or consent of instructor.

338-2 Organismic Laboratory. Four hours laboratory per week. Concurrent or subsequent enrollment in Biology 308.

GSA 340-3 Ecology.

390-2 to 4 Readings in Botany. A course of individually assigned readings in classical botanical literature; both oral and written reports required; open only to undergraduate students. Prerequisites: concentration in botany, consent of instructor. Elective Pass/Fail.

391-2 to 5 Special Problems in Botany. Individual laboratory or field work under supervised direction. Both written and oral discussions required. Prerequisite: concentration in botany, consent of department or division. Elective Pass/Fail.

392-3 to 21 Honors in Botany. Individual research problems available to qualified juniors and seniors. Prerequisite: consent of department.

400-5 Plant Anatomy. An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Cost \$5. Prerequisites: 301 or consent of instructor.

404-5 The Algae. Structure, development, and relationships of the algae. Laboratory and some field work. Prerequisite: 300.

405-5 Mycology. Structure, development, and relationships of the fungi. Problems of economic and scientific interest stressed. Laboratory. Prerequisite: 300.

406-5 Industrial Mycology. A consideration of the myriad ways in which fungi impinge on man's affairs, with special emphasis upon their various industrial application—real and potential. Three-lectures and 4 laboratory hours per week. Prerequisite: 405 or consent of instructor.

410-4 The Taxonomy and Ecology of Bryophytes and Lichens. Floristic studies of the moss, liverwort, and lichen communities of Southern Illinois. Prerequisite: consent of instructor.

411-4 The Bryophytes and Pteridophytes. Structure, development, and relationships of the liverworts and mosses, and the ferns and fern allies. Laboratory. Prerequisite: 301.

412-4 The Spermatophytes. Structure, development, and relationships of the gymnosperm and angiosperm. Laboratory. Prerequisite: 301, GSA 303.

414-5 Paleobotany. (Same as Geology 414). An introduction to the study of fossil plants emphasizing the major features of plant evolution and the applications of paleobotany to problems in the botanical and geological sciences. Lecture, laboratory, and field trips. Student cost about \$5. Prerequisite: 301 or Geology 221.

420-4 Physiology of Fungi. A treatment of the physiological activities of fungi with particular stress upon (1) those aspects peculiar to the group by virtue of their being non chlorophyllous plants, and (2) exploration of the possible explanations of the parasitic vs. the saprophytic habit. Prerequisite: consent of instructor.

425-15 (5,5,5) Advanced Plant Physiology. (a) Physics of the plant, water relations, membrane phenomena, photobiology. (b) Chemistry of the plant; anabolic and catabolic processes, photosyntheses, respiration, chemosynthesis. (c) Covers the absorption, translocation, function and interaction of inorganic nutrient elements in green plants with application to forest, agronomic, and horticultural species. Prerequisites: 320, Chemistry 305, or a minor in chemistry.

428-3 Plant Nutrition. The physiological importance of carbon, nitrogen, and

- phosphorus-containing compounds is stressed. Prerequisites: organic chemistry, minor in botany or agriculture.
- 440-14 (4,5,5) Advanced Ecology.** (a) Management and ecology of grasses and grasslands. (b) Physiology and autecology of forest species. (c) Sampling methods and community analysis. Prerequisite: Biology 307, or consent of department.
- 441-4 Field Studies of the Lower Plants.** Field course designed to learn the names of the macroscopic algae, fungi, lichens, and bryophytes in southern Illinois. Emphasis on distinguishing characteristics and economic importance.
- 442-4 Field Studies of the Higher Plants.** Field course designed to learn the names of ferns, trees, and wildflowers in southern Illinois. Emphasis on distinguishing characteristics and economic importance.
- 446-12 Tropical Ecology.** Three weeks of marine ecology on the atolls and extensive barrier reef near Belize, British Honduras, and three weeks of terrestrial ecology at several locations inland. Prerequisite: advanced undergraduate or graduate standing in one of the biological sciences.
- 447a-4 to 12 Botanical Field Studies in Latin America.** Four to eight weeks long. Acquaints students with plants in various environments of Latin America and with methods of field study, collection, and preservation. Cost per individual will be determined by type of study and location. Prerequisite: advanced undergraduate or graduate standing in one of the biological sciences and consent of instructor.
- 447b-4 to 12 Botanical Field Studies in the Rocky Mountains.** Acquaints students with plants in various environments of the Rocky Mountain region and with methods of field study, collection, and preservation. Cost per individual approximately \$250, which includes room and board at the Yellowstone Bear-tooth Camp near Red Lodge, Montana. Prerequisite: advanced standing in one of the biological sciences and consent of instructor.
- 449-3 Elements of Taxonomy.** Principles of taxonomy including historical sketch, phyletic concepts, biosystematics, classical and experimental methods. Lecture. Laboratory. Prerequisite: GSA 303 or equivalent, or consent of the instructor.
- 450-3 Plant Geography.** World distribution of plants related to environmental, floristic, and historical factors. Prerequisites: consent of instructor.
- 456-5 Plant Pathology.** (Same as Plant Industries 455.) A study of plant diseases caused by fungi, bacteria, and viruses. Special attention given diseases of southern Illinois plants. Laboratory and field trips. Lab charge. Prerequisite: consent of instructor. Elective Pass/Fail.
- 457-4 Forest Pathology.** Nature and control of forest and shade tree diseases. A study of tree diseases in forests, parks, streets, and nurseries. Fungi important in decay and stain of timber and its products are included. Lab charge. Prerequisite: consent of instructor or 456. Elective Pass/Fail.
- 470-4 Methods of Teaching High School Biology.** Methods, objectives, types of courses taught in secondary school biology. Laboratory and field trips. Prerequisite: major in botany or zoology.
- 484-4 Palynology.** (See Geology 484)
- 490-6 (4,2) Photographic Methods in Scientific and Biological Photography.** (a) Black and White. (b) Color. Specimen photography, photomicrography, macrophotography, infrared and ultraviolet photography. Slides for presentation, materials and methods used in scientific publications. Prerequisite: consent of instructor. No auditing permitted.
- 500-5 Biosystematic Plant Anatomy.**
- 503-20 (5,5,5,5) Advanced Angiosperm Taxonomy.**
- 522-5 Advanced Microtechnique.**
- 524-3 Advanced Plant Genetics.**
- 525-5 Cytology.**
- 526-5 Cytogenetics.**
- 533-3 to 4 Growth and Development in Plants.**
- 535-3 Energetics of Aquatic Ecosystem.**
- 542-3 Biosystematics.**
- 543-5 Experimental Ecology.**
- 551-4 The Natural Vegetation of the Mississippi Basin, Upland.**
- 552-4 Mississippi Flora, Aquatic.**
- 555-12 (4,4,4) Advanced Plant Pathology.**
- 570-2 to 5 Readings.**
- 580A-1 to 3 Seminar.**
- 580B-2 Plant Ecology Seminar.**

- 581-4 Advanced Systematics.
- 584-3 Palynology.
- 590-2 to 4 Introduction to Research.
- 591-3 to 9 Research.
- 599-3 to 9 Thesis.
- 600-1 to 36 Dissertation.

Business Administration

Major (Graduate only), Courses

- 500-4 Research Methods and Communications.
- 501-4 Quantitative Methods for Decision Making.
- 502-4 Business and Society.
- 510-4 Managerial Accounting and Control.
- 511-4 Accounting Theory.
- 512-4 Advanced Auditing.
- 513-4 CPA and Advanced Accounting Problems.
- 514-4 Controllership.
- 519-4 Seminar in Accounting.
- 521-4 Business Conditions Analysis.
- 526-4 Managerial Economics.
- 530-4 Financial Management.
- 531-4 Financial Policies.
- 532-4 Financial Institutions and Markets.
- 533-4 Investment Concepts.
- 539-4 Seminar in Finance.
- 540-4 Managerial and Organization Behavior.
- 541-4 Operations Analysis and System Controls.
- 542-4 History and Theory of Management.
- 543-4 Personnel Management.
- 544-4 Production Management.
- 549-4 Seminar in Management.
- 550-4 Marketing Management.
- 551-4 Product Strategy and Management.
- 552-4 Advanced Marketing Analysis.
- 553-4 Logistics Management.
- 554-4 Marketing Theory.
- 555-4 Consumer Behavior.
- 559-4 Seminar in Marketing.
- 580-4 International Business Operation.
- 590-4 Independent Study.
- 598-4 Business Policies.
- 599-4 to 8 Thesis.

Business Teacher Education

Major

(See also Secretarial and Business Education.)

The Department of Secretarial and Business Education offers a business teacher education major to prepare business teachers for work in high schools, community colleges and other institutions in which business subjects are taught.

Students who prepare to teach business subjects also become qualified for work in business and industry, particularly in secretarial, accounting, marketing, and management positions. Upon graduation business teacher education majors have job opportunities in two areas: (1) working as teachers, supervisors, or administrators in educational institutions; and (2) working as secretaries, accountants, office managers and in other positions in business and industry.

Bachelor of Science Degree, COLLEGE OF EDUCATION

General Studies Requirements

Requirements for Major in Business Teacher Education 51-66

Core Requirements:

Accounting 251a

Administrative Sciences 170 or 340 or Finance 305

Economics 214 or GSB 211

Marketing 301

Secretarial 201b, 317

Preparation to Teach in four (preferably five) of the Following Areas

Typewriting—Secretarial 241, 243, 304, 351

Since typewriting is the most popular business subject taught in the high school and is a part of the teaching assignment of almost all business teachers, it is highly recommended that business teacher education majors elect Area 1, Typewriting, as one of their four or five teaching areas. Those students who do not elect Area 1 may be delayed in getting a student teaching assignment because the number of business teachers in Southern Illinois who do not teach typewriting is limited.

Shorthand and Transcription—Secretarial 221c, 324a, 352

Bookkeeping, Accounting, and Record Keeping—Accounting 251b; Secretarial 355

General (Basic) Business and Consumer Education—Four of the following courses in addition to the courses taken in fulfilling the requirements of any other part of the program: Administrative Sciences 170, 340; Economics 215, Finance 305, 370; Family Economics and Management 340, 341; Secretarial 353, 410 (Secretarial 353 or 410 is required as one of the four courses. Only one of these two courses may be taken for credit.)

Office Practice and Machines—Courses required for Area 1, Typewriting; Administrative Sciences 302; Secretarial 326, 341, 354

Business Law—(To be selected as a fifth or sixth area only.) Finance 271, 370

Distributive Education—Three of the following courses in addition to Marketing 301: Marketing 363, 390, 401; Secretarial 409 (Secretarial 409 is required as one of the three courses.)

Data Processing—Secretarial 243, 412; Electronic Data Processing 101; Electronic Data Processing 201a, or Computer Science 202, or Engineering 222, or Accounting 315

Professional Education 45-48

Guidance 305 4

Secondary Education 310 4

Secondary Education 352 16

Two of the following: 8

 Guidance 422

 Educational Administration and Foundations 355

 Instructional Materials 417

 Secondary Education 312, 495

Four of the following: 13 or 16

 Secretarial and Business Education 351, 352, 353, 354, 355, 409, 410

Electives 4-22

Total 186

To become a vocational teacher or coordinator in a reimbursable voca-

tional program in Distributive Education or Office Occupations, a minimum of two of the following courses is recommended: Secretarial 414a-3; 414b-3; 415-6; 485-3; 525-4.

The city of Chicago has requirements that differ somewhat from those established by the Department of Secretarial and Business Education, Southern Illinois University at Carbondale, and the State of Illinois. Copies of these requirements may be obtained from the Department of Secretarial and Business Education.

All students transferring into the undergraduate business teacher education program are required to take a minimum of 24 hours of work in School of Business subjects; a minimum of 16 of these hours must be in courses offered by the Department of Secretarial and Business Education.

Minor

A minor in business-teacher education consists of a minimum of 30 hours in business.

Minors are planned for each student individually by the student and his adviser. This procedure is necessary because students' backgrounds and needs vary greatly.

Chemistry and Biochemistry

Department, Major (Chemistry), Courses

The Department of Chemistry and Biochemistry offers three degree programs with a major in chemistry. The first is the Bachelor of Arts degree. This program is recommended to students who wish to complete a major in chemistry, but who plan to eventually go into other professional areas such as medicine, dentistry, business.

The second is the Bachelor of Science degree. This degree is for those who wish to prepare for graduate study in chemistry or who will become professional chemists. This degree requires more mathematics and more chemistry than the Bachelor of Arts degree. By taking four additional advanced courses in chemistry; the student may be certified by the American Chemical Society.

The third program of study leads to the Bachelor of Science degree in education. This degree program is administered by the College of Education. It is provided for those who wish to become secondary school chemistry teachers.

Candidates for degrees are required to have a 3.00 grade point average in chemistry courses at the start of the second year of the major and a 3.25 grade point average in chemistry courses, and/or consent of the chairman, before starting the third and fourth years.

A knowledge of German is recommended for all majors in chemistry, and required for those students working for ACS certification.

Students taking a laboratory course will be required to purchase a notebook or a laboratory exercise book costing from \$1.50 to \$6.00.

Bachelor of Arts Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i>	51
GSA (in field or fields other than chemistry or physics)	4
GSB	16
GSC *	16
GSD (English Composition and Speech)	9
GSE	6

<i>Supplementary College Two-Year Requirement in FL/Mathematics</i>	29
GSC-FL (German, French or Russian)	9 *
Mathematics 111-10, 150-10	20
<i>Requirements for Major in Chemistry</i>	54-69
Chemistry 122-9, 123-7, 342-9 and 343-9 or 305-15, 432a-4, 461-12 or 460-5, plus additional 300 or 400 level courses to equal 42 hours	42-50
Mathematics recommendation 252a,b (These are prerequi- sites for Chemistry 461)	0-7
Physics 111-9 and 112-3 or 206-9 and 207-3 or 211-9 and 212-3	12
<i>Electives</i>	37-52
<i>Total</i>	186

Bachelor of Science Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i>	51
GSA (in field or fields other than chemistry or physics)	4
GSB	16
GSC *	16
GSD (English Composition and Speech)	9
GSE	6
<i>Supplementary College Two-Year Requirement in FL/Mathematics</i>	29
GSC FL (German) *	9
Mathematics 111-10, 150-10	20
<i>Requirements for Major in Chemistry</i>	79
Chemistry 122-9, 123-7, 342-9, 343-9, 432a-4, 446 or 450-4, 461-12	54
Mathematics 252-7, 305-6	13
Physics 111-9 and 112-3 or 206-9 and 207-3 or 211-9 and 212-3	12
<i>Electives</i>	27
<i>Total</i>	186

* GSC Foreign Languages does not satisfy GSC requirements for a major in the College of Science.

American Chemical Society Certification

A student who completes the requirements for the Bachelor of Science degree and completes Chemistry 461a,b,c his Junior year, takes Chemistry 411 and two courses from the following list: 412, 432b, 433, 455, 496, 451 and 464, one of which must be picked from the first five in the list will qualify for A.C.S. Certification.

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i>	55
GSA 115a,b	8
GSB (must include 202-4)	16
GSC	16
GSD (English Compositions-6 and Speech-3)	9
GSE	6
<i>Requirements for Major in Chemistry</i>	80-96
Chemistry 122-9, 123-7, 342-9 and 343-9 or 305-15,	

461-12 or 460-5 plus courses selected from 375, 411, 412, 416, 432, 433, 446, 450 or 451 and 455, 464, 490 and 496 to total 48 hours	48
Mathematics 111-10, 150-10 required. 252a,b recommended (Prerequisite to Chemistry 461)	20-27
Physics 111-9 and 112-3 or 206-9 and 207-3 or 211-9 and 212-3	12
Modern Foreign Languages Recommended	0-9
<i>Professional Education Requirements</i>	36
Refer to catalog section headed Secondary Education	
<i>Electives</i>	0-16
<i>Total</i>	186-187

Minor

A minor in chemistry consists of a minimum of 27 hours of chemistry courses.

Courses

110-4 General and Inorganic Chemistry. A brief introduction to the structure of the atom and chemical bonding; acids, bases, salts, and pH; and a study of the properties and reactions of some of the more common elements. Three lecture and 3 laboratory hours per week. Not applicable to a major or to a minor in chemistry. No prerequisite.

115-5 Introductory General Chemistry. Equivalent to a year of high school chemistry. For students who have had less than a year of high school chemistry and who require a year or more of college chemistry. May be audited by students who have had a year or more of high school chemistry. Three lectures, four laboratory hours, and one recitation per week.

122-9 (3,3,3) Introduction to Chemical Principles. For students majoring in scientific, pre-professional or technological areas. Three hours lecture, one hour help session per week. (a) Atomic structure, molecular structure and bonding, stoichiometry, properties of gases, liquids, and solids. (b) Elementary thermodynamics and kinetics, chemical equilibria, pH, electrochemistry. (c) Methods of quantitative analysis. Must be taken in a,b,c sequence. Corequisite: the corresponding quarter of 123.

123-7 (2,2,3) Introduction to Laboratory Techniques. For students majoring in scientific, pre-professional, or technological areas. (a,b) Introduction to laboratory apparatus and techniques. Three hours laboratory, one hour laboratory lecture per week. (c) Introduction to quantitative techniques. Two three-hour laboratories and one hour laboratory lecture per week. Corequisite: the corresponding quarter of 122.

240-4 Organic Chemistry. A survey course not open to those majoring in chemistry. An introduction to aliphatic and aromatic compounds with emphasis on those of biological importance. Three lecture and 3 laboratory hours per week. Prerequisite: 110 or the equivalent.

305-15 (5,5,5) Organic Chemistry, Preprofessional. For minor in chemistry and preprofessional students. Three lectures and one laboratory lecture per week. (a) Three laboratory hours per week. (b,c) Six laboratory hours per week. Must be taken a,b,c sequence. Prerequisite: 122b and 123b.

342-9 (3,3,3) Organic Chemistry. (a,b) Lecture in organic chemistry. (c) Lecture dealing with the chemistry of compounds of biological significance. Must be taken in a,b,c sequence. Corequisite or prerequisite: corresponding quarters of 343 and 122c, 123c.

343-9 (3,3,3) Laboratory Techniques. Two three-hour laboratories and a one hour laboratory lecture per week. Synthesis and structural identification of inorganic and organic compounds. Must be taken in a,b,c sequence. Corequisite: corresponding quarters of 342 and 122c, 123c.

350-4 Biological Chemistry. A brief introduction to metabolism, nutrition, and the chemistry of the important biological processes in plants and animals. Three lecture and 3 laboratory hours per week. Prerequisite: 240 or consent of instructor.

375-0 to 2 Undergraduate Seminar. For juniors and seniors with a major in chemistry.

411-4 Intermediate Inorganic Chemistry. Modern inorganic chemistry involving atomic structure, chemical bonds, complexes, and chelate structures; chemistry of familiar and less familiar elements. Four lecture hours per week. Prerequisite: 461c or 460 with consent of instructor. Elective Pass/Fail.

412-3 Inorganic Preparations. A study of several important inorganic syntheses. One lecture and 6 laboratory hours per week. Prerequisites: 122c, 123c, 305c or 342c and 343c.

416-4 X-Ray Crystallography. Prerequisite: Chem 122b, 123b, 1 yr. college physics and Math 150b. (See Geology 416.)

432-8 (4,4) Instrumental Analytical Measurements. Theory and practice of instrumental analytical measurements, including spectrophotometric, electroanalytical, and chromatographic methods. Two lecture and 6 laboratory hours per week. May be taken in either sequence. Prerequisite: 461b or concurrent enrollment.

433-3 Intermediate Quantitative Analysis. A study of the analysis of complex materials, with emphasis on separations, functional group analysis, and instrumental applications. Two lecture and 3 laboratory hours per week. Prerequisites: 432a or b and 461c.

438-3 Review of Analytical Chemistry. A discussion, in depth of the principles of chemical equilibrium, analytical separations, and common chemical and physical measurements. Three lecture hours per week. Prerequisite: graduate standing and consent of instructor.

446-4 Qualitative Organic Analysis. A systematic study of the separation and identification of organic compounds. Two lecture and 6 laboratory hours per week. Prerequisite: 122c, 123c, 342c, and 343c or consent of instructor.

450-4 Survey of Biochemistry. Function and metabolism of aminoacids, proteins, enzymes, carbohydrates, lipids, and nucleic acids. For preprofessional students, chemistry majors, and others with a one-year course in organic chemistry. Three lecture and three laboratory hours per week. Not offered for graduate credit. Prerequisite: 305c or 342c and 343c. Elective Pass/Fail.

451-9 (3,3,3) Biochemistry. (a) Chemistry and function of amino acids, proteins, and enzymes. (b) Carbohydrate chemistry, function and metabolism; biochemical energetics; citric acid cycle; oxydative phosphorylation. (c) Photosynthesis; lipid chemistry, function and metabolism; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Prerequisite: 122c, 123c, and 305c or 342c and 343c.

455-8 (4,4) Biochemistry Laboratory. Modern biochemical laboratory techniques (a) for isolation, purification, and characterization of constituents of living cells and (b) for investigations of pathways, kinetics, energetics, and regulatory mechanisms related to metabolism and enzymic activity. 1 lecture and 8 laboratory hours per week. Prerequisite: concurrent enrollment in 451b and c.

460-5 Principles of Physical Chemistry. A one-term course in physical chemistry designed especially for non-chemistry majors including prospective teachers of high school chemistry. Three hours of lecture and six hours laboratory per week, one hour of which will be used for special instruction. Prerequisite: 122c, 123c, and 305c or 342c and 343c, Mathematics 150b and one year of physics or consent of department. Elective Pass/Fail.

461-12 (4,4,4) Physical Chemistry. A fundamental course in physical chemistry composed of a sequence of a, b, and c. Three lecture and 3 laboratory hours per week. Prerequisites: 122c and 123c, 12 hours of physics, Mathematics 252b. Must be taken in a,b,c sequence.

464-3 Introduction to Quantum Chemistry. Quantum chemistry as applied to atoms and molecules. Three lecture hours per week. Prerequisite: 461c or consent of instructor. Elective Pass/Fail.

468-4 Elements of Physical Chemistry. Open only to graduate students in chemistry whose diagnostic examinations indicate a need for this course, and to qualified non-chemistry majors. Prerequisites: twelve hours of physics, one year of calculus, and at least one year of chemistry.

471-3 Industrial Chemistry. A survey of modern industrial chemistry and an introduction to chemical research processes. Three lecture hours per week. Prerequisite: 305c or 342c and 343c. Elective Pass/Fail.

472-12 (4,4,4) X-Ray Crystallography. (Same as Engineering 402-12.) (a) Introductory crystallography. (b) X-ray diffraction techniques. (c) Crystal structure analysis. Prerequisite: 461b.

- 490-2 Chemical Literature.** A description of the various sources of chemical information and the techniques for carrying out literature searches. Two lecture hours per week. Prerequisites: 122c, 123c, and 305c or 342c and 343c, reading knowledge of German or consent of instructor. Elective Pass/Fail.
- 496-1 to 12 Chemical Problems.** Investigation of individual problems under the direction of a staff member. Prerequisite: consent of instructor and department chairman.
- 504-3 Mechanisms and Syntheses in Organic Chemistry.**
- 511-9 (3,3,3) Advanced Inorganic Chemistry.**
- 519-2 to 30 (2 to 6 per quarter) Advanced Topics in Inorganic Chemistry.**
- 531-3 Theory of Quantitative Analysis.**
- 532-3 Instrumental Methods of Analysis.**
- 539-2 to 30 (2 to 6 per quarter) Advanced Topics in Analytical Chemistry.**
- 541-3 Advanced Organic Chemistry.**
- 542-3 Advanced Organic Chemistry.**
- 543-3 Advanced Organic Chemistry.**
- 547-3 to 6 Advanced Laboratory Preparations in Organic Chemistry.**
- 549-2 to 30 (2 to 6 hours per quarter) Advanced Topics in Organic Chemistry.**
- 552-3 Carbohydrate Chemistry.**
- 553-3 Plant Biochemistry.**
- 554-3 Biochemical Mechanisms.**
- 556-9 (3,3,3) Advanced Biochemistry.**
- 559-2 to 30 (2 to 6 hours per quarter) Advanced Topics in Biochemistry.**
- 561-3 Chemical Thermodynamics.**
- 562-6 (3,3) Quantum Chemistry.**
- 563-3 Chemical Dynamics.**
- 564-3 Statistical Thermodynamics.**
- 569-2 to 30 (2 to 6 hours per quarter) Topics in Advanced Physical Chemistry.**
- 594-1 to 15 Special Readings in Chemistry.**
- 595-0 to 9 Advanced Seminar in Chemistry.**
- 598-1 to 48 Research.**
- 599-1 to 9 Thesis.**
- 600-3 to 48 Dissertation-Doctoral.**

Child and Family

Department, Major, Courses

Within a major in Child and Family, the Department offers specialization in Pre-School Programs. (See Home Economics)

Bachelor of Science Degree, COLLEGE OF HUMAN RESOURCES *Pre-School Programs Specialization*

These courses offer basic background leading to positions as nursery school director or teacher in private schools, colleges and universities and day care centers; child care specialists with social, public health and welfare agencies; agricultural extension specialist in child care and recreation leaders.

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Child and Family</i>	67-76
GSD 101, 102, 107	(11)
GSB 104, 202, 203	(12)
Child and Family 227, 237, 337, 345a, 345b, 366, 445, 456, 466, 471	33-37
Three courses representing three departments other than major from the following: I.D. 327-3, 131-3; Clothing and Textiles 127a-2, 329-3, 340-4; Family Economics and Management 331-3, 340-3, 341-4, 323-3; Food and Nutrition 100-3; Home Economics Education 111-2, 306-2; GSE 236-3	7-11
Elementary Education 413	4

Guidance 305, 412	8
Psychology 301	4
Special Education 400	4
Select two from the following: Health Education 312-4, 325-3; Social Welfare 375-4, 383-4, 391-3; Music 302b- 4; Speech 401-4; Special Education 410a, 410b-4, 410c- 4; Psychology 459-4	7-8
<i>Electives</i>	42-51
Recommended electives: Child and Family 340, 408; Instruc- tional Materials 405, 417; Music 010E, 300; Psychology 305, 451; Recreation 300, 301, 310; Sociology 426; Speech 401; Theater 240, 410	
<i>Total</i>	186

Courses

227-3 Marriage and Family Living. A study of relationships and adjustments in family living, designed largely to help the individual.

237-3 Child Development. Principles of development and guidance of children as applied to home situations. Directed observation involving children of varying ages.

337-3 Advanced Child Development. Examines the specific behaviors of both parents and teachers to determine the effects they have on the development of children's desirable and undesirable behavior. Prerequisite: 237.

340-3 Instructional Materials and Activities for the Preschool. Provides opportunities to acquire a working knowledge of the purposes of the various types of preschool centers; the roles of the personnel; basic teaching skills; curriculum areas, including objectives, activities, and evaluation; and basis for parent-teacher communication.

345-7 (3,4) Child Development Practicum. (a) Observation and participation in the guidance of preschool children in the daily routines, preparation and use of materials and equipment for activities. One hour lecture, 3 hours laboratory. (b) Planning and executing a variety of experiences for preschool children. 3 hours seminar, 3 hours laboratory. Must be taken in a,b, sequence. Prerequisite: 237 or Psychology 301.

366-3 Family Development. Study of changing patterns in family living throughout the family life cycle. Prerequisites: 227 or GSB 341.

408-2 to 12. Workshop. Designed to aid workers in professions related to child and family. Emphasis for the workshop will be stated in the announcement of the course.

445-4 Administration of Pre-School Programs. Planning and organizing programs for preschool or residential facilities including budgeting, staffing, programming and evaluation. Prerequisite: 345a,b or consent of instructor.

456-4 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory and field experiences. Prerequisite: 237, Psychology 301.

466-4 Practicum in Parent-Child Study. Designed to increase student's ability to work with parents and parent groups through an awareness of factors in the parent-child relationship and knowledge of current research and methods in parent education. Integration with infant and child development laboratories and related field experience. Prerequisites: 227, 237, or equivalent.

471-2 to 6 Field Experience. Supervised learning experience in community nursery schools and public agencies. Prerequisite: consent of instructor.

481-2 to 6 Readings. Child development and family living readings under staff supervision. Prerequisite: consent of instructor and chairman.

490-4 Introduction to Marriage and Family Counseling. Problems and techniques of premarital, marital, divorce, family, and family crisis counseling. Counseling individuals singly, in family units, and in groups. Prerequisite 227 or equivalent and consent of instructor.

500-4 Research Methods.

556-4 The Pre-school Child.

562-4 Child Development Through Home and School.

566-4 Interpersonal Relationships within the Family.

- 571-4 Recent Research.
- 572-2 to 8 Special Problems.
- 599-2 to 9 Thesis.

Cinema and Photography

Department, Major, Courses

Cinema and photography courses provide the undergraduate student with a substantial background in the history, theory, and practice of photographic communication. The program is structured to make available a strong foundation for professional, fine arts and educational careers in film and photography; to explore the social implications of still and motion pictures; and to provide opportunity for the study of both cinema and still photography as media for personal expression. In all instances, programs are tailored to the interests and career plans of the individual student.

The major in cinema and photography requires from 48 to 60 credit hours, depending on the specialization chosen by the student. Four specializations are available within the major: cinema, with options in either film production or history/theory/criticism; still photography, with options in either commercial/professional or fine arts photography; cinema and photography; or photojournalism. The photojournalism sequence is administered jointly by the Department of Cinema and Photography and the School of Journalism.

To be admitted to the major, a student must have a grade point average of C or better. In order to remain in a specialization within the major, all courses in the specialization must be passed with a grade of C or better. All Mandatory Pass/Fail courses must be completed with a grade of Pass. Cinema and Photography courses are not available to majors on a Pass/Fail basis unless designated as Mandatory Pass/Fail.

A senior thesis, Cinema and Photography 490, is required of all cinema and photography majors. This thesis will consist of the preparation of a photographic portfolio, film, research or critical paper under the supervision of a cinema and photography faculty member. Normally taken during the last quarter in residence, the senior thesis is evaluated on a Mandatory Pass/Fail basis by the departmental faculty.

Students provide photographic materials for many cinema and photography courses. In still photography production courses, students supply their own film, photographic paper, certain specialized chemicals, and a fully adjustable 35mm or 120 roll film camera. In motion picture production courses, students provide their own film, processing, recording materials, and editing supplies. In courses which involve analysis and screening of a number of films, a \$5.00 screening fee is assessed. For some courses, supplementary textbooks are required.

The University reserves the right to retain examples of the work of each student in each photography class and to make and retain prints of all films made as part of course work. Such photographs and films become part of a permanent departmental collection from which exhibitions may be prepared.

There is no required minor.

Bachelor of Science Degree, SCHOOL OF COMMUNICATIONS AND
FINE ARTS

Cinema Specialization, Film Production Option

<i>Requirements for Major in Cinema and Photography with a Specialization in Cinema, Film Production Option</i>	48
Cinema and Photography 350, 351, 355, 356, 357, 490, one 4-hour course in film history, and at least 20 additional hours selected from the following: 361, 362, 450, 456, 457, 458, 460, 461, 463, 470, 480.	
<i>Electives</i>	70
<i>Total</i>	186

Cinema Specialization, History/Theory/Criticism Option

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Cinema and Photography with a Specialization in Cinema, History/Theory/Criticism Option</i>	48
Cinema and Photography 350, 351, 355, 450, 490, one 4-hour course in film history, and at least 24 additional hours selected from the following: 361, 457, 458, 460, 461, 462, 463, 480.	
<i>Electives</i>	70
<i>Total</i>	186

Still Photography Specialization

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Cinema and Photography with a Specialization in Still Photography, Commercial/Professional and Fine Arts Option</i>	48
Cinema and Photography 310, 311, 320, 321, 322, 490, and at least 24 additional hours selected from the following: 313, 403, 404, 405, 406, 407, 408, 409, 415, 418, 420, 421, 422, 457, 458, 480.	
<i>Electives</i>	70
<i>Total</i>	186

Cinema and Photography Specialization

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Cinema and Photography with a Specialization in Cinema/Photography</i>	48
Cinema and Photography 310 or 311, 320, 321, 322, 350, 355, 356, 357, 490, and at least 24 additional hours in Cinema and Photography.	
<i>Electives</i>	70
<i>Total</i>	186

Photojournalism Specialization

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Cinema and Photography with a Specialization in Photojournalism</i>	48
Cinema and Photography 320, 322, 407, 408, 409, 490; Journalism 300, 301, 302, 346, 349, 383B; either Cinema and Photography 310 or Journalism 345 and one 4-hour elective course in cinema and photography.	
<i>Electives</i>	70
<i>Total</i>	186

Courses

- 259-3 to 48 Technical Subjects.** Used to recognize credit in cinema and photography earned in art, technical, or trade schools above the high school level. 3 to 48 hours of credit may be applied toward graduation requirements following departmental evaluation and approval of the credit. Prerequisite: transfer from a two-year school.
- 310-4 History of Still Photography.** History, esthetics, and appreciation of still photography. Not open to students who have had GSC 348. Elective Pass/Fail.
- 311-4 Contemporary Photography.** Uses, styles, and influences of contemporary still photography. Elective Pass/Fail.
- 313-4 Visual Design in Photography.** Study and use of elements of design as used in the photographic image. Prerequisite: 320. Elective Pass/Fail.
- 320-4 Fundamentals of Still Photography.** Introduction to photographic communication. Basic camera controls, black and white film, and print processing. Elective Pass/Fail.
- 321-4 Intermediate Photography.** Continuation of 320 with emphasis on refinement of photographic techniques and processes. Prerequisite: 320 and consent of department. Elective Pass/Fail.
- 322-4 Fundamentals of Color Photography.** Theory, techniques, and aesthetics of color photography. Production of color prints and transparencies. Prerequisite: 321 and consent of department. Elective Pass/Fail.
- 350-4 Introduction to Cinema.** Analysis of film as an independent form of art and communication. Survey of production methods, film types, and utilization of the medium in contemporary society. Screening fee. Must be taken before or with 355. Elective Pass/Fail.
- 351-4 Introduction to Film Theory.** Historical survey of the theories of film. Analysis of theoretical and aesthetic concepts associated with the motion picture. Screening fee. Prerequisite: 350. Elective Pass/Fail.
- 355-4 Beginning Film Production.** Basic techniques for silent film making. Production of short motion pictures by student crews. Prerequisite: 350 or concurrent enrollment. Elective Pass/Fail.
- 356-4 Intermediate Film Production.** Sound film techniques. Production of short synchronous sound films from student scripts. Prerequisite: 350, 355 and consent of department. Elective Pass/Fail.
- 357-4 Advanced Film Production.** Production of sound and color films by students working individually and in crews. Prerequisite: 350, 356 and consent of department. Elective Pass/Fail.
- 361-4 Film Planning and Scripting.** Analysis of both scripted and non-scripted films. Script as a basis for production. Practice in preparing film plans, treatments, storyboards, and scripts. Prerequisite: 350 and 355 for cinema & photography majors. Elective Pass/Fail.
- 362-4 Sound for Motion Pictures.** Analysis and practice of sound recording and editing techniques. Prerequisite: 357 and consent of department. Elective Pass/Fail.
- 403-4 Studio Portraiture.** Theory and practice of formal studio portrait photography. Prerequisite: 322 and consent of department. Elective Pass/Fail.
- 404-4 Environmental Portraiture.** Theory and practice of formal and informal portraiture outside the studio. Prerequisite: 322. Elective Pass/Fail.
- 405-4 Commercial Photography.** Study and use of studio lighting techniques for commercial photography. Prerequisite: 322 and consent of department. Elective Pass/Fail.
- 406-4 Advanced Commercial Photography.** Assignments in areas of commercial photography in black and white and color. Prerequisite: 405. Elective Pass/Fail.
- 407-4 Publications Photography.** Photographic news reporting with emphasis on single pictures and short picture stories. Prerequisite: 322. Elective Pass/Fail.
- 408-4 Advanced Publications Photography.** Production of picture essays including research, lay-out, captions, and text. Black-and-white and color. Prerequisite: 407. Elective Pass/Fail.
- 409-4 Picture Editing.** Picture usage and layout and methods of photographic reproduction for the mass media. Elective Pass/Fail.
- 415-4 Technical and Scientific Photography.** Introduction to photographic methods used in science and research. Prerequisite: 322. Elective Pass/Fail.

- 418-4 Documentary Photography.** Methods, approaches, and work in documentary photography. Prerequisite: 322. Elective Pass/Fail.
- 420-4 Experimental Photography.** Experimental approaches to the creation of photographic images. Prerequisite: 322. Elective Pass/Fail.
- 421-4 to 8 Personal Photographic Expression.** Development of personal vision in photography. Usually taken 4,4. Prerequisite: 322 and consent of department. Elective Pass/Fail.
- 422-4 Advanced Color Photography.** Study and production of color photographs. Emphasis on experimental techniques. Prerequisite: 322. Elective Pass/Fail.
- 450-4 Film and Society.** Major social issues associated with the cinema. Examination of attempts to regulate and control the medium. Prerequisite: 350 and consent of department. Elective Pass/Fail.
- 456-1 to 6 Workshop in Film Production.** Crew work on university film productions. Prerequisite: consent of department and film production. Elective Pass/Fail.
- 457-4 Mixed Media Production.** Multi-media theory. Creation and coordination of presentations involving visual and aural media. Prerequisite: 322 or 357 and consent of department. Elective Pass/Fail.
- 458-1 to 12 Projects in Cinema and Photography.** Individual or crew projects in motion picture production or still photography. Usually taken 4,4,4. Prerequisite: consent of department. Elective Pass/Fail.
- 460-4 History of the Silent Film.** Emphasis on the theatrical film to 1929. Screening fee. Prerequisite: 350 for cinema and photography majors. Elective Pass/Fail.
- 461-4 History of the Sound Film.** Theatrical film from early sound experimentation to the present. Screening fee. Prerequisite: 350 for cinema and photography majors. Elective Pass/Fail.
- 462-4 Film History of the Documentary Film.** The development of the documentary film as illustrated by the work of representative film makers. Screening fee. Prerequisite: 350 for cinema and photography majors. Elective Pass/Fail.
- 463-4 History of the Experimental Film.** Survey of experimentation in cinema from the turn of the century, through the avant-garde periods, to contemporary independent films. Screening fee. Prerequisite: 350 for cinema and photography majors. Elective Pass/Fail.
- 470-4 Special Cinematic Forms.** Innovation in technique and content in animated, advertising, and experimental films. Production of short innovative films. Prerequisite: 357 or equivalent and consent of department. Elective Pass/Fail.
- 480-1 to 12 Individual Study in Cinema and Photography.** Research in history, theory, or aesthetics. Usually taken 4,4,4. Prerequisite: consent of department. Elective Pass/Fail.
- 490-4 Senior Thesis.** Preparation of a portfolio, film, research or critical paper under the supervision of a cinema and photography faculty member. Normally taken during the last quarter in residence, the senior thesis is evaluated by the departmental faculty, and is required of all majors. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.

Clothing and Textiles

Department, Major, Courses

The Department of Clothing and Textiles offers courses allowing for two undergraduate specializations; apparel design or retailing. The two specializations have the same General Studies requirements, home economics core, and clothing and textiles core.

Bachelor of Science Degree, COLLEGE OF HUMAN RESOURCES Apparel Design Specialization

This specialization is intended for the student interested in professional preparation in apparel design or allied design positions in either industrial or commercial fashion businesses. The courses available to the student cover textile information, fashion design, and skills required for develop-

ing original designs into patterns and completed garments. Courses in the department are complemented by ones in art, business and other areas in order to provide a suitable background for various career opportunities.

<i>General Studies Requirements</i>	68
Chemistry 110, 240	(8)
GSB 202, 211	(8)
GSD 101, 102, 152 or alternate, 107	(14)
<i>Home Economics Core</i>	8-10
Choose one course in three departments:	
Child and Family 227-3 or 237-3; Family Economics and Management 323-3, 331-3, 340-3, or 341-4; Food and Nutrition 100-3 or GSE 236-3; Home Economics Education 111-2 or 306-2; Interior Design 131-3 or 327-3	
<i>Clothing and Textiles Core</i>	15
Clothing and Textiles 304-5, 329-3, 339-3, 340-4	
<i>Other Professional Requirements</i>	51
Clothing and Textiles 127c-2, 333-4, 334-3, 360-4, 364-4, 433-4, 434-4, 435-4; Art 100-12, 200b-4, Art history-3; Interior Design 331-3	
<i>Professional Electives</i>	12-14
Choose from the following:	
Any Clothing and Textiles or Art course; Physiology 300-4; Physical Education for Women 303-5; Theater 414-4, 415-4; Psychology 307-4; Family Economics and Management 435-4; Journalism 359-3; Accounting 250-4 or 251a-4; Marketing 301-4; Administrative Sciences 301-4, 340-4 or Psychology 320-4; Finance 271-4 or 370-4; GSC 348 or 349; GSD 110-3, Electronic Data Processing 107-3 or Computer Science 202-4	
<i>Electives</i>	<u>30</u>
<i>Total</i>	186

Retailing Specialization

This specialization prepares the student for a profession in retail stores, either as buyers or department managers. Other related retailing positions are also available to the student who majors in the retailing specialization. The courses available to the student cover textile information, fashion merchandising, marketing, and other business-related courses.

<i>General Studies Requirements</i>	68
Chemistry 110, 240	(8)
GSB 202, 211	(8)
GSD 101, 102, 152 or alternate, 107	(14)
<i>Home Economics Core</i>	8-10
Choose one course in three departments:	
Child and Family 227-3 or 237-3; Family Economics and Management, 323-3, 331-3, 340-3, or 341-4; Food and Nutrition 100-3 or GSE 236-3; Home Economics Education 111-2 or 306-2; Interior Design 131-3 or 327-3	
<i>Clothing and Textiles Core</i>	15
Clothing and Textiles 304-5, 329-3, 339-3, 340-4	
<i>Other Professional Requirements</i>	46
Clothing and Textiles 319-2, 349-4, Clothing and Textiles electives—15 hours; Marketing 301-4; 2 Marketing electives; Accounting 250-4 or 251a-4; Administrative Sciences 301-4,	

340-4, or Psychology 320-4; Electronic Data Processing 107-3; Computer Science 202-4, or GSD 110-3; Interior Design 300-2

Professional Electives 17-19

Choose from the following:

Any Clothing and Textiles or Marketing courses; Interior Design 131-3, 327-3; Family Economics and Management 324-3, 340; Journalism 370-3, 393-3; Finance 271-4 or 370-4; Psychology 322-4, 323-4

Electives 30

Total 186

Minor

A minor in clothing and textiles consists of 24 hours in clothing and textiles courses which have been approved by the Department Chairman.

Courses

Proficiency examinations are available for Clothing and Textiles 104 and 127a,b,c.

Students will be expected to purchase their own materials in some of the courses offered by the Department of Clothing and Textiles.

104-3 Basic Textiles. Emphasis on recognition of fabrics and weaves, suitability, care, and maintenance, especially household textiles.

127-6 (2,2,2) Clothing Selection & Construction. (a) Clothing selection and care. Study of clothing in relation to fabric composition, fashion emphases, art principles, suitability, and cost. (b) Basic construction laboratory. Use of machine and pattern; fabric preparation, and garment construction. For beginning student. (c) Couture construction laboratory. Techniques of fitting and pattern alteration. Construction of a garment using a designer pattern. Prerequisite: 127b or proficiency. Proficiencies available for a,b and c. Elective Pass/Fail.

304-5 (3,2) Textiles. (a) Selection of textiles from consumer standpoint. Characteristics of commonly used fibers and fabrics; textile information as a tool in the selection and care of household textiles and clothing. Must purchase book of readings. Prerequisite: Chemistry 110 and 240. (b) Introduction to textile laboratory equipment. Identification of fibers and fabric performance. Care labeling. Lab fee. Must purchase lab book. Prerequisite: 304A or equivalent.

319-4 (1,1,1,1) Retailing Seminar. (a) Inventory shrinkage. (b) Buying procedures. (c) Personnel. (d) Promotion and advertising. Comparison of practices related to the stated topic based on the students' work experiences and information from resource persons from a variety of stores. Group project or study. Field trips. Prerequisite: 100 hours approved retailing experience.

329-3 Fashion Motivation. Psychological motivation for wearing clothing; societal functions of clothing; cultural differences in dress.

333-4 Flat Pattern Designing. Development of style patterns from slopers; individual sloper; origination of garment for individual. Prerequisite: 127c.

334-3 Fashion Design. Original designs for male or female apparel and accessories using various media. Designs based on a variety of sources of inspiration. Prerequisite: Art 100 or Interior Design 131.

339-3 Clothing Economics. Factors of production, distribution, and consumption influencing clothing industry; management of these factors in clothing related businesses; place of clothing industry in the national and international markets. Field trip. Prerequisite: GSB 211 or Economics 214.

340-4 Family Clothing. Clothing needs of individual family members within the context of developmental stage, life style and societal setting; functional and fashion-motivated needs considered; clothing budgeting.

349-4 Fashion Merchandising. Study of functions and responsibilities of the fashion merchandiser, considering various retail establishments. Professional course for retailing majors. Prerequisite: 319-1 and Marketing 301.

- 360-4 Tailoring.** Basic principles of tailoring applied to coat or suit. Prerequisite: 127c.
- 364-4 Draping.** Manipulation of fabric to produce style and fit on a dress form or human figure; construction of draped garment. Prerequisite: 127c.
- 371-0 to 6 Field Experience.** Supervised learning experience in approved business or industry. Prerequisite: consent of chairman.
- 395-1 to 4 Special Problems.** Independent investigation of clothing, textiles, or home furnishings in consultation with staff member and resource persons. Prerequisite: consent of chairman.
- 432-2 to 8 Workshop.** Discussion and analysis of current topics in clothing and textiles. Emphasis stated in announcement. Prerequisite: 8 hours in clothing and textiles.
- 433-4 Custom Clothing Production.** Flat pattern and draping approaches to evolve patterns for various designs, figure types and fabrics; fitting, and custom finishes. Emphasis on work for custom business. Prerequisite: 333 and 364.
- 434-4 History of Clothing.** Development of clothing in Western Civilization to the present time. Consideration of social, economic, and esthetic factors and technical innovations influencing clothing. Prerequisite: 329.
- 435-4 Industrial Clothing Production.** Design of a line to specifications; drafting; toiles, mass-production costs; work flow; use of industrial equipment. Field trip required.
- 470-3 Seminar.** Topics considered at level of design room, research laboratory, mill, store, and consumer. Prerequisite: consent of chairman.
- 473-4 Advanced Tailoring.** Concepts developed during fitting and tailoring of male or female garments. Organization of work and time management. Prerequisite: 360 or proficiency.
- 474-4 Advanced Textiles.** The physical and chemical analysis of textiles. Problems dealing with economic and industrial developments, standards, labeling, and legislation. Current literature of developments within the field. Prerequisites: 304 or equivalent.
- 481-1 to 6 Readings.** Supervised study of clothing and textiles literature in area of special interest. Prerequisite: senior standing.
- 500-4 Research Methods.**
- 570-6 (3,3) Seminar.**
- 572-1 to 8 Special Problems.**
- 582-4 Foundations of Fashion.**
- 583-3 (1,1,1) College Teaching of Clothing, Textiles.**
- 599-1 to 9 Thesis.**

Commercial Graphics—Design

Program, Major

(Also See *Commercial Graphics—Production*)

Today's advertising industry offers many opportunities to the commercial artist who can meet the exacting demands of the profession.

The graphics design student learns the basics of the field through assignments and work standards parallel to those he will encounter when he enters the field. He will learn figure drawing, perspective, geometric drawing, color, cartooning, fashion illustration, and mechanical rendering.

He will learn typography, layout, the preparation of camera-ready art, and production processes, and will work in the fully-equipped shop of the commercial graphics—production program to follow his projects through to printed form so that he will understand how his work is affected by mechanical reproduction. He also will learn advertising design, story and technical illustration, and product rendering. He may make arrangements with the faculty for special study in addition to regular requirements if his interest lies in a specific area.

The student should expect to spend approximately \$400 for supplies and materials.

Professional artists comprise the faculty of the program, which also is served by an advisory committee from the industry. Current members are

Sam Laird, president, John Roberts Awards, Austin, Texas; Jack Zinke, art supervisor, Bell Laboratories, Naperville; and Jack Rehtin, president, Rehtin Associates Advertising Agency, Herrin.

A minimum of 97 hours credit is required for this major.

Associate In Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Commercial Graphics—Design

GSB 202, 212	8
GSD 101, 102, 153	9
Media Technology 213a	4
Vocational and Technical Careers 102	3
Commercial Graphics 110, 120, 122, 130, 132, 140, 142, 210a,b,c, 215, 220, 230, 240, 345	73
<i>Total</i>	<u>97</u>

Commercial Graphics—Production

Program, Major, Courses

(Also see Commercial Graphics—Design)

The growing printing and publishing field offers many career opportunities for trained production specialists and persons with mechanical skills and abilities in management areas.

The commercial graphics—production student may concentrate on management and production coordination or upon specialties within production such as lithographic stripping and plate-making.

The student will gain experience in the most up-to-date printing methods in a fully equipped shop. He will learn production and press procedures, lithographic photography, stripping, and platemaking, offset presswork, estimating and cost, and production and finishing processes.

The student who wishes to prepare for a career in management will study business law, office management and supervision, accounting, and other related subjects.

Students in this program will learn layout and design and color by working with students and faculty of the commercial graphics—design program in the complete production of actual design projects.

The student should expect to spend an average of about \$25 each quarter for materials and supplies.

A minimum of 97 hours credit is required for this major.

Associate In Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Commercial Graphics—Production

GSB 212	4
GSD 101, 102, 153	9
Media Technology 213a	4
Vocational and Technical Careers 105, 232	7
Commercial Graphics 101, 102, 103, 125, 126, 127, 134, 135, 153, 201, 202, 203, 225, 226, 227, 251	65
Electives	8
Recommended: Secretarial and Office Specialties 110a, 226, Com- mercial Graphics 240	
<i>Total</i>	<u>97</u>

101-6 Introduction to Production Procedures Laboratory. The student will

apply the practical application of letterpress and offset procedures, set composition by hot and cold methods and maintain equipment. Lecture 1 hour. Laboratory 15 hours. Must be taken concurrently with 125.

102-6 Advanced Press Procedures. Students will apply production techniques to produce selected live jobs by making dummies, repro proofs, imposition, mix and match ink to paper, maintain equipment and set composition. Lecture 1 hour. Laboratory 15 hours. Must be taken concurrently with 126. Prerequisite: 101.

103-6 Lithographic Stripping and Platemaking Laboratory. The student will apply imposition principles for offset in stripping line and halftone negatives, positives, combinations, surprints, double burns, tints and color blocks, step and repeat, burn plates and produce printing on small presses. Lecture 1 hour. Laboratory 15 hours. Must be taken concurrently with 127.

110-3 Art Analysis. The student will be able to recognize and identify at least 20 paintings by the masters through color, technique, and composition. A field trip will be taken to an art museum. Lecture 3 hours.

120-5 Techniques of Figure and Freehand Drawing Theory and Practice. The student will demonstrate his knowledge of the bones and muscles of the anatomy by accurately drawing the human figure from life. He will be able to draw the basics: sphere, cone, cylinder, cube and show a complete understanding of perspective, light and shadow. This course must be taken concurrently with 122. Lecture 4 hours. Laboratory 3 hours.

122-5 Techniques of Advertising Design. The student will demonstrate his ability to use the fundamental techniques in advertising design such as color, fashion illustration, cartooning, scratch board, doublestone and geometric drawing. This course must be taken concurrently with 120. Lecture 4 hours. Laboratory 3 hours.

125-3 Introduction to Production Procedures. The student will apply pre-planning techniques of markup, selection of type faces, imposition, papers, inks and methods of production. Lecture 3 hours. Must be taken concurrently with 101.

126-3 Advanced Press Procedures Theory. Students will demonstrate pre-planning in composition, typography imposition, bindery methods of production and apply nomenclature procedures to order supplies and repair parts. Lecture 3 hours. Must be taken concurrently with 102. Prerequisite: 125.

127-3 Lithographic Stripping and Platemaking Theory. The student will pre-plan the darkroom procedures necessary to produce line and halftone negatives, positives, combinations, double burns, tints, color blocks, step and repeat, and apply nomenclature procedures to maintain a supply of materials with varied shelf life. Lecture 3 hours. Must be taken concurrently with 103.

130-5 Typographic Design. The student will be able to identify at least 10 type faces, count and mark copy to be set, understand the history and practical use of typography in advertising and execute professional quality finished lettering. This course must be taken concurrently with 132. Lecture 4 hours. Laboratory 3 hours. Prerequisite: 120 and 122.

132-5 Advertising Layout and Illustration. The student will demonstrate his ability to use the basic principles of layout and how to do clean, accurate roughs and comprehensives in addition to taking a story outline and developing a full-color illustration. This course must be taken concurrently with 130. Lecture 4 hours. Laboratory 3 hours. Prerequisite: 120 and 122.

134-2 Typography. The student will be able to recognize at least 15 type faces, learn to estimate and accurately count copy, and mark copy to be set. The student will also discuss the history and practical use of typography in advertising. Lecture 2 hours.

135-3 Color and Business Forms Design. The student will demonstrate a knowledge of pigmental and light-ray theory and practice. He will know how to mix and match colors exactly. In addition, he will develop the skill to handle the T-square and triangle and use the ruling pen to execute to perfection ruled business forms. Lecture 3 hours.

140-5 Airbrush and Photo Retouching. The student will develop skills in the operation and techniques of airbrush rendering used for mechanical and illustrative purposes. In addition, he will retouch black and white photographs suitable for reproduction. This course must be taken concurrently with 142. Lecture 4 hours. Laboratory 3 hours. Prerequisite: 130 and 132.

142-5 Graphic Production. The student will be able to explain several different kinds of printing processes such as letterpress, offset, etc., and how paper is made and used in advertising today. He will prepare overlays and separations

and do accurate paste-up and registration. He will receive actual experience with the camera and stripping. This course must be taken concurrently with 140. Lecture 4 hours. Laboratory 3 hours. Prerequisites: 130 and 132.

153-3 Fundamentals of Layout. The student will demonstrate his ability to use the basic principles of balance in layout and how to do clean, accurate roughs and comprehensives. He will design letterheads, envelopes and business cards. Lecture 3 hours.

201-6 Lithographic Photography Laboratory. The student will produce line and halftone negatives, tint screens, reverses contact prints, positives, posterization, process color, emphasis techniques and produce selected work on small presses. Lecture 1 hour. Laboratory 15 hours. Must be taken concurrently with 225.

202-6 Offset Presswork Laboratory. The student will produce selected work on the Heidelberg KORA, including multiple imposition, four-color process, step and repeat, duotones, posterization and bindery. Lecture 1 hour. Laboratory 15 hours. Must be taken concurrently with 226.

203-6 Production and Finishing Process Laboratory. The student will demonstrate ability by organizing selected work from dummy to finished product and producing quality work. This will include composition, imposition, presswork and bindery procedures. Lecture 1 hour. Laboratory 15 hours. Must be taken concurrently with 227.

210-18 (6,6,6) Graphic Design and Advertising Illustration. (a) The student will apply the techniques learned during the first year in the preparation of professional assignments in the areas of two-color production and broadsides, logotype design and letterhead design. He will prepare mechanicals which will be used by production majors who will complete the production. This course must be taken concurrently with 215. Lecture 4 hours. Laboratory 6 hours. (b) The student will demonstrate advanced techniques of story and fashion illustration. He will design promotional slides for television and do cartooning for advertising. This must be taken concurrently with 220a. Lecture 4 hours. Laboratory 6 hours. (c) The student will design and produce finished art with overlays for three- and four-color production. He will design album cover and poster illustrations and develop annual report design. This course must be taken concurrently with 230. Lecture 4 hours. Laboratory 6 hours. Must be taken in a,b,c sequence. Prerequisites: 140 and 142.

215-6 Industrial Illustration Theory and Practice. The student will draw mechanical objects to scale and render in black, white and color (using zip-a-tone and other mechanical mediums). The student will design everyday business forms such as invoices, statements, shipping labels, and business reply cards. This course must be taken concurrently with 210a. Lecture 4 hours. Laboratory 6 hours. Prerequisites: 140 and 142.

220-6 Dimensional Design. The student will demonstrate his ability to conceptually order verbal information, to form a precise concept, and to express the concept visually in the execution of point-of-purchase displays, exhibits, TV set design and billboards. The student will also show an ability to do package design via the use of the silk screen process. This course must be taken with 210b. Lecture 4 hours, laboratory 6 hours. Prerequisite: 210a and 215.

225-3 Lithographic Photography Theory. The students will inventory, order, maintain supplies and material essential to darkroom operations to produce the lab work. They will evaluate the emphasis techniques as they are produced on colored and textured paper stocks. Lecture 3 hours. Must be taken concurrently with 201.

226-3 Offset Presswork Theory. Students will pre-plan work for the KORA including imposition of various sheet sizes or half sizes, with advantages or disadvantages with relationship to bindery procedures of folding, cutting, scoring and perforating. Lecture 3 hours. Must be taken concurrently with 202.

227-3 Production and Finishing Process Theory. Students will plan the organization and operation of finishing processes which include inspection, cutting, scoring, padding, stitching and advanced folder operations. Lecture 3 hours. Must be taken concurrently with 203.

230-6 Experimental Design. The student will demonstrate his ability to create new and unusual techniques in the design of advertising and sales promotion booklet dummies. He will also develop a story board for a commercial product. This course must be taken concurrently with 210b. Lecture 4 hours, laboratory 6 hours. Prerequisite: 220 and 210b.

240-3 to 12 Special Study. A student with a special interest in a particular commercial graphics area will do selected projects to develop additional profes-

sional skill. Requires approval of the supervisor. Lecture 4 hours. Laboratory 24 hours maximum. Prerequisite: staff approval.

245-1 Job Orientation. The student will demonstrate a knowledge of the inside operations of large and small agencies and studios including the various responsibilities of the people employed in them by class discussion and examination. This must be taken concurrently with 210c. Lecture 1 hour. Prerequisite: 210b and 220a.

251-3 Estimating and Cost in Printing. The student will estimate the cost of composition, ink, paper and press production costs. Lecture 3 hours. Must be taken concurrently with 203 and 227.

Community Development

Institute, Major (Graduate only), Courses

The community development program is essentially a curriculum for the Master of Science degree in Community Development. However, four undergraduate courses are offered; one of which, 401, is a prerequisite for entering the master's program.

Courses

401-4 Introduction to Community Development. This survey includes an analysis of the history, values, and techniques of various approaches to community development and explores some of the specific social issues and problems which confront community development practitioners. Prerequisite: 4 hrs. soc. or consent of instructor. Elective Pass/Fail.

402-4 Comparative Community Development. Surveys the historic, economic, organizational, and other aspects of international community development programs under the auspices of world and regional agencies, or of multinational, or local sponsorship, focusing primarily upon specific case studies. Prerequisite: 401, 4 hrs. soc. or consent of instructor. Elective Pass/Fail.

490-1 to 8 Seminar in Community Development. The identification and analysis of special problems in community development. Prerequisite: 401. Elective Pass/Fail.

499-1 to 5 Independent Study in Community Development. Supervised study and projects in fitting with the needs of each student. Prerequisite: consent of instructor. Elective Pass/Fail.

501-4 Small Group Process in Community Development.

502-4 Community and Change.

503-4 Problems and Approaches to Community Development.

511-4 Laboratory in Small Group Process.

512-4 The Change Agent in Planned Change.

513-4 Laboratory in Consulting Styles and Techniques.

596-1 to 8 Independent Study in Community Development.

598-4 Research Seminar in Community Development.

599-1 to 8 Thesis Research.

Comparative Literature

Minor

A minor in comparative literature is principally for students majoring in English or a foreign language, although others are not excluded. The minor is offered within the College of Liberal Arts. To qualify, one must present a total of 24 hours in course work at the 300 level or above approved by the student's major adviser and by the comparative literature coordinator.

If the student's major is in English or a foreign language, the minor is intended to permit the study of a second national literature to be related to the major literature studied. Neither English or American literature is allowed as the minor, if one or the other is the major subject. The same is true of Iberian and Spanish American literature.

The required courses are (1) English 493–4, Special Problems in English and (2) independent work for a total of 4 hours. The latter is to be taken either (a) under the LA listings: 300–302 (Individual Interdisciplinary Readings, Research, Field Study) singly or in combination; or (b) 4 hours of independent study under already existing departmental offerings.

The first course will introduce the student to the discipline and familiarize him with standard practices. The second will offer him the opportunity to work on individual projects under the supervision of his adviser(s). The course “Nature and Method of Comparative Literature” (taught as English 493) should be taken before the independent study is undertaken.

Students interested in preparing a special major in comparative literature should consult the coordinator.

Computer Science

Department, Minor, Courses

The Department of Computer Science offers courses for undergraduate credit covering a wide range of topics in computer science. Students interested in this area will be advised by the department so that they may profitably pursue their academic and professional interests.

The Department does not offer an undergraduate major at this time but does offer a minor.

Minor

A minor in computer science shall consist of 27 hours including 302b, 403, 411, 414 and other courses to be determined by the student in consultation with the department adviser except that no more than 3 hours of 311 may be included.

Courses

202–4 Introduction to Computer Programming. Discussion of algorithms, flowcharts, data representation, structure and debugging of programs, computers and languages. Emphasis on computational problems using an algorithmic language. Non-numeric applications also considered. Prerequisite: GSD 107, or Mathematics 111a, or 1½ years of high school algebra.

302–6 (3,3) Computer Structure and Programming. The organization of computers into memory, control, arithmetic/logical, and input/output structures. Complete treatment of machine and assembly language. Principles of programming, selected programming techniques, logic design and interpreters, the design of hardware components, computer hardware systems, supervisory software systems, segmentation, linkage, and multiprogramming. Must be taken in a,b sequence. Prerequisite: 202.

311–1 to 9 Laboratory in Programming Languages and Applications. Treatments of various programming languages and applications with extensive programming practice. (c) COBOL and Business Data Processing. (f) Programming Techniques in FORTRAN IV. (1) List and String Processing Languages. (p) P1/1 and ALGOL. (s) Statistical Data Processing. Need not be taken in sequence. Prerequisite: 202.

403–3 Data Structures. Data, strings, stacks, arrays, lists, trees, storage systems and structures, searching and sorting, and list and string processing languages. Basic concepts. Prerequisite: 302a.

411–3 Structure of Programming Languages. Introduction to the formal definition of a language. Representation and evaluation of arithmetic expressions. Extensive analysis of the structure of an algorithmic language. Other languages such as list processors. Prerequisite: 302a.

414–3 Systems Programming I. Interpretive systems, assemblers, loaders, compilers. Addressing techniques, program segmentation, and linkage. Explicit

input-output references. Batch processing systems. Time sharing, multiprogramming, and multiprocessor systems. Prerequisite: 403.

442-3 Discrete Structures. (Same as Mathematics 428.) Review of sets, functions, and relations. Algebraic structures including semi-groups, groups, and Boolean algebras. Subalgebras, congruence relations, homomorphisms, and direct products. Elements of graph theory. Applications to various areas of computer science. Prerequisite: Mathematics 301.

445-3 Applied Boolean Algebra. (Same as Mathematics 429.) Applications to switching circuits and propositional logic. Circuit simplification, logical circuits, and sequential circuits. Prerequisite: 442.

451-3 Introduction to the Theory of Computation. (Same as Mathematics 451.) Automata, their behavior and basic properties. Turing machines. Examples and applications to computing functions and recognizing sets. The concept of an algorithm. Definition and examples of formal grammars. Prerequisite: 442 and either 445 or consent of instructor.

461-6 (3,3) Numerical Calculus. Algorithms for the solution of numerical problems encountered in scientific research work. Emphasis on the use of high speed, digital computers. Elementary discussion of error, polynomial interpolation, quadrature, solution of non-linear equations and linear systems, matrix calculations, solution of differential equations. May not be taken for credit by graduate students in computer science or mathematics. Students may not receive credit for both 461 and 464. Survey course. Must be taken in a,b sequence. Prerequisites: 202, Mathematics 305a, and 221.

464-6 (3,3) Numerical Analysis I. (Same as Mathematics 475.) Theory and practice of computation. Emphasis on methods useful with high speed digital computers. Solution of non-linear equations, interpolation and approximation, numerical differentiation and integration, solution of differential equations, matrix calculations and the solution of systems of linear equations. Students may not receive credit for both 461 and 464. Introductory course. Must be taken in a,b sequence. Prerequisite: 202, Mathematics 305a, and 221.

470-4 Theory of Simulation. Methodology, including generation of random numbers and design of experiments. Discrete and continuous models for stochastic processes. Simulation languages. Emphasis on the use of the computer in constructing simulation models. Prerequisite: 202 and either Mathematics 150b or 140b.

472-3 Introduction to Mathematical Programming. (Same as Mathematics 472.) Theory of linear programming, game theory, and dynamic programming. Prerequisite: Mathematics 221 or 321.

495-1 to 9 Readings. Supervised readings. Prerequisite: consent of instructor and department.

514-3 Systems Programming II.

516-6 (3,3) Compiler Construction.

518-3 Large-scale Information Processing Systems.

531-3 Information Structure and Retrieval Systems.

536-3 Artificial Intelligence and Heuristic Programming.

551-3 Automata Theory.

554-3 Formal Languages.

557-3 Theory of Computability.

564-6 (3,3) Numerical Analysis II.

590-1 to 18 Special Topics.

593-1 to 9 Seminar.

595-1 to 9 Readings.

597-1 to 9 Special Problems.

599-1 to 9 Thesis.

Construction Technology—Building

Program, Major

(Also see *Construction Technology—Civil*)

Light building construction offers a multitude of opportunities in the areas of management and supervision.

The student will learn basic construction principles, surveying, drafting and properties of construction materials. He will be able to develop construction details and working drawings, to design steel and timber struc-

tural members, and to make construction cost estimates, including labor, materials, and schedules. He will learn code requirements and specifications affecting mechanical equipment such as plumbing, heating, air conditioning, and illumination. He will acquire the knowledge necessary for basic management and business positions through the study of business law, labor management relations, technical writing, physical sciences, and mathematics.

The student in this program will have the benefit of facilities of construction technology—civil, as well as a well-equipped word utilization laboratory.

The student should expect to spend approximately \$100 for a drawing kit, supplies, and materials.

This program is served by an advisory committee which currently consists of: Hobard Beasley, Beasley Lumber Co., Cambria; Frederick H. Persson, Steffes Construction Co., Carterville; Donald W. Hutton, The Reason Corp., IBC Homes, Charleston; and D. Leo Robinson, J & L Robinson Development and Construction Co., Carbondale.

A minimum of 96 hours credit is required for this major.

Associate In Applied Science Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Construction Technology—Building

GSA 101	4
GSB 212	4
GSD 101	3
Secretarial and Office Specialties 226	4
Vocational and Technical Careers 102, 105, 232	10
Construction Technology 102, 103, 104, 105a,b, 107, 109, 110a,b,c, 125a, 208, 210a,b,c, 213	68
Electives	3
<i>Total</i>	96

Construction Technology—Civil

Program, Major

(Also see Construction Technology—Building)

Opportunities abound in the heavy construction industry for the technician who is trained to work in support of engineers or in supervisory or management positions. The graduate of this program may find a position anywhere in the world on such projects as dams, bridges, tunnels, waterway improvements, industrial structures, or in highway construction.

The student will gain basic knowledge of surveying, drafting and design, construction materials and methods, equipment, planning, and estimating. He will learn the principles of hydraulics and drainage and the effects of various soils on heavy construction. He will develop skills in writing and interpreting technical material, labor management relations, and other areas necessary to work successfully with engineers and construction crews.

The student will have the opportunity to supplement required on-campus laboratory and field work projects with a summer of cooperative work experience.

The student should expect to spend approximately \$100 for a drawing kit, supplies, and materials.

This program is served by an advisory committee composed of a con-

sortium of civil engineers affiliated with state and federal agencies and the members of the advisory committee for construction technology—building.

A minimum of 96 hours credit is required for this major.

Associate In Applied Science Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Construction Technology—Civil

GSA 101	4
GSD 101	3
Mathematics 111a	5
Vocational and Technical Careers 102, 232	7
Construction Technology 101a,b,c, 102, 103, 105a,b, 107, 109, 125a,b, 203, 207, 208, 213a,b	70
Electives	7
Approved Selections in GS areas of: Communications, Humanities, or Social Science	
<i>Total</i>	96

Courses

101-17 (6,5,6) Surveying. (a) The student will be able to make observations, prepare field notes and make field checks and adjustments using equipment frequently encountered in plane surveying. Subjects included are: distance, angles, elevations, traversing, triangulation, stadia, profiles, cross sections, direction of a line. Lecture 3 hours. Laboratory 6 hours. (b) He will be able to reduce field notes and plot the results on a drawing. He can use a desk calculator, planimeter, slide rule and drawing instruments as required to obtain results. Subjects included are: error theory, areas, volumes, coordinates, profiles, contours, cross sections, photogrammetry, topography and the fundamentals of the United States Public Land Survey System. Lecture 4 hours. Laboratory 2 hours. (c) He will know field techniques used in construction layout for buildings, pipe lines, earthwork and transportation facilities. This includes: horizontal and vertical curves, transition curves, tie-ins, construction tolerances, slope stakes. Additional instruction is provided in: the mass diagram, topography, celestial observations, the state plane coordinate system and recent developments in surveying instruments. Lecture 3 hours. Laboratory 6 hours. Must be taken in a,b,c sequence or by consent of instructor.

102-4 Fundamentals of Drafting. Knowledge and experience acquired in this course will allow the student to perform more advanced work. Subjects included are: lettering, linework, geometrical constructions, drawing layout, dimensioning, orthographic projection, sections, auxiliary views, surface intersections, surface development, pictorial drawing. Lecture 2 hours. Laboratory 4 hours.

103-3 Construction Materials. The student obtains knowledge of production methods, physical properties, uses, advantages and disadvantages of frequently used construction materials. Lecture 3 hours.

104-4 Building Construction Surveying. The student will be able to give line and grade for construction layout using the tape, transit and level. Additional subjects include: computation of areas and volumes, topography, horizontal curves, vertical curves, tie-ins, construction tolerances. Lecture 2 hours. Laboratory 4 hours.

105-8 (4,4) Structural Drafting. (a) The student will be able to apply drafting techniques and given design data to the preparation of working drawings for reinforced concrete. He will be able to read and interpret placing drawings. Lecture 2 hours. Laboratory 4 hours. (b) Using given design data, he will be able to prepare structural steel working drawings. He will know the relationships among engineering, fabrication and erection drawings. Lecture 2 hours. Laboratory 4 hours.

107-5 Soils. The student will be able to sample, determine characteristics and classify soils in accordance with ASTM and AASHTO recommended procedures. He will know elementary principles of soil mechanics and foundation design. Lecture 3 hours. Laboratory 4 hours.

109-4 Concrete Materials and Proportioning. The student will be able to sample

and field test concrete materials and inspect storage, handling and batching operations. Under supervision, he will be able to design and adjust concrete mixes. Lecture 2 hours. Laboratory 4 hours.

110-15 (5,5,5) Basic Construction. (a) Woodworking Machines. The student will demonstrate his ability to set-up and operate the basic woodworking machines common to the construction industry. He will apply knowledge of preventive maintenance and accepted safety precautions. Lecture 2 hours. Laboratory 9 hours. (b) Wood Construction Methods. The student will demonstrate his knowledge of the properties of wood and wood based materials used in millwork and construction. He will further apply this knowledge in the laboratory in the construction of joints and the use of fasteners and adhesives. He will use testing methods and equipment to measure wood strengths and other properties. Lecture 2 hours. Laboratory 9 hours. (c) Millwork. The student will apply the knowledge and skills developed in Woodworking Machines and Wood Construction Methods in the construction of cabinet and millwork items. He will develop further understandings in the use of equipment common to the millwork industry. Lecture 2 hours. Laboratory 9 hours. Must be taken in a,b,c sequence or by consent of instructor.

125-8 (4,4) Statics and Strength of Materials. (a) The student will be able to apply fundamental concepts to the solution of problems. Subjects included are: force systems, strength of materials, friction, connections, thin wall pressure vessels. Lecture 4 hours. (b) Continuation of 125a: beam design, torsion, shafts, couplings, keys, combined stresses, columns, statically indeterminate members. Lecture 4 hours. Must be taken in a,b sequence, or by consent of adviser.

202-5 Cooperative Work Experience. The student is expected to work for an approved organization engaged in activities related to civil construction technology. Periodic reports are required. Laboratory 15 hours. Prerequisite: three quarters of civil technology instruction prior to enrollment.

203-5 Hydraulics and Drainage. The student will have sufficient technical background to perform inspection functions on projects where static and moving liquids are being controlled. Under supervision, he will be able to perform small area surface run-off and drainage structure computations. Subjects studied are: static pressures, flow in open channels and pressure conduits, surface run-off, drainage structures. Lecture 5 hours.

207-5 Construction Planning, Methods and Equipment. The student will have basic knowledge of construction management functions primarily from the point of view of the contractor. He will be able to assist in the preparation of work schedules, requests for progress payments and the evaluation of alternate methods of construction. Systematic problem solving procedures based on factual data are emphasized. Lecture 5 hours.

208-3 Construction Cost Estimating. The student will be able to assist in the preparation of construction cost estimates. Extensive use is made of actual working drawings and specifications. Emphasis is on quantity take-off, and the development of unit costs from given or derived data. Lecture 3 hours.

210-15 (5,5,5) Advanced Construction. (a) Light Frame Construction. The student will demonstrate his knowledge and ability in the layout and fabrication of light frame construction utilizing typical construction methods. He will identify the building components using appropriate terminology. Lecture 3 hours. Laboratory 6 hours. (b) Prefabrication. The student will demonstrate his understanding of systems and methods used in prefabricating building components, roof trusses and laminated constructors. He will also develop the ability to design fixtures for the multiple manufacture of these components. Lecture 3 hours. Laboratory 6 hours. (c) Wood Preservation and Finishing. The student will demonstrate his knowledge of the advantages and limitations of wood preservative materials, methods, and equipment. He will further demonstrate his knowledge and skill in the use of wood finishing materials and equipment. Emphasis is placed on materials used in the construction industry. A field trip is included to observe commercial treating operations. Lecture 3 hours. Laboratory 6 hours. Must be taken in a,b,c or c,a,b sequence or consent of instructor.

213-8 (3,5) Structural Design. (a) Structural Steel Design. Sufficient design background is provided for supervision of construction techniques to insure that the intentions of the drawings and specifications are fulfilled in so far as structural considerations are concerned. The provisions of the American Institute of Steel Construction Manual of Steel Construction constitute the fundamentals of this course. Lecture 3 hours. (b) Reinforced Concrete Design. The student will have sufficient background to supervise reinforced concrete con-

struction. Provisions of the American Concrete Institute Code are emphasized. Lecture 5 hours.

Correctional Services

Program, Major, Courses

(Also see *Law Enforcement*)

Increasing emphasis on the rehabilitation of criminal offenders is creating a growing demand for people trained in correctional services. The field includes penal institutions, "half-way houses," and probation and parole supervision.

The student will learn the nature and effects of crime on the perpetrator and the victim, methods used to combat crime in modern society, the development of correctional institutions, the philosophy of probation and parole, and the various approaches to rehabilitation of the offender that are being developed to help those in custodial care.

The student will develop an understanding of people and their motivations and behavior patterns that will aid him in working with offenders.

He will spend one term in supervised internship in a correctional institution or with a correctional agency.

Persons already working in the correctional field may enroll in the program on a part-time basis with the assurance that faculty members will help them to arrange classes compatibly with their work schedule. Classes are often available at various off-campus locations throughout the area.

Professionals in the field serve on an advisory committee which assists in the program. Current members are Myrl E. Alexander, Southern Illinois University at Carbondale; Warden Vernon Housewright, Vienna Correctional Center; Warden Elza Brantley, Illinois State Penitentiary at Menard; Warden George Pickett, United States Penitentiary at Marion; Anthony Kuharich, Illinois Department of Corrections, Springfield; and Associate Judge William Lewis, Anna.

A minimum of 96 hours credit is required for this major.

Associate in Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Correctional Services

GSB 104, 202, 203, 212	16
GSD 101, 102, 153	9
Administrative Sciences 301	4
Elective to be approved by program supervisor	2
Government 232	4
Sociology 372	4
Vocational and Technical Careers 102	3
Correctional Services and Law Enforcement 103, 104, 105, 106a,b, 113, 115, 209, 210, 213, 215, 217, 220	54
<i>Total</i>	96

Correctional Services and Law Enforcement

Courses

103-4 Introduction to Criminal Justice. Review of the historical and ideological foundations of law enforcement and corrections; delineation of major patterns of practice and organizational structure; and description of major programs and their inter-relationships. Lecture 4 hours.

104-4 Treatment Methods for Line Personnel. Introduction to correctional treatment methods including transactional analysis and differential treatment processes. Along with the treatment practicum (* CLE 106) the student has an opportunity to participate in ongoing treatment programs at area correctional facilities. Lecture 4 hours.

105-4 Criminal Behavior. Introduction to personality theories and their application to causes of crime with primary emphasis on individual-oriented theories; consideration of the offender and his community context as problems for rehabilitation efforts; criticism of typical treatment programs. Lecture 4 hours.

106-6 (3,3) Treatment Practicum. (a) Students have an opportunity to participate in a treatment group at a correctional facility in the area utilizing skills learned in * CLE 104. (b) Students have an opportunity to assume leadership roles in a treatment group at a correctional facility in the area utilizing techniques learned in * CLE 104 and 106a.

107-4 Law Enforcement and Community Problems. Examination of the functions of police agency as a part of the social system of the community; analysis of the impact of community problems on police activities and responsibilities; traffic control, patterns, civil disturbance, use of suppressive tactics to deal with vice, and so on. Lecture 4 hours.

113-4 Corrections and the Community. Study of the problems of the released prisoner; inter-relationship between institutional programs and his subsequent experiences; and the place and function of parole, pre-release centers, and halfway houses. Lecture 4 hours.

115-4 Interpersonal Relations. Delineation of the major patterns characteristic of relationships between predelinquents or offenders and staff of community-based programs; analysis of means of encouraging the development of internalized controls by offenders within the relatively free environment of the average community. Analysis of the fundamental problem of police relationships when situations call for persuasive techniques; discussion of principles pertinent to motivating law observance without coercion; study of the techniques of suspect interrogation, consideration of creating favorable public image of policemen. Lecture 4 hours.

205-5 Survey of Methods in Crime Detection. Study of major phases of criminal investigation: gathering and preservation of evidence, identification of offenders, apprehension, recovery of stolen property, and presentation of evidence; survey of criminalistics. Lecture 4 hours. Laboratory 2 hours.

208-4 Jail Administration for Law Enforcement Personnel. Review of historical background of American jails; introduction to the problems of jail administration stressing both security and treatment, role of jailer and supervising administrative officer such as the Sheriff or Police Chief. Lecture 4 hours. Prerequisite: 103.

209-4 Criminal Law I. Consideration of legal aspects of law enforcement. Laws of arrest, search and seizure and constitutional due process, entrapment and informers, wire tapping, interrogation, evidence examination of court procedures with special implications for criminal justice professionals. Lecture 4 hours.

210-4 Criminal Law II. Applications of legal principles to procedures characteristic of correctional systems in general with particular attention to the emerging legal challenges to traditional corrections; laws associated with arraignment appeal, habeas corpus, detainers, parole, probation, loss and restoration of rights, pardons, conditions of release in community. Lecture 4 hours. Prerequisite: 209.

213-4 Specialized Problems in Criminal Justice. Intensive probing of problem areas through employment of concepts learned in previous courses as a means of deepening of understanding. Topics such as victimless crimes rehabilitation programs and the conflicting role problems of police officers are discussed. Lecture 4 hours.

215-6 to 12 Internship in Criminal Justice Practice. Exposure of the student to an unfamiliar role in a criminal justice agency to give him the opportunity to test his classroom learning in a field situation under competent supervision. Prerequisite: fourth quarter status in major or consent of the adviser. Elective Pass/Fail.

217-4 Correctional Administration. Introduction to the management functions and recurrent problems of correctional administration; consideration of the means of balancing organizational change and stability; study of major aspects

of management such as personal, budgeting, inter-agency coordination, leadership, program-planning, and decision making. Lecture 4 hours.

220-4 Probation and Parole Practice. An introduction to an area of correctional practice that is concerned with the treatment of the offender in the community without institutional restraints. Lecture 4 hours.

221-4 Police Administration. Study of organizational patterns and management problems, recruitment, training, discipline, allocation of functions, and budget; assessment of affects of localization of government, restriction of police power, and political factors. Lecture 4 hours.

225-4 Problem Seminar in Rural Non Metropolitan Law Enforcement. Discussion of the problems facing rural and non metropolitan policing including the regionalization of police services in rural areas as well as the services available from local or regional law enforcement planning agencies. Lecture 4 hours. Prerequisite: 103.

Dance

Minor (See Physical Education for Women)

Dental Hygiene

Program, Major, Courses

The dental hygienist is the only member of the auxiliary dental health team who is licensed to work directly in the mouth. She is required to successfully complete comprehensive written national and practical state examinations before she can become licensed.

The hygienist's area of service includes oral prophylaxis (scaling and polishing of the teeth), dental health education, x-ray examinations, serving as receptionist, administrative procedures, chairside assisting, some laboratory techniques, and other services in the area of preventive dentistry. All her work is done under supervision of a licensed dentist.

Applicants for this program in dental hygiene should expect to meet exceptionally high standards, because only about one of five applicants can be accepted each year due to limitation of faculty and facilities. All university admissions requirements must be completed by April 1 and special dental hygiene requirements by May 1 of the year in which the student plans to enter, or her application will automatically be disqualified.

At the same time the student applies for admission to the University, she should request from the dental hygiene program the special application packet. She will be required to take the Dental Hygiene Aptitude Test given under the auspices of the Counseling and Testing Center in November or February so that results can be evaluated in time for the May 1 deadline. During this pre-admission period she may be asked to also make an appointment for a personal interview with the dental hygiene faculty.

During the seven quarter program, the student will gain a basic knowledge of the human body in health and disease, and a specific knowledge of the oral cavity in its relation to dentistry and dental hygiene. She will develop skill, dexterity, and speed in oral prophylaxis procedures on clinical patients in preparation for her licensing examination.

The student will have additional expenses of about \$375 to cover the cost of instruments, uniforms, and the start of her professional library.

The program is fully accredited by the Council on Dental Education of the American Dental Association.

It is served by an advisory committee made up of practicing dentists and dental hygienists. Current members are: William J. Greek, DDS, executive secretary of the Illinois State Dental Society; William C.

Maurer, DDS, regional dental consultant with the Illinois Department of Health; Frederick Custer, DDS, School of Dental Medicine, Southern Illinois University at Edwardsville; Clifford G. Neill, DDS, Carbondale; Arthur L. Lenzini, DDS, Herrin; Mrs. Betty Lacy, RDH, Decatur; and Mrs. Sandra Blankenship, RDH, Herrin.

A minimum of 118 credit hours is required for this major.

Associate in Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Dental Hygiene

GSA 209	4
GSB 202, 203	8
GSD 101, 102, 153	9
Vocational and Technical Careers 115a,b	8
Health Education 334s	4
Dental Hygiene 130, 131, 133, 134, 136, 137a,b, 138, 139, 140, 201, 210a,b,c,d, 217, 218a,b,c, 220, 313, 315, 319	82
Electives	3
<i>Total</i>	<u>118</u>

Courses

130-2 Orientation to Dental Hygiene. The student will learn the history and organization of the Dental Hygiene profession; will have a general knowledge of the anatomy of the human teeth and mouth; the processes relating to dental caries and periodontal disease; and will be able to instruct patients in proper oral health care. Lecture 2 hours.

131-5 General Anatomy. The student will learn the basic anatomical structures of the human body including the skeletal, muscular, cardiovascular, lymphatic, nervous, respiratory, digestive, urinary, endocrine and reproductive systems. Detailed knowledge of the anatomy of the head and neck will be required. Lecture 5 hours.

133-4 Histology and Embryology. The student will learn the microscopic components of the primary tissue groups of the human body, epithelial, connective, muscle and nervous tissue. In addition, the student will be expected to know and identify in detail, the microscopic components of the dental tissues and to relate the embryonic development of the structures of the head to the normal and abnormal structures of the adult head and oral cavity. Lecture 4 hours.

134-5 Microbiology. The student will learn the general characteristics of important pathogenic bacteria and viruses, conditions affecting their growth and destruction, the diseases they cause and the body's natural and acquired mechanisms for resisting and overcoming disease. Special emphasis will be placed on microorganisms of the oral cavity. The microscope will be used to identify selected bacteria and the student will conduct routine testing and staining procedures. Lecture 4 hours. Laboratory 2 hours. Prerequisite: 133.

136-4 Oral Anatomy. After a brief review of the anatomy of the head and neck, the student will learn to recognize, describe and reproduce the human teeth and the anatomical landmarks of the deciduous and permanent dentitions. Included are the nomenclature and functions of the teeth. Lecture 3 hours. Laboratory 3 hours. Prerequisites: 131 and 133.

137-10 (5,5) Pre-Clinical Dental Hygiene. (a) The student will be introduced to the basic dental equipment and instruments, their care and instrument sharpening techniques. By use of manikins with simulated gum tissue, the student will develop instrumentation techniques used for oral prophylaxis procedures. Clinical procedures to be used on clinical patients will be introduced, including oral inspection, charting, recording medical and dental histories, application of fluorides and patient education techniques. Lecture 3 hours. Laboratory 3 hours. Prerequisite: 130 and 132. **(b)** The student will continue to develop and perfect skills in hand instrumentation on both the manikin and selected clinical patients. Detailed dental appointment procedures will be stressed, including patient management, dietary counseling, special procedures the hygienist would use in specialty practices and on periodontal patients, oral hy-

giene instructions for special patients, dental emergencies and the use of various dental materials used on dental patients. Lecture 3 hours. Laboratory 3 hours. Must be taken in a,b sequence.

138-3 Pathology. The student will learn to recognize the appearance, causes and body's response to pathological conditions including congenital disorders, circulatory and neurologic ailments, tumors and neoplasms. Special emphasis will be made on pathological conditions of the oral cavity including dental caries, periodontal disorders, lesions of the hard and soft tissues and neoplasms. Lecture 3 hours. Prerequisites: 133 and 134.

139-3 Dental Nutrition. The student will identify the biological function of nutrients in maintaining a healthy body. Included will be the basic principles of nutrition in relation to dental health care; identification and recommended quantities of carbohydrates, proteins, fats, vitamins and minerals; the digestion, absorption and metabolism of those nutrients and nutritional management of dental problems. Lecture 3 hours. Prerequisite: Vocational and Technical Careers 115b.

140-3 Dental Pharmacology. The student will learn to recognize the various types of drugs, their actions and effects on tissues and organs of the body. Included will be anesthetics, depressants, stimulants, drugs affecting the autonomic nervous and cardiovascular systems, anti-infective drugs and those most commonly used and prescribed by the dentist. Lecture 3 hours. Prerequisites: 139 and Vocational and Technical Careers 115b.

201-5 Restorative Dental Materials. The student will learn the physical and chemical properties of the various dental materials used in the fabrication of dental appliances and tooth restorations, including plaster and stone, impression materials, synthetic resins, metals and cements. In the laboratory, the student will learn to manipulate those dental materials and recognize the effects of proper and improper manipulation. Lecture 3 hours. Laboratory 3 hours. Prerequisite: Vocational and Technical Careers 115b.

210-20 (5,5,5,5) Clinical Dental Hygiene. (a) The student will perform the professional services of a dental hygienist on a designated number of clinical patients with varying degrees of periodontal involvement. He will demonstrate his ability to prepare the clinic station, take a medical and dental history, perform oral prophylaxis procedures, apply topical fluoride to the surfaces of the teeth and maintain the dental equipment used in the clinic. One hour a week is devoted to a seminar discussion of a clinical practice and patient management. Lecture 1 hour. Laboratory 12 hours. Prerequisites: 130, 137a,b, and 139. (b) The student continues his clinical experience on patients performing the professional services of a dental hygienist. Special emphasis is placed on communications with adult and children patients in instructing how to maintain oral health. The use of the ultrasonic cleaning device is required on selected patients. The weekly seminar covers discussion of clinical problems and patient management. Lecture 1 hour. Laboratory 12 hours. (c) The student continues his clinical experience performing dental hygiene services for clinical patients. The student is expected to show improvement in manual skills and abilities and to demonstrate growth in use of judgment in evaluating patient needs. Special groups of patients including mentally retarded and emotionally disturbed children will be included to demonstrate the student's ability to communicate and handle problem patients. The weekly seminar continues as a discussion of clinical practice. Lecture 1 hour. Laboratory 12 hours. (d) Clinical experience is continued with the student expected to demonstrate advanced skills and abilities in performing complete clinical services for patients in all categories and to make necessary judgements as to their clinical needs. The weekly seminar is a discussion of clinical practice and management. Lecture 1 hour. Laboratory 12 hours. Must be taken in a,b,c,d sequence.

217-2 Dental Health Education. The student will learn the basic concepts of dental health education and how to apply these concepts to practical practice. Included will be developing audio-visual aids for various age groups and preparing dental health talks to be given to community groups and public school classrooms. The student will work in a small group to prepare and present a dental health project at a selected school or as a table clinic at a dental meeting. Lecture 2 hours. Prerequisite: 130, 137, 139.

218-6 (2,2,2) Dental Roentgenology. (a) The student will learn how x-rays are produced; precautions while using x-ray equipment; to differentiate between the various types of x-radiation; the characteristics and usage of various types of x-ray film; the chemical composition of processing solutions and their action

on exposed films. The student will learn the techniques of exposing, processing, mounting and interpreting bitewing surveys on clinical patients. Lecture 2 hours. (b) The student will learn the techniques of exposing full mouth periapical x-rays using the bisecting angle technique and will demonstrate ability in that technique by exposing, processing, mounting and interpreting a designated number of full mouth periapical surveys on both the training manikin and clinical patients. The student will also identify anatomic landmarks as seen on dental x-rays and understand the hazards of radiation exposure. Lecture 2 hours. (c) The student will learn the techniques of exposing full mouth periapical x-ray surveys using the paralleling technique and special surveys including occlusal and special angle views. A designated number of surveys are required using the training manikin and clinical patients. The student will identify the qualities, artifacts and faults of exposed dental films and be able to recognize the appearance of pathological conditions viewed on dental radiographs. Lecture 2 hours. Must be taken in a,b,c sequence. Prerequisites: 131, 132, 135, and Vocational and Technical Careers 115b.

220-3 Dental Public Health. The student will learn the objectives and principles of Public Health Dentistry and the organization of community dental health programs at the local, state and federal levels. Epidemiology and the basis of scientific investigation will be learned including morbidity, mortality, case rates and statistical analysis of dental data. Community preventive measures, manpower resources and purchased dental care plans will be studied. Guest lecturers and field trips will be utilized. Lecture 3 hours.

313-3 Dental Assisting. Functions and duties of a dental assistant in both the generalist and specialist type of dental practice. Normal dental housekeeping duties for both the operatory and laboratory will be emphasized and identification and usage of the basic armamentarium for various dental procedures will be stressed. Chairside assisting and normal practice administration duties will be included. Lecture 3 hours. Prerequisite: 201.

315-2 Ethics and Jurisprudence. The student will identify the rules of conduct and behavior that a dentist and hygienist must adhere to; differentiate between ethical and unethical, legal and illegal behavior and understand the consequences of unethical and illegal acts relating to the practice of dentistry. Professional responsibilities and legal obligations of the dental profession and how to prevent a malpractice charge or lawsuit will be included. Lecture 2 hours.

319-2 Orientation to Private Practice. The student will be made aware of what will be expected of hygienist in actual practice. The student will prepare a resume to be used when applying for a position and through participation in groups, will learn how to conduct himself in a professional manner during an interview. The hygienist's relationship with office personnel and how to cope with special problems associated with obnoxious patients will be included. Lecture 2 hours.

Dental Laboratory Technology

Program, Major, Courses

The dental laboratory technician constructs dental prosthetic appliances according to the prescriptions of a licensed dentist. He may work in the office of a dentist, or in an approved dental laboratory.

The student will learn to construct full dentures, partial dentures, single crowns, inlays, onlays, dental bridges, porcelain crowns and bridges, and precision attachments. He will be able to operate and maintain dental laboratory equipment.

The student also will learn dental practice acts and laws, and will be able to solve managerial problems inherent in the dental laboratory industry.

Each student is required to purchase a kit of instruments, at a cost of approximately \$395, which he will retain after graduation.

The program is the first in Illinois accredited by the Council on Dental Education of the American Dental Association. Faculty members have many years of experience in the practice of dentistry and dental laboratory technology and in dental education.

An advisory committee whose members are drawn from the profession and from educational institutions serves the program. Current members are Edward Grimes, South Shore Dental Laboratory, Inc., Chicago; Virgil Beadle, Sr., D.D.S., Carbondale; Jack Piper, Modern Materials Manufacturing Company, St. Louis; James D. Harrison, D.D.S., School of Dental Medicine, Southern Illinois University at Edwardsville; Harry M. Stoup, D.D.S., Downers Grove; Larry E. Worth, University Dental Laboratory, Edwardsville; Ray Zepp, Jalenko Company, Florissant, Missouri; and Tilghman Tade, Tade Dental Laboratory, Belleville.

A minimum of 102 credit hours is required for this major.

Associate In Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Dental Laboratory Technology

GSB 202	4
GSD 101, 153	6
Secretarial and Office Specialties 126	3
Vocational and Technical Careers 102, 104, 115a, 141	15
Dental Laboratory Technology 102, 103a,b, 104a,b, 113a,b, 114, 128, 143, 202, 203, 204a,b, 205, 206a,b, 208	74
<i>Total</i>	102

Courses

102-6 Tooth Anatomy Theory and Laboratory. The student will be able to identify individual tooth form and write or recite the nomenclature of tooth anatomy. The student will also be able to draw teeth, carve twelve plaster carvings, fourteen wax carvings, and a maxillary and mandibular wax-up that includes full crowns, $\frac{3}{4}$ crowns, inlays and onlays. Lecture 3 hours. Laboratory 9 hours.

103-10 (4,6) Removable Partial Denture Theory and Laboratory. (a) The student will be able to write and perform the basic steps of partial dentures, and to identify impression materials, laboratory stones and plaster, component parts, types of surveyors, artificial teeth and waxes. He will construct master cast, mount, cast, survey, design and arrange teeth. Lecture 2 hours. Laboratory 6 hours. (b) The student will be able to describe the planning, designing, and surveying partial dentures. He will be able to construct refractory cast, wax cast, invest, cast and finish framework. He will arrange artificial teeth, construct denture bases, repair broken dentures. Lecture 3 hours. Laboratory 9 hours.

104-10 (4,6) Complete Denture Theory and Laboratory. (a) The student will be able to write and perform the basic steps of complete dentures, and to identify impression materials, laboratory stone and plaster, acrylic resins and articulators. He will be able to construct edentulous cast, individual trays, base plate, occlusal rims, and to mount cast on articulators. Lecture 2 hours, laboratory 6 hours. (b) The student will be able to describe the related factors of complete dentures, construction, and to perform the setting of cast using jaw relations, vertical relations, centric and eccentric relations. He will be able to arrange artificial teeth, construct immediate, conventional dentures, rebase, reline, duplicate and repair denture. Lecture 3 hours, laboratory 9 hours.

113-6 (3,3) Science of Dental Materials. (a) The student will be able to identify the different materials used in dental technology. He will be able to list the composition, uses, advantages and disadvantages of dental materials, and be able to communicate and use the proper terminology of the dental materials used in the laboratory. Lecture 3 hours. (b) The student will be able to identify precious metals, alloys, and chrome alloys: their application to dental procedures, including the physical and mechanical properties, crystalline structure, investments, methods of casting, soldering and heat treatment and polishing. Lecture 3 hours.

114-2 Dental Laboratory Problems. The student will be able to communicate orally or written with staff, lab owners and manufacturers of dental supplies concerning problems of the dental laboratory business. Students will be able to demonstrate knowledge of laboratory management.

128-2 Oral Anatomy. The student will be able to identify the anatomical features of the head and oral cavity. Identify the blood and nerve supply to the oral cavity and area. Be able to list the muscles of mastication, and know the origin and insertion of each muscle. Identify the anatomical parts of the maxilla and mandible. Differentiate the movements of the mandible. Be able to identify the temporomandibular articulations. Lecture 2 hours.

143-2 Orientation of Dental Technology. The student will be able to define the proper views of the dental technology education, and will be able to explain what the education has to offer. Will also familiarize himself with the new educational environment so that he may better adjust himself to it. Lecture 2 hours.

202-2 Professional Ethics. The student will be able to differentiate between organizations affecting dental laboratories, be able to identify the industry and its members and to identify the ethics necessary in dealing and cooperating with the dental profession. He will know the legal requirements of the technician and the dental laboratory. Lecture 2 hours.

203-4 Dental Orthodontics and Pedodontics Theory and Laboratory. The student will be able to construct space maintainers, fitted mouth guards, and Hawley retainers. Proficiency in the use of orthodontic pliers and soldering equipment must be demonstrated by the student. He will be able to communicate on the restorative techniques for primary and young permanent teeth, space maintenance and prosthetic appliances for children. Lecture 2 hours. Laboratory 6 hours.

204-12 (6,6) Beginning Crown and Bridge Theory and Laboratory. (a) The student will be able to write the definitions of the nomenclature of beginning crown and bridge, communicate orally, as well as written the theory that is necessary for successful completion of the laboratory projects, construct dies, master and working casts, full and veneer crowns, acrylic jackets, inlay and onlays. Lecture 3 hours. Laboratory 9 hours. (b) The student will be able to differentiate between different types of pontics, waxing, venting and sprucing techniques; identify soldering and heat treatment techniques; list techniques in crown and bridge repair; write theory inherent in broken-stress, steele's telescope and cantilever bridgework; construct broken stress, steele's, telescope and cantilever bridgework; construct broken stress, steele's, telescope and cantilever bridgework. Lecture 3 hours. Laboratory 9 hours.

205-4 Dental Occlusion Theory and Laboratory. The student will be able to identify articulation points of cusp-marginal ridge occlusion, and cusp-fossa occlusion, and identify and correct problems caused by malocclusion. They will wax-up a complete maxillary and mandibular arch using the Lundeen Cusp-Marginal Ridge Technique and the Peter K. Thomas Cusp-Fossa Technique. Lecture 2 hours. Laboratory 6 hours.

206-10 (4,6) Dental Ceramics Theory and Laboratory. (a) The student will be able to communicate definitions of the nomenclature of ceramics; draw substructure design for single unit ceramics; write constituents of dental porcelains; draw sprucing and investing procedures for high fusing golds; construct platinum matrices, porcelain single unit crowns and jackets. Lecture 2 hours. Laboratory 6 hours. (b) The student will be able to draw substructure design for multiple unit ceramic bridgework, write the theory of color control, demonstrate the uses and maintenance of porcelain equipment, construct multiple unit porcelain bridgework, and demonstrate a working knowledge of shade control. Lecture 2 hours. Laboratory 6 hours.

208-4 Precision Attachments Theory and Laboratory. The student will be able to write the theory inherent in precision attachment work; list the different types of precision attachments and their uses and construct cases using the Williams Precision Attachment and Hook, the Neys Precision Attachments and Sterns Precision Attachments. Lecture 2 hours. Laboratory 6 hours.

Design

Department, Major, Courses

The Department of Design sees multi-faceted problems today. It therefore seeks to prepare multi-faceted individuals to help solve them. Learning to state today's complex needs and meet them with the relevant set of interrelated tools requires a different, even experimental approach.

It is not an industrial design school, nor a commercial art school, nor

a school of architecture. It is not a professional school in the sense of preparing graduates specifically for clearly defined jobs. It views the designer not simply as a manipulator of tools, materials, and products of the present industrial process, but as a change agent, an individual capable of purposeful action guided by humanistic values and equipped with generalized problem-solving principles. It focuses on problems and opportunities of people and their environment, with an emphasis on process and information rather than form or material substance.

In the learners who share its educational venture, it seeks the following characteristics: evidence of leadership, imagination and self-discipline; independence in thought and action with a firm sense of responsibility; a willingness to operate in changing and unstructured situations; the ability to see the world through the eyes of another; and a willingness to question and examine critically.

The courses are different. Most similar to the familiar class are courses which focus on developing problem-solving skills emphasizing philosophy, theory, and method. Another course form is the experimental design activity which enables students to engage in the entire variety of behaviors needed in an actual problem-solving context. Students organize themselves as necessary to best deal with the problem. Group behavior is a significant part of the process.

Bachelor of Arts, COLLEGE OF HUMAN RESOURCES

<i>General Studies Requirements</i>	68
GSA (three areas)	16
GSB (three areas)	16
GSC (three areas) Including GSC 205	16
GSD	14
GSE	6
<i>Requirements for Major in Design</i>	92
Design 300 level: 4 hours each if offered from at least 5 of the 10 areas; balance in area of specialization. Design 201 may be substituted for one area	48
Design 400 level: from at least 2 of the 10 areas	44
<i>Electives</i>	26
300 level courses or above outside Department of Design. May include General Studies courses.	
<i>Total</i>	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/> 186

Student must have a minimum 3.0 grade point average and it is recommended that he earn a grade of *B* in GSC 205, Design 120, and Design 201 to be admitted as a major in design.

Courses

120-3 Introduction to Design. Survey of the philosophy of the Department of Design. Team taught with weekly lectures and projects directed toward an overview of the department's program.

201-15 (5,5,5) Design Fundamentals. Dialogue, problems, and experimentation illuminating the possibility of the participants and their environment. The individual is encouraged to struggle with the problems of making a world he wants to live in. Visual and verbal communications, alternative futures, gaming and problem-solving are some of the techniques used in the involvement.

259-3 to 60 Occupation Credit. For occupational credit earned at junior colleges, technical institutes or related work experience. Credit is granted by department evaluation.

301-4 Integrative Readings. Assigned readings in books and periodicals survey-

- ing the theory and practice of contemporary design, followed by weekly discussion sessions. Prerequisite: design major or consent of department.
- 302-4 Team Management.** Study of individual and group behavior in a team situation. Attention is focused on the utilization of team resources, problem-solving, and decision-making.
- 310-4 Basic Materials and Process Exploration.** Introduction to materials and processes for the designer with emphasis on the manipulation of three-dimensional materials, i.e., wood, metal, and plastics. Prerequisite: design major or consent of instructor.
- 311-4 Fundamentals of Visual Design.** Introduction to the tools and techniques of visual communication and processes involved in two-dimensional design solutions. Prerequisite: design major or consent of instructor.
- 320-4 Problem-Solving Strategy.** Development of capability for creating strategies and evaluation techniques as a means of finding solutions to design problems. Prerequisite: design major or consent of instructor.
- 330-4 Photography for Designers.** Introduction to still photographic techniques as a tool for the designer. Prerequisite: design major or consent of instructor.
- 332-4 VTR for Designers.** Introduction to video tape recording as a design tool. Prerequisite: design major or consent of instructor.
- 335-4 Basic Visual Communication.** Exploration in visual communication with emphasis on experimentation and various methods of print. Projects directed toward development through all phases of graphics from problem-solving to production of finished art.
- 340-4 Introduction to Computer Graphics.** Introduction to the concepts and methods used to access a computer graphics system. Prerequisite: design major or consent of instructor.
- 341-4 Computer Methods for Designers.** Introduction to the broad possibilities in the use of computers for problem-solving in the design profession. Practical experience gained through student design projects.
- 350-4 Three-Dimensional Studies.** An introduction to the orderly subdivision of three-dimensional space. Prerequisite: consent of instructor.
- 351-4 Structural Studies.** An introduction to some of the methods by which a pre-determined form may be stabilized. Prerequisite: consent of instructor.
- 354-4 Human Settlement—Theory for Design.** A critical appraisal of the failure of present urban networks to cope with the issues of human settlement as a design for either present or future. The establishing of criteria to guide us in a search for more serviceable patterns. Prerequisite: course level attainment.
- 360-4 Artifacts and Modern Society.** Analysis of existing products and their effect on people in modern society. The development of new solutions to significant human needs. Prerequisite: design major or consent of instructor.
- 362-4 Introduction to Environmental Design.** Study of peoples' relationship to their environment and environmental factors which can control and change their behavior.
- 370-4 Basic Systems Analysis.** Introduction to systems analysis techniques including PERT, graphical analysis, modeling and simulation. Prerequisite: design major or consent of instructor.
- 385-4 Introduction to Design Science.** Introduction to the methodology and systems approach to comprehensive design science. Prerequisite: design major or consent of instructor.
- 391-4 Undergraduate Seminar.** Special projects developed with adjunct and visiting professors. Prerequisite: consent of department.
- 399-2 to 4 Independent Study.** Creative project developed by student and faculty sponsor and approved by department chairman. Prerequisite: consent of department.
- 420-2 Portfolio and Display Techniques.** Assist the student in planning and preparing a portfolio and resume for approaching his segment of the job market. Offered for undergraduate credit only. Prerequisite: senior standing in design and consent of instructor and undergraduate status.
- 430-4 to 8 Advanced Visual Communication.** Advanced work in visual design, with emphasis on creative research, and experimental design solutions to two- and three-dimensional communication problems. Offered for undergraduate credit only. Prerequisite: 335 or consent of instructor and undergraduate status.
- 435-24 (8,8,8) Human Communications Design Laboratory.** Exploration and visual design as applied to various mediums of communication. Offered for undergraduate credit only. Prerequisite: design major or consent of instructor and undergraduate status.

- 445-24 (8,8,8) Computer Graphics Laboratory.** Creative utilization of existing computer programs; designing graphic qualities in the final output and learning to direct resources economically toward a successful end product, i.e., plots, documents, slides, film, etc. Offered for undergraduate credit only. Prerequisite: 335, 340 or 341 or consent of instructor and undergraduate status.
- 450-4 Further Structural Studies.** Further studies of ideas introduced in 350 and 351. Offered for undergraduate credit only. Prerequisite: consent of instructor and undergraduate status.
- 462-24 (8,8,8) Design and Environment.** Practical experience through projects in cooperation with outside organizations. Analysis of a problem; develop, communicate and implement solutions. Need not be taken in sequence. Offered for undergraduate credit only. Prerequisite: design major or consent of instructor and undergraduate status.
- 464-24 (8,8,8) Human Settlement—Practice of Design.** Using the theoretical criteria already developed, to study and propose design outlines to future patterns of human settlement. Offered for undergraduate credit only. Prerequisite: 354 and undergraduate status.
- 485-24 (8,8,8) Design Science Laboratory.** Procedural methodology and systems approach to comprehensive design science. Offered for undergraduate credit only. Prerequisite: senior standing in design or consent of instructor and undergraduate status.
- 491-4 to 24 Senior Seminar in Design.** Special projects in design developed with adjunct and visiting professors. Offered for undergraduate credit only. Prerequisite: consent of department and undergraduate status.
- 496-4 to 12. Special Problems in Design.** Independent design project developed by student in conjunction with faculty sponsor and approved by department chairman. Offered for undergraduate credit only. Prerequisite: senior standing in design and consent of instructor and undergraduate status.
- 499-4 to 12 Senior Honors Research.** Research projects for senior honors students developed by the student and faculty sponsor and approved by department chairman. Offered for undergraduate credit only. Prerequisite: senior standing in design and consent of instructor and undergraduate status.
- 520-4 to 10 Educational Tool Systems.**
- 530-4 to 12 Studies in the Industrial Process.**
- 535-4 to 12 Research in Product Design.**
- 540-4 to 12 Studies in Communications Design.**
- 545-4 to 12 Research in Communications Design.**
- 550-2 to 16 Field Study in Design.**
- 560-4 to 12 Environmental Control.**
- 570-4 to 12 Design Science Exploration.**
- 575-4 World Ecological Studies.**
- 576-4 to 8 Structural Evolution.**
- 599-3 to 9 Thesis.**

Driver and Safety Education

Minor (See Health Education)

Early Childhood Education

Major (See Elementary Education)

Earth Science

Minor

This course of study is designed for the student with an interest in the interdependent dynamic processes that take place on and near the earth's surface. At present the program is structured to complement a major in another discipline. This work may be taken through the College of Liberal Arts, the College of Science, or the College of Education.

A minor in earth science consists of a core program of 20-23 hours and 9 to 12 hours of electives, as follows:

<i>Core Program</i>	20-23
GSA 110-4, 330-3 or Geog. 331-4, and Geog. 302	
Agricultural Industries 306a-3 or GSA 312-3 or Geography 324-4	
Geology 221-3 or 374-4, 400-3	
<i>Electives</i>	9-12
GSA 322, 340	
Agricultural Industries 306b	
Geography 310, 432a, 432b, 424, 438	
Geology 425	
Plant Industries 301	

Economics

Department, Major, Courses

The aim of the course of study in economics is to develop in the student such critical and analytical skills as underlie the ability to understand economic problems and institutions, both in their contemporary and historical setting.

Majoring in economics gives the student a basic understanding of the chief theoretical and institutional branches of the subject as well as the academic background necessary for many positions in industry and labor organizations, for work in the economic branches of government service, for college or university teaching, for graduate study in economics and business, and a background preparation for legal studies.

Bachelor of Science Degree, SCHOOL OF BUSINESS

<i>General Studies Requirements</i> (For detailed description, see School of Business information, p. 57.)	68
<i>Professional Business Core</i>	56-57
(See page 57.)	
<i>Requirements for Major in Economics</i>	32-36
Economics 310, 315, 330, 440, 441	20
Any four remaining Economics Courses (including GSB 311) Except 301, 490	12-16
<i>Electives</i>	25-30
<i>Total</i>	186

*Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS **

<i>General Studies Requirements</i>	68
<i>Supplementary two year college requirement in FL/Math</i>	21-25
One year Mathematics	(5) + 3 to 5
GSC FL	9 ¹
2nd year FL or Math	9 to 11
<i>Requirement for Major in Economics</i>	42-44
GSD 110	3
Economics 214, 215, 310, 315, 330, 440, 441	28
Any four remaining Economics Courses (including GSB 311) except 301, 490	14-16
<i>Electives</i>	49-55
<i>Total</i>	186

¹ GSC FL does not satisfy GSC requirement in College of Liberal Arts.

* Any student planning to pursue graduate work in Economics should consider completing Math 150.

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i>	68
Must include GSB 202	
<i>Requirements for Major in Economics</i>	48
GSD 110	(3)
Economics 214, 215, 310, 315, 330, 440, 441	28
Any 20 hours of economics courses except Economics 301. GSB 311 may be included	20
<i>Professional Education Requirements</i>	36
Guidance 305	
Secondary Education 310, 315, 352-16	28
Two courses to be chosen from a list of restricted professional education electives, refer to the catalog section entitled Sec- ondary Education	8
<i>Electives</i>	<u>34</u>
<i>Total</i>	186

Minor in Economics

The following courses constitute a 24-28 hour minor in economics: Economics 214, 215, 315, and any four economics courses, two of which must be at the 400-level.

Courses

Courses in this department may require the purchase of additional textbooks.

All departmental courses may be taken on a Pass/Fail basis except where permission is denied to their students by other units requiring economics courses, e.g., Economics 214 and 215 which are required by the School of Business as part of its professional business core.

214-4 Economics (Macro). Analysis of the methodology of economics; the determination of the level of national income, employment, and output; money and banking; and economic fluctuations, including government monetary and fiscal policy to control those fluctuations. Elective Pass/Fail.

215-4 Economics (Micro). Analysis of the operation of an economy in the determination of product prices, wage rates, levels of output by the firm, and the distribution of income, including the role of government therein. Elective Pass/Fail.

301-1 to 6 Economic Readings. Readings in books and periodicals in a defined field, under direction of one or more staff members. Periodic written and oral reports. Prerequisite: consent of instructor and chairman. Elective Pass/Fail.

303-4 Introduction to Economics—MBA. Survey of economic principles including national income, money and banking, fiscal policy, economic growth, prices, theory of the firm, labor, rent, interest, and profits. MBA students only. Elective Pass/Fail.

304-4 Introduction to Statistics—MBA. A survey of statistics. Specifically, hypotheses testing and confidence interval determination. Three hours lecture; 2 hours laboratory. Restricted to MBA students. Elective Pass/Fail.

308-4 Economics and Business Statistics I. Prerequisite: GSD 110. Elective Pass/Fail.

310-4 Labor Problems. Analysis of labor markets including factors affecting wage levels and wage differentials, income distribution, unemployment, and poverty; labor unions and collective bargaining; public policy toward trade unionism and labor market operation. Prerequisite: 215. Elective Pass/Fail.

GSB 312-3 Comparative Economic Systems. Prerequisite: GSB 211.

315-4 Money and Banking I. Prerequisite: 214. Elective Pass/Fail.

323-3 Operation of Public Utilities. (Same as Engineering Technology 323.) The study of public utilities regulation, electrical utility, load factors, rates fixed, and operating costs, power plant economics, and distribution policy. Prerequisite: GSB 361. Elective Pass/Fail.

- 330-4 Public Finance.** Government spending, taxing, budgeting, and debt in relation to resource allocation, income distribution, and economic stability. Elective Pass/Fail.
- 333-4 Economics of the Environment.** Factors which lead to physical and human deterioration in a market economy. Consideration of solutions to such problems as urban decay, over-population, and pollution. Prerequisite: 214, 215. Elective Pass/Fail.
- 411-4 Collective Bargaining and Dispute Settlement.** Nature, issues, procedures, economic effects. Prerequisite: 310 or consent of instructor. Elective Pass/Fail.
- 416-4 Money and Banking II.** Emphasis upon the Federal Reserve System and other banking systems. Prerequisite: 315 or consent of instructor. Elective Pass/Fail.
- 418-4 Economic History of Europe.** A survey of the economic growth of Europe with emphasis upon the development of European agriculture, industry, finance, and international trade since 1750. Prerequisites: 214 or consent of instructor. Elective Pass/Fail.
- 419-4 Latin American Economic Development.** A survey of the resource base of Latin American economic development with special reference to the problems of transition from an export-import to an integrated industrial economy; monetary policies; problems of economic planning. Prerequisites: 214 or consent of instructor. Elective Pass/Fail.
- 420-8 (4,4) Economic Development of the United States.** (a) Economic Development of the United States to 1900. The main forces in the development of the U.S. economy from discovery to the end of the 19th century. Stresses the use of economic theory in historical analysis. (b) Recent Economic History of the United States. Review and analysis of the chief characteristics, trends, and continuing problems of the economy of the United States in the 20th century. Need not be taken in a,b sequence. Prerequisite: 214 and 215 or consent of instructor. Elective Pass/Fail.
- 422-4 Introduction to Economic Development.** An analysis of the preconditions, processes, and problems involved in economic development. Both the theory and policy relevant to development, with special emphasis upon the developing or emerging economics, are stressed. Prerequisites: 214 and 215. Elective Pass/Fail.
- 425-8 (4,4) Economics in Geography.** (Same as Geography 422a.) Economic theory and analysis: elementary mathematics, individual's preferences, production functions, the firm, markets, welfare economics, and Pareto Optimality, and externalities. Practice in elementary reading and writing from geographic and associated literature. Elective Pass/Fail.
- 429-4 International Economics.** Intensive treatment of the principles of international economics with special emphasis on the classical and modern theories of international trade. Income effects. Balance of payments adjustments. Prerequisites: 214 and 215, or consent of instructor. Elective Pass/Fail.
- 430-4 Regional Economy.** Natural economic regions, governmental action (as in the T.V.A.), local applications. Prerequisite: 215. Elective Pass/Fail.
- 431-3 Public Finance II.** State and local. Prerequisite: 330 or consent of the instructor. Elective Pass/Fail.
- 436-4 Government and Labor.** (Same as Government 436.) A study of labor relations and legislation considering both constitutional and economic aspects. Prerequisite: GSB 211 and GSB 212, or consent of instructor. Elective Pass/Fail.
- 440-4 Intermediate Micro Theory.** A more intensive treatment of price theory. Prerequisites: 215, or consent of instructor. Elective Pass/Fail.
- 441-4 Intermediate Macro Theory.** Basic analytical concepts of the modern theory of aggregative income determination. Prerequisites: 214 or consent of instructor. Pass/Fail.
- 443-4 Senior Seminar in Economics and Problems and Policy.** Application of the tools of economic analysis to the study of contemporary social problems. Economics graduate students not permitted to enroll in this course. Prerequisite: 440, 441. Elective Pass/Fail.
- 450-8 (4,4) History of Economic Thought.** The development of economic thought; (a) ancients to 1850; (b) 1850 to present. Must be taken in a,b, sequence. Prerequisites: 214 and 215. Elective Pass/Fail.

460-4 Russian Economy. Development of Russian trade, agriculture, industry, government, finance, and standards of living in successive periods in relation to the historical, geographic, economic, and ideological background. Prerequisite: 214 and 215, or GSB 211, or consent of instructor. Elective Pass/Fail.

462-4 Economic Development of the Middle East. Economic structure of the countries constituting the Middle East; economic, political, social, and cultural forces influencing economic development. Prerequisite: 214 and 215, or consent of instructor. Elective Pass/Fail.

465-4 Mathematical Economics I. A systematic survey of mathematical economic theory. Conditions of static equilibrium (including stability conditions), optimizing behavior under constraints, and dynamic economic models. Prerequisite: 440 and Mathematics 140a,b, or consent of instructor. Elective Pass/Fail.

467-4 Introduction to Econometrics. Problems in the quantification and testing of economic theories. Introduction to regression analysis. Prerequisite: 308. Elective Pass/Fail.

471-4 Land Resource Economics. (Same as Agricultural Industries 471 and Forestry 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; and land utilization as related to institutional arrangements. Prerequisite: 215 or equivalent. Elective Pass/Fail.

479-4 Problems in Business and Economics. (Same as ADSC 479.) Elective Pass/Fail.

481-4 Comparative Economic Systems. Capitalism, socialism, fascism, and other forms of the economy. Prerequisite: 214 and 215, or consent of instructor. Elective Pass/Fail.

490-4 Workshop in Economic Education. (Same as Elementary or Secondary Education 490.) Designed to assist elementary and secondary school teachers in promoting economic understanding in the minds of their students through the translation of economic principles and problems into classroom teaching materials. Elective Pass/Fail.

500-4 to 8 Economics Seminar.

501-1 to 12 Economics Readings.

502-1 to 6 Readings in Resource Economics.

505-2 to 12 Political Economy Seminar.

507-1 to 12 Practicum in Undergraduate Teaching.

510-4 Research in Economics: Design, Methodology, and Presentation.

512-4 Seminar in Labor Institutions.

517-4 Monetary Theory and Policy.

518-4 Monetary Theory and Policy II.

520-8 (4,4) Economic Development Theory and Policy.

522-4 Microeconomic Foundations of Labor Markets.

525-4 Seminar—Economics and Geography.

526-4 Managerial Economics.

530-4 Foreign Trade.

531-4 International Finance.

533-4 Public Finance Theory and Practice.

540-8 (4,4) Microeconomic Theory I and II.

541-8 (4,4) Macroeconomic Theory I and II.

552-4 Seminar in Economic Thought.

555-4 Seminar in Economic History.

562-4 Seminar in Economic Systems.

566-4 Mathematical Economics II.

567-8 (4,4) Econometrics I and II.

570-4 Seminar in Contemporary Microeconomic Theory.

571-4 Seminar in Contemporary Macroeconomic Theory.

575-4 Microeconomic Regulation.

581-4 Economics of Welfare.

582-4 Economic Behavior.

585-4 Seminar in Social Economy.

590-1 to 6 Seminar in Contemporary Economics.

599-1 to 9 Thesis.

600-1 to 48 Doctoral Dissertation.

Education

Courses

200-1 to 16 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

300-1 to 16 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

400-1 to 16 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: written consent of instructor.

500-1 to 16 Experimental Education.

Educational Administration and Foundations

Department, Major (Graduate only), Courses

Courses

GSB 331-3 The American Educational Systems.

355-4 Philosophy of Education. (Same as Philosophy 355.) Intended primarily for those interested in education as a profession. Schools of philosophy are reviewed as they relate to education, and students are encouraged to develop and apply philosophic thought to the practices and problems of education. Supplementary textbooks to a maximum of \$15 may be required.

360-4 Subcultures in American Education. Poverty, racial prejudice, and various subcultural issues as may relate to American educational development. Analysis of conflicting systems of cultural values and norms and their implications.

421-2 to 4 Law and the Teacher. Legislative and case law as it applies to the role of the teacher.

431-4 History of Education in the United States. An historical study of American Education.

432-4 Education and Social Forces. A study of the social forces that shape educational policies in the United States.

454-4 Contrasting Philosophies of Education. An examination of current educational problems and trends in the light of contrasting philosophies of education.

500-4 Research Methods.

501-12 (4,4,4) Seminar in Educational Administration.

502-4 Seminar in Comparative Education.

503-4 Seminar in Philosophy of Education.

504-4 Seminar in History of European Education.

505-4 to 8 Advanced Seminar in Comparative Education.

506-4 Seminar: Curriculum in Relation to American Culture.

507-12 (4,4,4) The Twentieth Century and Education.

508-8 (4,4) Interdisciplinary Seminar in Education Administration.

511-12 (4,4,4) Internship Practicum.

512-4 Workshop in Adult Education.

520-8 (4,4) Legal Basis of American Education.

524-12 (4,4,4) School Administration.

527-2 to 4 Current Issues in School Administration.

533-4 School Buildings.

534a-4 School Finance.

534b-4 School Business Administration.

534c-4 Educational Application of Electronic Data Processing.

536a-4 Administrator's Workshop.

539-4 Community Development Through the School.

556-8 (4,4) Educational Supervision.

560-4 Curriculum.

563-4 School Public Relations.

564-4 Secondary School Principalship.

575-1 to 4 Individual Research.

576-1 to 4 Readings in Administration and Foundations.

- 589-2 to 12 General Graduate Seminar.
 591-2 Doctoral Seminar in Philosophic Foundations.
 592-4 Doctoral Seminar in Cultural Foundations of Education.
 596-5 to 9 Independent Investigation.
 597-1 to 3, 598-1 to 3, 599-5 to 9 Thesis.
 600-1 to 48 Dissertation.

Electronic Data Processing

Program, Major, Courses

The need for skilled computer programmers is increasing with the growth of data processing. The task of persons who design data processing applications and systems grows more complex as the power of computers and related information processing equipment increases.

The student will gain a general working knowledge of programming languages with sufficient depth of understanding to grow with new demands. He will develop a basic knowledge of electronic computer operating systems and related machines. He will learn supportive skills in accounting, statistics, mathematics, and communications.

The student should plan to spend approximately \$30 for special laboratory materials.

An advisory committee made up of professional people and educators helps to keep instruction responsive to needs in the field. Members also serve as visiting lecturers. Those currently serving are Deal T. Dohr, manager of supervisory administration, McDonnell Douglas Automation Company, St. Louis; Ellis T. Bick, general mechanization supervisor, Southwestern Bell Telephone Company, St. Louis; Don MacPherson, education director, Data Processing Management Association, Park Ridge; J. Henry Malkus, supervisor of data processing, Office of the Illinois Secretary of State, Springfield; Robert Parks, president, United Computer Services, Marion; and Thomas Purcell, director, Information Processing Center, Southern Illinois University at Carbondale.

A minimum of 96 credit hours is required for this major.

Associate In Applied Science Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Electronic Data Processing

GSB 212	4
GSD 101, 102, 153	9
Electronic Data Processing 101, 104, 201a,b,c, 203a,b, 204a,b, 205, 207, 235	59
Secretarial and Office Specialties 110a,b	8
Vocational and Technical Careers 102, 104	6
Electives	10
Recommended: Selected courses in the physical sciences, social sciences, mathematics, secretarial and office specialties courses, and vocational and technical careers courses.	

Total 96

Courses

101-5 Automatic Data Processing Machines. The successful student will be able to demonstrate in the laboratory and on examinations, the proper operation of basic unit record machines; to read computer number systems including BCD, octal and hexadecimal; to describe the basic components and devices of computer systems; to flow chart logical solutions to simple data processing problems, and to describe the general use of several different programming lan-

guages including COBO1, assembler, PL/1, FORTRAN and RPG. Lecture 4 hours. Laboratory 3 hours.

104-5 Data Processing Applications. The successful student will demonstrate by examination a general knowledge of processing procedures and terminology for basic business applications including billing, accounts receivable, accounts payable, inventory control and payroll. Lecture 5 hours. Prerequisite: 101.

107-3 Automatic Data Processing Concepts. This course is designed as a concepts course for non DP majors. Each student will learn the basic operation and functions of IBM unit record machines, be able to flow chart logical solutions to simple data processing problems and describe the use of several different programming languages. Lecture 2 hours. Laboratory 3 hours.

109-3 Punched Card Preparation. This course is designed as a skill course for non DP majors. Each student will learn the basic operation and function of IBM unit record machines, memorize the keyboard and design program cards for the IBM 26 and 29 model key punches. Most of the laboratory time will be spent in improving speed and accuracy of alphameric punching. Lecture 2 hours. Laboratory 3 hours. Prerequisite: typing skills.

201-15 (5,5,5) Program Operating Systems. This three part sequence course will enable a successful student to (a) operate an IBM 360/40 computer under DOS and prepare class problems using RPG, (b) demonstrate skills in Job Control using sorts, merges, monitors and program library maintenance, (c) generate and modify operating systems. Lecture 4 hours. Laboratory 3 hours. Prerequisite: 101.

202-3 FORTRAN IV 360/40 Programming. The successful student will demonstrate a working knowledge of the FORTRAN IV programming language by flow charting, coding, compiling and testing a variety of mathematical and statistical problems. Lecture 2 hours. Laboratory 3 hours. Prerequisite: Math 111a or consent of instructor.

203-10 (5,5) Assembler Language 360/40 Programming. The successful student will demonstrate a working knowledge of the 360/4 Assembler Language by flow charting, coding, compiling and testing (a) simple class problems using card, disk and magnetic tapes files, and (b) complex problems using card, disk and magnetic tapes files in combination. Lecture 4 hours. Laboratory 3 hours. Prerequisite: 210a.

204-10 (5,5) COBOL 360/40 Programming. The successful student will demonstrate a working knowledge of the 360/40 COBOL programming language by flow charting, coding, compiling and testing (a) simple class problems using card, disk and magnetic tapes files, and (b) complex problems using card, disk and magnetic tapes files in combination. Lecture 4 hours. Laboratory 3 hours. Prerequisite: 201a.

205-5 Systems Design and Development. The successful student will demonstrate in class discussion, on examinations and by preparing a case study, his ability to design an effective business information processing system including the system flow chart, system specifications, feasibility, the implementation procedure and essential documentation. Lecture 5 hours. Prerequisite: 104.

207-5 Data Processing Field Project. This course is designed to provide the student with a data processing problem beyond the classroom. Each student selects and completes a suitable project in the area of systems design or programming. His work is evaluated by the manager of the cooperating center and his VTI instructor. Prerequisite: 201a.

208-6 (3,3) Introduction to Data Processing and Numerical Control Programming. The student will be able to (a) Operate basic data processing machines; plan code, test and debug an elementary FORTRAN IV program; plan, code, test and prove an elementary AD-APT part program, and (b) Describe the environment in which the AD-APT system resides and become proficient in using the AD-APT part programming language. Lecture 2 hours. Laboratory 3 hours. Prerequisite: TT 210.

235-4 Business Statistics. Collection, tabulation, and graphic presentation of data, averages, and index numbers, economic trends, cycles, correlation, and application. Lecture 4 hours. Prerequisite: * SCR 110a or 126.

Electronics Technology

Program, Major, Courses

The trained electronics technician will find a virtually unlimited range of

occupational opportunities in the expanding electronics industry, where he will work closely in support of the electronics engineer.

The student will gain a basic understanding of AC-DC and active element circuits so that he can design, build, test, and analyze new types of circuitry. He will learn communication systems, digital circuits, and industrial systems in a theory-laboratory situation where he will develop the ability to solve problems and report his test results in data sheets, graphs and technical papers. He will learn to do diagnostic analyses and troubleshoot and repair electronics equipment.

The student should expect to spend approximately \$10 for supplies and materials.

An advisory committee drawn from among professionals active in the industry helps to assure that the student gets a course of studies that will prepare him for existing and developing conditions in his field. Current members are Al Budlong, supervisor of design, Bell Telephone Laboratories, Naperville; Eshmal Porter, senior engineer, McDonnell-Douglas Corporation, St. Louis; H. N. Schlechte, branch manager, field engineering division, IBM Corporation, Springfield; Carl Remy, senior engineer, Electric Energy Incorporated, Joppa; and Robert Sell, vice president for engineering, National Transformer Company, Johnston City.

A minimum of 97 credit hours is required for this major.

*Associate In Applied Science Degree, SCHOOL OF TECHNICAL
CAREERS*

Requirements for Major in Electronics Technology

GSA 101 and 106 or VTC 120	8
GSB 202, 212	8
GSD 101	3
Mathematics 111a	5
Vocational and Technical Careers 102, 118	7
Electronics Technology 101a,b,c, 125a,b,c, 127, 129, 201a,b,c, 225a,b,c, 231, 228 or 239	66
<i>Total</i>	97

Courses

101-12 (4,4,4) Basic Electronics Laboratory. (a) AC-DC Circuit Analysis. Upon successful completion of this course each student should be able to select proper instruments to measure properly, voltage, current and resistance. He should apply Ohm's law, Kirchoff's law, Thevenin's theorem, Norton's theorem, superposition theorem to AD-DC breadboarded circuits showing the advantage of each to a given practical situation. He should apply troubleshooting techniques to practical circuits and know the weaknesses of various types of meters in operation. He should design, build, and test meter circuits (given a basic movement), voltage dividers, photo cell circuits, thermistor circuits, battery circuits, switching circuits, transformer circuits and resonant circuits. Laboratory 10 hours. (b) Active Element Circuit Analysis. Upon successful completion of this course each student should be able to measure amplified gain, efficiency, input impedance, and output impedance. He should plot the amplifier frequency response and simulate its response with resistances and reactances in order to handle extremes properly. He should measure power supplies, with and without regulation, efficiency, % ripple, % regulation and analyze how much each component contributes to these criteria of operation. He should design, set up, test, and redesign vacuum tube, transistor, and FET amplifiers using graphical and mathematical techniques. These designs will be evaluated and compared under demands of extreme frequency, output and heat applications. Laboratory 10 hours. (c) Communications Circuits Laboratory. Upon successful completion of this course each student should be able

to make a voltage analysis of a practical amplifier and oscillator, measure amplifiers gain, oscillators frequency and output, % modulation of an AM transmitter, AGC voltage, conversion efficiency of mixer-oscillator operation, align IF amplifiers, local oscillators, RF amplifiers, troubleshoot AM transmitters—receivers and align FM detectors. Laboratory 10 hours. Must be taken in a,b,c sequence or by consent of adviser. Must be taken concurrently with corresponding section of 125.

125-15 (5,5,5) Basic Electronics Theory. (a) AC-DC Circuit Analysis. The student will demonstrate his understanding of the basic laws and principles of electricity by solving circuit analysis problems in series, parallel and series-parallel combination circuits involving direct and alternating current in resistive, inductive, capacitive and combinations of each. Lecture 5 hours. (b) Active Element Circuit Analysis. The student will demonstrate his understanding of the basic principles of the active elements; vacuum tubes, transistors, FET's, varactors and integrated circuit amplifiers by solving problems with these components connected with the ELT 125A components in series and parallel combinations with AC-DC applied. Lecture 5 hours. (c) Communication Circuits. The student will demonstrate his understanding of the basic principles of communication circuits by solving problems of amplifiers, oscillators, detectors, antennas, mixers, modulators singly and in combination as AM-FM transmitters and receivers. Lecture 5 hours. Must be taken in a,b,c sequence or by consent of adviser. Must be taken concurrently with corresponding section of 101.

127-3 Basic Technological Concepts. The student will demonstrate his ability to simulate a measurement problem calibrating a meter against a primary or secondary standard and make a prediction and analysis of errors with the ability to work slide rule problems. He will present technical work from the laboratory and technical library in the form of data sheets, laboratory reports, tables, graphs, monographs, and empirical equations. He will be able to draw an organizational diagram, a chart of technical skills and a flow chart of money in a typical company. He will be able to take a simulated industrial problem and write up specifications, ratings, deratings, and interpret evaluation testing. He will be in proper orientation to his technical school and occupational choice of industry. Lecture 3 hours.

129-3 Electrical Circuits Problems. The student will demonstrate his ability to plot AC waves and vectors graphically and calculate mathematically and present on the J complex plane problems on inductance, capacitance, resistance, impedance, and phase angle. He will be able to apply the above mathematics to practical cases involving Q, resonant point, and band width. He will be able to apply the above mathematics, filter design, practical electrical transmission and distribution problems and power supplies including three-phase. Lecture 3 hours. Prerequisite: 101 and 125 or consent of adviser.

201-12 (4,4,4) Advanced Electronics Laboratory. (a) Pulse and Microwave. Upon successful completion of this course, each student should be able to operate triggered oscilloscopes, design, construct, test and evaluate wave shaping circuits and wave generation circuits. He should calibrate and operate microwave generation and measurement devices such as cavity wave meters, slotted line, hybridtee, tunable termination and phase shifter. He should apply pulse techniques to microwave operation. Laboratory 10 hours. (b) Digital Logic Circuits. Upon successful completion of this course, each student should be able to design, construct, test and evaluate logic and switching circuits which perform operations in computer type circuitry and apply Boolean algebra. He should trace and troubleshoot printed logic switching and computer type circuit boards. He should combine basic logic circuits into systems which perform Digital computer operations. He should construct, analyze, and troubleshoot analog-digital and digital-analog converters. Laboratory 10 hours. (c) Instrumentation and Control. Upon successful completion of this course, each student should be able to design, build, test and evaluate closed loop circuits involving controlled voltage, lighting, sound, heat, motor speed, torque and frequency. He should design, build, test, and evaluate circuits involving controlled voltage, lighting, sound, heat, motor speed, torque and frequency. He should design, build, test, and evaluate circuits involved with the SCR, gas tubes, ring modulators, photo cells, strain gage, and synchros. He will set up, test, and evaluate problems involving pneumatic-electronic instrumentation equipment. Laboratory 10 hours. Must be taken in a,b,c sequence or by consent of adviser. Must be taken concurrently with corresponding section of 225, or consent of adviser.

202-4 Basic Avionics Controls Laboratory. At the completion of this course, the student will be able to set up, analyze, and trouble-shoot basic open and closed loop servo controls including synchros. He will be able to apply Boolean Algebra to switching and pulse type circuitry and to troubleshoot basic circuits. Simple microwave circuits will be analyzed. Laboratory 10 hours. Prerequisite: 101b and 125b.

225-15 (5,5,5) Advanced Electronics Theory. (a) Pulse and Microwave. The student will demonstrate his ability to solve problems of RC-RL integrators, RC-RL differentiators, clippers, clippers, triggers, multivibrators (astable, bistable, monostable, and emitter coupled) sweep circuits, transmission lines (using the Smith Chart) singly and in combinations of systems involving pulse and microwave, AM-FM transmitters and receivers. Lecture 5 hours. (b) Digital Logic Circuits. The student will demonstrate his ability to solve problems in the common number systems, to change from one number system to another. He must be able to apply Boolean algebra with all of its rules, laws, and theorems to practical designs of logic circuitry which correspond to Boolean equations. He must set up and apply binary counters, decoders, shift-storage registers. He will solve analog-digital and digital-analog converter problems. Lecture 5 hours. (c) Instrumentation and Control. The student will demonstrate his ability to design an industrial control system to control voltage, light, sound, heat, motor speed torque and frequency. He will be able to solve problems with SCR, gas tube amplifier, ring modulator photocells singly and in control systems. Bode plot with criteria for stability will be used. He will solve problems associated with interfaces in instrumentation equipment. Lecture 5 hours. Must be taken in a,b,c sequence or by consent of adviser. Must be taken concurrently with the corresponding section of 201. Prerequisite: 101 and 125 or consent of adviser.

226-5 Basic Avionics Controls Theory. At the completion of this course, the student will be able to design, analyze, and paper trouble-shoot, open and closed loop, simple open and closed loop controls including synchros. He will be able to design, analyze, and paper trouble shoot switching and pulse circuitry. Simple microwave circuits will be analyzed. Lecture 5 hours. Prerequisite: 101b and 125b.

228-3 Federal Communications Commission License Test. The student will demonstrate his ability to summarize his work in electronics by making preparation to take the FCC second class test. Lecture 3 hours. Prerequisite: consent of adviser.

231-3 Diagnostic Analysis. The student will demonstrate his ability to draw block diagrams of complicated electronic systems indicating the function of each block, the symptoms which each block malfunctions and give an estimate of the overall operation of the system from the effects of the individual blocks. He will be able to logically analyze each block to determine the effects on the block of each component therein. Lecture 3 hours. Prerequisite: 101 and 125, or consent of adviser.

239-3 Computer Systems Applications. The student will demonstrate his ability to draw a block diagram of the basic computer sections and interconnections, list the function of the computer control of circuitry, identify in a large block diagram of a computer all major sections, control functions, instruction flow, data flow, and error checking systems. This will be able to be applied to the Digiac 3060 computer. The student will be able to place in the computer problems in machine language, trace its solution and indicate possible malfunctioning areas. Lecture 3 hours. Prerequisite: 201b and 225b, or consent of adviser.

245-5 Electro-Mechanical. The student will calculate Ohm's Law and Kirchoff's Law problems. He will apply these laws to solving motor, generating, and electromechanical relay problems. He will calculate Bowle's Law and Charles' Law problems, applying them to practical situations involving temperature and pressure problems. Lecture 2 hours. Laboratory 9 hours. Prerequisite: consent of adviser.

250-6 (2,2,2) Electronics Learning Experiences. (a) Controls, Motors, Generators. Upon completion of this course the student will be able to choose the proper contractors and fuses for a given job. He will be able to read meters and apply Ohm's Law to the DC motor-generator, series, parallel and combination circuits with the proper wire sizes. 24 hours total. (b) Electronics Measuring Instruments. Upon completion of this course, the student will be able to measure amps, volts and ohms on the AC-DC equipment. He will be able to design and build simple meter circuits from meter movements and color coded resistors. He will be able to operate the oscilloscope to solve AC

Ohm's Law problems. 24 hours total. (c) Amplifiers, Power Supplies and Transducers. Upon completion of this course, the student will be able to measure an amplifier's gain, frequency response, input and output impedance. He will be able to measure a power supplies efficiency, ripple and regulation and properly apply a new power supply to a given load. He will be able to analyze an amplifier to properly apply input transducers (microphones, phonopickups, etc.) and output transducers (speakers, meters, etc.). This course is designed for non-majors and is comprised of 24 hours of audio-visual tutorial instruction where the learner is continually involved with experimental hardware in order to make responses into the A-V equipment. Test time and outside enrichment are added to the 24 hours per course. Must be taken in a,b,c sequence at the learner's pace with registration possible in one or more courses per term. Elective Pass/Fail.

Elementary Education

Department, Major, Courses

Bachelor of Science Degree, COLLEGE OF EDUCATION

One who is preparing to teach in elementary school should select a major in elementary education or early childhood education. The Department of Elementary Education is concerned with providing the sequences of professional education courses that lead to certification for teaching in the public elementary schools of Illinois. Further, it is concerned with programs composed of general and professional course requirements which lead to the Bachelor of Science degree with a major in elementary education or early childhood education.

Elementary Education

<i>General Studies Requirements</i> ¹	68
<i>Requirements of Major in Elementary Education</i>	23-44
16 hours of physical and biological science (GSA courses)	(16) ²
16 hours of social science (to include GSB 202 and 300b or 300c, other GSB courses)	(16)
24 hours of language arts (to include GSD 101,* GSD 102,* GSD speech and GSC * literature. May use GSC literature and speech courses for fulfillment of remaining require- ments)	(12-24) ... 24
12 hours of fine arts (GSC 100, 101, or 205. Must include one music course and one art course. Courses may be taken as a part of GSC)	(3-12) ... 9
11 hours of mathematics (GSD 107, Mathe- matics 308 and 309)	(5) ... 6
10 hours of health and physical education (GSE 201, GSE electives, and Physical Edu- cation for Women 319)	(6) ... 4
12 hours in area of specialization	12
<i>Professional Education</i>	62
Educational Administration and Foundations 355	4
Guidance 305	4
Elementary Education 314, 337, 310, 351, 423, 424, 441	40
Electives	14

<i>Electives</i>	13-34
<i>Total</i>	186

¹ Must take constitution test or GSB 212 or GSB 300a

² Numbers in parentheses indicate hours which could be completed in General Studies

* A minimum of *C* is required in each of GSD 101, GSD 102, and a^aGSC 200 or 300 level English course, or a minimum of *B* in each of GSD 101 and GSD 102

Early Childhood Education

<i>General Studies Requirements</i> ¹	68
<i>Requirements for Major in Early Childhood Education</i>	37-48
16 hours of physical and biological science (GSA courses)	(16) ²
16 hours of social science (to include GSB 202 and 300b or 300c, other GSB courses)	(16)
24 hours of language arts (to include GSD 101,* GSD 102,* and GSD speech and GSC * literature. May use GSC literature and speech courses for fulfillment of remaining require- ments)	(12-24) ... 12
17 hours of fine arts (to include one of GSC 101, 100, or 205; Art 300a; Occupational Education 302; Music 200 or two levels of Music 010e; Music 300c)	(3) ... 14
11 hours of mathematics (GSD 107, Mathe- matics 308 and 309)	(5) ... 6
10 hours of health and physical education (GSE 201, GSE electives, and Physical Education for Women 319)	(6) ... 4
12 hours in area of specialization	12
<i>Professional Education</i>	62
Educational Administration and Foundations 355	4
Guidance 305	4
Elementary Education 203, 310, 316, 337, 309, 350, 423, 441 ..	42
Electives	12
<i>Electives</i>	8-20
<i>Total</i>	186

¹ Must take constitution test or GSB 212 or 300a

² Number in parentheses indicate hours which could be completed in General Studies

* A minimum of *C* is required in each of GSD 101, GSD 102, and a GSC 200 or 300 level English course, or a minimum of *B* in each of GSD 101 and GSD 102

Courses

100-3 Introduction to Elementary Education. A thorough investigation of the factors which are involved in teaching in the elementary school. Not open to juniors and seniors.

203-3 Understanding the Elementary School Child. Concepts needed to understand the child in the elementary school situation. Two hours lecture and two hours observation. Prerequisite: GSB 202.

301-2 Early Fall Field Experience. Work completed in public schools. Designed to acquaint prospective elementary teachers with the teaching-learning process in elementary classrooms. Direct supervision of a public school teacher. Minimum of two weeks in early September. Enrollment must be arranged through the Office of Professional Education Experiences.

309-3 Kindergarten-Primary Social Studies Methods. The objectives and

- methods of teaching social studies at the kindergarten-primary level, culminating in the planning of a unit of work. Prerequisite: 316.
- 310-4 Teaching Mathematics in the Elementary School.** Objectives of mathematics education, learning theory as it related to mathematics, major concepts to be taught, modern approaches to instruction, with emphasis on the use of concrete learning aids. Four class hours and two laboratory hours per week. Prerequisite: Mathematics 308 and 309.
- 312-2 to 8 Instructional Analysis and Field Work.** Presents systems for analysis of classroom interaction. Allows teacher education students to move into classrooms for direct observation and participation. Variable credit permits the student to utilize part of the course credit for observation and participation during his block program and other aspects of his teacher education program. Prerequisite: Admission to teacher education program. Enrollment must be arranged through the Office of Professional Education Experiences.
- 314-4 Elementary School Methods.** The fundamental principles of education, the interpretation of current educational theory and practice, the processes of teaching and learning involved in elementary education. Prerequisite: Guidance 305.
- 316-4 Kindergarten-Primary Methods and Curriculum.** Philosophy and principles underlying the teaching of four-to-eight-year-olds. Emphasis upon organization, equipment, materials and methods for promoting growth of young children. Prerequisite: Guidance 305.
- 337-4 Reading in the Elementary Schools.** The principles of reading, factors that condition reading, together with grade placement of aims and materials; diagnostic and remedial treatment. Prerequisite: 314.
- 350-4 to 16 Kindergarten-Primary Student Teaching.** Prerequisites: 203, 309, 316, and 337.
- 351-4 to 16 Elementary Student Teaching.** Prerequisites: 314, 337, and two specialized elementary education courses.
- 375-2 to 3 Readings in Elementary Education.**
- 401-2 to 4 Problems in Public School Reading.** Requirements: attendance at all sessions of a reading conference; preparation of a paper showing practical applications of theory to the student's own teaching situation.
- 410-4 Improvement of Instruction of Mathematics in the Kindergarten-Primary Grades.** Recent findings, current practices and materials used in building a basis for quantitative thinking in early childhood education. Will involve work with young children. Prerequisite: 310.
- 411-4 Seminar in Instruction.** To assist student teachers and in-service teachers in solving classroom problems. Involves clinical study and discussion of behavioral and learning situations, with special attention to the development of characteristics and needs of students.
- 413-4 Children's Literature.** Emphasizes types of literature, analysis of literary qualities, selection and presentation of literature for children. Prerequisite: Guidance 305.
- 415-4 Improvement of Instruction of Mathematics in the Upper Elementary School.** The grade placement of content, newer instructional practices, materials of instruction, and means of evaluation. Will involve work with elementary students. Prerequisite: 310 or consent of instructor.
- 423-4 Teaching Elementary School English Language Arts.** Oral and written communication processes, with emphasis on the structure and process of the English language arts. Specific attention to the fundamentals of speaking English, writing, spelling, and listening. Study of learning materials, specialized equipment, and resources. Prerequisite: 314 and 337 or 316 and 337.
- 424-4 Teaching Elementary School Social Studies.** Emphasis on the structure and process of social studies. Specific attention to developing social studies objectives, planning units, developing a general teaching model, organizing the curriculum, and evaluating behavioral change. Study of learning materials, specialized equipment, and resources. Prerequisite: 314 or 316.
- 430-3 Workshop in Creative Writing in the Elementary School.** Techniques of encouraging creative writing in the elementary school.
- 431-4 Education for the Disadvantaged Child.** An understanding of culturally disadvantaged children with emphasis on the nonurban poor. Discussion of necessary adjustments of school programs emphasizing early school admission, experimental background, self-concept, language development and learning style. Prerequisite: 337.
- 433-4 Workshop in Kindergarten-Primary Education.** Meets needs of in-service teachers in such areas as curriculum adjustment, remedial teaching,

child development, and early childhood education. Prerequisite: student teaching or teaching experience.

437-4 Corrective Reading Techniques for the Classroom Teacher. A discussion of individualized reading instruction based upon diagnostic testing procedures. Remediation of difficulties, grouping strategies, techniques, and materials for the slow learner in the regular classroom will be emphasized. Prerequisite: 337 or equivalent or consent of instructor.

441-4 An Introduction to Teaching Elementary School Science. Content and methods of elementary school science, grades K-8. Emphasis on the materials and strategies for using both traditional and modern techniques of science education. One or more field trips. Prerequisite: 314.

442-4 Analysis and Design of Elementary Science Curricula and Instructional Strategies. Analysis of existing science materials with reference to educational philosophy, learning theory, and instructional design. Emphasis on student development of instructional designs and seminars to critique prepared materials. Field trips. Prerequisite: 441 or consent of instructor.

443-4 Workshop in Social Studies. Material on critical areas of the world, not commonly emphasized in elementary social studies. Areas considered; significant geographical concepts, Asia, Africa, Russia, and Eastern Europe. Outstanding specialists in social science present their specialties.

445-4 Parent Involvement in Education. Materials, techniques, and resources suitable for use by teachers in helping parents and teachers to understand how they can help each other in the partnership responsibilities of the education of children from a variety of backgrounds. Prerequisite: Student teaching or consent of instructor.

465-4 Seminar in Psychology of Elementary School Subjects. Psychological principles of learning applied to the mastery of materials used in elementary school subjects. Prerequisites: 314, Guidance 305.

475-2 to 8 Workshop in Elementary Education. Evaluation of innovative programs and practices. Acquaints teachers within a single school system, or a closely associated school system, with the philosophical and psychological considerations and methods of implementation of new programs and practices in one of the following areas: curriculum, supervision, language arts, science, reading, social studies, problems in elementary education, arithmetic, kindergarten-primary, elementary education, administration and supervision. Field trips may be required. Prerequisite: 314.

490-2 to 3 Workshop in Economic Education in Elementary Schools. (Same as Economics 490.) A study of newer programs stressing economic understandings of the social studies in the elementary school.

503-9 NDEA Summer Institute in Reading.

505-4 Reading in Elementary School.

507-2 to 4 Independent Readings.

509-4 to 12 Practicum.

510-4 to 8 Seminar: Problems in Reading.

514-4 Organization and Administration of Reading Programs.

515-4 Special Problems in the Teaching of Arithmetic in the Elementary School.

516-4 to 12 Internship in Reading.

518-4 Supervision of Professional Education Experiences.

519-2 to 4 Readings in Research in Elementary Mathematics.

520-4 Diagnosis and Correction of Elementary Mathematics Disabilities.

521-12 (4,4,4) Diagnosis and Correction of Reading Disabilities.

525-4 Specialty Area Seminar.

531-4 Disadvantaged Schools-Research and Teaching.

537-4 Kindergarten-Primary Reading.

541-4 Problems, Trends, and Research in Elementary School Science.

542-1 to 4 Language Arts in the Elementary School.

543-4 Teaching the Social Studies in the Elementary School.

557-4 The Elementary Principalism.

558-3 to 4 Leadership in Elementary Education.

559-4 Workshop in Instructional Leadership.

560-4 Kindergarten-Primary Education.

561-4 The Elementary School Curriculum.

563-4 Organization of the Elementary School.

564-4 to 12 Internship.

570-4 Seminar, Research in Elementary Education.

575-2 to 4 Individual Research. (Selected areas with 2 to 4 hours in each.)

596-5 to 9 Independent Investigation.

599-3 to 9 Thesis.

600-1 to 48 Dissertation.

Engineering

Major, Courses

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

The four-year undergraduate program leading to the Bachelor of Science degree in engineering is a modern flexible curriculum fully accredited by the Engineers Council for Professional Development (ECPD), the recognized agency for accrediting engineering curricula in the United States. Graduating seniors with a major in engineering are eligible to take the Engineer-In-Training (EIT) examination as a first step toward registration as a Professional Engineer (PE). The program of study, which is designed to offer the greatest possible flexibility of choice to the student in his preparation for professional practice or for graduate study, properly reflects the interdisciplinary character of modern engineering. In order to provide the necessary breadth, all engineering undergraduates are required to demonstrate competence in a common core area. In their junior or senior year, students choose among three senior options in the Departments of Electrical Sciences and Systems Engineering, Engineering Mechanics and Materials, or Thermal and Environmental Engineering.

All three senior options are fully accredited by the Engineers Council for Professional Development. They each offer a coordinated series of required courses and technical electives designed to serve and fulfill the interests of the student. A judicious selection of courses will help the student prepare for professional employment in one of the traditional engineering fields or in a non-conventional area of engineering. The graduating student is prepared to contribute to the solution of complex problems of society, even when they cross conventional engineering disciplines.

Transfer students from junior colleges are encouraged to complete a baccalaureate oriented associate degree program. They should have strong backgrounds in mathematics, physical sciences, social sciences, and humanities. Students are encouraged to complete specific freshman and sophomore course requirements which include 9 hours of English composition and speech, 12 hours of university physics, 10 hours of chemistry, 10 to 20 hours of mathematics (including calculus), 9 hours of statics and dynamics, 3 hours of graphics, and 25 hours of social studies and humanities. Calculus and analytical mechanics are prerequisites for most junior-level engineering courses.

Students with Bachelor of Science degrees in engineering can specialize further at the graduate level.

Bachelor of Science Degree, SCHOOL OF ENGINEERING AND TECHNOLOGY

<i>General Studies Requirements</i>	51
Substitute GSA-1; and GSD mathematics *	
<i>Requirements for Major in Engineering</i>	147
Chemistry 122-6 and 123-4	10

Mathematics 150-10, 252-7, 305a-3, and approved electives-6	26
Physics 211-9, 212-3, 300-4	16
Engineering Technology 102a	3
Engineering 100-1, 222-3, 260-9, 300-6, 302-3, 311-9, 313-6, 335-4, 336-4, 338-3, 361-3, 443-6	57
Optional Groupings	30
Electrical Sciences and Systems Engineering: 432-3, 436-3, 439a-3, 446-3, 463a-3, technical electives-15 including at least 6 hours of Electrical Sciences and Systems Engineer- ing credit.	
Engineering Mechanics and Materials: 447-3, 449-3, 464-3, 413-6, technical electives-15 including at least 3 hours of Engineering credit.	
Thermal and Environmental Engineering: 300-3, 415a-3, 416a-4, 411-3, 480a,b-6, technical electives-11.	
<i>Electives</i>	<u>5</u>
<i>Total</i>	198

* General Studies requirements for engineering:

GSA: 4 hours, 115a

GSB: 16 hours

GSC: 16 hours. Foreign language will not count toward this requirement.

GSD: 9 hours, 101, 102, 153

GSE: 6 hours, including 201-3

Courses

Safety glasses and a sliderule with log-log scales (or the equivalent) are required of all engineering students.

100-1 Engineering Orientation. Introduction to engineering as a profession and discipline. A comprehensive review and analysis of the role of the engineer in modern society. Mandatory Pass/Fail.

222-3 Digital Computer Programming. Programming of digital computers in a problem-oriented language (FORTRAN). Problems solved will illustrate some of the elementary methods of numerical analysis. Prepares the student to use digital computers in later courses. Includes programming of a computational problem from inception to completion: formulation and analysis, flow charting, coding, check-out, documentation. Prerequisite: Mathematics 111b. Elective Pass/Fail.

260-9 (3,3,3) Analytical Mechanics. (a) Principles of mechanics; force systems; statics of particles; statics of rigid bodies in two dimensions and three dimensions; equilibrium; analysis of structures; distributed forces; forces in beams and cables. Prerequisite: Mathematics 150b or concurrent enrollment. (b) Centroids and center of gravity; friction; moments of inertia; kinematics of particles; kinematics of rigid bodies; relative motion. (c) Kinetics of particles; Newton's laws of motion (mass, force and acceleration); kinetics of rigid bodies; D'Alembert principle; work and energy; impulse and momentum. Must be taken in a,b,c sequence.

300-9 (3,3,3) Thermodynamics. (a) The study of fundamental energy concepts and the laws of thermodynamics, availability of energy, properties of gases, vapors and gas-vapor mixtures, flow and nonflow processes. (b) Engine cycles and applications to internal combustion engines, gas turbines, steam turbines, jet devices, air compressors and air engines. Combustion refrigeration and air conditioning. (c) Axiomatic thermodynamics, criteria for equilibrium; absolute temperature; Maxwell's relations; open systems; the phase rule; systems of one and two components; idealized systems; equations of state; systems involving chemical and electrochemical equilibrium. Prerequisite: Mathematics 252a.

302-3 Heat Transfer. Fundamental modes of heat transfer and application to engineering systems. Steady state heat transfer by conduction, convection, and radiation. Laboratory. Safety glasses are required at an approximate cost of \$4.50. Prerequisite: 222, 300a and Mathematics 305a.

311-9 (3,3,3) Properties of Materials. (a) Introduction to the mechanics of deformable bodies. Torsion: Bernoulli-Euler Beam theory. Inelastic behavior. Stress concentrations. Mohr circle. Thermal stresses. Maxwell and Kelvin-Voigt theories of viscoelasticity. Buckling of columns. Laboratory manual required, approximate cost \$4.50. Prerequisite: 260b, Mathematics 252b. (b) Atomic constitution of materials, Lattice theory, structure, point imperfections in solids, diffusion, dislocations, domain structure. Fatigue, friction and wear, polymer characteristics, relation between microscopic and macroscopic properties. Prerequisite: 260b, Mathematics 252b. (c) Physics of submicroscopic materials, electronic states in solids, relation of bonding to electrical properties, properties of semiconductors, electron transport, dielectric properties of materials. Prerequisite: 311b.

313-6 (3,3) Fluid Mechanics. (a) A broad introduction to the concepts and principles of fluid statics, kinematics and dynamics using the continuum as a mathematical model. Differential and integral form of the basic law of conservation of mass, Newton's law of motion in the form of Euler's, Bernoulli's and the momentum equation; the basic law of conservation of energy. Laminar and turbulent pipe flow; open channel flow. Turbomachinery. Fluid property measurement. Prerequisite: 260c. (b) Resistance to flow around submerged bodies, basic boundary layer theory. Dimensional analysis by means of the Buckingham Pi-theorem and the method of non-dimensionalizing the governing equations, dynamic similitude. Perfect gas equations, basic theories of compressible flow in short passages and pipes; shock waves. Inviscid flow concepts including the velocity potential. Laboratory. Must be taken in a,b sequence.

335-4 Electrical Circuits. Introduction to basic laws and concepts of linear circuits. Direct current analysis; Kirchhoff's laws; principle of superposition; Thevenin's theorem; Norton's theorem; sinusoidal analysis; complex frequency; phasor concepts; resonance. Prerequisite: Mathematics 252a.

336-4 Introduction to Electronics. The ideal amplifier. Diode and controlled source are introduced, followed by a detailed study of actual amplifiers and electronic devices. Includes concepts of device modeling, voltage, current and power gain, input and output impedance, and biasing. Current technology of field effect, and bipolar junction integrated circuits and devices. Prerequisite: 335.

338-3 Electromagnetic Fields. Electric and magnetic fields using Vector Analysis. Evolution of Maxwell's equations through the laws of Coulomb, Gauss, Ampere, and Faraday and the concepts of energy, potential, and Poisson and Laplace fields. Prerequisite: Mathematics 305a.

361-3 Engineering Economics. Procedures for evaluating the relative economic merit of applied engineering principles. These procedures, which are included in all professional engineering examinations, involve comparison of alternate engineering estimates. Prerequisite: Mathematics 111.

375-6 (3,3) Mechanics of Machines. (a) Theory and analysis of the dynamics of various machine elements. Study and design of motion control mechanisms. Vibratory phenomena. (b) Kinematics and synthesis. Balancing. Computing mechanisms. Selected design topics. Prerequisite: 311a.

402-12 (4,4,4) X-Ray Crystallography. (a) Introductory Crystallography. Lattice theory of the crystal. Miller indices. Crystal zones. The Bravais lattices. Symmetry elements. Proper and improper rotations. Point groups: crystal classes. Operators involving translation. Space groups. Elements of crystal structure. Coordination. Structure types. (b) X-Ray Diffraction Techniques. X-ray diffraction by single crystals: fundamental equations. Reciprocal lattice and Ewald sphere. Optical analog: The optical diffractometer. Single crystal photographic methods: the Laue method: rotating and oscillation. Weissenberg, Buerger-precession and Jong-Bourman, Divergent and convergent-beam techniques. Interpretation of the x-ray diagrams. Diffractometric methods; fundamentals. Identification of polycrystalline materials with x-ray diffractometer (power method). Single crystal diffractometry. Absolute intensity measurements. (c) Crystal Structure Analysis. Fundamental diffraction relations. Determination of the cell size, chemical formula, symmetry and space group. Measurement of intensities: geometrical and physical factors affecting intensities. The structure factor; phase of the structure factor. The anisotropic temperature factor. Fourier synthesis. Electron-density projections. The phase problem. Utilization of anomalous dispersion. Direct determination. The Patterson method. Refinement of the structure with high speed computers. (Was Applied Science 401.)

403-4 Statistical Thermodynamics for Engineers. Principles of kinetic theory and classical statistical mechanics as applied to thermodynamic systems. Discussion of the equilibrium state and laws and properties of thermodynamics with applications to engineering systems. Prerequisite: 300c.

407-4 Thermal Pollution and Waste Heat Management. Physical, chemical, and biological aspects of thermal pollution. Methods of waste heat disposal from power plants. Management of heated effluents. Prerequisite: senior standing.

408-3 Bioenvironmental Engineering. The application of microbiological and biochemical principles to various phases of bio-engineering, sanitary engineering, and analysis and design of bioprocesses.

409-3 Engineering Hydrology. Hydrologic cycle and analyses. Infiltration studies, groundwater exploration. Statistical analyses, flood routings. Mechanics of entrainment, movement and deposition of sediment material by moving fluids. Analysis of roughness and sediment transport rate in rivers. Prerequisite: 313b or consent of instructor. Elective Pass/Fail.

410-8 (4,4) Electronics and Instrumentation for the Life Sciences. (a) Review of electrical theory and electrical aspects of biological systems; introduction to circuit analysis; fundamentals of instrumentation, primarily electronic; laboratory. (b) Transducers and characteristics of instruments used in biological research; basic computer and data-system theory and applications; analysis of biological waveforms; simulation of biological systems; laboratory. Only the b course may be taken for credit in engineering. (Was Applied Science 410.)

411-3 Design of Engineering Experiments. Engineering data evaluation by application of statistical techniques. Design of engineering experiments. Prerequisite: 222, Mathematics 252a.

412-3 Engineering Practice: Legal Considerations. Legal responsibilities of the professional engineer. The law of contracts with enough emphasis on legal procedure to enable students to understand decided cases. Practice in applying some of the principles through written communications. Prerequisite: senior standing.

413-6 (3,3) Intermediate Mechanics of Fluids. (a) Application of basic laws of nature to the theory of fluids using the continuum approach. Kinematics of fluid motion using various coordinate systems; the continuity equation. Dynamics of viscous fluid motion; the Navier-Stokes and Energy equations. Solutions to the fundamental system of equations. Introduction to magnetofluid mechanics. (b) Dimensional analysis. Incompressible irrotational flows. Fundamentals of compressible fluid flow including isentropic flows, normal and oblique shocks, and Prandtl-Meyer expansions. Turbulence. The application of the equations of motion to turbulent flow fields. Reynolds equations. Production, convection, and dissipation of turbulence. Prerequisite: 313b, and Mathematics 305a.

414-3 Mechanics of Soils. Fundamental theories of soil behavior and their applications in engineering. Laboratory. Soil-water systems and interactive forces; stress-deformation characteristics; ultimate strength; theory of consolidation; methods for estimating soil deformation. Applications of soil engineering in earth dams, retaining walls, foundations, piles, and underground conduits. Prerequisites: 311a, 313a.

415-9 (3,3,3) Principles of Water Quality Control. (a) Characteristics of water quality, natural and man-made; relationship of quality to use; unit operations or water quality control for municipal and industrial use. (b) Characteristics of waste waters; biological and chemical processes for treatment of sewage and industrial wastes; water quality criteria in stream pollution control. (c) Application of physical, chemical, and biological unit operations and processes to design of waste treatment facilities. Laboratory. Safety glasses are required at an approximate cost of \$4.50. Prerequisite: 300a or consent of instructor. Elective Pass/Fail.

416-8 (4,4) Air Pollution Control. (a) Introduction to emission sources, transport/diffusion, and effect of air pollution. Aspects of social, meteorological, biological, physiological, and chemical relationships plus control methods and economics included. Laboratory. (b) Engineering control theory, procedures, and equipment related to particulate and gaseous emissions control. Source and atmospheric sampling and analytical techniques covered. Laboratory. Taken in a,b sequence. Safety glasses are required at an approximate cost of \$4.50. Prerequisite: senior or graduate standing. Elective Pass/Fail.

417-3 Fundamental Compressible Fluid Flow. Principles of fluid flow. Wave

propagation in compressible media, isentropic flow of a perfect gas, normal and oblique shock waves, Prandtl-Meyer expansions, and supersonic aerodynamics. Prerequisite: 313b.

418-3 Digital Computers in Research. Computational techniques for matrix inversion, solution of linear equations, and characteristic roots and vectors; least squares analysis, curve-fitting, and regression; design of experiments; solution of nonlinear equations; min-max functional approximation techniques; generation of approximate solutions, Monte Carlo techniques. Prerequisite: 222 and Mathematics 150a.

420-6 (3,3) Transport Phenomena. (a) Mechanism of heat, mass, and momentum transport on both molecular and continuum basis. Estimation of transport properties. Generalized transport equations in one or three-dimensional system. (b) Analogy of mass, heat, and momentum transfer. Macroscopic balances, operations, penetration theory, simultaneous mass and heat transfer, equilibrium operations. Prerequisite: 302 and 313b.

421-3 Introduction to Systems Theory. An introduction to the description of engineering systems by the means of a general systems theory. Prerequisite: Mathematics 305a.

422-4 Operations Research and Mathematical Model Formulation. Applications of digital computers to the mathematical modelling of physical systems with particular emphasis on the simulation and problem solving techniques of operations research. Dynamic models of transportation, allocation, and replacement. Physical applications and computation techniques related to the theory of games. Prerequisites: 222, Mathematics 221, or consent of instructor.

423-3 Hybrid Computation. The simultaneous use of the analog and the digital computer for the solution of engineering problems. Scaling of problems. Block diagrams and logic are stressed. Linear and nonlinear differential equations. Simulation as well as iterative analog computation are covered. Supplementary text required, costing approximately \$2.00. Prerequisite: 222 and 432 or equivalent.

426-3 Communications Theory. Basic information theory, Fourier series and transform, sampling theory, modulation, and signal to noise ratio. Prerequisite: 439a.

428-1 Water Quality Laboratory. Measurements of water quality parameters performed. Use of modern instrumental techniques demonstrated. Safety glasses are required at an approximate cost of \$4.50. Prerequisite: 415a.

430-1 to 8 Special Problems in Engineering. Consists of topics and problems selected either by the instructor or by the student with the approval of the instructor. Prerequisite: senior standing in engineering and consent of the instructor.

431-6 (3,3) Analog and Digital Computer Design. Introduction to the design of analog and digital computers. Subjects include: operational amplifiers, multiplying circuits, regulated power supplies, 3 column algebra, switching circuits, memory devices. Prerequisite: 336.

432-3 Analog Computation in Engineering Design. An introduction to the theory and operation of an analog computer. Applications to engineering design, simulation, optimization. Laboratory. Prerequisite: Mathematics 305a.

434-4 Electronic Design. Application of electronic device and linear network theory to the design of practical electronic circuits. Design of oscillators; audio; video, and RF tuned amplifiers; feedback circuits. Extensive use of ECAP and other computer-aided design techniques. Laboratory. Prerequisite: 336 and 439a.

436-3 Control Theory. Feedback concepts, signal flow graphs, s-plane analysis, frequency domain analysis, root locus, stability conditions, and compensation techniques. Prerequisite: 439a.

437-4 Microwaves Theory and Measurements. Theory of passive microwave devices for guiding, storing, coupling, or radiating electromagnetic energy. Theory of active and non-linear devices including klystrons, circulators, and isolators. Microwave measurements. Laboratory. Prerequisite: 338.

438-3 Electronic Devices. Semiconductor, magnetic, dielectric, and vacuum devices with wide range of engineering applications. Develop understanding of the mechanisms of operation. Prerequisite: 311c, 336.

439-6 (3,3) Transient Analysis and Network Theory. (a) Transient analysis of linear electrical networks and analogous systems by classical techniques and the Laplace transform. (b) One- and two-port networks, Foster and Cauer forms, and image parameter filter theory. Must be taken in a,b sequence. Prerequisite: 335 and Mathematics 305a.

440-6 (3,3) Structures. (a) Analysis of statically determinate and statically indeterminate structures. Deflections. Slope deflection. Moment distribution. (b) Principles of structural design. Loads. Influence diagrams. Structural materials. Types of structures and their behavior. Safety. Social and environmental considerations. Prerequisite: 311a.

441-3 Intermediate Mechanics of Vibrations. Equations of motion applied to systems with free and forced vibrations, damping and multiple-degrees of freedom; Euler equations; introduction to Lagrange's equations and orbital mechanics.

442-4 Structural Design-Metal. Rational, empirical, and practical basis for design of metal structures with emphasis on structural steel and aluminum. Behavior of members and their connections. Prerequisite: 440a or consent of instructor.

443-6 (3,3) Engineering Design. Projects of an engineering systems design nature. Students select a problem, define and design the various subsystems, define subsystem interface requirements, integrate the subsystems into the final design, and document the design effort. Laboratory. Must be taken in a,b sequence. Prerequisite: senior standing in engineering.

444-4 Design of Reinforced Concrete. Ultimate strength and behavior of reinforced concrete members. Flexure. Shear. Bond. Continuity. Compression members. Prerequisite: 311a.

446-3 Electromechanical Energy Conversion. Electromagnetics. Theory and basic concepts of rotating electrical machines. Application of principles to d.c., synchronous, and polyphase induction machines. Prerequisite: 335 and 338.

447-3 Intermediate Mechanics of Materials and Structures. Stress and strain at a point in three dimensions. Theory of elasticity. Shear center; unsymmetrical bending; curved beams; elastic foundations; thick walled cylinders; theory of failures; energy methods. Prerequisite: 311a.

448-4 Experimental Stress Analysis. Theoretical and experimental methods of determining stresses and strains; use of optical, electrical, and mechanical instrumentation; relation of model and prototype; brittle coating; electrical resistance gages; photoelasticity. Prerequisite: 311a.

449-3 Intermediate Dynamics. Kinematics and kinetics of three-dimensional motion; Coriolis' acceleration; rigid body motion; Euler's equations; work and energy; gyrostatics; generalized coordinates; impulse-momentum principle; vibrations; computer applications. Prerequisite: 260c and Mathematics 305a.

451-3 Numerical Methods in Mechanics. Application of numerical techniques to problems encountered in engineering mechanics. Prerequisite: 222, 311a, 313b (or concurrent enrollment), and Mathematics 305a or consent of instructor.

454-16 (4,4,4,4) Materials Science. (a) Crystal structure of materials, concepts of ionic, metallic, van der Waals, and covalent bond; hydrogen bond; solid solutions; interstitial phases. Coordination structures. Radicals in crystal structures. Long chain molecular crystals. Clathrate and molecular complexes. The structure of polymers, glass, and liquids. (b) Crystalline materials preparation. Phase rule, Crystal growth. Homogeneous and heterogeneous nucleation. Absorption. Impurities. Rate of crystallization. Preparative crystallization. Twinning. Spiral growth theory. Recrystallization. (c) Perfection of crystalline materials. The solid as an imperfect body. Isomorphic substitution. Composition disorder. Electron holes and traps. Diffusion. The role of dislocations in growth and phase transition. Crystal surface. The role of imperfections. (d) Thermodynamics of solids. Potential energy of ionic and molecular crystals. Band theory. Stability of solid phases. Equilibrium diagrams. Influence of temperature, pressure, and composition. Polymorphism; role of crystal structure. The thermodynamics of the imperfect crystal. (Was Applied Science 444.)

455-3 Engineering Geology. (Same as Geology 455.) An examination of problems posed by geology in the design, construction, and maintenance of engineering works. Topics studied include groundwater, land subsidence, earthquakes, and rock and soil mechanics. Two term papers and a field trip required. Prerequisite: Geology 220 or consent.

458-3 Photoelasticity. Optics related to photoelasticity, theory of photoelasticity, photoelastic model materials, analysis techniques, three-dimensional photoelasticity, birefringent coatings, application of photoelasticity methods. Prerequisite: 448 or consent of instructor.

462-6 (3,3) Matrix Methods in Structural Analysis. (a) Review of matrix algebra. Displacement method of analyzing trusses, continuous beams, and

rigid frames with and without sidesway. (b) Force method of analysis. Direct element method of analyzing trusses, rigid frames, and plane grids. Prerequisite: 311a.

463-6 (3,3) Introductory Instrumentation. (a) Characteristics and techniques in analog and digital instrumentation; transducers; signal conditioners; output and display systems; recorders. Laboratory. (b) Ultrasonic techniques; fringe patterns, Fresnel and Schlieren lenses, Moire patterns, pattern enhancement methods, optical systems. Laboratory. Must be taken in a,b sequence. Prerequisite: 336.

464-3 Intermediate Materials Science. Internal structure, treatment, and properties of metals and intermetallic compounds. Theory of dislocations in metals. Plastic flow, phase transformations, martensitic transformation, and X-ray diffraction identification of metallic phases. Prerequisite: 311b.

466-4 Prestressed Concrete. Theory and design of prestressed concrete simple beams, continuous beams and shells. Deflections. Behavior. Prerequisite: 311a.

470-6 (3,3) Engineering Analysis. (a) Basic vector field theory; transformation theorems. Methods of solution for basic ordinary differential equations with applications to engineering systems. Prerequisite: Mathematics 252b. (b) Basic methods of solution for partial differential equations with emphasis on applications of the Laplace, Poisson and heat equations to engineering problems. Basic complex variables, matrix theory, numerical analysis and simulation techniques applied to engineering systems. Prerequisite: 470a or Mathematics 305a. (Was Applied Science 470.)

480-9 (3,3,3) Engineering Process Design. (a) Application of the fundamentals of conduction, convection, and radiation heat transfer. Combined mode and transient heat transfer. Design of equipment using simultaneous heat and mass transfer. (b) Applications of the fundamentals of mass transfer. Consideration of rate controlled, equilibrium, and mass transfer operations. (c) Original design of a process and determination of process variables and equipment. Analysis of construction cost. Prerequisite: 300c, 302.

485-4 Power Systems Analysis. Modeling of power system components. Power system configuration. Control of power and frequency, control of voltage and reactive power, and load flow analysis. Prerequisite: 446.

486-3 Electric Energy Sources. Sources of energy. Study of the principles and utilization of fuel cells and thermoelectric, thermionic, photovoltaic, and magnetohydrodynamic generators. Prerequisite: senior standing.

500-3 Convection Heat Transfer.

501-3 Radiation Heat Transfer.

502-3 Conduction Heat Transfer.

503-6 (3,3) Heating and Cooling Systems.

504-12 (4,4,4) X-Ray Diffraction and the Solid State.

505-12 (4,4,4) Physical Properties of Crystalline Materials.

508-3 Industrial Waste Treatment.

509-3 Advanced Biological Waste Treatment.

510-9 (3,3,3) Electromagnetic Fields.

511-6 (3,3) Quantum Electronics.

512-8 (4,4) Continuum Mechanics.

513-3 Mechanics of Viscous Fluids.

514-3 Mechanics of Inviscid Fluids.

515-3 Wave Motion.

516-4 Water Resources Development.

517-12 (4,4,4) Analysis and Design of Engineering Systems.

518-3 Introduction to Turbulence.

519-3 Boundary Layer Theory.

520-6 (3,3) Reaction Engineering and Rate Processes.

521-3 Solid Waste Collection and Disposal.

522-3 Advanced Topics in Operations Research.

525-3 Small Particle Phenomena.

530-6 (3,3) Separation Processes and Equilibrium Operations.

535-6 (3,3) Network Analysis and Synthesis.

540-3 Elastic Stability.

542-3 Theory of Plates.

544-4 Plastic Analysis of Structures.

550-3 Advanced Compressible Fluid Flow.

561-3 Advanced Vibrations.

570-2 to 6 Special Investigations.

580-1 to 9 Seminar.

599-1 to 9 Thesis.

Engineering Biophysics

Major

The program is essentially a five-year curriculum leading to the Master of Science degree in engineering biophysics. However, a full four-year undergraduate curriculum is offered leading to the degree of Bachelor of Science with a major in engineering biophysics. The undergraduate curriculum is interdisciplinary, emphasizing selected areas in the behavioral, engineering, life, mathematical, and physical sciences. The first two years of the program are sufficiently general and basic so that the student can move freely from this program into the traditional scientific disciplines without penalty. The fifth year emphasizes the advanced aspects in the behavioral and life sciences and provides for the student optimum flexibility in electives as well as practical biomedical experience.

Students interested in this program will be advised by Dr. Harold M. Kaplan, Administrator of the Program, or by members of the executive committee.

Bachelor of Science Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i> ¹	46
Substitutions for GSA-1, GSA-2, and GSD Mathematics	
<i>Supplementary Two Year College Requirement in FL/Mathematics</i>	29
Mathematics 111-10, 150-10	20
GSC-FL	9 ²
<i>Requirements for Major in Engineering Biophysics</i>	105-108
Individual courses with allowable substitution	74
Additional required courses with allowable substitutions within the specified group	31-34
Required courses are selected in consultation with the Administrator to ensure a background of basic courses in natural, physical, and social sciences.	
<i>Electives</i>	3-6
<i>Total</i>	<hr/> 186

¹ Required courses in General Studies:
 GSD 101-3, 102-3, English Composition
 GSD 153-3, Public Communication
 GSC-FL-9 (3,3,3),² Any modern foreign language
 GSC-2 or 3-10 (3,3,4), Preprofessional students should take a year of courses in the broad area of literature

² College of Science majors may not count GSC-FL toward the 16 hours required in Area C

Courses

The courses applicable to the major in the program will be selected from listings in the catalog in relevant areas of the behavioral, engineering, life, mathematical, and physical sciences. A specific schedule of courses will be prepared with the student at the time of advisement.

Engineering Technology

Major, Courses (See Technology)

English

Department, Major, Courses

The student who wishes to declare English as a major should consult the director of undergraduate programs in English early in his college career. Transfer students from General Studies and other units of Southern Illinois University at Carbondale should bring a petition for change of academic unit or major. Transfers from colleges other than Southern Illinois University at Carbondale should bring their evaluated transcript of grades. Thereafter, all students must have their advance registration forms signed by an adviser in the Department of English. Only courses which are completed with at least a C will fulfill a major requirement. Deviations from regular programs must have approval.

Foreign language requirement: the College of Liberal Arts requires two years on the college level or equivalent. English majors in the College of Education have the option of substituting courses in literature in translation for the second year of a foreign language. Approval to make this substitution must be secured from the Department of English only after completing the first year of a language.

*Bachelor of Science Degree, COLLEGE OF EDUCATION OR
Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS
Specialization 1 (primarily for teacher-training candidates)*

<i>General Studies Requirements</i>	68
* <i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	18
Foreign Language: GSC FL-9 and FL 201-9	
<i>Requirements for Major in English</i>	51
English 209; 300; 302a,b,c; 309a; 309b or c; 390; 471b; 485, 495a	
or b	43
One 400-level genre-period course in Poetry and one in Fiction	8
<i>Professional Education Requirements (for certification)</i>	32
Guidance 305 (GSB 202 is prerequisite), Secondary Education	
310, 352	20
Two courses to be selected from a restricted list of professional	
education electives. Refer to catalog section titled Secondary	
Education	8
** <i>Electives</i>	17
<i>Total</i>	186

*Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS
Specialization 2 (primarily for general English majors)*

<i>General Studies Requirements</i>	68
* <i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	21-23
Foreign Language: GSC FL-9 and FL 201-9	
<i>Requirements for a Major in English</i>	55
English 209; 302a,b,c; 309a; 309b or c; 390; 471a; 471b; 495a	
or b	39
One 400-level genre-period course in Poetry and one in Fiction	8
English 400-level electives to complete 55 hours	8

** Electives	40-42
Total	186

Specialization 3 (primarily for prospective graduate students)

<i>General Studies Requirements</i>	68
* <i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	21-23
Foreign Language: GSC FL-9 and FL 201-9	
<i>Requirements for Major in English</i>	56
One course in each of the following areas: medieval Renaissance or 17th century, 18th century, 19th century, 20th century, early American, and American since 1865	28
English 209; 471a and b; 495a or b	16
English language course	4
English 400-level electives to complete 56 hours	8
*** Electives	39-41
Total	186

* English majors in the College of Education are not required to take the Mathematics combination. English majors in the College of Liberal Arts may not use the GSC foreign language requirement to satisfy the GSC requirements. Majors in liberal arts are required, in addition to the two years of FL in GSC, to take one additional course in mathematics—3 to 5 hours.

** Elective hours for majors in the College of Education are 17 hours. Elective hours for major in liberal arts will vary from 40 to 42 depending on the mathematics course.

*** Elective hours for majors will vary from 39 to 41 depending on the mathematics course.

Specialization 4

Students may petition to undertake a more flexible or interdisciplinary approach to the major. Interested students should prepare a plan and discuss it with the departmental director of undergraduate programs.

Specialization 5

Any of the specializations outlined above may be modified by entry into the departmental honors program. Eligible students will be invited to enter. Requirements for honors students remain as above except that three pro-seminars substitute for three senior genre-period courses.

Minor in English

A minor in English is 27 hours, to include the following courses: English 209; 300; 302a,b, or c; 309a, 390; and two 400-level electives. A student interested in an English minor should review the programs with the departmental advisers.

Courses

105-6 (3,3) English Composition for Foreign Students. A course in writing and reading skills: composition, note-taking, summaries, grammar. Equivalent to GSD 101 and 102. Limited to foreign students selected by proficiency examination on entrance.

209-4 Introduction to the Three Genres. Poetry, drama, and fiction. Statement and illustration of the techniques of the three genres over the range of American and English literature. English majors only. Substitutes for GSC 209. Prerequisite: GSD 102 or equivalent.

290-3 Intermediate Expository Writing. Designed for any University student, to improve writing skills beyond freshman composition. Based on individual needs. Prerequisite: GSD 102.

300-4 Introduction to Language Analysis. Nature of language and linguistic

- inquiry. Dialectology, usage, and chief grammatical descriptions of present day American English. Required of minors and teacher training candidates.
- 302-12 (4,4,4) Survey of English Literature.** A survey (a) to 1550, (b) 1550-1750, (c) after 1750. All three courses are required of students with a concentration in English. Elective Pass/Fail.
- 309-12 (4,4,4) Survey of American Literature.** (a) to 1860; (b) 1860 to 1920; (c) 1920 to the present. English 309a and 309b are required for a major in English. Elective Pass/Fail.
- GSC 317-3 Recent American Literature.**
- GSC 365-3 Shakespeare.**
- 390-3 Advanced Composition.** Expository writing. Prerequisite: C average in GSD 101 and 102 or equivalent. Open to English majors and minors or with consent of department.
- 392-3 Professional Writing I.** Introductory creative writing course for undergraduates. Prerequisite: consent of instructor.
- 400-4 Introduction to English Linguistics.** Methods of structuralizing: phonetics, phonemics, morphemics, syntax. Especially recommended for students preparing to teach English to native speakers. Elective Pass/Fail.
- 402-4 Old English Literature in Translation.** A study of prose selections from Bede, Aelfric, and other writers, and of poetry from the simplest riddles and gnomic verses to the complex forms of the Caedmonic and Cynewulfian schools, the elegaic poems, and *Beowulf*. Emphasis is on the literary and cultural significance of works studied. Elective Pass/Fail.
- 403-4 The History of the English Language.** A survey of the development of the language from Indo-European to modern English with special emphasis on Middle and Early Modern English changes. Elective Pass/Fail.
- 404-12 (4,4,4) Middle English Literature.** (a) Middle English Literature excluding Chaucer, (b) Chaucer: early poems and *Troilus*, (c) Chaucer: *Canterbury Tales*. May be taken singly. Elective Pass/Fail.
- 410-4 Literature for the Adolescent.** Criteria for evaluation of literary materials for junior and senior high school, with emphasis on critical approaches in selection of literature. Elective Pass/Fail.
- 412-20 (4,4,4,4,4) English Nondramatic Literature.** (a) 16th century. (b) 17th century. (c) The age of Dryden. (d) The age of Pope. (e) The age of Johnson. May be taken singly. Elective Pass/Fail.
- 417-4 Black Literature.** Studies in American and African Black literature, with major emphasis upon contemporary Black expression. Elective Pass/Fail.
- 418-4 English Literature, 1885-1914.** Poetry, drama and fiction of the later Victorian and early modern period. Elective Pass/Fail.
- 420-8 (4,4) American Poetry.** (a) Trends in American poetry to 1900 with a critical analysis of the achievement of the more important poets, (b) the more important poets since 1900. May be taken singly. Elective Pass/Fail.
- 421-16 (4,4,4,4) English Poetry.** (a) Early Romantics: major emphasis on general background and on Blake, Coleridge, and Wordsworth; (b) later Romantics: emphasis on Byron, Shelley, and Keats, the minor figures; (c) Victorian poets: Tennyson, Browning, Arnold, and other poets in England, 1830-1880; (d) modern British poets. May be taken singly. Elective Pass/Fail.
- 425-4 Modern Continental Poetry.** Representative Poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece. Elective Pass/Fail.
- 431-12 (4,4,4) Major American Writers.** Significant writers of fiction and nonfictional prose from the Puritans to the twentieth century. (a) 1620-1800; (b) 1800-1865; (c) 1865-1915. May be taken singly. Elective Pass/Fail.
- 438-4 Intellectual Backgrounds of American Literature.** The relationship of basic ideas in America to American literature. Elective Pass/Fail.
- 442-4 Romantic Prose.** Fiction of Austen, Scott, Mary Shelley, Peacock, the Gothic novelists; prose of Lamb, Landor, Hazlitt, DeQuincey; criticism, journals and letters. Elective Pass/Fail.
- 443-4 Victorian Prose.** The chief writers of nonfiction from the late romantics to 1880. Elective Pass/Fail.
- 454-12 (4,4,4) English Fiction.** (a) Eighteenth century: Defoe through Jane Austen, (b) Victorian novel: 1830-1880; (c) twentieth century. May be taken singly. Elective Pass/Fail.
- 456-4 Modern Continental Fiction.** Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse. Elective Pass/Fail.
- 458-8 (4,4) American Fiction.** (a) The novel in America from its beginnings to the early twentieth century; (b) trends and techniques in the American

novel and short story since 1914. May be taken singly. Elective Pass/Fail.
460-16 (4,4,4,4) British Drama. (a) Elizabethan drama excluding Shakespeare: from the beginning of the drama in late Middle Ages through its flowering in such Elizabethan playwrights as Greene, Peele, Kyd, Marlowe, Heywood, Dekker; (b) Jacobean drama: the Jacobean and Caroline playwrights: Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger. Ford Shirley; (c) Restoration and eighteenth century drama: after 1660, representative types of plays from Dryden to Sheridan; (d) modern British drama. May be taken singly. Elective Pass/Fail.

464-4 Modern Continental Drama. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal. Elective Pass/Fail.

468-4 American Drama. The rise of the theater in America, with readings of plays, chiefly modern. Elective Pass/Fail.

471-8 (4,4) Shakespeare. (a) The plays before 1600; (b) the plays of 1600 and later. Readings on the life of Shakespeare, the theater, and the acting company. May be taken singly.

473-4 Milton. A reading of a selection of the minor poems, of *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, and the major treatises. Elective Pass/Fail.

485-4 Problems in the Teaching of High School English. Aims, methods, materials, tests, programs, and other aspects of English instruction in the high school.

486-2 to 8 Workshop in High School English.

487-2 to 8 Workshop in Junior High School English.

491-4 Expository-Technical Writing. An all-university course designed to teach advanced academic and professional (non-fictional) writing skills. Prerequisite: GSD 102.

492-8 (4,4) Professional Writing II. Advanced creative writing. Prerequisite: English 392 or consent of instructor.

493-4 Special Problems in English. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated for a maximum of eight quarter hours provided registrations cover different topics. Prerequisite: consent of instructor. Elective Pass/Fail.

494-4 Literature in Society. An analysis of the structure and function of literature as a social institution. Elective Pass/Fail.

495-8 (4,4) Literary Criticism. (a) History of criticism: ideas and techniques from Aristotle to the end of the nineteenth century; (b) modern criticism: recent critics and critical attitudes, and practice in writing criticism. Open only to seniors and graduate students. Elective Pass/Fail.

497-12 (4,4,4) Senior Honors Seminars. (a,b) Topics vary yearly. (c) Honors Readings. Prerequisite: departmental approval and undergraduate status.

499-2 to 8 Readings in English. For English concentrations only. Departmental approval required. No more than four hours may be taken any one quarter.

500-2 Materials and Methods of Research in English.

501-4 Old English Grammar.

502-4 Beowulf.

506-4 Old Norse.

508-4 to 12 Studies in Chaucer.

509-4 to 12 Studies in Middle English.

511-4 to 12 Studies in The Renaissance.

513-4 to 12 Studies in Seventeenth Century Literature.

514-4 to 24 Studies in Restoration and Eighteenth Century Literature.

518-4 to 12 Studies in English Literature, 1885-1914.

519-4 to 12 Studies in Contemporary British Literature.

520-4 to 12 Studies in Romantic Writers.

521-4 to 12 Studies in Victorian Poetry.

524-4 to 12 Studies in the Metaphysical Poets.

532-4 to 12 Studies in American Transcendentalism.

534-4 to 12 Studies in Early Nineteenth Century American Writers.

536-4 to 12 Studies in Later Nineteenth Century American Writers.

537-4 to 12 Studies in Twentieth Century American Writers.

538-4 to 12 Problems in American Literature.

543-4 to 12 Studies in Victorian Nonfiction Prose.

555-4 to 12 Studies in The Victorian Novel.

560-4 to 12 Studies in Renaissance Drama.

566-4 to 12 Studies in Shakespeare.

579-16 (4,4,4,4) Studies in Modern Literature.

580-4 Traditional Themes.

581-12 (4,4,4) Problems in Teaching English.

585-2 Teaching College Composition.

593-4 Special Problems in English.

594-8 (4,4) Studies in Literary Form and Symbolic Action.

595-1 to 10 Independent Readings.

596-4 Stylistics

598-1 to 6 (1 to 3, 1 to 3) Independent Review of English and American Literature.

600-1 to 48 Dissertation.

European and Russian Studies

Program

Students interested in European or Soviet studies should seriously consider a special major in one of these areas.

The European and Soviet studies committee has as its main tasks the coordination of academic work in these areas and the encouragement of a sophisticated awareness of modern European civilization (both western and eastern) as well as an examination of European approaches to solving contemporary problems. At the undergraduate level this awareness may best be attained by an interdisciplinary special major tailor-made to the student's particular interests. Because an in-depth understanding of a culture or geographical area is often dependent upon knowing the language and understanding the area's economic system, history, etc., students are encouraged to consider working toward a double major, one a special major in European studies, the other in a related academic discipline.

In addition to a strong interest in one of the geographical areas, a student should enjoy studying languages and have a fairly high level of verbal ability. Many students majoring in European or Soviet studies will continue their studies after the bachelor's degree in a graduate or professional school.

Students completing an undergraduate special major will find that they are well prepared for various positions with the federal government, teaching, and journalism. An individual major could be designed as an excellent preparation for studies in international law or business.

Although courses from any department may be appropriate to a special major, most students have chosen courses from anthropology, government, history, geography, economics, and foreign languages. Study in Eastern or Western Europe is not required but strongly recommended if such study would facilitate learning about a particular area.

Because special majors are designed to match a student's individual interests, those interested in developing a European or Soviet studies curriculum should contact the chairman of the committee for assistance in locating an appropriate faculty sponsor.

Family Economics and Management

Department, Major, Courses

Bachelor of Science Degree, COLLEGE OF HUMAN RESOURCES

Departmental objectives are to develop students' knowledge and understanding of three broad areas of family resource management. These are (1) resources of economically disadvantaged families, (2) the consumer's

ability to handle available resources, and (3) the social economic aspects of housing the family in relation to both the household and community. The department offers two specializations, consumer services in business and family services consultant, leading to a Bachelor of Science degree. In addition, the department offers a minor in consumer studies.

Consumer Services in Business Specialization

This program is designed to give students an understanding of business and public relation aspects of organizations as they affect the consumer's ability to satisfy his wants in the marketplace. The program deals with issues and problems consumers face in managing and selecting specific goods—durable, non-durable, or services. Promotional and testing work relative to effective consumer choice is emphasized.

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Family Economics and Management with a Specialization in Consumer Services in Business</i>	72
GSB 202, 211	(8)
Family Economics and Management 323, 324, 331, 332, 340, 341, plus 7 hours selected from 423, 424, 430, 435	27
Other requirements:	
Chemistry 110	(4)
Clothing and Textiles 127a,* 104 or 304	5
Food and Nutrition 100,* plus 9 hours selected from 256, 321, 335, 356	12
Interior Design 131 * or equivalent, 300	5
Journalism 393	3
Marketing: select 12 hours	12
Radio-Television: select 8 hours	8
<i>Electives</i>	46
For careers in government regulatory agencies: GSB 346; Administrative Sciences 301; Child and Family 366; Clothing and Textiles 339, 340, 474; Family Economics and Management 302, 407, 471, 481; Food and Nutrition 320, 421; Government 438.	
For careers in journalism/writing: GSB 346; Child and Family 366; Clothing and Textiles 339, 340, 474; Food and Nutrition 320, 421; Journalism 301, 302, 303, 330, 369, 370, 445.	
For careers in marketing analysis: GSB 346; Administrative Sciences 301; Child and Family 366; Clothing and Textiles 339, 340, 474; Food and Nutrition 320, 421; Marketing 390, 463; Psychology 211, 322, 323.	
For careers in public speaking: GSB 346; Administrative Sciences 301; Child and Family 366; Clothing and Textiles 339, 340, 474; Food and Nutrition 320, 421; Home Economics Education 307; Theater 203.	
For careers in public relations: GSB 346; Administrative Sciences 301; Clothing and Textiles 339, 340, 474; Food and Nutrition 320, 421; Psychology 211, 322, 323.	
<i>Total</i>	186

* Also meets Home Economics core requirements

Family Services Consultant Specialization

This specialization is designed to give students a knowledge and under-

standing of the family's allocation of resources. The low-income family is of particular interest in this specialization. Elective courses may reflect the student's personal employment goals in a variety of public and private social welfare agencies. A program is tailored to meet theoretical, as well as applied, concepts in preparing students to serve individuals and families of various ages, physical abilities, and income levels.

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Family Economics and Management with a Specialization in Family Services Consultant</i>	86
GSA 209	(4)
GSB 202, 203, 211	(12)
Family Economics and Management 323, 324, 331, 332, 340, 341, plus 7 hours selected from 423, 424, 430, 435	27
Other Requirements:	
Chemistry 110	(4)
Child and Family 227 * or GSB 341, 237 * or GSB 306, plus 5 hours from other Child and Family courses	11
Clothing and Textiles 127a,* 104 or 304	5
Family Economics and Management 302, 471	8
Food and Nutrition 100,* plus 3 additional hours in Food and Nutrition	6
Home Economics Education 307	3
Interior Design 131 or equivalent, 327	6
Social Welfare 375, 383	8
Additional hours in Psychology, Social Welfare, and Sociology	12
<i>Electives</i>	32
For careers in private or public social welfare agencies: GSB 321, 325, 346; Accounting 309; Child and Family 456; Family Economics and Management 424; Food and Nutrition 321; Government 438; Home Economics Education 309b; Psychology 301, 303, 304, 305, 307; Social Welfare 481, 482; Sociology 301, 302, 308, 312, 335, 473.	
For careers in agencies serving senior citizens: GSB 321, 325, 346; Accounting 309; Government 438; Psychology 304; Recreation 300, 302, 305, 310, 315, 325; Social Welfare 481; Sociology 312.	
For careers in VISTA, Peace Corps, or other overseas agencies: GSB 321, 325; Accounting 309; Anthropology 311a,b,c, 312a,b,c, 313a,b, 314a,b; Child and Family 456; Home Economics Education 309b; Psychology 301, 303, 304; Recreation 300, 305; Social Welfare 481; Sociology 312, 426.	
For careers in business agencies such as banks or other credit and financing agencies, trade associations, or educational services: GSB 346; Accounting 309; Child and Family 456; Family Economics and Management 424, 430; Government 438; Home Economics Education 309b; Psychology 303, 305, 307; Sociology 426, 435.	
<i>Total</i>	186

* Also meets Home Economics core requirements

Minor

The minor in consumer studies is designed to give students background in

consumer economics and home management. The program is flexible to permit selection of courses appropriate to the student's special interests.

Requirements for Minor in Consumer Studies in Family Economics and Management 24

Family Economics and Management 331, 341 7

An additional 17 hours may be selected from the following Family Economics and Management courses: 300, 301, 302, 323, 324, 332, 340, 407, 423, 424, 435, 471, 481, and GSB 346 17

Or

An additional 11 hours in the Family Economics and Management courses listed above, plus 6 hours selected from the following: Child and Family 227; Food and Nutrition 100; Journalism 370 17

Total 24

Courses

300-3 Fundamentals for Everyday Living for Men. A survey course for non-majors dealing with economics and management of personal and family resources; food, clothing selection and buying, financial management, personal relationships, consumer education, and protection. Emphasis reflects needs of the students.

301-3 Fundamentals for Everyday Living for Women. A survey course for non-majors dealing with economics and management of personal and family resources; food, clothing selection and buying, financial management, personal relationships, consumer education, and protection. Emphasis reflects needs of the students.

302-4 Management for Low-Income Families. Job oriented course for social welfare workers; selected units in family economics and management with application to the low income family.

323-3 Housing. An examination of the physical characteristics of housing as they relate to family needs, wants, and capabilities, as well as the social and economic factors which affect satisfaction associated with family shelter. Field trip.

324-3 Household Equipment. Materials construction, selection, operation and care of equipment to provide maximum satisfaction to the family are identified.

331-3 Management of Family Resources. A study of factors affecting the management of the home in meeting the needs of individuals and creating a satisfying environment for the family. Special consideration given to those problems involving the resources of time, money, and energy.

332-4 Home Management Practicum. Analysis of current management situations and family resource use with practical application of basic principles. Laboratory fee required. Prerequisite: 331 and consent of chairman.

340-3 Consumers and the Market. The impact of market and governmental activities on consumers' decision-making. Analysis and evaluation of programs designed to inform and protect consumers.

341-4 Consumer Problems. Study of family income, consumption and expenditure patterns, selection of commodities and services, and evaluation of consumer aids with emphasis on contemporary consumer problems.

407-2 to 8 Workshop. Designed to aid workers in professions related to use of family resources. Emphasis for each workshop will be stated in the announcement of the course.

423-3 Housing Alternatives. Selected aspects of the housing market and their relationship to changing life styles of households. Structure, operations and performance of the housing market and home building industry, housing finance, and contemporary housing problems and issues are considered. Prerequisite: 323, equivalent, or consent of instructor.

424-4 Trends in Household Equipment. Design, function, principles of operation, current trends and ecological problems related to equipment use in the home. Prerequisite: 324 or consent of instructor.

430-4 Family Financial Management. Developments in family financial man-

agement evaluation of methods and procedures for helping families, with emphasis on the role of the consultant. Case studies and simulation, as well as a field problem, are included. Prerequisite: 331 and 341, equivalent, or consent of instructor.

435-4 Household Activity Analysis. Work methods, work place, and characteristics of the worker in relation to solving work problems of employed, full-time, and handicapped home managers.

471-2 to 6 Field Experience. Supervised learning experiences in an acceptable employment area. Prerequisite: consent of department chairman.

481-2 to 6 Readings. Supervised readings on selected equipment, family or consumer economics, housing or management topics. Prerequisite: 8 hours in FE&M, and consent of department chairman.

500-4 Research Methods.

520-3 Societal Factors in Housing.

540-4 Consumption Trends.

550-4 Advanced Home Management.

571-4 Seminar in Family Economics and Management.

572-2 to 8 Special Problems.

599-2 to 9 Thesis.

600-3 to 48 Dissertation.

Finance

Department, Major, Courses

The financial implications of decisions in both business and government are daily becoming more complex. Within the firm, financial considerations permeate the central decisions of research, engineering, production and marketing. Within governmental activities, sophisticated financial techniques are becoming increasingly important. The financial executive thus takes a key role in the successful management of both business and governmental operations.

The finance curriculum offers two areas of specialization to meet the varied interests of students: (1) financial management and (2) financial institutions. The financial management program provides the background for a career in the financial operations of business firms and public institutions. The financial institutions specialization is designed for those interested in the operations of financial intermediaries and financial markets.

Bachelor of Science Degree, SCHOOL OF BUSINESS

<i>General Studies Requirements</i>	68
For detailed description, see School of Business information, page 57.	
<i>Professional Business Core</i> (See page 57.)	56-57
<i>Requirements for Major in Finance</i>	40
Administrative Sciences 361 or Marketing 390	4
Economics 315	4
Finance 271, 323, 421	12
<i>One of the following specializations</i>	
Financial Management	
Finance 422	4
Select four: Finance 324, 475, 480, Accounting 475, Administrative Sciences 452, Economics 440, or Administrative Sciences 479, Accounting 341, 351a, 351b . . .	16
Financial Institutions	
Finance 325	4
Select four: Finance 324, 326, 327, 328, 372, Economics 440, or Administrative Sciences 479	16

<i>Electives</i>	21-22
<i>Total</i>	186

Courses

Some of the courses offered by this department may require expenses by students for books, field trips, or other items.

271-4 Business Law I. Legal problems arising from situations involving contracts and agency and business organizations. Elective Pass/Fail.

300-4 Internship in Finance. Designed to provide an opportunity to relate certain types of work experience to the student's academic program and objectives. Approved internship assignments with cooperating companies in the fields of finance are coordinated by a faculty member. Not repeatable for credit. Prerequisite: consent of department chairman. Mandatory Pass/Fail.

301-1 to 8 Readings in Finance. Readings in classical and current writing on selected topics in various areas in the field of Finance. Mandatory Pass/Fail.

305-4 Personal Finance. An introduction to the problems of personal financial asset management, including income and expense budgeting. Emphasis also placed on consumer credit, insurance, investments, home ownership and taxation. (Not open to students with majors in the School of Business.) Elective Pass/Fail.

320-4 Introduction to Business Finance. Principal problems of managing the finance function of a business firm. Emphasis on asset acquisition and management, and financial structure planning and management. Prerequisite: Accounting 251b, Economics 215, GSD 110.

323-4 Investments. Survey of the problems and procedures of investment management; types of investment risks; investment problems of the individual as well as the corporation. Elective Pass/Fail.

324-4 Security Analysis. Application of investment principles to investment policy; analytical principles and techniques; analysis of fixed income corporate securities, of senior securities with speculative features, of common stocks, of government and municipal securities, and of investment company securities. Prerequisites: Finance 323.

325-4 Financial Markets. Operations of capital markets. Sources and uses of funds of financial institutions. Prerequisite: Economics 315.

326-4 Management of Financial Institutions. Principal policies and problems which confront top management. Emphasis on liquidity loans, investments, deposits, capital funds, financial statements, organization structure, operations, personnel, cost analysis, and public relations. Prerequisite: 320, Economics 315.

327-4 Insurance and Risk Management. Fundamentals of insurance and risk management including a study of selected insurance contracts and alternative methods of controlling risk exposures. Elective Pass/Fail.

328-4 Real Estate. Problems of real estate ownership, management, financing, and development. Elective Pass/Fail.

329-4 Advanced Topics in Insurance. Continuation of Finance 327. Insurance and risk management. Includes a detailed investigation of company practices with regard to rate-making, risk selection and underwriting, and statement preparation. Emphasis is on coverages not studied in basic course. Prerequisite: 327.

370-4 The Legal and Social Environment of Business. Legal, social, and political forces that influence business and businessmen.

372-4 Business Law II. Legal problems arising from situations involving sales, commercial paper, secured transactions, and property. Elective Pass/Fail.

421-4 Management of Business Finance. The principal problems of managing the financial operations of an enterprise. Emphasis upon analysis and solutions of problems pertaining to policy decisions. Prerequisite: 320.

422-4 Advanced Financial Management. The development of ability to use sophisticated analytical tools by the discussion of case situations dealing primarily with capitalization, return on investment, and cost of capital. Prerequisite: 421.

430-4 Business Finance. An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Restricted to graduate students.

473-4 Government Regulation of Business. Social and economic assessment of environmental factors influencing business policies and strategies. Emphasis

is placed on legislation affecting competition and allocation of the firm's products and resources. Prerequisite: senior standing.

475-4 Forecasting and Budgeting. Methods and problems associated with the development of data used in planning financial activities. Prerequisite: 320.

480-4 International Financial Management. Financial behavior of multinational firms. Emphasis on the modifications of conventional financial models to incorporate uniquely foreign variables. Prerequisite: 320 and Economics 315.

Food and Nutrition

Department, Major, Courses

Students will be required to take field trips in those courses so designated with the expenses pro-rated for each student. Appropriate uniforms will be required of all students enrolling in those courses that involved preparation of food.

Bachelor of Science Degree, COLLEGE OF HUMAN RESOURCES Dietetics Specialization

These courses give a strong scientific education to those interested in becoming dietitians in hospitals, college dormitories, industrial plants, health clinics, laboratories, or public health and welfare organizations. They meet the requirements of the American Dietetics Association.

<i>General Studies Requirements</i>	68
<i>Home Economics Core</i> (choose one course in three departments)	7-10
Child and Family 227, 237	
Clothing and Textiles 127a, 329, 340	
Family Economics and Management 323, 331, 340, 341	
Home Economics Education 111, 306	
Interior Design 131, 327	
<i>Requirements for Major in Food and Nutrition with a Specialization in Dietetics</i>	65-66
GSA 115a,b, 209	(12)
GSB 202	(4)
Accounting 250 or equivalent	4
Administrative Sciences 385 or 301 or Psychology 320	4
Chemistry 110, 240, 350	(8) + 4
Electronic Data Processing 107	3
Food and Nutrition 100, 256, 320, 335, 356, 360a,b, 361, 362, 363, 390, 420	42
Home Economics Education 307 or Psychology 307 ..	3-4
Microbiology 301	5
<i>Electives</i>	44-46
Recommended Electives: Food and Nutrition 321, 372, 373, 421, 490; Interior Design 131, Microbiology 421; Physiology 300a; Recreation 300	
<i>Total</i>	<hr/> 186

Food and Lodging Systems Management Specialization

These courses prepare students for positions as food systems managers for restaurants, hotels, school food service, public and private lodging facilities, airlines, industrial feeding, resorts, institutions, hospitals and clubs. They meet the requirements as set forth by industry, the Council of Hotel, Restaurant, and Institutional Education, and the National Restau-

rant Association. Through this program in the hospitality field, transfer students from community colleges also will be able to complete their baccalaureate degrees.

<i>General Studies Requirements</i>	68
<i>Home Economics Core</i> (choose one course in three departments)	7-10
Child and Family 227, 237	
Clothing and Textiles 127a, 329, 340	
Family Economics and Management 323, 331, 340, 341	
Home Economics Education 111, 306	
Interior Design 131, 327	
<i>Requirements for Major in Food and Nutrition with a Specialization in Food and Lodging Systems Management</i>	80
GSA 115a,b, 209	(12)
GSB 202	(4)
Accounting 251a,b or equivalent	8
Administrative Sciences 301, 382 and 385 or 340	12
Chemistry 110, 240	(8)
Electronic Data Processing 107	3
Finance 271	4
Food and Nutrition 100, 256, 320, 335, 360a,b, 361, 362, 363, 371, 372, 373	44
Microbiology 301	5
Psychology 320	4
<i>Electives</i>	28-31
Recommended electives: Chemistry 350; Food and Nutrition 321, 390, 420; Family Economics and Management 332; Microbiology 421.	
<i>Total</i>	186

Foods in Business Specialization

These courses are for students who desire to enter the business field as home service representatives for utility companies, as demonstrators for manufacturers, or for other educational, experimental, and promotional work with household equipment and foods.

<i>General Studies Requirements</i>	68
<i>Home Economics Core</i> (choose one course in three departments)	7-10
Child and Family 227, 237	
Clothing and Textiles 127a, 329, 340	
Family Economics and Management 323, 331, 340, 341	
Home Economics Education 111, 306	
Interior Design 131, 327	
<i>Requirements for Major in Food and Nutrition with a Specialization in Foods in Business</i>	64-66
GSA 115a,b, 209	(12)
GSB 202	(4)
Accounting 250 or equivalent	4
Administrative Sciences 385 or 301	4
Chemistry 110, 240, 350	(8) + 4
English 290	3
Family Economics and Management 324, 424	7
Food and Nutrition 100, 256, 320, 321, 335, 356	22

Interior Design 131, 300	(3) + 4	
Marketing 301, 363		8
Microbiology 301		5
Radio-Television 300m or 467		3-5
<i>Electives</i>		44-45
Recommended electives: Clothing and Textiles 304; Food and Nutrition 371, 420		
<i>Total</i>		186

Food and Nutrition Science Specialization

These courses give a strong scientific education to those interested in preparing for graduate study in food, nutrition or related discipline; for research in university, industrial or governmental laboratories; or for educational and promotional work in industry or public health organizations.

<i>General Studies Requirements</i>		68
<i>Home Economics Core</i> (choose one course in three departments)		7-10
Child and Family 227, 237		
Clothing and Textiles 127a, 329, 340		
Family Economics and Management 323, 331, 340, 341		
Home Economics Education 111, 306		
Interior Design 131, 327		
<i>Requirements for Major in Food and Nutrition with a Specialization in Food and Nutrition Science</i>		65
GSA 115a,b, 209	(12)	
Chemistry 122a,b, 123a,b, 305a,b,c, 450	(10) + 19	
Food and Nutrition 100, 256, 320, 356, 390, 420, 421 ..		24
Health Education 325		3
Mathematics 111a,b, 410a	(5) + 9	
Microbiology 301, 421, 422		10
<i>Electives</i>		43-46
Recommended electives: Chemistry 122c, 123c, 451a; Food and Nutrition 490, 361a; Health Education 490; Physiology 300, 415, 417; Psychology 211a,b.		
<i>Total</i>		186

Courses

- 100-3 Fundamentals of Nutrition.** Emphasis on basic principles of food and nutrition in relation to personal health.
- 106-3 Fundamentals of Foods.** An introduction to the basic principles and techniques of food preparations. Not open to students specializing in Food and Nutrition or Home Economics Education.
- 247-6 (2,2,2) The School Lunch Program.** (a) Food purchasing; (b) quantity food production, and (c) nutrition practices in the school lunchroom.
- 256-5 Science of Food.** Application of scientific principles to food preparation. Prerequisites: 100, Chemistry 110 and 240 or equivalent.
- 320-3 Nutrition.** Principles of nutrition in relation to intermediary metabolism and the role of vitamins and minerals. Prerequisites: 100, Chemistry 110 and 240.
- 321-3 Food and Nutrition Demonstration.** Emphasis on principles of food and nutrition including food standards and demonstration techniques. Field trip. Prerequisite: 256.
- 335-4 Meal Management.** The selection, purchase, preparation and service of food with emphasis on time and money management. Prerequisite: 256.
- 356-4 Experimental Foods.** Experimental approach to the study of factors

influencing the behavior of foods. Individual problems. Prerequisite: 256.
360-8 (4,4) Quantity Food Production. (a) Use of power equipment, standardized formulas, and techniques of quantity preparation and service of food to large groups; (b) Practical experiences in area food service units. Prerequisite: 256.

361-3 Food Service Organization and Management. Policies, budgets, supervision, and personnel in feeding large groups. Prerequisite: 256 or consent of instructor.

362-3 Institution Equipment and Layout. Selection and arrangement of various types of institutional food service equipment, including materials, construction, operation, cost, use and care. Field trip. Prerequisite: 256.

363-3 Food Purchasing for Institutions. Principles and methods of purchasing food in quantity. Field trip. Prerequisite: 256.

371-6 Field Experience. Opportunity for supervised learning experiences in the student's major. Consent of instructor and chairman.

372-3 Food Systems in the Lodging Industry. Principles and concepts from mathematics, mechanics, design, manufacturing, maintenance, engineering, food science and technology, data processing, and related areas and their application in developing and operating food production systems in the lodging and tourism industry. The optimum utilization of physical and human resources is emphasized. Prerequisite: Accounting 250 or 251a or equivalent.

373-3 Food and Beverage Controls. Duties and responsibilities of the manager in restaurant, catering, hospitals, and club operations. The use of management methods in budgeting, forecasting, controlling costs, and establishing operational policies in food and beverage cost control. Prerequisite: Accounting 250 or 251a or equivalent.

390-3 Diet Therapy. Study of physiological and biochemical changes in certain diseases with emphasis on those involving nutritional therapy. Prerequisite: 320.

420-3 Recent Developments in Nutrition. Critical study of current scientific literature in nutrition. Prerequisite: 320 or equivalent.

421-3 Recent Trends in Food. Critical study of current scientific literature in food. Prerequisite: 320 or equivalent.

481-2 to 4 Readings. Supervised readings for qualified students. Prerequisites: 320 or consent of chairman and instructor.

490-3 Nutrition and Growth. Lectures, readings, and discussions on nutrition in relation to human growth. Prerequisites: 320 or equivalent.

500-4 Research Methods.

515-1 to 6 Seminar.

520-3 Advanced Nutrition.

556-4 Advanced Experimental Foods.

572-2 to 8 Special Problems.

599-1 to 9 Thesis.

Foreign Languages and Literatures

Department, Courses

Majors are offered in Classical Studies, French, German, Russian, and Spanish. Courses are also offered in Chinese, Japanese, Portuguese, Classical Greek, Latin, and Italian. Qualified students are encouraged to take proficiency examinations. A student is not eligible to apply for proficiency in 220-6 unless he has passed the corresponding 201. If the student has had 4 years of one foreign language in high school, he is expected to begin with 300 level courses and take more upper level courses.

Bachelor of Arts, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i> (Includes GSD 107-5)	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	
1 year Mathematics	(5) + 3 to 5
GSC Foreign Language	9 *

* GSC FL does not satisfy GSC requirements for a major in College of Liberal Arts.

Foreign Language 201a,b,c	9	21-23
Foreign Language. Includes FL 201-9		52-56 ¹
Minor		24 ²
<i>Electives</i>		16-22
<i>Total</i>		<u>186</u>

Bachelor of Arts, COLLEGE OF LIBERAL ARTS
(secondary school certification)

<i>General Studies Requirements</i> (Includes GSD 107-5)		68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i>		
1 year Mathematics	(5) + 3 to 5	
GSC Foreign Language	9 *	
Foreign Language 201a,b,c	9	21-23
Foreign Language. Includes FL 201-9		52-56 ¹
<i>Professional Education Requirements</i>		32 ⁴
Guidance 305 (GSB 202 is prerequisite)	4	
Secondary Education 310, 352	20	
Two courses to be selected from a list of restricted professional education electives, refer to the catalog section titled Secondary Education		
		8
<i>Electives</i>		<u>8-14³</u>
<i>Total</i>		<u>186</u>

* GSC FL does not satisfy GSC requirements for a major in College of Liberal Arts.

Bachelor of Science, COLLEGE OF EDUCATION

<i>General Studies Requirements</i>		68
Foreign Language		52-56 ¹
<i>Professional Education Requirements</i>		32 ⁴
Guidance 305 (GSB 202 is prerequisite)	4	
Secondary Education 310, 352	20	
Two courses to be selected from a list of restricted professional education electives, refer to the catalog section titled Secondary Education		
		8
<i>Electives</i>		<u>31-35³</u>
<i>Total</i>		<u>186</u>

¹ See individual language listings for requirements.

² The minor may be in any field which supports the student's projected career. Among recommended fields are another foreign language, English, linguistics, philosophy, history. The minor may be waived by the department.

³ Electives may contribute to a teaching minor. If it is in a second foreign language, state certification requirements may be met by counting GSC-FL courses or by doing additional work.

⁴ FL 453-4 must be taken instead of Secondary Education 315.

The student who has completed only one year of foreign language in high school will usually begin with the first quarter of the first-year course in General Studies. The student who has completed two or more years of high-school French, German, Russian, or Spanish is required to take a placement/proficiency examination administered by the Counseling and Testing Service. This will determine at which course level of the language the student will be placed. Students having completed two or more years of high-school foreign language other than French, German, Russian, or Spanish will usually begin with the second-year course.

Minor

A minor in a foreign language is constituted by from 26-30 hours in

courses 200 level and above. See individual languages for specific requirements. State certification requirements may be met by counting GSC-FL courses or by doing additional advanced work.

General Foreign Language Courses

Courses

320-3 Psychoanalysis and Literature. Exposition and discussion of Freud's relevance to literary criticism with special emphasis on the literary work as an act and a means for communication. The reading list will include Moliere, Dostoyevsky, Stendhal, Balzac, and Flaubert. Lectures and readings in English.

330-3 Sociology of Literature. An analysis of the literary work as symbolic of reality insofar as it expresses the relationship of historical, philosophical and economic structures to human consciousness. The readings will be drawn from Beckett, Sartre, Zamyatin, Babel, Malraux and Solzhenitsyn. Lectures and readings in English.

420-4 Modern Vietnamese Theater or Drama. Hat Boi (VN Opera), Hat Cheo (Popular Theater from North VN), Cai Luong (Modernized Opera and Musical), Thoai Kich (Modern Theater), and Kich Tho (Lyric Theater). Emphasis on the main plays, the stage techniques, and the literary and social meaning of those various forms of VN theater. Prerequisite: Linguistics 420 or consent of instructor. Elective Pass/Fail.

430-3 Vietnamese Poetry. Classical and modern poetry. Emphasis on masterpieces and leading figures such as Ng Trae, Ng B Khiem, the authors of Chinh Phu Ngam and Cung Oan, Ng Huy Tu, Ng Du and the Kim Van Lieu, Ng Cong Tru, and the new poetry with the impact foreign poetry had on it. Prerequisite: Linguistics 420. Elective Pass/Fail.

453-4 Methods in Teaching Modern Foreign Languages. Survey of general principles of second-language teaching, based upon insights of modern linguistics and learning-psychology. Followed by intensive practical work in classroom and language laboratory with teachers experienced in the student's specific language field. Required of prospective teachers of modern foreign languages in secondary schools. Prerequisite: concurrent or prior enrollment in 300-level course in French, German, Russian, or Spanish. Elective Pass/Fail.

477-3 Contemporary Vietnamese Prose. Open to advanced students. Short stories, novels, and essays (main trends and evolution). Emphasis on works of prominent authors since 1920, such as Nguyen V. Vinh, Pham Quynh, H. N. Phach, Ng. Tr. Thuat, P. K. Binh, Khai Hung, and the recent generation. Prerequisite: Linguistics 410. Elective Pass/Fail.

497-9 (3,3,3) Survey of Vietnamese Literature. Readings and analysis of selected works of Vietnamese literature from the beginning to the present time. Knowledge of Chinese characters and demotic characters not necessary, since all texts will be in Roman script. Presented in Vietnamese. Prerequisite: equivalent of two years of Vietnamese. Elective Pass/Fail.

543-1 to 6 Research Problems.

560-3 to 4 Bibliography and Research Techniques in Foreign Language Areas.

Chinese

Courses

120-3 (1,1,1) Chinese Conversation. Conversation and oral drill taken with GSC 120 by students who wish additional oral training: elected only by students enrolled in GSC 120.

201-15 (5,5,5) Intermediate Chinese. Designed to give the students a review of the Chinese language and its expansion, a reading ability of modern prose, and practice in conversation and composition. Must be taken in a,b,c sequence. Prerequisite: one year of college Chinese (GSC 120c) or equivalent.

315-2 to 6 Readings in Chinese. Readings in the contemporary Chinese such as the adaptations of the writings of Tsau Yu, Lau she, Hu shih, and Lu Synn. Prerequisite: 201c. Elective Pass/Fail.

Classical Studies

Major, Courses

This major gives students an opportunity to study an entire western

civilization in its many diverse but related aspects. They study the literature, history, philosophy, religion, art, archaeology and law of Greek and Roman antiquity from the earliest beginnings in Greece to the fall of Rome for their intrinsic artistic value, their historical significance, and their power to illuminate man's problems in contemporary society. The ancient texts will be studied primarily in translation (unless the student wishes to specialize in the language aspect), under the guidance of instructors, however, who know the ancient literature in the original language.

This major is designed for 1) teaching in the general humanities, 2) for teaching high school Latin (in which case the student will take the maximum electives in the original languages and will take 32 hours in secondary education) or 3) as preparation for many possible specializations, e.g., law, graduate work in history, art, archaeology, political science, comparative literature, philosophy and religion.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

Classical Studies courses, including beginning Latin and Greek . . .	65
Original Latin and Greek courses including GSC 130a,b, Gr 130a,b, GSC 133a,b,c, and 18 hours of higher level Latin and/or Greek courses	35
(Of these 35 hours, at least 21 must be taken within the SIU-C department of Foreign Language)	
Survey of Literature in Translation: C1St 420 and C1St 431	6
Independent Study: C1St 376 (Junior and Senior Level)	8-11
Electives: Additional Latin and Greek courses beyond those required; GSC 330, 332; Anthropology 304; Art 447b,c; Government 484a; History 304b,c, 315a, 481a,b, 482a,b; Philosophy 310, 381, 382, 471a,b; Gr/RelS 341	13-16

Courses

376-2 to 11 Independent Study in Classical Studies Program. (Same as Anthropology 376, Art 376, History 376, Philosophy 376, Religious Studies 376.) Normally taken in course of junior and senior years to a total of at least eight hours under a professor participating in Classical Studies Program (Anthropology, Art, Foreign Languages, History, Philosophy, or Religious Studies). At end of senior level work, student will submit a research paper. Prerequisite: Consent of instructor and Classical Studies Section Head. Elective Pass/Fail.

420-3 Greek Literature in Translation. A study of woman and man in the masterpieces of ancient Greek literature in translation. (Not for graduate credit.) Elective Pass/Fail.

431-3 Latin Literature in Translation. A reading and discussion of the great works of Roman literature—history, satire, epic, love, poetry, elegy, lyric, and drama with some attention to their influence on modern literature and culture. Students will have the opportunity to study one author in some depth. (Not for graduate credit.) Elective Pass/Fail.

Greek

Courses

130-3 (1,1,1) Classical Greek Conversation. Class conducted in the language laboratory. Helps students studying elementary classical Greek. Prerequisite: concurrent enrollment in GSC 130.

201-9 (3,3,3) Intermediate Greek. Grammar review and composition. Selected readings. Taken in a,b,c sequence. Prerequisite: GSC 130c.

301-4 Greek Historians. Reading and discussion of selections from the histories of Herodotus, Thucydides, and Xenophon. Elective Pass/Fail.

302-4 **Plato**. Reading and discussion of the **Republic**. Elective Pass/Fail.
 303-4 **Aristotle**. Reading and discussion of the **Ethics**. Elective Pass/Fail.
 311-2 to 4 **Homer**. Reading and interpretation of selections from the **Iliad** and the **Odyssey**. Elective Pass/Fail.

313-2 to 6 **Greek Tragedy**. Readings and interpretations of various plays from the works of Aeschylus, Sophocles, and Euripides. Elective Pass/Fail.

GSC 330-3 **Classical Mythology**.

GSC 332-3 **Classical Drama**.

341-4 **Themes in Greek Tragedies and the New Testament**. (Same as Religious Studies 341.) Greek tragedies and passages from the Synoptic Gospels and the Letters of Paul showing similarities and differences in their treatment of such themes as freedom, law, love, and justice. Prerequisite: GSC 330 or 332 or drama course or Classical Studies 420 and GSC 215 or Philosophy 310 or consent of instructor. Elective Pass/Fail.

415-2 to 8 **Readings from Greek Authors**. Flexible reading program of works not included in other courses. By special permission only. (Not for graduate credit.) Elective Pass/Fail.

Latin

Minor, Courses

Latin courses 200 level and above: 27
 201a,b,c 12 hours
 300 level: FL 353-4 is recommended 15 hours

Courses

201-12 (4,4,4) **Intermediate Latin**. Composition and reading from various authors. Should be taken in a,b,c sequence. Prerequisite: GSC 133 or two years of high-school Latin.

301-4 **Cicero's Essays and Letters**. Prerequisite: 201c or equivalent. Elective Pass/Fail.

302-4 **Vergil's Eclogues and Georgics**. Prerequisite: 201c or equivalent. Elective Pass/Fail.

303-4 **Tacitus**. Prerequisite: 201c or equivalent. Elective Pass/Fail.

304-2 **Private Life of the Romans**. Elective Pass/Fail.

311-4 **Roman Comedy**. Prerequisite: 201c or equivalent. Elective Pass/Fail.

312-4 **Horace's Odes and Epodes**. Prerequisite: 201c or equivalent. Elective Pass/Fail.

313-4 **Pliny's Letters**. Prerequisite: 201c or equivalent. Elective Pass/Fail.

326-4 **Ovid's Metamorphoses**. Prerequisite: 201c. Elective Pass/Fail.

GSC 332-3 **Classical Drama**.

335-4 **Vergil's Aeneid**. Prerequisite: 201c. Elective Pass/Fail.

342-4 **Composition**. A careful study based on classic prose-writers. Prerequisite: 201c or equivalent. Elective Pass/Fail.

415-2 to 8 **Readings from Latin Authors**. Flexible reading program of works not included in other courses. By special permission only. (Not for graduate credit.) Elective Pass/Fail.

French

Major, Courses

At least one course in history of France is recommended for all students majoring in French.

BACHELOR OF ARTS DEGREE, COLLEGE OF LIBERAL ARTS

French courses 200 level and above, including the following: 56
 200 level: 201a,b,c-9; 220a,b,c-6 recommended 9-15
 300 level: 350-6, 352-2, 354-4, 397a,b,c-9 21
 400 level: 408-4, 461-4, and at least 3 literature courses 17
 French electives: Romance Philology, 410-4, and FL 453-4, are
 recommended 3-9

BACHELOR OF SCIENCE (COLLEGE OF EDUCATION) OR BACHELOR OF ARTS (COLLEGE OF LIBERAL ARTS) DEGREE WITH TEACHING CERTIFICATE

(FL 453-4 is taken in lieu of Sec Ed 315)

French courses 200 level and above, including the following:	56
200 level: 201a,b,c-9; 220a,b,c-6 recommended	9-15
300 level: 350-6, 352-2, 354-4, 397a,b,c-9	21
400 level: 408-4, 461-4, and at least 3 literature courses	17
French electives: Romance Philology, 410 is recommended . . .	4-10

MINOR

French courses 200 level and above, including the following:	27-28
200 level: 201a,b,c-9; 220a,b,c-6 recommended	9-15
300 level: 350-6 plus 352-2 and FL 453-4, or 350-6 plus 354-4 and any one quarter of 397 a, or b, or c (3)	12-13
French electives:	0-6

Courses

123-3 (1,1,1) French Conversation. Conversation and oral drill taken with GSC 123 by students who wish additional oral training: elected only by students enrolled in GSC 123. Parts may be taken singly.

135-15 (5,5,5) Intensive Elementary French. Intensive study and drill of pronunciation, speech patterns and grammar of the French language. Reading, writing, listening and speaking skills are equally stressed. Recommended for students with special interest in French. Three out of the five hours of 135a and three of the five hours of b can be used to satisfy GSC requirements. Must be taken in a,b,c sequence, and each is prerequisite for the next course in the sequence.

201-9 (3,3,3) Intermediate French. Composition, oral practice, rapid reading of modern authors with special attention to the role of French culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSC 123 or two years of high school French, or French 135-15, or equivalent.

220-6 (2,2,2) Intermediate French Conversation. Development of oral skill on the intermediate level. Offered for 3 quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201.

288-9 (3,3,3) French as a Research Tool. Reading of French texts with emphasis on grammar as a tool for reading comprehension; development of reading skills in various fields; humanities, social studies, science; development of interpretative and translation skills in student's own discipline.

350-6 (3,3) Advanced Composition and Conversation. Translation and composition. Taken in a,b sequence. Prerequisite: 201c or equivalent. Elective Pass/Fail.

352-2 French Phonetics. French phonemics and phonetics, involving production of French sounds and English interference, the written representation of French sounds and the teaching thereof. Laboratory and dictation practice. Prerequisite: 201c or equivalent. Elective Pass/Fail.

354-4 Introduction to Literary Analysis. Practice in rudimentary explications de textes of passages taken from representative works in French literature, with a view to developing the students' artistic sensibilities and improving their analytical skills. Prerequisite: 350. Elective Pass/Fail.

363-1 French Pronunciation and Diction for Music Majors. Introduction to rules of French phonetics, the development of students' skill in producing French sounds. Emphasis on pronunciation of terms, texts, and librettos. Elective Pass/Fail.

397-9 (3,3,3) Survey of French Literature. Reading and analysis of selected works of French literature from the beginning to the present time. Presented in French. Should be taken in a,b,c sequence, although not obligatory. Prerequisite: 350 or consent of instructor.

401-9 (3,3,3) French Literature of the 17th Century. (a) Tragedy: Corneille and Racine. (b) Comedy: Molière. (c) Philosophy, fiction and fable: Descartes,

- Pascal, La Rochefoucauld, La Bruyère, Mme. de Lafayette, La Fontaine, and others. Prerequisite: 354, 397 or consent. Elective Pass/Fail.
- 402-6 (3,3) Contemporary French Novel and Theater.** (a) Major themes, forms, and techniques in the novel with particular emphasis on Gide, Proust, Malraux, Sartre, Camus, and Robbe-Grillet. (b) A study of the dramatic masterpieces of Giraudoux, Claudel, Anouilh, Sartre, Camus, Ionesco, and Beckett with respect to structure, technique, themes, and language. May be taken out of sequence. Prerequisite: 354, 397, or consent of instructor. Elective Pass/Fail.
- 403-9 (3,3,3) French Literature of the 18th Century.** (a) Theater; (b) Novel; (c) Philosophic and Didactic Literature. Prerequisite: 354, 397, or consent of instructor. Elective Pass/Fail.
- 408-4 French Civilization.** Society, culture, social institutions, and the arts of contemporary France. Lectures, slides, discussion. Prerequisite: 350 or consent of instructor. Elective Pass/Fail.
- 409-3 French Romanticism in the Drama, Novel and Poetry.** Prerequisite: 354, 397, or consent of instructor. Elective Pass/Fail.
- 419-3 French Poetry from Nerval through Symbolism.** Prerequisite: 354, 397, or consent of instructor. Elective Pass/Fail.
- 429-6 (3,3) French Novel and Theatre, 1850-1930.** (a) Realism, naturalism, and the reaction to these in the novel, from Flaubert through Barres. (b) Realism, naturalism, and symbolism in the theatre from mid 19th century to 1930. Prerequisite: 354, 397, or consent of instructor. Elective Pass/Fail.
- 430-2 to 6 Travel-Study in France.** Comprises part of the travel-study program in France. Prerequisite: participation in the French travel-study program. Elective Pass/Fail.
- 461-4 French Stylistics.** Aesthetics and theory of French literary expression through examination of various stylistics methods, and through stylistic analyses of excerpts from representative works of great French authors. Prerequisite: 350, 354, or consent of instructor. Elective Pass/Fail.
- 498-3 Honors Seminar.** Study of an author or a special topic. Restricted to undergraduates. Prerequisite: consent of department. Elective Pass/Fail.
- 499-4 Honors Essay.** Individual exploration of some question, author, or theme of significance within the field of French literature or language. Restricted to undergraduates. Prerequisite: 498 and consent of department. Elective Pass/Fail.
- 501-2 to 6 Seminar on a Selected French Author.**
- 509-2 to 6 Studies in 19th Century French Literature.**
- 515-6 (3,3) Old French.**
- 520-4 Graduate Composition.**
- 522-2 to 6 Studies in 20th Century French Literature.**
- 523-2 to 6 Studies in Medieval French Literature.**
- 524-2 to 6 Studies in French Literature of the Renaissance.**
- 526-2 to 6 Studies in 18th Century French Literature.**
- 536-3 (1,1,1) Teaching French at the College Level.** Prepares graduate students in French for teaching at the university level. Required of all teaching assistants in French. May not be counted to satisfy secondary certification requirements.
- 599-2 to 9 Thesis.**

German

Major, Courses

At least one course in history of Germany or Central Europe is recommended for all students majoring in German.

BACHELOR OF ARTS DEGREE, COLLEGE OF LIBERAL ARTS

German courses 200 level and above, including the following:	55
200 level: 201a,b,c-9; 220a,b,c-6 recommended	9-15
300 level: 301a,b,c-9 (normally taken in senior year), 304a,b-6, 311-3	18
400 level: At least three literature courses (6-12); 408-4 is recommended	6-16
German electives: FL 453-4 is recommended	6-22

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(FL 453 is taken in lieu of Sec. Ed 315)

German courses 200 level and above, including the following:	55
200 level: 201a,b,c-9; 220a,b,c-6 recommended	9-15
300 level: 301a,b,c-9 (normally taken in senior year), 304a,b-6, 311-3	18
400 level: 401a,b-4, plus at least two literature courses (4-8); 408-4 is recommended	8-16
German electives	6-20

MINOR

German courses 200 level and above, including the following:	27
200 level: 201a,b,c-9; 220a,b,c-6 recommended	9-15
300 level: 304a-3, 311-3; 304b-3 or FL 453-4 are recommended	6-13
German electives	0-12

Courses

126-3 (1,1,1) German Conversation. Conversation and oral drill taken with GSC 126 by students who wish additional oral training: elected only by students enrolled in GSC 126. Parts may be taken singly. Prerequisite: concurrent enrollment in GSC 126.

201-9 (3,3,3) Intermediate German. Composition, oral practice, rapid reading of modern authors with special attention to the role of German culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSC 126 or two years of high school German, or equivalent.

220-6 (2,2,2) Intermediate German Conversation. Development of oral skill on the intermediate level. Offered for 3 quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201.

251-4 Scientific German. Study of vocabulary and sentence construction as commonly found in Germanic scientific writings. May be counted as the equivalent of German 201c. Prerequisite: one year college German or its equivalent.

288-9 (3,3,3) German as a Research Tool. (a), (b) Basic grammatical structure and vocabulary necessary to a reading knowledge of the language. (c) Finalizes translation skills in the student's discipline. With consent of student's department, 288c satisfies the graduate school foreign language as a research tool requirement.

301-9 (3,3,3) Survey of German Literature to 1900. (a) Beginnings to 1530. (b) 1530-1780. (c) 1770-1900. Includes Old and Middle High German literature, baroque, enlightenment, Storm and Stress, Classicism, Romanticism, Biedermeier, Young Germany, Realism, and Naturalism. Prerequisite: 201c. Elective Pass/Fail.

303-4 German "Novelle" in the Nineteenth Century. A study of representative works from 1800 to 1900, with emphasis on the literary movements of that time. Elective Pass/Fail.

304-6 (3,3) Advanced Composition and Conversation. Two quarters are required for prospective teachers of German. Must be taken in a,b sequence. Prerequisite: 201c. Elective Pass/Fail.

311-3 German Literature since 1945. An introduction to the work of outstanding writers in Germany since World War II. Lectures, reading of short stories, plays, poems, and short novels. Prerequisite: 201c. Elective Pass/Fail.

312-4 German Drama in the Nineteenth Century. Kleist, Grillparzer, Hebbel. Reading and discussion of representative works. Elective Pass/Fail.

315-4 From Rationalism to Realism. Study of German literary works representing 18th Century Rationalism, "Sturm und Drang" and Romanticism leading to the literature of Realism; lectures and reports. Elective Pass/Fail.

363-1 German Pronunciation and Diction for Singers. Limited to voice majors.

Aids student singers in pronunciation and interpretation of the folk song, art song, or aria they are learning. Elective Pass/Fail.

401-4 (2,2) Goethe's Faust. (a) The Faust legend and early Faust books and plays; the genesis of Goethe's *Faust*: reading of Part I. (b) reading of Part II; study of symbolism such as blending of paganism with Christianity, of ancient Greek culture with Germanic culture. Must be taken in a,b sequence. Elective Pass/Fail.

402-3 Advanced German Syntax. Descriptive and contrastive study of German syntax, with particular attention to the needs of prospective teachers. Elective Pass/Fail.

403-3 German Ballads and Lyrics. A selective study of the foremost examples of German balladry and lyric poetry, ranging from the poetry of Klopstock and Buerger to that of Hesse, Benn, etc. Lectures, recitations. Elective Pass/Fail.

404-4 Weimar and Its Aftermath. German writings from the inception of the Weimar Republic to the end of World War II, with special reference to the correlation existing between literary expression and social, economic and political conditions. Elective Pass/Fail.

406-3 The German Comedy. Comic and satirical works in German Literature, with special emphasis on the "Lustspiel" since 1800; lectures, reports. Elective Pass/Fail.

408-4 German Civilization. Intensive study of the German speaking areas of the world, with emphasis on the anthropological and sociological aspects of their respective cultures (Austrian, German, Swiss, "Reichs-deutsch," etc.); lectures, reports. Elective Pass/Fail.

411-6 (3,3) Middle High German. (a) Grammar, and selective readings in both MHG originals and NHG translations of such epics as the *Nibelungenlied* and *Gudrun*. (b) The Courtly epic poetry of such authors as Wolfram von Eschenbach, Gottfried von Strassburg, Hartmann von Aue, the lyric poetry of Walther von der Vogelweide, and didactic prose. Elective Pass/Fail.

412-2 Contrastive Phonetics: English and German. Study and comparison of the speech sounds of English and German. Provides prospective teachers of German with the skills requisite for helping students to develop adequate pronunciation habits in German. Elective Pass/Fail.

413-3 History of the German Language. Survey of the development of German through the Old-, Middle-, and New-High-German periods; lectures, readings, reports. Prerequisite: 412. Elective Pass/Fail.

417-3 The German Drama of the 20th Century. Reading and interpretation of the dramas of Brecht, Durrenmatt, Frisch, and others; lectures, discussions, and reports. Elective Pass/Fail.

497-1 to 2 Readings in 18th Century German Literature. Departmental approval required. Elective Pass/Fail.

498-1 to 2 Readings in 19th Century German Literature. Departmental approval required. Elective Pass/Fail.

499-1 to 2 Readings in 20th Century German Literature. Departmental approval required. Elective Pass/Fail.

500-2 Seminar in Contemporary Literature.

501-2 to 6 Seminar on a Selected German Author.

503-3 Introduction to Germanic Linguistics.

506-2 Romanticism I.

507-2 Romanticism II.

509-4 (2,2) Old High German.

512-3 19th Century German Novel.

513-3 20th Century German Novel.

514-3 Seminar in Folklore.

533-3 Gothic.

536-3 (1,1,1) Teaching German at the College Level.

554-3 German Classicism.

599-2 to 9 Thesis.

Greek

Courses

(See Classical Studies)

*Italian**Courses*

144-3 (1,1,1) Italian Conversation. Taken with GSC 144 by students who wish additional oral training; elected only by students enrolled in the corresponding beginning sections. Each quarter may be taken separately. Prerequisite: concurrent enrollment in GSC 144.

201-9 (3,3,3) Intermediate Italian. Development of listening, speaking, reading, and writing skills on the intermediate level, with special attention to the role of Italian culture in world civilization. Prerequisite: GSC 144 or 2 years of high school Italian or equivalent.

363-1 Italian Pronunciation and Diction for Singers. Limited to voice majors. Aids student singers in the pronunciation and in interpretation of the folk song, art song, or aria they are learning. Elective Pass/Fail.

*Japanese**Courses*

131-3 (1,1,1) Japanese Conversation. Conversation and oral drill taken with GSC 131 by students who wish additional training in oral ability: elected only by students enrolled in GSC 131.

201-15 (5,5,5) Intermediate Japanese. Development of listening, speaking, reading, and writing skills on the intermediate level, with special attention to cultural readings. Prerequisite: GSC 131c.

Latin

Minor, Courses

(See *Classical Studies*)

*Portuguese**Courses*

135-3 (1,1,1) Portuguese Conversation. Conversation and oral drill taken with GSC 135 by students who wish additional oral training. Elected only by students enrolled in GSC 135. Parts may be taken singly.

201-9 (3,3,3) Intermediate Portuguese. Composition, oral practice, rapid reading of modern authors. Must be taken in a,b,c sequences. Prerequisite: GSC 135c or two years of high school Portuguese, or equivalent.

Russian

Major, Courses

At least one course in Russian history is recommended for all students majoring in Russian.

BACHELOR OF ARTS DEGREE, COLLEGE OF LIBERAL ARTS

Russian courses 200 level and above, including the following:	52
200 level: 201a,b,c-9; 220a,b,c-6 recommended	9-15
300 level: 301-4; 308a,b-8; 330a,b-6	18
400 level: at least three literature courses	12-16
Russian electives: FL 453 is recommended	6-16

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(FL 453 is taken in lieu of Sec Ed 315)

Russian courses 200 level and above, including the following:	52
200 level: 201a,b,c-9; 220a,b,c-6 recommended	9-15
300 level: 301-4; 308a,b-8; 330a,b-6	18
400 level: At least two literature courses	8-12
Russian electives	10-20

MINOR

Russian courses 200 level and above, including the following:	26
200 level: 201a,b,c-9; 220a,b,c-6 recommended	9-15
300 level: 301-4, plus any combination of 308a,b-8 and 330a, b-6	9-15
Russian electives: FL 453 is recommended	0-8

Courses

136-3 (1,1,1) Russian Conversation. Conversation and oral drill taken with GSC 136 by students who wish additional oral training; elected only by students enrolled in GSC 136. Parts may be taken singly.

201-9 (3,3,3) Intermediate Russian. Continuation of grammar. Exercises in language laboratory required. Introduction to readings on Russian culture. Prerequisite: GSC 136 or 2 years of high school Russian, or equivalent.

220-6 (2,2,2) Intermediate Russian Conversation. Development of oral skill on the intermediate level. Offered for three quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: GSC 136c or concurrent registration in any quarter of 201.

288-9 (3,3,3) Russian as a Research Tool. (a), (b) Basic grammatical structure and vocabulary necessary to a reading knowledge of the language. (c) Finalizes translation skills in the student's discipline. With consent of student's department, 288c satisfies the graduate school foreign language as a research tool requirement.

301-4 Intermediate Readings in Russian. Designed to improve skills in reading selections from Russian prose. Prerequisite: 201c or equivalent. Elective Pass/Fail.

308-8 (4,4) Survey of Russian Literature. Historical survey of major movements, authors, and works in Russian to the present time. Should be taken in a,b sequence. Prerequisite: 301 or approval of department. Elective Pass/Fail.

320-1 to 4 Reading in Russian Literature. Selected readings in areas not covered in regular course work. Elective Pass/Fail.

330-6 (3,3) Russian Culture. Based on the history of Russia and the cultural heritage of the Russian people. Prerequisite: 201c or equivalent. Elective Pass/Fail.

400-4 Travel-Study in USSR. Specialized course comprising part of the travel-study program in the Union of Soviet Socialist Republics. Prerequisite: 201c or equivalent. Elective Pass/Fail.

405-4 Translation Techniques. Translation of material from humanities, social sciences, and sciences; discussion of techniques, procedures, methodology, and art of translation. The course is also designed for students majoring in fields other than Russian. In addition, students will spend several hours weekly in a workshop translating individually supervised projects. Prerequisite: 201c or consent of the department. Elective Pass/Fail.

408-4 Soviet Civilization. Present-day political, economic, and social institutions of the Soviet Union. Reading and translation from contemporary news media. Prerequisite: 201c or consent of department. Elective Pass/Fail.

412-4 Russian Realism. Authors in the 19th century Russian literature. Special attention to stylistic devices. Lectures, readings, and individual class reports. Prerequisite: 308b or approval of department. Elective Pass/Fail.

413-4 Russian Drama in the Nineteenth Century. Griboyedov, Gogol, Pushkin, and minor dramatists. Prerequisite: 308b or approval of department. Elective Pass/Fail.

414-3 Russian Poetry from Zhukovsky to 1920. A study of Russian Poetry from Sentimentalism through Symbolism. Prerequisite: 308b or approval of department. Elective Pass/Fail.

- 415-3 Russian Phonetics.** Analysis of the sounds of Russian and their manner of production; intonation and stress; levels of speech, oral practice. Prerequisite: 201c. Elective Pass/Fail.
- 416-4 Russian Poetry Since 1920.** Literary trends and representative works of Russian poets such as Mayakovsky, Yevtushenko, Voznesensky, and others. Prerequisite: 308b or approval of department. Elective Pass/Fail.
- 425-3 Soviet Russian Literature.** Major fiction writers and literary trends since 1917. Lectures, readings and reports. Prerequisite: 308b or approval of department. Elective Pass/Fail.
- 462-4 Russian Stylistics.** Writing style in Russian and its application to the development of skill in written expression. Advanced work in the principles of Russian grammar and composition. Prerequisite: 308b or approval of department. Elective Pass/Fail.
- 500-2 Seminar in Contemporary Russian Literature.**
- 501-2 Seminar on a Selected Russian Author.**
- 503-2 Seminar on 19th Century Russian Literature.**
- 510-3 Russian Literature of the 18th Century.**
- 514-6 (3,3) History of the Russian Language.**
- 520-4 Russian Linguistics Structure.**
- 525-4 Comparative Slavic Phonology and Morphology.**
- 599-2 to 9 Thesis.**

Spanish

Major, Courses

At least one course in history of Spain or Latin America is recommended for all students majoring in Spanish but may not be counted toward the major. One year of Portuguese is also recommended.

BACHELOR OF ARTS DEGREE, COLLEGE OF LIBERAL ARTS	52
Spanish courses 200 level and above, including the following:	
200 level: 201a,b,c-9; 220a,b,c-6	15
300 level: 301 required prior to taking 310 and 333; 310a,b,c-9; and 333a,b,c-9 (at least 3 of the 6 courses required; at least one in 310 and 333; may take all 6.) 320a,b-6	18
400 level: At least three literature or linguistic courses	9
415 required	4
Spanish electives: 305 and FL 453-4 recommended	6
BACHELOR OF SCIENCE (COLLEGE OF EDUCATION) OR BACHELOR OF ARTS (COLLEGE OF LIBERAL ARTS) DEGREE WITH TEACHING CERTIFICATE . .	52
(FL 453 is taken in lieu of Sec Ed 315)	
Spanish courses 200 level and above, including the following:	
200 level: 201a,b,c-9; 220a,b,c-6	15
300 level: 301-3 required before 310a,b,c-9; and 333a,b,c-9 (at least 3 of the 6 courses required; at least one in 310 and 333; may take all 6.) 320a,b-6	18
400 level: At least three literature or linguistic courses	9
415 required	4
Spanish electives 305 recommended	3
MINOR	30
Spanish courses 200 level and above, including the following:	
200 level: 201a,b,c-9; 220a,b,c-6	15
300 level: 301-3 required before 310a,b,c (or 333a,b,c)-9, (a 400 level course or FL 453-4 may be substituted for one quarter of the 310 or 333 sequence courses.)	

320a,b-6	15
305-3 Highly recommended	

Courses

- 140-3 (1,1,1) Spanish Conversation.** Integrated with GSC 140. Complete sequence not required. Conversation and oral drill for students who wish additional audio-lingual training in small groups. Prerequisite: concurrent enrollment in GSC 140.
- 201-9 (3,3,3) Intermediate Spanish.** Continuation of grammar. Exercises in language laboratory required. Introduction to cultural reading, plays, and short stories. Prerequisite: GSC 140 or 2 years of high school Spanish, or equivalent.
- 220-6 (2,2,2) Intermediate Spanish Conversation.** Practice in spoken Spanish. Prepared and impromptu group discussions on general topics and everyday situations. Frequent short talks by students. Prerequisite: GSC 140 or 2 years of high school Spanish, or equivalent.
- 288-9 (3,3,3) Spanish as a Research Tool.** (a), (b) Basic grammatical structure and vocabulary necessary to a reading knowledge of the language. (c) Finalizes translation skills in the student's discipline. With consent of student's department, 288c satisfies the graduate school foreign language as a research tool requirement.
- 301-3 Intermediate Readings in Spanish.** Improves skills in reading Spanish. Prerequisite: 201c or equivalent. Elective Pass/Fail.
- 305-3 Advanced Conversation.** Improvement of self-expression and oral comprehension. Expansion of vocabulary and idioms emphasized through classroom and language laboratory work. Highly recommended for those students with a concentration in Spanish. Prerequisite: 201c, 220c. Elective Pass/Fail.
- 310-9 (3,3,3) Survey of Spanish Literature.** The literature of Spain to the present. Should be taken in a,b,c sequence. Prerequisite: 301-3. Elective Pass/Fail.
- 316-3 Civilizacion Espanola.** A study of the cultural patterns and heritage of the Spanish people from earliest times to the present. Prerequisite: 201c or equivalent. Elective Pass/Fail.
- 317-3 Civilization Latin Americana.** Latin American civilization from Pre-Columbian times to the present. Elective Pass/Fail.
- 320-6 (3,3) Advanced Grammar and Composition.** Required of students with a concentration in Spanish and any student planning to teach the language. Must be taken in a,b, sequence. Prerequisite: 201c or equivalent. Elective Pass/Fail.
- 333-9 (3,3,3) Survey of Spanish American Literature.** Spanish literature in America from the conquest to modern times. Prerequisite: 301-3. Elective Pass/Fail.
- 360-3 Travel-Study Course in Mexico.** Lectures and course work at a Mexican university, in conjunction with the Latin American Institute's Study Abroad Program. Native professors and lecturers on occasion. Individual projects and reports. Prerequisite: advanced standing in Spanish or consent of department. Elective Pass/Fail.
- 400-4 Travel-Study in Spain.** Course taught as part of the travel-study tour in Spain. Usually given in the summer. Prerequisite: Participation in travel-study tour in Spain. Elective Pass/Fail.
- 415-2 to 4 The Linguistic Structure of Spanish.** Phonology and grammatical structure of Spanish. Examination of the features of the principal dialects. Required of all majors. Elective Pass/Fail.
- 425-4 History of the Spanish Language.** Survey of development from the Middle Ages to the present day. Elective Pass/Fail.
- 490-1 to 6 Readings in Spanish.** Directed independent readings in a selected area. Prerequisite: consent of department. Elective Pass/Fail.
- 536-3 (1,1,1) Teaching Spanish at the College Level.**

IBERIAN

- 401-3 Spanish Novel of the 19th Century.** Study of representative novels of Fernan Caballero, Valera, Pereda, Galdos, etc. Elective Pass/Fail.
- 402-3 Spanish Drama of the 18th and 19th Centuries.** Reading of representative plays of the chief dramatists from Moratin to the Generation of 1898.

Elective Pass/Fail.

403-3 **Spanish Poetry.** General survey of Spanish poetry from its beginnings to 1900. Elective Pass/Fail.

404-6 (3,3) **Spanish Literature of the 20th Century.** (a) The Generation of 1898. (b) Contemporary Novel and Essay. Main trends of the Spanish novel and essay since 1900. Elective Pass/Fail.

440-6 (3,3) **The Golden Age: Drama.** Plays of Lope de Vega, Calderon, Tirso de Molina, Ruiz de Alarcon, and others. Elective Pass/Fail.

445-4 **Cervantes. Don Quijote;** other works assigned as collateral readings. Elective Pass/Fail.

501-2 to 6 (2 per quarter) **Seminar on a Selected Spanish Author.**

502-3 **Seminar in Hispanic Linguistics.**

515-6 (3,3) **Old Spanish.**

520-3 **Seminar in Syntax.**

590-1 to 4 **Readings in Spanish.**

599-2 to 9 **Thesis.**

AMERICAN

421-3 **Survey of Modernism in Spanish American Poetry.** Study of its origins, characteristics and achievements. Elective Pass/Fail.

422-3 **Contemporary Spanish American Poetry.** Spanish American poetry since modernism. Elective Pass/Fail.

423-3 **The Mexican Novel of the 20th Century.** Emphasis on fiction dealing with the Revolution and related social problems. Elective Pass/Fail.

424-3 **Gaucha Literature.** Study of the Gaucho as a social class and of the types of literature developed to portray and symbolize his way of life, attitudes and values. Elective Pass/Fail.

426-3 **The Mexican Short Story.** Survey of the Mexican short story from pre-Conquest to the present. Elective Pass/Fail.

427-3 **Spanish American Drama.** Works of Florencio Sanchez, Rodolfo Usigli, Armando Moock, Samuel Eichelbaum, Xavier Villarrutia, and others. Elective Pass/Fail.

428-3 **Colonial Literature.** Study of the literature of Latin America before 1800. Elective Pass/Fail.

429-6 (3,3) **The Latin American Novel.** Survey of the genre in Latin America: (a) From the beginnings to 1940 (b) From 1940 to the present. Elective Pass/Fail.

478-4 **Seminar in Latin American Thought.** (See Philosophy 478.) Elective Pass/Fail.

500-2 to 6 (2 per quarter) **Seminar in Latin American Literature.**

599-2 to 9 **Thesis.**

Romance Philology

Courses

410-4 **Romance Philology I.** Survey of phonology, morphology, and syntax changes in Romance languages in general; special attention to the developments in French and Spanish for students with majors in these fields. Elective Pass/Fail.

Forestry

Department, Major, Courses

There are two specializations offered within the major in forestry. *Forest resource management* includes instruction in forest management, multiple-use resource management, forest products utilization and forest recreation planning and development. This specialization includes areas of study in forestry curriculum recommendations of the Society of American Foresters. One spring quarter of practical field courses is required (spring camp). During this period, students live in the field, pay living and traveling expenses involved. The transportation and lodging costs per student will be approximately \$110. The lodging costs referred to here are for those nights that are spent away from campus. Other costs for equipment and supplies

will also be required for the spring camp and other courses in this program.

Outdoor recreation resource management provides an interdisciplinary training for management of the nation's outdoor recreation heritage. The courses offered are among those recommended by the National Recreation and Park Association. The recreation resource management student does not attend the spring camp, but instead travels through selected sections of the United States on a three-week tour of outdoor recreation and park facilities in late August and early September. During this period, the students pay transportation and living expenses which usually do not exceed \$110 per student. Other courses in this program may also require additional fees for materials and field trips.

Urban land management—urban forest management specialization trains the student to manage urban parks and green areas. For further details on this specialization, see the General Agriculture program described elsewhere in this catalog.

Available to the Department of Forestry for teaching and research are the following: the Crab Orchard National Wildlife Refuge; the Shawnee National Forest; the Union State Tree Nursery and Trail of Tears State Forest; a number of state parks and conservation areas; and the Kaskaskia Experimental Forest, together comprising over a million acres of forest land, all in the vicinity of the University. Also accessible for forest products utilization teaching and research is a wood products plant located near the Carbondale campus. Staff members of the U.S. Forest Service (Forestry Sciences Laboratory) and the Crab Orchard National Wildlife Refuge are affiliated with the Department of Forestry.

Bachelor of Science Degree, SCHOOL OF AGRICULTURE

Forest Resource Management Specialization

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Forestry with Specialization in Forest Resource Management</i>	101
GSA 101, 115a,b, 330	(12) + 3
GSD 101, 102, 153, 110	(9) + 3
GSE 101a	(1)
Biology 307	4
Botany 457	4
Chemistry 122a, 123a	(4) + 1
Economics 214 or Agricultural Industries 204	(4)
Economics 215	(4)
Engineering Technology 363a	4
Forestry 104, 221, 306, 330, 340, 350b, 363a,b, 365a,b, 369, 370, 450, 466, 470a,b, 475	58
Geology 220	3
Mathematics 111a,b, 140a	(5) + 8
Plant Industries 301	5
Zoology 316, 463	8
<i>Forestry and Related Electives</i>	10
<i>Electives</i>	7
<i>Total</i>	186

Outdoor Recreation Resource Management Specialization

<i>General Studies Requirements</i>	68
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<i>Requirements for Major in Forestry with Specialization in Outdoor Recreation Resource Management</i>		111
GSA 106 or Chemistry 122a, 123a	(4)	
GSA 101, 115a,b, 303	(12)	+ 3
GSB 103, 104, 203, 212	(16)	
GSD 101, 102, 153, 110	(9)	+ 3
GSE 101a, 106	(2)	
Accounting 250		4
Administrative Sciences 340, 341		8
Biology 307		4
Economics 214 or Agricultural Industries 204		4
Economics 215		4
Finance 271		4
Forestry 350a, 365a, 410, 450, 451a,b, 460		24
Geography 310a		4
Government 360, 440		8
Mathematics 111a,b	(5)	+ 5
Plant Industries 301, 304a,b, 306a, 404		16
Recreation 301, 320		8
Zoology 316, 463, 466		12
<i>Electives</i>		<u>7</u>
<i>Total</i>		186

Courses

104-3 Introduction to Forestry. Acquaints students with the broad field of multiple-use forestry. Special emphasis is given to forestry as a profession. Required field trips. Elective Pass/Fail.

221-4 Dendrology. Taxonomy and silvics of angiospermous and gymnospermous trees and shrubs.

301-5 Soil Science. (See Plant Industries 301.)

306-3 Silvical Field Studies. The forest as a result of site and biotic factors. Influences of the forest on the site. Offered only at spring camp. Costs per student given in forestry description. Prerequisite: Biology 307 or equivalent.

320-4 Wood Technology. Structure, identification, and properties of wood.

330-2 Harvesting Forest Products. Principles of harvesting and transporting forest products.

340-4 Forest Protection. The prevention, suppression, and effects of forest fires. The recognition and importance of insect pests, disease organisms, and other destructive agents in the forest. Offered only at spring camp. Costs per student are given in forestry description. Prerequisite: 365a and Biology 307 or equivalent.

350-6 (3,3) Forest and Outdoor Recreation. (a) Recreational use of forest and adjacent lands with emphasis on parks and national forests. Administration; interpretation; trends in use and development. (b) Offered only at spring camp. Costs/student are given in the Forestry description.

360-4 Farm Forestry. The management of farm woodlands, measurement of logs, trees, and stands; planting and harvesting methods; improvement cuttings; uses and marketing of woodland products. 104 and 360 are mutually exclusive. Required field trips.

363-7 (4,3) Forest Mensuration. (a) Principles and methods of applying mathematical and statistical models to forest measurement problems. Emphasis on inventory and growth models. Prerequisites: GSD 110, Mathematics 111b, and 140a. (b) The implementation of inventory and growth and yield models in forest stands. Offered only at spring camp. Costs/student are given in the forestry description. Prerequisite: 363a, 221.

365-7 (4,3) Silviculture. (a) The theory and practice of applying ecological knowledge to economic management of establishment, composition, and growth of forest stands. Prerequisites: 221, Plant Industries 301, and Biology 307. (b) Student participation in planting, weeding, thinning, pruning

and improvement cuttings. Offered only at spring camp. Costs per student are given in forestry description. Prerequisite: 365a.

369-4 Forest Photogrammetry. The science or art of obtaining reliable measurements by means of aerial photography and the principles and practice of aerial photo-interpretation for forestry purposes.

370-2 Forest Field Studies. An extended trip to study forest conditions and management practices in different forest regions of the U.S. Offered only at spring camp. Costs per student are given in the forestry description. Prerequisite: 330, 363a, 365a.

381-1 to 2 Forestry Seminar. Discussion of problems in or related to forestry.

390-1 to 6 Special Problems in Forestry. Research and individual problems in forestry. Prerequisite: consent of chairman.

391-1 to 6 Honors in Forestry. Independent research sufficiently important to require 3 hrs. per week of productive effort for each hour of credit. Prerequisite: junior standing, GPA of 4.0 with a 4.25 in the major and consent of the department chairman.

401-3 Advanced Forest Mensuration. Theory and practical problems in biometrics to obtain estimates of forest populations. Use of computers and other advanced techniques. Prerequisites: 363a,b; 369.

410-3 Forest Management for Wildlife. Interrelations between forest practices and game. Forest protection from mammals and birds. Emphasis is on the treatment of the forest. Prerequisite: major in forestry or consent of instructor.

420-4 Advanced Wood Technology. The study of wood as an industrial and structural material; the botanical, physical, chemical, and mechanical properties are discussed. The advantages and disadvantages of wood as a raw material are analyzed. Prerequisite: 320, Mathematics 111a,b or equivalent.

433-4 Forest Products Industries. Analysis of raw material requirements, the processes and the products of forest industries. The past, present, and the future economic status of each industry is briefly examined. Requires field trips.

440a-4 Ecology of Grasses and Grasslands. (See Botany 440a.)

450-4 Forest and Park Management. Fundamentals of management and administration of recreation forests. Development of forests and suburban parks under a forest environment. Review of current local, state, and Federal legislation applicable to forest recreation. Prerequisite: 350b or 460 or consent of instructor.

451A-3 Forest Park Plans. Fundamental and applied principles and elements involved in site, master, and comprehensive planning for outdoor recreation at the state, metropolitan, and federal level. Requires field trips. Prerequisite: 450 or consent of instructor.

451B-4 Forest and Park Planning and Development. Basic planning and design principles of space, scale, and circulation applied to park and recreation areas at the state, metropolitan, and federal levels. Basic elements in park and recreation area site planning selection and development. Requires field trips. Prerequisite: 451A.

460-4 Forest Park Field Studies. A study of park conditions, visitors, and management practices in different county, state, and federal park systems in the United States. Requires field trip. Prerequisite: 350a, or b, or consent of instructor.

463-3 Regional Silviculture. Applied systems of silviculture to commercially important timber species and types in U.S. Prerequisite: 365b.

466-3 Forest Watershed Management. Effects of treatment of forested watersheds on quality and quantity of water yield. Consideration of alternatives in water use and flood control. Prerequisite: 365a, PII 301, GSA 330, or consent of instructor.

470-8 (4,4) Economics of Forestry. (a) Production. Introduction to forestry economics; micro-economics of forestry production and conservation. Prerequisite: Agricultural Industries 204, or Economics 215, or equivalent. (b) Marketing. Marketing in the forestry economy; introduction to aggregate planning in forestry including consumption and production goals. Prerequisite: 470a or consent of instructor.

471-4 Land Resources Economics. (See Agricultural Industries 471 or Economics 471.)

475-4 Forest Management. The application of business procedures and technical forestry principles to manage forest properties for their resources and benefits. Requires field trips. Prerequisite: 340; 363a,b; 365a,b; 470a.

483-4 Urban Forest Management. Evaluates urban forests, city forest preserves,

and city watersheds. Emphasis on urban environment (soil, water, atmosphere) and tree species adapted to it. Administrative and legislative problems and forestry practices considered. Expenses for 3-day field trip required. Prerequisite: 221 or knowledge of plant materials.

490-4 to 16 Practicum. Supervised practicum experience in a professional setting. Emphasis on administration, supervision, teaching, and program leadership in community, school, park, forest, institution, and other recreation settings. Prerequisite: consent of department.

520a-1 to 6 Readings in Forestry or Forest Recreation.

520b-1 to 6 Readings in Resource Economics.

520c-1 to 6 Readings in Forest Products or Wood Science.

570-4 Principles of Research.

575-1 to 6 Research.

581-1 to 6 Advanced Forestry Seminar.

588-1 to 12 International Graduate Studies.

599-1 to 9 Thesis.

General Science

Major

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i> ¹	68
<i>Requirements for Major in General Science</i>	(98) ²
GSA 110, 115a,b, 209	16
Biology ³ 305, 306, 307, 308	16
Botany 300, 301	9
Chemistry ^{4,5} 122a,b; 123a,b, 240, 350	18
Geology 220, 221	6
Mathematics 111b	5
Microbiology 301	5
Physics ⁶ 206a,b,c; 207a,b,c; 300, 309, 310, 311	23
<i>Professional Education Requirements</i>	36
Guidance 305 (GSB 202 is prerequisite)	4
Secondary Education 310, 315 (or special methods), 352	24
Two courses to be selected from a list of restricted professional education electives, refer to the catalog section titled Secondary Education	8
Total	186

¹ General Studies requirements must include the following: GSB 202; 212 or 300a; GSD 101 and 102 with a minimum grade of *B* in each or GSD 101, 102, and one GSC 200 or 300 level English course with a minimum grade of *C* in each; GSD 153; Mathematics 111a,b required in lieu of GSD mathematics; GSE 201.

² 16 hours representing three different disciplines may be substituted from the major for General Studies requirements.

³ Students may elect to substitute Zoology 317a and 317b for two of the required biology courses.

⁴ Chemistry 122a,b and 123a,b—10 hours substitute for GSA chemistry.

⁵ Students may elect to substitute Chemistry 305a,b,c for Chemistry 240 and 350.

⁶ Physics 206a,b,c and 207a,b,c—12 hours substitute for GSA physics.

Geography

Department, Major, Courses

The Department of Geography offers three programs to undergraduate students. The Bachelor of Arts and the Bachelor of Science are offered through the College of Liberal Arts and the Bachelor of Science degree is offered through the College of Education. A minor is required of all geography majors and should be arranged in consultation with the depart-

ment. Junior college transfer students interested in geography are encouraged to visit the department to determine possibilities for waivers, proficiencies, and transfer credit.

Honors in geography is a special four quarter program available to majors with an overall grade point average of 4.00 or better. During the junior year, the honors candidate should apply. Eligible students must obtain departmental consent prior to initiation of this program.

The core of training for majors involves 300- and 400-level courses. Geography 300, the first course in a major's program, gives a basic foundation in the topics and fields of research within geography. It acquaints the students with the viewpoints and methods of geography, with the concepts and theories in geography, and with the basic techniques and tools used by the geographer, namely maps and quantitative methods. In addition to Geography 300, at least fourteen hours of 400-level courses and 20 to 26 hours of geography electives are required. Several 400-level courses are offered in physical environment systems, resource management systems, urban and regional planning, geographic techniques, and cultural adaptations. The capstones to the geography major's program are the 490-tutorials. These two two-hour seminars are required and offer the student an opportunity to work closely with the faculty during the senior year. Graduates from the Department enter several categories of employment: teaching (35%), planning and government (15%), business and industry (15%), graduate study (20%), military (5%), and miscellaneous (10%).

The minor for geography majors may be formed in either of two ways. It may be a regular minor from another department or it may be an interdisciplinary minor created in consultation with the department.

Students minoring in geography must take Geography 300 and at least 20 hours of electives in geography at the 300 and 400 level. Social studies (12 hours and 24 hours concentration) students must take Geography 300 and complete their concentration with electives from geography.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i> (including GSD mathematics)	68
<i>Supplementary Two Year College Requirement in FL/Mathematics</i>	21 *
Foreign Language GSC FL-9 and FL 201-9	18
Additional mathematics to complete one year	3
<i>Requirements for Major in Geography</i>	42
Geography 300, 490	8
Geography electives to complete 42 hours with at least 14 hours at the 400-level in addition to 490	34
<i>Electives</i> (including a 24-hour minor)	55
<i>Total</i>	186

Bachelor of Science Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i>	68
<i>Supplementary Two Year College Requirement in FL/Mathematics</i>	29 *
Mathematics 111-10 and 150-10	20
GSC Foreign Language-9	9
<i>Requirements for Major in Geography</i>	42
Geography 300, 490	8
Geography electives to complete 42 hours with at least 14	

hours at the 400-level in addition to 490	34
<i>Electives</i> (including a 24-hour minor)	<u>47</u>
<i>Total</i>	186

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i> (GSC-FL-9 required by Geography)	68
<i>Requirements for Major in Geography</i>	48
Geography 300, 490	8
Geography 400-level (at least 14 hours)	14
Geography electives	26
<i>Professional Education Requirements</i>	36
Guidance 305 (GSB 202 is prerequisite)	4
Secondary Education 310, 352-16	20
Geography 443 or Secondary Education 315	4
Two courses from a list of restricted professional education electives (See Secondary Education)	8
<i>Electives</i> (including a 24-hour minor)	<u>30</u>
<i>Total</i>	186

* GSC FL does not satisfy the GSC requirement in the College of Liberal Arts.

Minor

A minor in geography consists of 24 hours and includes Geography 300.

Courses

300-4 Introduction to Geography. The nature of geography, the kinds of problems which it investigates, the methods which it uses. Preparation for systematic geography.

302-4 Physical Geography. A study of the earth's physical surface, world distribution patterns of the physical elements, their relationship to each other and their importance to man. Field trip and laboratory work. Prerequisite: 300. Elective Pass/Fail.

304-4 Economic Geography. Study of the spatial distribution and interaction of economic activities. Introduction to locational theory. Prerequisite: 300. Elective Pass/Fail.

306-4 Cultural Geography. An overview of the geographic viewpoint in the study of the human occupation of the earth. Aspects of population, settlement, and political geography are treated, and a generalized survey of major world cultural areas is used to integrate course elements. Prerequisite: 300. Elective Pass/Fail.

310-7 (4,3) Cartographic Methods. Properties of maps and air photos, their uses and sources; Map symbols, map projections and map construction. Introduction to the use of quantitative techniques as applied in geographic study. Laboratory. Prerequisite: 300. Elective Pass/Fail.

324-4 Geographic Basis of Resource Management. Survey of major resources of United States with stress on problems of conservation and restoration. Emphasis on water, mineral, forest, grass, soil, wildlife, scenic, and recreational resources. Field trips. Elective Pass/Fail.

GSA 330-3 Weather.

331-4 Climate. Introduces the basic concepts in the functioning of the climatic environment at the earth's surfaces and develops a holistic view of the way parts and processes of the earth interact through exchanges of energy and water with reference to questions of the human use of the earth.

GSB 355-3 Geography of the United States.

360-4 Geography of Illinois. Introduces and explores some of the spatial elements of the physical and human geography of the State of Illinois through a comparative analysis of the urban and rural lifespaces. Specific geographic issues and problems are selected by the students for group discussion and analysis. Elective Pass/Fail.

362-4 Regional Geography of Europe. Introduces present-day Europe. Survey of the area and an investigation of problems and issues affecting the region. Elective Pass/Fail.

363-4 Regional Geography of Mediterranean Lands and Southwestern Asia. Geography of northern Africa and the near East in a systematic context. Settlement and land use patterns, cultural history and diversity, and contemporary problems. Elective Pass/Fail.

364-4 Regional Geography: Soviet World. Introduction to and survey of the Soviet world and investigation of problems and issues affecting the region. Elective Pass/Fail.

365-4 Regional Geography of Subsaharan Africa. Analysis and explanation of emerging spatial pattern of socio-economic development in Africa as most meaningful to the geographer in assessing the continent's transition from traditional to modern political, social, and economic systems. Elective Pass/Fail.

366-4 Regional Geography: Eastern and Southern Asia. Introduces present-day Eastern and Southern Asia. Survey of the area and an investigation of problems and issues affecting the region. Elective Pass/Fail.

367-4 Regional Geography of South America. Analysis of the landscapes of tropical and Andean South America. Historical background of current patterns and problems. Present and future development problems in terms of natural resources, economic, and agriculture systems, and ethnic and settlement patterns. Elective Pass/Fail.

368-4 Regional Geography of Middle America. Interrelationships of groups of humans and their physical and social environments in Middle America. Emphasizes historical depth of perspective. Clarifies the origin of problems in the region. Elective Pass/Fail.

369-4 Regional Geography of Oceania. Introduces present day Oceania. Survey of the area and investigation of specific problems and issues affecting the region. Elective Pass/Fail.

404-7 (4,3) Advanced Economic Geography I. Deals with one or more of the following: transportation, manufacturing, agriculture, resources, trade and urban geography; depending on, and varying with, interests of instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 304. Elective Pass/Fail.

406-7 (4,3) Advanced Cultural Geography I. Deals with one or more of the following: population, settlement, ethnic characteristics, political factors; depending on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 306, or consent. Elective Pass/Fail.

407-7 (4,3) Advanced Cultural Geography II. Content drawn from same broad range of topics as 406. To be altered with 406 to enable student to specialize further in cultural geography. Prerequisite: 306 or consent of department. Elective Pass/Fail.

410-8 (4,4) Advanced Geographic Techniques. Geographic applications of cartographic and quantitative research techniques. Prerequisite: 310 or consent. Elective Pass/Fail.

416-8 (4,4) Advanced Cartography. Instruction and practice in the techniques of map-making and problems in map reproduction. Laboratory. Prerequisite: 310 or consent. Elective Pass/Fail.

421A-4 Urban Geography. Emphasis on examination of extra-city relationships-theory and structure, intra-city relationships-theory and structure, and selected urban problems. Offered once annually. Prerequisite: consent of department. Elective Pass/Fail.

422-8 (4,4) Economics in Geography. (a) Concepts, symbols, theory, language. Theory and analysis, elementary mathematics, individual's preferences, production functions, the firm, markets, welfare economics, Pareto Optimality, and externalities. (b) Process, criteria, conditions. Certainty, uncertainty, and inter-temporal criteria; public, private, and merit goods and services; multipliers; shadow prices, spatial and regional economic concepts; public expenditure criteria; free market allocation, comprehensive plans, and multiple objectives. Prerequisite: taken in a,b, sequence or consent of instructor. Elective Pass/Fail.

424-4 Regional Problems in Conservation. The distribution, use, and inter-

relationship of the resources of the U.S. and the conservation techniques applied to them. Elective Pass/Fail.

430-4 Theory of Environment. Exploration of the hypothesis that the physical environment works on local hydrology, soils, natural vegetation, agriculture, and landforms, through energy and moisture exchanges. Emphasis on model building for comparison of subsystems, to rate effectiveness of contrasting environments, and to project these consequences to environmental management questions. Prerequisite: consent of department. Elective Pass/Fail.

431-4 Medical Geography. Deals with the distributions of diseases and attempts to use the operational concepts of human ecology as a point of departure. A brief historical outline and an introduction to public health, epidemiology, and related fields is provided. Problems of communicable and chronic diseases, nutritional deficiency, geochemical relations, bio-meteorology and medical climatology, environmental pollution, and seasonal disease calendars are emphasized. Taught by Department of Geography staff.

432-12 (4,4,4) (a) Exchanges in environment. (b) Moisture exchanges in the environment. (c) Momentum exchanges in the environment. Prerequisite: 302, or 400, or consent of the department. Elective Pass/Fail.

433-8 (4,4) Advanced Physical Geography. Topics may include landforms, climate, soil, or water. Varies with the interests of the instructor. Prerequisite: 302. Elective Pass/Fail.

438-4 Applied Meteorology. (See Geology 438.) Elective Pass/Fail.

440-2 to 6. Readings for Majors. Supervised readings in selected subjects. Student submits statement of problem to instructor and department chairman before enrolling in course. Prerequisite: advanced standing and consent of instructor and department chairman. Elective Pass/Fail.

443-4 Teaching of Geography. Presentation and evaluation of methods of teaching geography. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Prerequisite: 300. Elective Pass/Fail.

450-4 Physical Environmental Systems in Geography. Research in physical geography. Budgeting of energy, momentum, and matter to models of atmospheric diffusion and circulation. Emphasis on research problems in urban climatology, hydrometeorology, bioclimatology, medical geography, and climate geomorphology. Elective Pass/Fail.

451-4 Resource Management Systems in Geography. Literature in resource management problems. Emphasis on theory methods of measurement and evaluation concerning implications of public policy. The role of resources in economic development and regional planning, water and related land resource problems, and environmental quality from a multi-disciplinary perspective. Elective Pass/Fail.

452-4 Systems of Cultural Adaptation in Geography. Cultural-historical inquiry in geography. Emphasis on theory and methodology in the study of the relations between nature and culture, the evolution of livelihood forms, and cultural persistence and change in a geographical context. Elective Pass/Fail.

470-16 (4,4,4-8) Urban Planning. (Same as Government 470.) (a) Planning concepts and methods. (b) Field problems. (c) Planning and public administration internship. Prerequisite: junior standing. Elective Pass/Fail.

471-7 (4,3) Regional Planning. Examination of the viewpoint, methods and techniques of regional planning. Prerequisite: consent of instructor. Elective Pass/Fail.

487-10 (2,4,4) Honors in Geography. (a) Honors tutorial (b) Honors reading (c) Honors supervised research a and b may be taken in any order but both must precede c. These three courses must be spread over the last two years of the undergraduate's career. Prerequisite: consent of the department. Elective Pass/Fail.

490-1 to 16 (1 to 4, 1 to 4, 1 to 4, 1 to 4) Tutorial in Geography. Individual and small group conferences with staff members to examine geographic concepts. (a,b,c) Prerequisite: Senior, major in geography. (d) Summer institute. Not for geography majors. Elective Pass/Fail.

500-4 Geographic Techniques I.

502-4 Principles of Research.

505-8 (2,2,2,2) Pro-seminar in Geography.

511-4 Philosophy of Geography.

514-2 Teaching of College Geography.

515-4 to 6 Field Course.

520-2 to 12 Seminar in Physical Geography.

521-2 to 12 Seminar in Economic Geography.
 522-2 to 12 Seminar in Regional Geography.
 523-4 to 12 Seminar in Cartography.
 524-2 to 12 Seminar in Cultural Geography.
 525-4 Seminar: Economics in Geography.
 527-2 to 8 Seminar in Urban and Regional Planning.
 530-2 to 10 Independent Studies in Geography.
 540a-2 to 36 Research in Physical Geography.
 540b-2 to 36 Research in Economic Geography.
 540c-2 to 36 Research in Regional Geography.
 540d-2 to 36 Research in Cultural Geography.
 550-2 Introduction to Graduate Studies in Geography.
 599-2 to 9 Thesis.
 600-1 to 48 Dissertation.

Geology

Department, Major, Courses

In the field of geology a student may work toward either a Bachelor of Arts or Bachelor of Science degree.

The Bachelor of Arts degree requires a major in geology. A minor is optional. Having obtained a Bachelor of Arts degree, a student may continue his education toward a Master of Science degree although it may be necessary to absolve deficiencies in physics and mathematics.

The Bachelor of Science degree requires a major in geology and courses in biology, chemistry, mathematics, physics, and science electives. This degree will ordinarily be pursued by students desiring to do graduate work in geology or to become professional geologists.

Bachelor of Arts Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i>	47 ¹ -68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i> *	23-32
<i>Requirements for Major in Geology</i>	53-59
Geology 220, 221, 302, 310, 315, 325, 374, 425 and 450 or 454 ²	35-41
Chemistry 122a,b and 123a,b (Students entering with high school chemistry should begin with 122a and 123a)	10
Physics 111a, 112a or 206a, 207a or 211a, 212a	4
GSA 115a (biology)	4
<i>Electives</i>	27-63
<i>Total</i>	186

Bachelor of Science Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i>	47 ¹ -68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i> *	29
GSC Foreign Language	9
Mathematics 111a,b, 150a,b	20
<i>Requirements for Major in Geology</i>	90
Geology 220, 221, 302, 310, 315, 325, 374, 415, 425, 454 ² ..	44
Geology Electives	12
Chemistry 122a,b and 123a,b (Students entering with high school chemistry should enroll in 122a and 123a)	10
Physics 111a,b,c, 112a,b,c or 206a,b,c, 207a,b,c, or 211a,b,c,	

212a,b,c	12
GSA 115a (biology)	4
Electives in supporting sciences or technology (to be approved by geology undergraduate advisor)	8
<i>Electives</i>	<u>0-20</u>
<i>Total</i>	186-187

* GSC FL does not satisfy GSC requirements in the College of Science.

¹ Physics 111a, 112a or 206a 207a or 211a, 212a is substituted for 4 hours of GSA. Chemistry 122a,b and 123a,b is substituted for 8 hours of GSA. GSA 115a is included in the requirements for a major in geology. Mathematics 111 is substituted for 5 hours of GSD.

² The summer field geology course, Geology 454, should be taken between the junior and senior years.

Minor

A minor consists of 24 hours, determined by consultation with the geology adviser.

Courses

All departmental undergraduate courses may be taken as an elective Pass/Fail except by geology majors or minors. Courses with a laboratory may require purchase of a laboratory manual and a supply fee. All courses requiring field trips may have a field trip fee of \$2 to \$7.

220-3 Physical Geology. Introduction to the structure and composition of the earth, the concept of geologic time, and the physical and chemical processes that operate to modify the earth and its surface. Speculations concerning the origin and early development of the earth. Two lectures and one 3 hr. laboratory. One Saturday field trip required. Prerequisite: high school or college chemistry. Elective Pass/Fail.

221-3 Historical Geology. Presents in chronological order the procession of physical and biotic changes through which the earth has passed. Includes the physical history and evolution of life forms as evidenced by fossil records. Laboratory and field trips required. Prerequisite: 220; GSA 115 recommended. Elective Pass/Fail.

302-4 Structural Geology. An introduction to structural geology including a study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition and interpretation of the resultant geologic features. Laboratory and two Saturday field trips required. Prerequisite: 220, Mathematics 111a,b. Recommended: Physics 111a, 206a, or 211a or concurrent enrollment. Elective Pass/Fail.

310-5 Mineralogy. Rudiments of crystal structure, morphology, and symmetry. Introduction to crystal chemistry. Study of the properties, chemistry, occurrence and identification of common rock-forming and economically important minerals. Lecture-laboratory. Prerequisite or corequisites: 220, Chemistry 122. Elective Pass/Fail.

315-4 Igneous and Metamorphic Petrology. Study of the characteristics, classification, identification, and conditions of origins of igneous and metamorphic rocks. Lecture-laboratory. Field trip required. Prerequisite: 310, 415 recommended. Elective Pass/Fail.

320-4 Economic Geology. The geological aspects and origin, as well as the economic and political importance, of mineral resources. Lectures, laboratories, field trips. Elective Pass/Fail.

321-3 Introduction to Paleontology. The record of fossil plants and animals and the application of biological and geological principles to the development of theories regarding their origin, evolution, distribution, and extinction. Field trip required. Elective Pass/Fail.

GSA 322-3 Rocks and Minerals.

325-4 Stratigraphy and Sedimentation. The characteristic features of sedimentary rocks and the physical and chemical processes responsible for their origin and diagenesis. The classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory and field trips required. Prerequisite: 220, 221, 310; 415 recommended. Elective Pass/Fail.

374-4 Geomorphology. Study of the erosional and depositional processes operating at the earth's surface and the landforms resulting from these processes.

- Relationship of processes and landforms to the geologic framework is examined. Laboratory. Prerequisite: 220. Elective Pass/Fail.
- 400-3 Earth Science Seminar.** The interrelationships and unifying principles of the earth science fields. Illustrations of the nature of the Earth's dynamic system designed especially for science teachers and earth science students. Prerequisite: GSA 110, upper class standing or consent of department. Elective Pass/Fail.
- 412-3 Advanced Mineralogy.** A continuation of Geology 310 with emphasis on crystallography, crystal chemistry, crystal structure, and stereographic projection. Prerequisite: 310. Elective Pass/Fail.
- 414-5 Paleobotany.** (See Botany 414.)
- 415-3 Optical Mineralogy.** The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method. Lecture-laboratory. Prerequisites: 310, Physics 111b, 206b, or 211b. Elective Pass/Fail.
- 416-4 X-Ray Crystallography.** Introduction to the study, measurement, and identification of unknown crystalline materials by X-ray diffraction techniques (especially the Debye-Scherrer methods). Upon request, non-geology majors may work with unknowns from their own fields of study. Prerequisites: 310, Mathematics 150b or consent. Elective Pass/Fail.
- 418-4 Low Temperature Geochemistry.** The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture and laboratory. Prerequisite: 310, Chemistry 121a,b. Elective Pass/Fail.
- 420-8 (4,4) Geology of Petroleum.** The geological occurrence of petroleum, including origin, migration, and accumulation; a survey of exploration methods and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum. Laboratory. Prerequisites: 221, 302. Elective Pass/Fail.
- 425-5 Invertebrate Paleontology.** Principles of paleontology and a survey of the important invertebrate phyla and their fossil representatives. Laboratories. Field trips required. Prerequisites: 221 or GSA 115. Elective Pass/Fail.
- 428-4 Paleoecology and Environments of Deposition.** Characteristics, distribution and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentologic and paleoecologic approaches. Recognition of ancient environments and environmental associations. Laboratory. Field trips required. Prerequisites: 425, 325. Elective Pass/Fail.
- 430-4 Physiographic Provinces of North America.** The factors and geologic history which have determined the nature of the landscape in the physiographic divisions of North America. Prerequisite: 220 or consent. Elective Pass/Fail.
- 435-8 (4,4) Hydrogeology.** A problem-solving oriented course which covers the analysis and interpretation of the distribution, origin, movement, and chemistry of ground water. Laboratory. Must be taken in a,b sequence. Taught in alternate years after 1973-74. Prerequisites: 220, Mathematics 252. Elective Pass/Fail.
- 436-8 (4,4) Elementary Exploration Geophysics.** Theory and practice of geophysics as applied to the exploration and development of natural resources. Laboratory involves use of geophysical instruments and interpretation of field data. Field trips required. Taught in alternate years after 1972-73. Prerequisite: 220; Mathematics 252; Physics 111, 206, or 211 or concurrent enrollment. Elective Pass/Fail.
- 438-4 Applied Meteorology.** (Same as Geography 438.) Analysis of meteorological patterns approached through study of several case histories. Evaluation of meteorological data, air mass and frontal analysis, development of weather forecasts, study of meteorological instruments, clouds, and precipitation patterns. Prerequisite: GSA 330 or consent of instructor. Elective Pass/Fail.
- 440-1 to 4 Independent Study.** Independent study which does not normally require the development of new basic data. Hours and subject matter decided during consultation with a faculty member. Prerequisite: advanced standing and consent of instructor. Elective Pass/Fail.
- 449-1 to 3 Internship.** Credit for professional experience in the geological sciences. Arrangements made with chairman. Prerequisite: advanced standing and consent of department. Elective Pass/Fail.
- 450-3 Introduction to Field Geology.** Introduction to field techniques, principles of geologic mapping, and map interpretation. Field trip fee \$5. Prerequisites: 302 and 315. Elective Pass/Fail.
- 454-9 Field Geology.** Advanced field mapping in the Rocky Mountains, includ-

ing problems in stratigraphy, structure, petrology, paleontology, geomorphology, and economic geology. Transportation fee \$80, supplies \$6. Prerequisites: 302 and 315; 450 recommended. Elective Pass/Fail.

455-3 Engineering Geology. (Same as Engineering 455). An examination of problems posed by geology in the design, construction, and maintenance of engineering works. Topics studied include ground water, land subsidence, earthquakes, and rock and soil mechanics. Two term papers and a field trip required. Prerequisite: 220 or consent. Elective Pass/Fail.

460-4 Geological Data Processing. Two lecture and two laboratory periods each week for instruction in computer application to geological problems including the processing and programming of data and the interpretation and evaluation of results. Prerequisite: Engineering 222 or Computer Science 202. Elective Pass/Fail.

470-9 (3,3,3) Earth Science for Teachers. Earth's dynamic system, and principles of the physical and earth sciences applied to man's environmental problems. Use of ESCP, Time, Space, and Matter, IPS, ESS, and other curriculum project materials, development of study units and individualized projects. Prerequisite: teaching experience. Elective Pass/Fail.

476-3 Pleistocene Geology. Deposits, stratigraphy, and history of the Pleistocene epoch. Evidence for differentiating and dating the glacial and interglacial sequence examined including deep sea cores, soils, magnetic studies. Required field trips. Prerequisite: 220, 221. Elective Pass/Fail.

482-4 Coal Petrology. Structural features and microscopy of coal seams. Origin and alteration of coal constituents. Includes field trips, study of coal specimens, and techniques. Prerequisite: 220 and 221 or consent of instructor. Elective Pass/Fail.

484-4 Palynology. Taxonomy, morphology, stratigraphic distribution, and ecology of fossil pollen, spores, and associated microfossils. Prerequisite: 220, 221, or consent of instructor. Elective Pass/Fail.

500-1 to 3 Teaching for Geology Graduate Students.

510-8 (4,4) Sedimentation-Stratigraphy.

513-3 Advanced Geologic Data Analysis.

515-4 Metallic Mineral Deposits.

516-4 Industrial Rocks and Minerals.

518-4 Clay Mineralogy.

520-12 (4,4,4) Advanced Petrology.

528-6 (3,3) Micropaleontology.

529-8 (4,4) Advanced Invertebrate Paleontology.

540-1 to 9 Advanced Studies.

541-1 to 4 Research.

542-3 (1,1,1) Seminar in Geology.

578-8 (4,4) Advanced Geomorphology.

582-3 Advanced Coal Petrology.

584-3 Advanced Palynology.

599-1 to 9 Thesis.

Government

Department, Major, Courses

A major in government is recommended for students who want to develop their ability to describe, predict, explain, evaluate, and understand the political behavior, beliefs, laws, and organizational arrangements of people in a variety of settings.

Students may choose courses in theory and methodology, American government and politics, comparative politics, public law, public administration, and international relations. There are also many individually-tailored interdepartmental programs, e.g. urban affairs, black studies, community development, and crime and corrections.

A major in government provides a foundation for a variety of careers in fields such as law or judicial administration; public service at the local, state, national, or international level; corporate administration or management; politically-related activities such as lobbying, polling, journalism, and public relations; and in secondary or higher education

and research. A major may also be selected by the nonprofessionally-oriented student with an interest in politics and public affairs.

A student planning to major in government should consult with the academic adviser of the department as soon as possible in order to plan an orderly and coherent program. In addition any other member of the department's faculty will be pleased to consult with students regarding questions in his field of specialty.

It is recommended that government students take GSB 212, Government 200, 232, 303, and GSB 390 as these are prerequisites for many advanced courses in the department. In addition they should meet the second-level requirements in GSB by taking 202 (Psychology) and 203 (Sociology). It is also recommended that they take Economics 214 and/or 215 as an elective because of the close relationship of economics and political science.

A government student is encouraged to take either a minor or its equivalent in hours in related fields. A student planning to pursue graduate work in government should, depending on his area of interest, acquaint himself with a foreign language or statistics and computer programming.

The department also encourages qualified students to pursue individual interests through honors-program courses such as Government 321, 350, and 490. A student interested in pursuing a specialized interest should contact the academic adviser of the department or a member of the faculty with whom he would be interested in working.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i>	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	21-25
1 year Mathematics	(5) + 3 to 5
GSC Foreign Language	9 *
2nd year Mathematics or Foreign Language	
201a,b,c	9 to 11
<i>Requirements for Major in Government</i>	48
GSB 212 or its equivalent	
Government electives, including GSB 3 courses offered by the department, to total 48 hours distributed as follows:	
<i>Four</i> courses selected from the fields of International Affairs and Comparative Governments. One must be at the 400 level	
<i>Four</i> courses from three of the following fields: American Government and Policy, Political Process, Public Administration and Organizational Behavior, and Political Theory	
Sufficient other courses in government to total 48 hours	
A minimum of 16 hours must be taken at the 400 level.	
<i>Minor (Recommended)</i>	24
<i>Electives</i>	21-25
<i>Total</i>	186

* GSC FL does not satisfy GSC requirements in the College of Liberal Arts.

Bachelor of Science Degree, COLLEGE OF EDUCATION

A major in government for education requires 48 credit hours of work in the department. This work must be distributed among the sub-fields of the discipline in the same manner as the 48-hour requirement described above for the B.A. degree.

Every student enrolled in this program should seek regular advisement

in the Department of Government to insure that department requirements will be fulfilled.

Students obtaining a Bachelor of Science degree in the College of Education must satisfy all requirements of that college. Professional education requirements may be found in the section of this catalog titled secondary education.

Minor

A minor in government consists of 24 hours to be approved by the departmental adviser.

Courses

In many of the following courses the purchase of inexpensive books to supplement the text is recommended.

200-4 Introduction to Political Science. Philosophy, methodology, theories, approaches, and generalizations of the study of politics, and of the scope and subfields of political science. Elective Pass/Fail.

GSB 212-4 American Government and Politics.

232-4 State and Local Government. Structure, functions, and decision-making processes of governments in the United States. Prerequisite: 231 or GSB 212. Elective Pass/Fail.

301-4 Scope and Methods of Political Science. Analysis of major problems studied by political scientists and methods and techniques applied to these problems. Prerequisite: 200 recommended. Elective Pass/Fail.

302-4 Law: Civil Rights. The law protecting the civil liberties and rights of people. Elective Pass/Fail.

303-4 International Relations. A study of world politics. The cause of international conflict and conditions of peace. Elective Pass/Fail.

305-4 Development of the American Constitution. The origins and evolution of its fundamental ideas utilizing judicial, legislative, and other documentary sources from Magna Charter to date. Prerequisite: GSB 212. Elective Pass/Fail.

306-4 Introduction to Political Theory. Normative and testable theories in political science introduced and interrelated. Guidelines for applying those theories to empirical and ethical problems. Prerequisite: 200 recommended. Elective Pass/Fail.

310-4 Politics and Public Policy. Public policy-making process in the U.S. evaluated and a wide range of public policy problems analyzed. Prerequisite: GSB 212. Elective Pass/Fail.

311-4 Politics and Government Regulation. Susceptibility of corporate business to public control as a fundamental issue of our society. Prerequisite: GSB 212. Elective Pass/Fail.

315-3 Administration of Justice. The organization and work of the American judicial system. Recommended for prelaw students. Prerequisite: GSB 212. Elective Pass/Fail.

321-1 to 6 Readings in Government. In-depth, introductory and advanced readings in areas not covered in other government courses. The student must submit a statement describing his topic and relevant reading materials to the Department of Government undergraduate adviser for approval before registering for this course. Elective Pass/Fail.

330-3 Illinois Government. Development and functioning of Illinois state and local governments. Prerequisite: 232 or junior standing. Elective Pass/Fail.

335-4 Political Socialization. Focuses on interdisciplinary empirical theory and research on political learning relevant to (1) who, (2) learns what, (3) from whom, (4) under what circumstances, (5) with what effects. Prerequisite: 200 or GSB 212, or consent of instructor. Elective Pass/Fail.

340-4 The Legislative Process. Review of theory and research on representation, demands, support, decision making, outcomes, and other aspects. Emphasis on U.S. Congress and state legislatures. Prerequisite: GSB 212. Elective Pass/Fail.

GSB 345-3 Introduction to American Foreign Policy.

350-4 Masterpieces of Political Science. Honors. Significant topics chosen for discussion by students and instructor. Prerequisite: President's Scholar and

- junior standing, or a 4.0 cumulative GPA, or consent of instructor. Elective Pass/Fail.
- 360-4 Public Administration.** Public bureaucracy. Theoretical, political, and practical issues of organization, staffing, financing, and other matters surveyed. U.S. institutions and behavior. Prerequisite: GSB 212. Elective Pass/Fail.
- 361-3 Public Administration and Public Policy.** Intensive examination of problem areas illustrating administrative and management practices in public service and demonstrating linkages between politics and administration in our political system. Prerequisite: 360. Elective Pass/Fail.
- 371-3 Problems of American Foreign Policy.** An analysis of selected problems in the field of American foreign policy. Prerequisite: GSB 345. Elective Pass/Fail.
- 380-4 Political Parties.** Nature, structure, and functions of political parties, with particular attention to the roles and activities of political parties in the U. S. Some attention given to voting behavior and elections. Prerequisite: GSB 212.
- 381-4 Public Opinion and Electoral Behavior.** Nature and function of public opinion as related to electoral behavior. Sociological and psychological bases of voting behavior studied. Prerequisite: 200 recommended. Elective Pass/Fail.
- GSB 385-3 Contemporary Political Ideologies.**
- GSB 390-3 Introduction to Comparative Government.**
- 391-4 Introduction to Sub-Saharan African Government and Politics.** Aspects of the politics and government of Sub-Saharan Africa relevant to an understanding of past and present domestic and foreign policies of the African states and territories. Elective Pass/Fail.
- 392-4 Introduction to Latin American Government and Politics.** A general introduction to Latin American government as the institutionalized political expression of Latin American civilization and culture. Does not require a reading knowledge of Spanish or Portuguese. Elective Pass/Fail.
- 393-4 Comparative Communist Systems.** General introduction to the political systems of communist states with special emphasis on Eastern Europe. Attention given to the role of ideology, the character and role of the party, and major decision-making structures and processes.
- 395-4 to 12 Internship in Public Affairs.** Supervised field work in the office of a governmental agency, political party, interest group, legal agency, or other public affairs-oriented organization. The organization and the responsibilities of the intern must have the approval of the department prior to registration for this course. A paper is required relating academic and internship experiences. Prerequisite: consent of department. Elective Pass/Fail.
- 398-4 Government and Law.** Legal process in operation, basic procedural elements, and the law of manufacturing liability, contract law, and labor law. Prerequisite: GSB 212. Elective Pass/Fail.
- 403-4 Introduction to the Theories of International Relations.** Systematic analysis of a variety of approaches to explain the actions of nations. The realist and utopian traditions, ecological factors, decision-making processes, theories of conflict and integration, equilibrium and systems analysis, and other topics. Prerequisite: 303 or graduate standing. Elective Pass/Fail.
- 406-4 The American Chief Executive: President and Governor.** A study of the origin and background of the presidency and the governorship, qualifications, nomination and election, succession and removal, the organization of the executive branch, and the powers and functions of the president and governor. Prerequisite: GSB 212. Elective Pass/Fail.
- 411-4 Senior Seminar in Political Behavior.** Examines in depth such topics as political participation and influence (mass and elite), political conflict, political socialization and recruitment, political leadership. Prerequisite: 200 recommended; not for graduate students.
- 420-4 Pressure Groups and Politics.** An analysis of interest groups and their techniques of political propaganda. Prerequisite: GSB 212.
- 425-4 Blacks and Whites in American Politics.** Topics include various forms of political participation, leadership behavior, and analysis of political strategies including the Black Power concept. Prerequisite: GSB 212.
- 430-3 Government and National Security.** The role of the military in American society and politics and the development of military and disarmament policy. Comparison made between American developments and those in other countries, including Russia.
- 436-4 Government and Labor.** (See Economics 436.) Prerequisite: GSB 212, or consent of instructor.

- 438-4 Social Welfare Legislation.** The Social Security Act and other legislation of major significance for the welfare and maintenance of the family, the handicapped, children, and other special groups. Their relationship to the legal structure of federal, state, county, township, and municipal welfare facilities and institutions with indications of economic and social consequences.
- 440-4 Public Personnel Administration.** An analysis of some of the central problems encountered by the government executive in recruiting, maintaining, and developing personnel, such as political neutrality, leadership and motivation, career development, security regulations, and the role of personnel in policy planning and execution. Prerequisite: 360.
- 441-4 Philosophy of Politics.** (See Philosophy 441).
- 450-8 (4,4) Latin American Governments.** (a) Problem analysis of contemporary Latin American government and politics. (b) Latin American national systems. No prerequisite, but 392 recommended.
- 451-4 International Politics of Europe.** Comparative analysis of foreign policies of major states. Includes nationalism, unification and security, and Western Europe's relations with the developing world, Eastern Europe, the U. S. S. R., and the U. S.
- 452-4 Government and Politics of Sub-Saharan Africa.** Government and politics of French, English, and Portuguese-speaking areas of sub-Saharan Africa. Decolonization process and the relations of African states with each other and non-African powers. Prerequisite: GSB 390, or 391, or consent of instructor.
- 453-8 (4,4) Soviet Russia.** (a) Ideological foundations of Soviet politics. (b) Dynamics of Soviet government and economy. Need not be taken in sequence. Prerequisite: GSB 390 or consent of instructor.
- 454-8 Development of German Democracy.** Involves a summer's residence in Germany with classroom material supplemented by lectures by German professors and government officials. Prerequisite: consent of instructor.
- 455-4 Major Governments of Western and Central Europe.** A comparative study of the political systems of the major countries of Western and central Europe. Prerequisite: GSB 390 or consent of instructor.
- 456-4 Great Britain and the Commonwealth.** The Commonwealth association and the politics of Great Britain and the "Old Commonwealth" countries: Australia, Canada, New Zealand.
- 457-4 Government and Politics in the Middle East.** The Arab states of the Middle East and Israel. Socialization and integration patterns, the traditional and revolutionary regimes, and regional cooperation and conflict. Prerequisite: GSB 390 or consent of instructor.
- 458-12 (4,4,4) Government and Politics of Asia.** (a) Politics and governments of Burma, Thailand, Malaysia, North Vietnam, South Vietnam, Cambodia, Laos, Singapore, Indonesia, and the Philippines. (b) Internal political, economic, and social development of China and Japan. (c) Politics in India, Pakistan, Ceylon, Nepal. Need not be taken in sequence.
- 459-4 Politics of Developing Areas.** A survey, theoretical and descriptive, of the impact upon politics of the process of development, and the role of the governmental system in the direction and control of development. Prerequisite: GSB 390 or consent of instructor.
- 460-4 Policy Analysis.** Basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy, and instruments of policy development.
- 461-4 Organization Theory and Public Administration.** Analysis of various theoretical approaches to organization theory and public administration with emphasis on recent American literature in this field. Prerequisite: 360 or consent of instructor. Elective Pass/Fail.
- 462-3 Intergovernmental Relations.** Interaction between governmental units in the American federal system and the impact on the formulation of public policy and the performance of governmental functions. Prerequisite: GSB 212. Elective Pass/Fail.
- 463-3 Governmental Social and Economic Policy.** Examination of public policy-determining agencies and attributes of the American governmental system, with especial emphasis upon the national government and its processes and arrangements for social and economic policy-formulation and implementation. Prerequisite: GSB 212. Elective Pass/Fail.
- 466-3 State Government and Administration.** Emphasis on recent developments and research findings. Prerequisite: 232. Elective Pass/Fail.
- 467-4 Urban Politics.** Environment, institutions, processes, and functions of government in an urban society. Emphasis on current problems of social con-

- trol and the provision of services in the cities. Prerequisite: 232. Elective Pass/Fail.
- 468-4 Comparative Urban Politics.** Comparative analysis of urban political systems in the U.S. and other nations. Attention to the social environment, political structures, political processes, and public policies of selected urban areas. Prerequisite: 232 with 467 recommended.
- 469-3 Administration of State and Local Finance.** An examination of the administrative problems connected with local and state revenues and expenditures in the U.S. Prerequisite: 232. Elective Pass/Fail.
- 470-4 Urban Planning.** (See Geography 470.) Elective Pass/Fail.
- 471-4 The Organization and Administration of American Foreign Policy.** An advanced course dealing with the organizational and administrative aspects of American foreign policy. Prerequisite: GSB 345 or consent of instructor. Elective Pass/Fail.
- 472-4 International Organization.** Development and organization of international government and administrative systems, with emphasis on the United Nations. Prerequisite: 303. Elective Pass/Fail.
- 474-3 Law Enforcement Administration.** Development and changing roles of the police; forms of state, local, and municipal control; conflict areas; inter-governmental cooperation, and developing needs for regional law enforcement; structures and internal administration of police departments; the police, organized crime, riots, and minorities. Prerequisite: 360, 467, or consent of instructor. Elective Pass/Fail.
- 475-8 (4,4) International Law.** (a) Rules and practices governing the nations in their relations in peace and war. (b) Investigation of special problems in international law. Prerequisite: 303 and 475a or consent of instructor. Elective Pass/Fail.
- 477-4 Governments and Politics of Vietnam: North and South.** Development of nationalist and communist political groupings since the period of French domination. Role of the religious sects and the private armies. Constitutions and the legal and political systems of the two Vietnams. Elective Pass/Fail.
- 478-4 International Politics.** Alignment and conflicts of the major powers in historical and contemporary perspective. Emphasis on the basic interests of the great powers, regional arrangements, spheres of influence, the use of coercion in world politics. Elective Pass/Fail.
- 479-4 Advanced Comparative Politics.** Analysis of the comparative approach to the study of politics and the principal methods employed in this approach. Methodological and conceptual issues are presented in conjunction with basic political structures and processes. Prerequisite: GSB 390 or consent of instructor.
- 480-4 The Pacific and the Far East.** Political and strategic problems and the interplay of the foreign policies of the major powers in this area. Prerequisite: 303 or History 370. Elective Pass/Fail.
- 481-4 International Relations of the Western Hemisphere.** Emphasis on the international behavior of Latin American nation-states and regions especially related to policy trends and historical and contemporary objectives of the U.S. Prerequisites: 392 and 450a; 450b recommended.
- 482-4 International Relations of Communist States.** History and analysis of the foreign policies principally of the Soviet Union and China, with some attention to eastern Europe, North Korea, North Vietnam, and Cuba. Prerequisite: GSB 390 or consent of instructor.
- 483-4 International Relations of the Middle East.** Role of Middle Eastern countries in world affairs, international implications of Middle East conflicts, and strategic involvement of the U.S., Soviet Union, and other countries in the area.
- 484-8 (4,4) History of Political Theories.** (a) Ancient and Medieval theory, Plato to Thomas Aquinas. (b) Renaissance and Rationalist theory, Machiavelli to Edmund Burke. Prerequisite: senior standing or consent of instructor. Elective Pass/Fail.
- 485-4 Political Psychology.** Psychological theories as related to the development and change of political attitudes, leadership behavior, and mass political participation. Prerequisite: 200 recommended. Elective Pass/Fail.
- 487-6 (3,3,) American Political Ideas.** (a) Political ideas which shaped American beliefs and U.S. governmental systems, from pre-Colonial beginnings through the mid-Nineteenth Century. (b) Continuation of a. From the mid-Nineteenth Century to the mid-Twentieth. Prerequisite: 231 or GSB 212. Elective Pass/Fail.

488-9 (3,3,3) Recent Political Theory. (a) Liberal political theorists from John Stuart Mill to the present. (b) Revolutionary political theorists from Karl Marx to the present. (c) Idealistic and nationalistic political theorists from Hegel to the present. Need not be taken in sequence. Prerequisite: senior or graduate standing, or consent of instructor. Elective Pass/Fail.

490-2 to 6 Honors Research. Not for graduate students. Prerequisite: consent of instructor and chairman. Elective Pass/Fail.

495-12 (4,4,4) American Constitutional Law and the Judicial Process. (a) Role and policy of courts and the U.S. Supreme Court in particular in the American political system. The court system, judicial review and self restraint, inter-governmental relations, separation of powers of the three branches, and the expansion of national power. Foreign commerce, war powers, power of taxation, and spending power. Prerequisite: GSB 212 or equivalent. (b) Civil liberties and civil rights. Rights of property under the contract and due process clauses and the rights of the first amendment, speech, press, religion, assembly, petition, and association. Prerequisite: GSB 212 or equivalent; 495a highly recommended. (c) Continuation of 495b. Constitutional guarantees relating to criminal procedure, equal protection clause, i.e., the constitutional guarantee against racial and other invidious discrimination, citizenship and elections, and the expansion of congressional power to legislate in the area of civil rights. Prerequisite: GSB 212 or equivalent, 495b or consent of the instructor. Elective Pass/Fail.

497-4 Administrative Law. Law as it affects public officials in carrying out the rights, duties, and necessary functions of the public office. Prerequisite: 360. Elective Pass/Fail.

498-4 Jurisprudence. (Theories of Law.) Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights. Elective Pass/Fail.

500-9 (3,3,3) Methods of Empirical Research.

501-4 to 12 Seminar in the Legislative Process.

502-4 to 12 Seminar in Selected Governmental and Political Problems.

503-4 to 12 Seminar in Pressure Groups.

504-4 Seminar in the Judicial Process.

505-4 to 12 Seminar in Political Parties.

506-4 to 12 Seminar in Political Behavior.

508-4 to 12 Seminar in International Politics.

509-4 to 12 Seminar in International Organization.

510-4 to 12 Seminar in State Government and Politics.

511-4 to 12 Seminar in Local Government and Politics.

512-4 to 12 Seminar in Public Administration.

513-4 to 12 Seminar in Constitutional Law.

515-4 to 12 Seminar in Comparative Government and Politics.

516-4 to 12 Seminar in Municipal Administration.

517-4 to 12 Seminar in Political Theory.

520-4 to 12 Seminar in American Foreign Policy.

521-1 to 12 Readings.

525-4 to 12 Seminar in International Law.

530-4 to 12 Internship in Public Affairs.

531-4 to 12 Seminar in Empirical Theory.

551-4 to 12 Polimetrics.

582-4 Criminal Law and the Correctional Process.

584-4 Seminar in Correctional Program Management.

595-2 to 12 Individual Research.

599-1 to 9 Thesis.

600-1 to 48 Dissertation.

Guidance and Educational Psychology

Department, Major (Graduate Only), Courses

Courses

100-2 Decision Making for Career Development. Examination of factors relating to career decision making. Emphasis on the continuous use of learned processes and information in vocational development. Prerequisite: consent of instructor.

305-4 Educational Psychology. Basic components of the teaching-learning

process including objectives, student characteristics, motivation, and learning. Limited field experiences and supplemental material not to exceed \$15 additional student cost may be required. Prerequisite: GSB 202 and admission to the teacher education program.

380-2 to 4 Practicum in Instructional Roles. Application of educational psychology in a practical teacher-learner situation. Class members conduct actual instructional activities with individuals or groups of students. Field activities are required and the students may be required to purchase additional materials not to exceed \$20. Prerequisite: 305 or consent of instructor.

412-4 Mental Hygiene. A survey of principles concerning factors and conditions in personal life that tend to facilitate or deter mental health. Mental health viewed as living creatively in an atmosphere of satisfactory interpersonal relations. Prerequisite: 305.

422-4 Construction and Use of Evaluation Instruments. Construction and use of teacher-made tests, elementary statistical concepts directly related to measurement, and selection and interpretation of standardized tests. Opportunities are provided for practical applications of concepts to school-related situations. Supplementary text required. Prerequisite: 305.

442-4 Basic Principles of Guidance. Introductory course on student personnel services. Survey of philosophy, principles, and organization of guidance services. Field interviewing experiences, and additional materials may be required. Prerequisite: 305.

481-2 to 12 Seminar. Conducted by staff members and distinguished guest lecturers on pertinent topics. Prerequisite: consent of instructor and department

501-2 to 12 Special Research Problems.

505-4 Introduction to Statistical Methods.

506-4 Advanced Statistical Methods.

507-4 Design and Analysis of Experiments.

511-4 Research and Theory in Instructional Psychology.

515-4 Psychological Aspects of Education.

521-8 (4,4) Analysis of Classroom Behavior.

530-4 Standardized Testing: Theory, Use, and Interpretation.

531-4 Theory of Measurement.

532-8 (4,4) Individual Measurement Theory.

537-4 Counseling Theory and Practice.

541-4 Occupational Information and Guidance.

543-4 Guidance through groups.

545m-4 Doctoral Seminar in Psychological Foundations of Education.

546-8 (4,4) Personality Assessment.

548-2 to 40 Practicum in Secondary Guidance.

553-2 to 4 Organization and Administration of Guidance and Pupil Personnel Services.

555-2 to 12 Seminar in School Psychology.

562-8 (4,4) Human Development in Education.

567-2 to 12 Topical Seminar in Educational Psychology.

568-2 to 16 Topical Seminar in Counseling and Guidance.

580-2 to 10 Topical Seminar in Statistics and Measurement.

581-1 to 12 Specialized Practicum in Counseling, Guidance, and Counselor Supervision.

590-2 Seminar in Behavioral Foundations.

596-2 to 12 Independent Investigation.

597-1 to 12 Independent Study.

599-1 to 9 Thesis.

600-1 to 48 Dissertation.

Health Education

Department, Major, Courses

Bachelor of Science Degree, COLLEGE OF EDUCATION

The Department of Health Education offers two specializations within the health education major and three secondary specializations.

The two specializations are:

1. *Health Education in Secondary Schools.* For those individuals plan-

ning to teach or to supervise health education in the secondary schools.

2. *Health Education in Elementary Schools.* For those individuals planning to supervise health education in the elementary schools.

The three secondary specializations are:

1. *Health Education in Secondary Schools.* For those individuals planning to be secondary school supervisors or administrators.
2. *Health Education in Elementary Schools.* For those individuals planning to be elementary supervisors or administrators.
3. *Driver and Safety Education.* For those individuals planning to be school administrators, to teach driver education, to teach health education, or to work in any phase of safety education.

These specializations, in general, constitute minimal preparation for the positions listed. Consequently, all candidates are strongly urged to complete additional work in the field.

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Health Education with a specialization in:</i>	48-49
<i>Health Education in Secondary Schools</i>	
Health Education 301, 305, 312, 313s, 325, 334s, 401, 405, 471, 491, GSE 201, plus 11 elective hours in Health Education.	
<i>Health Education in Elementary Schools</i>	
Health Education 301, 305, 312, 313s, 325, 334s, 350, 401, 405, 471 plus Elementary Education 100, 203, and 314.	
Professional Education Requirements: Refer to catalog section titled Secondary Education	32
<i>Electives</i>	38-39
<i>Total</i>	186

Requirements for Minor

Health Education (in Secondary Schools)

Health Education 305, 312, 334s, 401, 471, 491, plus 7 elective hours in Health Education.

Health Education (in Elementary Schools)

GSE 201, Health Education 305, 312, 334s, 350, 401, plus 7 elective hours in Health Education.

Driver and Safety Education

Health Education 302s, 313s, 323s or 475s, 442s,¹ 443s, 445s, plus 6 hours of electives from the following: Health Education 323s, 334, 415s, 445s, 480s, Special Education 400, 410A, 410B, Psychology 303, 305, 312, 404, 320, Instructional Materials 417.

¹ Health Education 442s and 445s must be taken concurrently.

Courses

301-4 Health Education Concepts, Advanced. A survey of health sciences applied to healthful living. The dynamics of health and environment, behavior fitness, disease, addition, habituation and population control.

302s-4 Driver and Traffic Safety Education I. Prepares the college student for teaching driver education and training in the secondary school. Prerequisite: a valid driver's license.

305-4 Principles and Foundations of Health Education. Introduction to philosophy and history of health education as well as functions of the school health department and voluntary agency interaction in the health education program. Prerequisite for all 300 and above.

311-4 Child Development. Physical development of the child beginning with

- the study of pregnancy, prenatal and maternal care continuing with overview of development from birth through puberty.
- 312-4 Emotional Health.** Concepts of positive emotional health as related to teacher and parent in terms of influences on the child in the classroom and community.
- 313s-4 Introduction to Safety Education.** Prepares for safety education in the public schools. Concerns safety as a social problem, development of safety skills, accident causes, teacher liability, research in the field.
- 323s-4 Methods and Materials in Safety Education.** To acquaint student with material aids and methods, techniques in the teaching of safety education at elementary and secondary school levels.
- 325-3 Community Health Problems.** Problems of a community health nature are treated and methods outlined to meet the problems. Areas include community health organization, problems of the environment, food, sanitation, and disease. Epidemiological process stressed.
- 330-4 Consumer Health.** Legislation on state and federal levels affecting the health of the consumer; official agencies serving as watchdogs of consumer health; non-official agencies (AMA, CU, etc.) doing the same job; health and medical protection in the form of insurance, group practice, prepayment, etc.; health hazards of the space age; false and misleading information and advertising in health and medicine; cultists and faddist and their effect on the health of the consumer; media and publications and consumer health.
- 334-4 First Aid.** Red Cross Aid Course with lectures, demonstrations, and practical applications. Red Cross Instructor's Certificate given.
- 350-4 Health Education Methods and Materials for Elementary Teachers.** Designed to show the prospective teacher fundamental processes, techniques, and material aids involved in elementary school health teaching.
- 355-4 Introduction to Public Health.** Philosophy, organization, administration, and functions of federal, state, and local, official and voluntary public health agencies. Periodic field trips involved.
- 356-5 Public Health II.** An examination of specific public health problems and measures of control. Intended for health science students only.
- 400-4 Health Appraisal of School Children.** Prerequisite: Not open to students who have had 450.
- 401-3 Disease Prevention and Control.** Principles and practices in the prevention and control of communicable, chronic, and degenerative diseases in the school and community.
- 405-4 Sex Education in Schools.** Problems of teaching sex education in schools. Designed to meet state requirements for preparation of teachers. Prerequisite: Jr., Sr., or graduate health education, physical education, or elementary school major, or consent of department.
- 415s-3 to 4 Workshop in Driver Education and Traffic Safety.** Prerequisite: 302 or equivalent.
- 426-3 Knowledge Testing in Health Education.**
- 442s-4 Practicum in Driver and Traffic Safety Education II.** Provides prospective teachers with dual-control, simulation, and multiple-car laboratory teaching experiences. Teaching beginners, developing programmed lessons, methods and materials of instruction included. Prerequisite: 302s.
- 443s-4 Driver & Traffic Safety Education Program Administration III.** Includes a study of program administration, supervision, and planning. Prerequisite: 442s.
- 445s-4 Driver Simulation.** For in-service and pre-service teachers and supervisors of driver and traffic safety education. Includes methods of instruction, equipment familiarization, program development and objectives. Prerequisite: 443s or consent of the instructor.
- 450-4 Health Education in the Elementary School.** Prerequisite: Not open to students who have had 400.
- 460-4 School Health Programs.**
- 461-4 to 8 Workshop in Health Education.**
- 462-4 Health Education Workshop.**
- 463-1 to 4 Workshop in Health Education with Emphasis in Disaster Preparedness.**
- 464-4 Workshop in Alcohol and Drug Education.** Summer workshop for those responsible for teaching about alcohol and drug substances. Emphasis on motivations for use, nonuse, and abuse and on the varieties of effects in the young and older. Translates concepts, ideas, and information into teaching materials and approaches.

470s-4 Highway Safety as Related to Stimulants and Depressants. Relationship between alcohol and drugs and traffic accident causes. Concepts and educational programs designed to alleviate alcohol and drug related accidents. Prerequisite: advanced standing or consent of instructor.

471-4 Organization and Administration of School Health.

475s-4 Traffic Law Enforcement and Planning. Acquaints safety and driver education teachers with the purposes of traffic law enforcement and engineering and the methods used to fulfill these purposes. Emphasis on ways of improving existing services. Prerequisite: 443s or consent of instructor.

480s-Workshop in Safety Education. Prerequisite: 313 or 323 or consent of instructor.

481s-4 Safety Education Workshop. Prerequisite: 313 or 323 or 480s or consent of instructor.

485-4 International Health. A survey and analysis of the health beliefs, values, and practices of peoples in other cultures, with particular attention to how these beliefs and practices fit into a total way of life. An international orientation of potential value to both prospective teachers and students in other fields.

488-4 Educational Aspects of Environmental Sanitation.

489-4 Introduction to Vital Statistics.

490-2 to 12 Field work in School and Community Health. Field training, observation, and participation in current public agency and school health programs. Provides practical experience for the health education student. Restricted to majors in the department or by special permission of the instructor.

491-4 Health Teaching Methods in School and Community. An intensive study of and practice at various dimensions of teacher-student relations in the classroom with emphasis on the multiple roles of the teacher. Prerequisites: 305, 471 or consent of instructor.

495s-4 Driver Education for the Handicapped. Methods and techniques designed to teach handicapped persons how to drive. Consideration of programs for EMH and physically handicapped. Familiarization with assistive equipment and program materials. Prerequisite: advanced standing or consent of instructor.

498-2 to 6 Environmental Health Problems. Designed to meet the needs and interests of those students with health education interests in various phases of specific aspects of environmental health: general sanitation; pollution; food, milk, water sanitation; garbage and refuse disposal; pest control and other similar problems. Prerequisite: community health major or consent of instructor.

500-4 Community Organization for Health Education.

510-4 Construction of the Curriculum in Health Education and Safety.

511-5 Practicum in Health Education Workshop.

515-4 Review Current Literature in Health Education Public Health and Safety Education.

520-4 to 6 Special Projects in Health and Safety.

525s-4 Organization Administration and Supervision of Safety Education.

526-4 Evaluation in Health Education and Safety.

530s-4 Problems and Research in Accident Prevention.

533-12 (4,4,4) Human Conservation.

536-4 Professional Preparation in Health Education.

540s-1 to 4 Readings in Traffic and Safety Education.

545s-4 Externship in Traffic and Safety Education.

550s-4 Current Developments in Driver and Safety Education.

590-4 to 12 Field Internship.

597-3 (1,1,1) Seminar in Health Education and Safety.

599-3 to 9 Thesis.

600-1 to 48 Dissertation.

Higher Education

Department, Major (Graduate Only), Courses

The Department of Higher Education does not offer an undergraduate major but offers courses for undergraduate credit over a broad range of subject matter in higher education. Students interested in this area will be advised by their major department.

Courses

- 399-6 (2,2,2) **Problems of Higher Education in the United States.** An introduction to the broad understanding of high education in the United States. (a) Historical development with an emphasis on basic concepts. (b) Leadership and governance in colleges including community colleges. (c) Faculty and student problems in the modern university.
- 402-2 **Principles of Student Personnel Group Work.** Acquaints the student with group work possibilities and functions in higher education. Elective Pass/Fail.
- 510-4 **Higher Education in the United States.**
- 512-4 **Higher Education in Selected Nations.**
- 513-4 **Organization and Administration in Higher Education.**
- 515-4 **College Student Personnel Work: Operations and Policies.**
- 516-4 **College Students and College Cultures.**
- 518-4 **College Teacher and College Teaching.**
- 522-1 to 12 **Readings in Higher Education.**
- 523-1 to 12 **Internship in Higher Education.** (Selected areas.)
- 524-2 to 6 **Individual Study.**
- 535-2 to 4 **Higher Education Seminar I.**
- 545-2 to 4 **Higher Education Seminar II.**
- 551-4 **Curriculum Design and Policy.**
- 555-4 **Philosophy of Higher Education.**
- 565-4 **The Community-Junior College.**
- 578-4 **Economic Aspects of Higher Education.**
- 589-4 to 8 **Advanced Research.**
- 595-1 to 12 **Higher Education Seminar III.**
- 599-1 to 9 **Thesis.**
- 600-1 to 48 **Dissertation.**

History

Department, Major, Courses

A major in history consists of a minimum of forty-eight hours. Students who plan advanced study in preparation for college teaching or other professional careers are advised to take added work. A minor is recommended but not required.

Courses should be distributed over three fields of history chosen from American, European, and Third World (Latin-American, Asian, or African). Students who intend to major in history are expected to consult with the department's undergraduate advisers at the time of registration in order to plan a course of study. Transfer students should report to the department prior to their first quarter of attendance.

Students with exceptional scholarly promise may be invited into the departmental honors program which begins with a colloquium in the junior year and continues with an honors seminar and thesis prepared under the direction of a member of the department in the senior year. Graduation with honors is given to those who successfully complete the program.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i> (including GSD mathematics)	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	21
Foreign Language: GSC FL-9 and FL 201-9 *	18
Additional mathematics to complete one year	3
<i>Requirements for Major in History</i>	48
GSB 300-9, or other American History **	9
History 200-9, or other European History	9
Third World History (Africa, Asia, Latin America)	9

History electives	21
<i>Electives</i> (these may include 32 hours of professional education for teacher certification)	49
<i>Total</i>	186

* GSC Foreign Language does not satisfy the GSC requirement in the College of Liberal Arts.

** A minimum of 18 hours of American history is required by the State of Illinois for teacher certification.

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirement</i> (including GSB 202)	68
<i>Requirements for Major in History</i>	54-63
GSB 300-9 or other American history *	9
History 200-9 or other European history	9
Third World History (Africa, Asia, Latin America)	9
History electives	21
Additional mathematics or foreign language to total two years	6-15
<i>Professional Education Requirements</i>	36
Guidance 305 (GSB 202 is prerequisite)	4
Secondary Education 310, 315 or 488, 352-16	24
Two courses from a list of restricted professional education electives; refer to the catalog section titled secondary education	8
<i>Electives</i> (may include a teaching minor)	19-28
<i>Total</i>	186

Minor in History

Thirty hours are required for a minor in history. The student is advised to balance courses between American and European or Third World history.

* A minimum of 18 hours of American history is required by the State of Illinois for teacher certification.

Courses

200-9 (3,3,3) History of Western Civilization. Introductory survey of the history of Western civilization. (a) Prehistory to ca. 1000 A.D. (b) 1000-1715. (c) 1660 to present.

251-4 Problems in the History of World Civilization. Seminar focusing on selected topics in world history. Prerequisite: President's Scholars status or consent of instructor.

GSB 300-9 (3,3,3) History of the United States.

303-3 The Great Depression in the U.S. Causes and effects of the great depression and of governmental measures for relief, recovery, and reform during the years 1929-41. Elective Pass/Fail.

304-9 (3,3,3) History of the Ancient World. (a) The Near East; (b) Greece; (c) Rome. May be taken individually or in any sequence.

308-3 History of Illinois. The history of the state from 1818 to the present. Recommended for students with a concentration in history and those who expect to teach in elementary schools.

309-6 (3,3) Survey of Black American History. The black man's role and contribution in the building of America, and his ongoing fight for equality.

315-6 (3,3) Intellectual History of the Western World. (a) The ancient world. (b) The Middle Ages and Renaissance. Elective Pass/Fail.

322-12 (4,4,4) English History. (a) Britain to 1603; (b) 1603-1815; (c) since 1815. May be taken individually or in any sequence.

330-3 The Revolution and the Constitution. A study of the conflicting forces

- which produced the American Revolution, led to the creation of the federal union and shaped the early republic. Elective Pass/Fail.
- 332-9 (3,3,3) Medieval History.** (a) Early Middle Ages, 500-1000, (b) High Middle Ages, 1000-1300, (c) Late Middle Ages, 1300-1500.
- 333-9 (3,3,3) Modern European History.** (a) Early modern Europe. (b) The 18th and 19th centuries. (c) The 20th century.
- 349-9 (3,3,3) History of Africa.** (a) Pre-colonial Africa: Sub-Saharan Africa from earliest times; early empires in East, Central, and West Africa; pre-colonial relationships with Europe and Asia; the slave trade. (b) Africa in the colonial period. Colonial empires in Africa; institutional changes brought by western rule; and nationalistic reaction. (c) Independent Africa. The emergence of modern African states and societies. Elective Pass/Fail.
- 352-9 (3,3,3) History of Latin America.** (a) Colonial Latin America; (b) 19th century. (c) 20th century. May be taken individually or in any sequence. Elective Pass/Fail.
- 365-6 (3,3) History of Chinese Civilization.** The march of Chinese civilization from prehistoric times to the present stressing social structure, government institutions, and intellectual movements. (a) Antiquity to 1644; (b) 1644 to present. Offered alternate years with 367. Prerequisite: six hours of 300-level Social Science or consent of instructor.
- 367-9 (3,3,3) History of the Far East.** (a) Introduction to 1800; (b) 1800-1945; (c) Since 1945. May be taken singly or in any sequence.
- 376-2 to 11. Classical Studies.** Independent research in Greek and Roman history. Restricted to Classical Studies majors. Prerequisite: consent of instructor.
- 380-3 Eastern Europe.** An historical survey of the East European area from the Baltic to the Balkans, with emphasis on the modern era. Elective Pass/Fail.
- 398-3 History Honors.** Great ideas and works of history, with discussion of conflicting interpretations of major historical problems. Prerequisite: junior standing and consent of department.
- 401-9 (3,3,3) History of the South.** Social, economic, political, and cultural developments of the South. (a) To 1850. (b) 1850-1900. (c) Since 1900.
- 403-9 (3,3,3) American Economic History.** (a) To 1800. (b) 1800-1900. (c) 1900 to present.
- 404-3 American Party Politics, 1790-1828.** Issues and conflicts which dominated the American political scene prior to the emergence of Jacksonian democracy. Prerequisite: GSB 300a. Elective Pass/Fail.
- 405-6 (3,3) United States History 1850-1896.** (a) Civil war. (b) Reconstruction and industrialization. Prerequisite: GSB 300b or consent of instructor.
- 406-6 (3,3) Diplomatic History of Europe.** (a) From the Congress of Vienna to the Fall of Bismarck (1815-1890). (b) From the background of the First World War to the present (since 1890). Elective Pass/Fail.
- 408-6 (3,3) Problems in Black American History.** Developments which formed the foundation for the "Black Revolution" of the present time. Prerequisite: 6 hours of 300-level social science courses or consent of instructor.
- 409-9 (3,3,3) United States Constitutional History.** Origin and development of the American constitution, from English background through the convention to the present. (a) to 1830. (b) 1830-1912. (c) 1912 to present. Elective Pass/Fail.
- 410-2 to 5 Special Readings in History.** Supervised readings for students with sufficient background. Registration by special permission only. Offered on demand.
- 411-9 (3,3,3) Social and Intellectual History of the United States.** (a) 1607-1830; (b) 1830-1900; (c) 1900 to present. The development of American society and a study of various types of economic, social, and political thought that have influenced it.
- 414-9 (3,3,3) Intellectual History of Modern Europe.** (a) The Enlightenment; (b) The 19th century; (c) The 20th century. Elective Pass/Fail.
- 416-6 (3,3) Early Modern Europe.** (a) Renaissance. (b) Reformation. Prerequisite: six hours of 300-level social science or consent of instructor. Elective Pass/Fail.
- 417-9 (3,3,3) Advanced English History.** (a) The Empire-Commonwealth; (b) Constitutional History; (c) English Culture in the Age of American Colonization. Elective Pass/Fail.
- 419-6 (3,3) Europe in the Age of Absolutism.** (a) 1600-1715. (b) 1715-1789. Prerequisite: six hours of social science at 300 level or consent of instructor.

420-3 The French Revolution. A sketch of the passing of feudalism in France, the background and development of the revolutionary movement, and the Napoleonic period.

425-6 (3,3) American Colonial History. (a) Discovery and Settlement; (b) British Imperial structure-American independence.

428-3 The Age of Jackson. Origins, background, and development of that phase of American democracy associated with the Jacksonian era. The political, social, and economic history of the years 1815-44. Elective Pass/Fail.

430-9 (3,3,3) Late Modern Europe. Problems in the political, social, and military history of Europe in the twentieth century. (a) First World War and interwar years. (b) Second World War years. (c) Since 1945. Prerequisite: 200c or 333b.

434-9 (3,3,3) Social and Political History of Modern Europe. (a) 1815-1850 (b) 1850-1885 (c) 1885 to World War I. Changing social structure of Europe caused by industrialization. The consequence of this development in terms of the emergence of new social forces and political problems. Prerequisite: 200c or 333b. Elective Pass/Fail.

435-9 (3,3,3) Twentieth Century United States History. Important developments. (a) 1896-1919. (b) 1919-1937. (c) 1937 to present. Prerequisite: GSB 300c and or consent of instructor.

440-9 (3,3,3) History of American Diplomacy. A study of the important treaty relations of the United States and a general consideration of American foreign policies. (a) America in isolation (to 1860). (b) The emerging America (from 1860 to 1920). (c) America on the world scene (1920 to the present). Prerequisite: 6 hours 300-level social science courses or consent of instructor.

442-9 (3,3,3) History of the West. (a) Colonial; (b) Trans-Allegheny; (c) Trans-Mississippi.

448-6 (3,3) History of Southeast Asia. (a) To 1900. (b) 1900 to present. Elective Pass/Fail.

449-6 (3,3) Advanced African History. (a) Cultural history of traditional states, the slave trade, and the interaction of traditional systems and European culture. (b) Investigations into the most important historical questions and interpretations of the regions covered in (a). Prerequisite: 349a,b or c, or consent of instructor, or graduate standing.

451-3 Great Historians. Writings of historians from Herodotus to Toynbee. Prerequisite: 6 hours of 300-level social science courses or consent of instructor. Elective Pass/Fail.

452-3 Methods of Historical Research. Fundamentals of historical investigation, criticism, and composition. For concentrations in history only.

455-3 History of Inner-Asian Relations. Tribes, migrations, wars, and power politics in Central Asia and outlying areas of China from Han times through 19th century rivalries to latest developments along the Sino-Soviet frontier.

460-9 (3,3,3) Medieval Society. (a) Ecclesiastical. (b) Feudal and Royal. (c) Urban. Elective Pass/Fail.

461-6 (3,3) Cultural and Intellectual History of the Middle Ages. (a) Early Middle Ages. (b) High Middle Ages.

462-3 History of Modern Italy. Italian society and politics in the nineteenth and twentieth centuries. Elective Pass/Fail.

463-6 (3,3) History of France. Social, economic, political, and intellectual evolution from medieval origins to the present day. French contributions to Western culture. (a) Middle Ages to Absolutism. (b) French Revolution to the Fifth Republic. Prerequisite: 6 hours 300-level social science courses or consent of department.

464-6 (3,3) History of Germany. (a) German state and society from the Middle Ages to the early 19th century. (b) Germany since 1815. Prerequisite: six hours of 300-level social science or consent of instructor.

465-6 (3,3) History of Russia. (a) Traditional Russia to 1905. (b) Revolutionary Russia since 1905. Elective Pass/Fail.

466-3 History of Scandinavia. Denmark, Norway, Sweden, Finland, and Iceland. Related history of the Baltic and North Sea regions, from prehistoric times to the present.

470-3 Argentina and Chile. A narrative and comparative study of the independent era of the history of these two leading states of South America. Prerequisite: 300-level social science or consent of department. Elective Pass/Fail.

471-6 (3,3) History of Mexico. (a) 19th century; (b) 20th century. Significant political, economic, diplomatic, social, and cultural aspects of Mexican life from independence to modern Mexican life. Elective Pass/Fail.

- 472-3 **Colonial Latin America.** Policies and practices. Theory and operation of the colonial system. Prerequisite: 6 hours of 300-level social science courses or consent of instructor. Elective Pass/Fail.
- 473-6 (3,3) **The Caribbean Area.** (a) In the 18th and 19th centuries, (b) in the 20th century. Elective Pass/Fail.
- 474-3 **United States-Mexican Relations.** Relations between the United States and Mexico. Prerequisite: 6 hours of 300-level social science courses or consent of instructor. Elective Pass/Fail.
- 475-6 (3,3) **Dictatorships in Latin America.** (a) the 19th century; (b) the 20th century. A political, economic, social and military study of the domestic and international aspects of dictatorship. Prerequisite: Junior standing or higher. Elective Pass/Fail.
- 476-3 **Andean South America Since Independence.** A narrative and comparative study of Bolivia, Colombia, Ecuador, and Peru in the nineteenth and twentieth centuries. Prerequisite: 6 hours of 300 level social science or consent of department. Elective Pass/Fail.
- 477-3 **Brazil Since Independence.** Cultural, diplomatic, military, political, and socio-economic elements of Brazilian life from independence to the current era. Prerequisite: 6 hours of 300 level social science or consent of instructor. Elective Pass/Fail.
- 478-9 (3,3,3) **History of Spain.** Institutional intellectual, socioeconomic, and political history from the middle ages to the present. (a) Medieval Spain (to 1500). (b) The Imperial Period (1469-1825). (c) Modern Spain (since 1808). prerequisite: 6 hrs. of 300-level social sciences courses or consent of instructor.
- 481-6 (3,3) **History of Rome.** (a) Rome from Republic to Empire, 133 B.C.-A.D. 14. (b) Roman Empire to the death of Constantine. Prerequisite: six hours of 300-level social science or consent of instructor.
- 490-3 **Problems in United States History.** Topics vary with instructor. May be repeated for a maximum of six quarter hours provided registrations cover different topics. Topics announced in advance. Prerequisite: consent of instructor.
- 498-6 (3,3) **History Honors.** Principles of historical method, research, and writing for senior honor students only. (a) Methodology. (b) Research, honor thesis. Prerequisite: consent of department.
- 500-4 to 20 (4 to 10 each) **History Seminar.** (a) American history. (c) Latin American history.
- 509-4 **Studies in Negro History.**
- 510-2 to 12 **Readings in History.**
- 514-4 **Studies in Asian History.**
- 515-8 (4,4) **Seminar in Twentieth Century United States History.**
- 518-4 **England in the Age of the "Glorious Revolution."**
- 519-8 (4,4) **The Age of Jefferson.**
- 520-8 (4,4) **Sectionalism and Reform.**
- 521-8 (4,4) **Seminar in American Diplomatic History.**
- 522-8 (4,4) **Seminar in American Economic History.**
- 523-8 (4,4) **Seminar in American Social History.**
- 524-8 (4,4) **Seminar in American Constitutional History.**
- 525-8 (4,4) **Seminar in American Colonial History.**
- 549-4 to 8 (4) **Seminar in African History.**
- 553-4 **New Viewpoints in American History.**
- 568-8 (4,4) **Seminar in Illinois History.**
- 575-12 (4,4,4) **Studies in Latin American History.**
- 582-4 to 8 (4) **Studies in Medieval and Renaissance History.**
- 583-8 to 16 (4,4) **Seminar in Medieval and Renaissance History.**
- 586-4 to 8 (4) **Studies in Early Modern European History.**
- 587-8 to 16 (4,4) **Seminar in Early Modern European History.**
- 590-4 to 8 (4) **Studies in Modern European History.**
- 591-8 to 16 (4,4) **Seminar in Modern European History.**
- 597-3 to 7 **Independent Investigation.**
- 598-3 (1,1,1) **Teaching History in College.**
- 599-1 to 9 **Thesis.**
- 600-1 to 48 **Dissertation.**

Home Economics

School, Courses

The School of Home Economics through the College of Human Resources

grants the Bachelor of Science degree. Until recently all students followed a major in home economics, but this has been split into majors offered by the various departments. Majors currently offered are: child and family, clothing and textiles, family economics and management, food and nutrition, and interior design. Requirements for the majors are listed in this chapter under the appropriate department as are the course listings for each department. No minor is required.

The Home Economics Honors Program

An Honors Program in the School of Home Economics provides individualized programs for the student with high academic ability.

Selection depends upon (1) recommendations of the faculty members, (2) cumulative grade point average (4.00 is minimum, below 4.25 requires recommendation by the faculty and the Honors Council), (3) a personal interview for measuring other desirable characteristics, and (4) percentile ranks on the University's entrance examinations.

In selecting freshmen for participation in informal group discussions prior to formal honors study, percentile ranks on the University's entrance examinations, high school records, recommendations from the high school faculty, and the personal interview will be utilized.

For admission into the formal program, the student may apply independently to the Honors Council or may be encouraged by any member of the faculty to apply on the basis of his records and staff recommendations.

Courses

259-3 to 80. For credit earned in home economics subjects or home economics occupational proficiency. Credit is established by departmental evaluation. Prerequisite: transfer from two-year programs.

The Home Economics Honors courses are listed below. In each course, the subject matter depends upon the needs and interests of the students.

305-2 to 6 Home Economics Honors Seminar.

306-2 to 6 Home Economics Honors Seminar.

387-2 to 8 Special Problems—Honors.

388-2 to 8 Research and Investigations—Honors.

Home Economics Education

Department, Major, Courses

Bachelor of Science Degree, COLLEGE OF EDUCATION

Teaching Vocational Home Economics Specialization

These courses meet the needs of students desiring to teach consumer-homemaking and occupational home economics in school departments maintained according to the provisions of the federal vocational acts. Southern Illinois University at Carbondale is approved for training vocational home economics teachers.

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Home Economics Education with Specialization in Teaching Vocational Home Economics Education</i>	111-112
GSB 202, 203, 212; GSC 101; GSD 101,* 102,* 107, 152 or 153, GSE 201, 2 PE activity courses	(34)
Chemistry 110, 240	(8)

Child and Family 227, 237, 345a,b	13
Clothing and Textiles 127a,b,c, 333, 304	15
English 290 *	3
Family Economics and Management 323, 324, 331, 332, 341	17
Food and Nutrition 100, 256, 335 plus one advanced course	15-16
Guidance 305	4
Home Economics Education 111 or 306, 309a,b, 310, 325	18
Interior Design 131, 327	6
Secondary Education 310, 352b	16
Electives in Education	4
Select from Educational Administration and Founda- tions 355; Guidance 422a; Instructional Materials 417; Secondary Education 407a, 340, 312, 495; or Occupational Education 493	
<i>Electives</i>	6-7
<i>Total</i>	186

* As a prerequisite for student teaching, the student must complete GSD 101 and GSD 102 with a B in each, or must complete GSD 101, 102 and one 200 or 300 level English course with a C in each. Also to fulfill certification requirements a student needs 12 quarter hours of English arts.

Extension Specialization

These courses prepare students for positions as home advisers, 4-H Club advisers, and with further training, extension specialists.

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Home Economics Education with Special- ization in Extension</i>	100
GSB 202, 203, 212; GSC 101; GSD 101, 102, 107, 153	(29)
Chemistry 110, 240	(8)
Child and Family 227, 237, 345a,b	13
Clothing and Textiles 127a,b,c, 333, 304	15
Family Economics and Management 323, 324, 331, 332, 341 . .	17
Food and Nutrition 100, 256, 321, 335	15
Home Economics Education 111 or 306, 370, 371	13
Interior Design 131, 327	6
Journalism 393, or English 390	3
Speech 102 or 303	4
Electives in home economics	14
<i>Electives</i>	18
<i>Total</i>	186

Courses

111-2 Home Economics Orientation. The history and philosophy of home economics. Professional opportunities in the field; planning for the development of personal and professional proficiencies. Credit is not granted for both Home Economics Education 111 and 306.

306-2 Seminar in Home Economics. A social, psychological and philosophical interpretation of home economics in today's world. Overview of career areas and the practice of the dual role of homemaker-professional worker. Credit is not granted for both Home Economics Education 111 and 306.

307-3 Methods of Teaching for Non-Teaching Majors. Educational principles for use in situations outside of the formal classroom. Selection and organiza-

tion of materials. Practice in using a variety of techniques and teaching aids. Offered in spring for dietetics majors. Offered in winter for others.

309a-4 Program Planning in Home Economics. Philosophy; the three-phase program in home economics at the junior and senior high school level. Curriculum planning. Possible expense for materials for teaching experience: \$5.00. Prerequisites: Guidance 305; Secondary Education 310.

309b-4 Methods of Teaching in Home Economics. Unit and lesson planning, methods, techniques and teaching aids. Possible expense for materials for teaching experiences: \$5.00. Prerequisite: 309a.

310-4 Evaluation and Adult Education. Developing and using evaluation instruments for a three-phase family-community centered home economics program. Assessing affective learning. Preparing for adult education. Possible expense for professional materials: \$10.00. Prerequisites: 309a,b and Secondary Education 352 concurrently.

313-2 to 4 Special Problems. Independent directed study for selected students.

325-4 Introduction to Home Economics Related Occupations. Investigation of personal and educational competencies required of H.E.R.O. instructors. Operational procedures and development of instructional materials for H.E.R.O. programs in secondary and adult education. Work experience-supervised. Work block required. Field trips. Transportation expense for work and field trips. Prerequisite: 309a.

370-5 History, Development and Principles of Extension Work. The history and philosophy of cooperative extension. Principles and practice of organizing and administering extension work in home economics. Offered alternate years. Transportation expense for field trips: approximately \$5.00.

371-6 Field Experience. Six weeks of observing and assisting a county home economics extension adviser. Supervised experiences in various phases of extension work. Student must provide for own living and travel expenses. Prerequisite: 370.

407-2 to 8 Workshop. Designed to aid home economics teachers, supervisors, and leaders in the field with current problems. Resource people are used. Discussions, reports, lectures, and other methods of analyzing and working on solutions to problems. Emphasis for the workshop will be stated in the announcement of the course.

414-4 Home Economics for Elementary Teachers. Identification and development of meaningful home economics related experiences appropriate for various levels of elementary curriculum. Interpretation of current vocational education legislation and trends affecting elementary programs.

415-1 Introduction to Graduate Study. Seminar to orient the student to graduate work through relation of courses to goals of program, standards of work, habits of thinking, communication of ideas, uses of professional materials and publications.

417-4 Teaching Concepts and Generalizations in Home Economics. Use of cooperative teacher-pupil planning to develop curriculum based on subject matter concepts and generalizations. Techniques for helping students to take part in planning, implementation of learning experiences, and evaluation. Provides practice in use of group process to plan for sequential learnings. Prerequisite: consent of instructor.

481-2 to 6 Readings. Supervised readings for qualified students. Prerequisite: consent of instructor and chairman of department.

485-3 Principles and Philosophies of Vocational and Technical Education. (See Occupational Education 485.)

500-4 Research Methods.

505-4 Home Economics in the Secondary Schools.

506-4 Evaluative Procedures in Home Economics.

510-4 Supervision of Home Economics.

510a-1 to 4 Practicum in Supervision.

515-4 Trends and Issues in Home Economics Education.

516-4 Advanced Methods of Teaching Home Economics.

517-4 Methods and Materials for Adult Programs in Home Economics.

525-4 Cooperative Vocational-Technical Education.

571-4 Recent Research.

572-2 to 8 Special Problems.

573-1 to 6 Seminar: Research in Home Economics.

599-2 to 9 Thesis.

600-3 to 48 Dissertation.

Industrial Technology

Major, Courses

*(See Technology)***Instructional Materials**

Department, Minor, Courses

Courses in the utilization and administration of teaching materials are designed to train both audiovisual coordinators and librarians to become fully qualified instructional materials specialists who can administer all teaching materials.

Minor

Persons trained primarily as teachers may qualify for part-time professional service in a school library by completing 24 hours of work in approved courses which are 401, 403, 405, 406, 407, and 420.

Courses

400-2 Library Research Methods. Introduction to the use of library materials in graduate research. Includes a survey of scholarly publishing and the use of reference works in various subjects. Open only to non-majors.

401-4 Introduction to Cataloging. Organization of library materials. Emphasis on cataloging and classification. Acquisition and processing procedures. Both the Dewey Decimal and Library of Congress classification schemes studied. Laboratory assignments.

403-4 School Library Functions and Management. Effective library services in relation to the educational objectives of elementary and secondary school programs: organization, supervision, finance, housing, equipment, standards, and evaluation.

405-4 Library Materials for Children. Study of the aids, methods, and criteria for the selection and use of books and other instructional materials for children in the elementary schools. Open to juniors with consent of instructor.

406-4 Library Materials for Adolescents. A study of the aids, methods, and criteria for the selection and use of books and other instructional materials for students in the high school. Open to juniors with consent of instructor.

407-4 Basic Reference Sources. Evaluation, selection, and use of reference sources for elementary and secondary school libraries. Principles and methods of reference service.

413-4 Cataloging of NonBook Materials. The classification, cataloging, preparation and circulation of all types of nonbook materials such as films, filmstrips, slides, realia, etc. Prerequisite: 401.

417-4 Audiovisual Methods in Education. Selection and utilization of instructional materials in the learning environment, elementary through adult levels. Audio and visual materials and procedures are emphasized with some attention given to bibliographies and reference books for teachers. Prerequisite: Guidance 305.

420-4 School Library Activities and Practice. Supervised practice and observation integrated with instruction in the typical activities of school librarianship: storytelling, publicity, developing units of library instruction, and work with students.

440-4 Photography for Teachers. Photography as a tool of communication in the modern school. Techniques of camera handling, visually planning a story, macrophotography, color slides, and other processes. Prerequisite: 417.

445-4 Preparation of Teacher-Made Audiovisual Materials. Laboratory practice in the preparation of bulletin boards, opaque materials, models, slides, recordings, feltboards, and other graphic materials. Prerequisite: 417 or consent of instructor.

448-4 Supervision and Administration of an Audiovisual Program. Provides professional information and training for anyone who has administrative

responsibilities for an audiovisual program. For teachers, coordinators, or directors. Prerequisite: 417 or consent of instructor.

450-4 Classroom Teaching with Television. Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV, and definition of responsibilities are included. Demonstration and a tour of production facilities are provided.

457-4 Radio and Television in the Classroom. Educational programs and their value to the teacher in the classroom. Sample tapes of radio programs and kinescopes are used.

458-4 The Medium of the Motion Picture. A study of the full range of expression by motion pictures including the documentary, theatrical, educational, experimental, and industrial films. Representative films are screened.

470-4 Program Automated Instruction. The principles and practices of writing both linear and intrinsic types of programmed instruction with emphasis on pictorial and performance branches. Individual experience in planning and producing programs.

505-4 Literature of the Humanities.

506-4 Literature of the Social Sciences.

510-4 Mass Communications in Education.

514-4 Survey of Research and Development in Instructional Materials.

523-4 Seminar on Junior College Librarianship.

530-4 History of Media.

545-4 Cooperative Design of Instructional Materials.

546-4 Integration of Audiovisual Materials in the Classroom.

547-4 School Film and Filmstrip Production.

549-4 Visual Learning.

554-4 Administration of an Instructional Materials Center.

560-4 Seminar in Instructional Materials.

570-4 to 12 Practicum in Instructional Materials.

576-2 to 8 Problems in Instructional Materials.

599-5 to 9 Thesis.

600-1 to 48 Dissertation.

Inter-American Studies

Major

The Inter-American Studies program, under the direction of the Latin American Institute, was initiated in 1958 to meet the ever-increasing demand for personnel qualified to deal with questions related to Mexico and the countries in Central America, the Caribbean, and South America. Government, business, and other interests require the services of individuals who have a general comprehension of the problems and potentialities of the area, plus the necessary language skills to make possible graduates' highest-level performance in the field. Thus, the course of studies for this program is necessarily interdisciplinary. The student is given a firm general background in the history, geography, economics, anthropology, language, and literature of the English, Portuguese, and Spanish speaking countries in the New World. Further, special emphasis is placed upon the students' acquiring a working knowledge of Spanish and Portuguese. This level of linguistic skill is essential to permit a clear understanding of Latin Americans of all levels and backgrounds and as an indispensable skill or tool for anyone who intends to work in any professional capacity in Latin America regardless of an individual's specialized field of interest in business, government, agriculture, teaching, research, etc.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

General Studies Requirements (Includes GSD 107) 68
Supplementary Two-Year College Requirement in FL/Mathematics 21-23
 1 year Mathematics (5) + 3 to 5

GSC 140-9, Spanish 201-9	18 *
<i>Requirements for Major in Inter-American Studies</i>	83-85
Government 303	3
GSC 135-9 (Portuguese)	9
Anthropology 311b, 311c	6-8
Economics 419, 429	8
Spanish 201	(9)
Spanish 220-6, 301-3, 320-6, 339-9	24
Geography 367, 368	8
Government 392, 450b	8
History 352a, 352b and either 352c, 471 or 473	9
Philosophy 340 and 477 or 478	8
<i>Electives</i>	10-14
Total	<u>186</u>

* GSC Foreign Language does not satisfy GSC requirement for a major in the College of Liberal Arts.

Interior Design

Department, Major, Courses

The interior design curriculum is planned to prepare students to serve the interior design profession in the fields of residential, commercial, and contract design. Employment opportunities for the graduate designer exist with interior design studios, architectural firms, and in various retail organizations and furnishing manufacturers.

Allowance should be made in the student's budget to cover the expense of small amounts of equipment and expendable supplies and expenses involved in required field trips.

Bachelor of Science Degree, COLLEGE OF HUMAN RESOURCES

<i>General Studies Requirements</i>	68
<i>Home Economics Core</i> (choose one course in three departments) ..	7-10
Clothing and Textiles 127a-2, 329-3, 340-4	
Child and Family 227-3, 237-3	
Family Economics and Management 331-3, 341-4, 323-3	
Food and Nutrition 100-3, GSE 236	
Home Economics Education 111-2, 306-2	
<i>Requirements for Major in Interior Design</i>	93
Architectural Technology 110a,b, 121, 146b, 150, 151, 250a	29
Art 100d, 225a,b,c	13
Clothing and Textiles 104	3
Interior Design 231a,b, 300, 331, 380, 381, 384, 390, 391a,b,c, 394, 491	51
<i>Electives</i>	15
Minimum of 8 hours of electives must be in Interior Design departmental offerings.	
Other recommended electives: GSC 101; Administrative Sciences 170; Finance 271; Journalism 393; Cinema and Photography 320	
Total	<u>186</u>

Courses

131-3 **Introduction to Design.** Analysis of the visual environment, principles

and elements of design. Lecture and laboratory. Not open to interior design majors.

231-6 (3,3) Basic Interior Design. Design elements applied to two- and three-dimensional space problems. (a) Proportion, line, direction, texture. (b) Color, three-dimensional concepts. Open only to interior design majors. Lecture and laboratory.

300-2 Display and Exhibition Design. Application of design principles and the use of graphics. Two- and three-dimensional display and exhibit design problems. Laboratory problems. Emphasis on model-making techniques. Lecture and laboratory. Prerequisite: 131 or 231 or consent of chairman.

327-3 Home Furnishings and Interiors. Principles and elements of design related to selection and arrangement of furniture and the use of fabrics, accessories, and other media utilized in furnishing homes and their interiors. Lecture and laboratory.

331-3 Textile Design. Experience in applying the principles and elements of design to textiles. Linoleum block printing, silk screen printing, contemporary embroidery, batik, tie-dye, and other techniques. Lecture and laboratory. Prerequisite: 231a, or consent of chairman.

371-6 Field Experience. Supervised learning experience with a firm. Summer quarter only. Prerequisite: interior design majors within three quarters of graduation and consent of chairman. Mandatory Pass/Fail.

380-4 History of Interior Design Through the 19th Century. Furnishings and interiors from antiquity to the late 19th century. Lecture.

381-4 20th Century Interior Design. Furnishings and interiors from the late 19th century to the present. Lecture.

382-4 History of Architecture. The analysis of structural and design development of architecture from prehistoric to present day and its relevancy to man's cultural and environmental heritage. Lecture.

384-4 Lighting, Illumination and Mechanical Systems. Survey of mechanical equipment in buildings with emphasis on lighting and illumination design. Consideration given to water supply and sewage disposal, environmental comfort, and code requirements. Lecture. Prerequisite: * AD 250a or consent of chairman.

389-4 Furniture Design. Anthropometrics and systems analysis in the design of several original furniture pieces. Emphasis on production of construction drawings and model-making techniques. Lecture and laboratory. Prerequisite: * AD 110a, 381 or consent of chairman.

390-5 Interior Design. Design residential and commercial interior space. Includes designing for individual and small group activities such as a typical office task, residential group conversation, televiewing, dining, and food preparation. Lecture and laboratory. Prerequisites: * AD 110a,b, or consent of chairman. May be taken concurrently with 110b.

391-15 (5,5,5) Intermediate Interior Design. Analysis and design of interior space. (a) Residential interiors, complete design and specifications for large and small-scale housing, based upon family needs. (b) Commercial interiors such as restaurants, hotels, and motels. (c) Commercial interiors, large and small scale office and transportation facilities. Must be taken in a,b,c sequence. Lecture and laboratory. Prerequisite: 390 or consent of chairman.

394-4 Professional Practice. Techniques and methods of an interior design business. Includes contract specifications, customer relations, professional ethics. Lecture. Prerequisite: 391c, or consent of chairman.

396-2 to 5 Special Problems. Directed independent work and study in areas determined by the students interests and needs. Lecture and laboratory. Prerequisite: consent of chairman.

418-2 to 8 Workshop. Current problems facing the professional interior designer. Discussion, reports, lectures, design solution presentations and other methods of analyzing and working on design problems. Prerequisite: consent of chairman.

470-4 Interior Design Seminar. Development of systematic approach involving systems analysis, human factors engineering, environmental variables. Prerequisite: consent of chairman.

481-2 to 6 Readings. Individual interests in design-related research. Prerequisite: consent of chairman.

491-4 Advanced Interior Design. Systematic analysis of human factors as determinants of design solutions for large-scale interiors. Lecture and laboratory. Prerequisite: 391c or consent of chairman.

Journalism

School, Major, Courses

The School of Journalism prepares academically sound, technically proficient, capable, and responsible graduates for professional journalistic careers. These careers, depending on the level and direction of studies, may be found in newspaper and magazine editorial work, television and radio news, cable communications, photo-journalism, public relations, advertising, media management, teaching, and research.

Two specializations are approved by the professional accrediting agency, the American Council of Education for Journalism. Near the end of the junior year the student should decide whether to continue his work in the advertising or news-editorial specialization. Both specializations provide a number of electives which permit the student to explore many areas of journalism.

Advertising Specialization

The advertising specialization will help students develop their abilities to analyze problems and identify the roles advertising and other communications can play in solving them; develop tools of planning, executing, and controlling advertising campaigns; and develop skills in the use of language and other message forms for specific purposes. This program helps prepare students to enter a wide variety of positions in advertising, the media, and related fields.

News-Editorial Specialization

In addition to the general requirements of this specialization the student is expected, at the time he declares his major, to select a block of courses, which, in addition to general requirements, will prepare him for one of the following areas.

Community Newspaper. The community-suburban sequence has a dual purpose. Majors are first given an overview of this vital, expanding segment of the American newspaper industry as an introduction to the field. Advanced courses permit future owner-editor-publisher-manager personnel to explore the total operation of the community-suburban newspaper from advertising to circulation to printing the product.

Magazine. Students are trained in all aspects of magazine work from editorial policy to production and promotion.

News-Editorial. This sequence prepares students for reporting and editing positions in journalism and provides them with background that will help them excel as journalists.

Photojournalism. This sequence, administered jointly by the School of Journalism and the Department of Cinema and Photography, prepares students to be photographer-reporters, photo editors, and work in other related positions in the mass media.

Telecommunications. This sequence prepares the student for news, public affairs, and management careers in broadcast journalism and cable (CATV) communications through a study of policies and practices of electronic informational media systems.

Bachelor of Science Degree, COLLEGE OF COMMUNICATIONS AND FINE ARTS

General Studies Requirements 68

<i>Requirements for Major in Journalism</i>	48
Journalism 300, 301, 302, 345, 346, 370, 383a, 399	22
One of the five sequences below	15-21
Advertising: 372, 373, 374, 376, 389, 479	21
Marketing 301 is prerequisite to all advertising courses except 370	
Community Newspaper: 303, 330, 350, 351, 383b, 442	18
News and Editorial: 303, 330, 383b, 390, 391, 442	18
Magazine: 303, 359, 369, 397, 398, 442	18
Telecommunications: 303, 310a,b, 442, 475	15
Journalism electives to complete 48 hours	5-11
OR	
Photojournalism Sequence	41
Journalism 300, 301, 302, 345, 346, 349, 383b, 399	21
Cinema and Photography 320, 322, 407, 408, 409	20
Journalism electives to complete 48 hours	7
<i>Requirements for Minor</i>	24
The minor must be in a related area approved by the faculty and must be declared by the time the student has accumulated 130 hours of credit	
<i>Electives</i>	46
At least 40 hours of upper-class coursework in the College of Liberal Arts, the College of Science, or other areas approved by the faculty.	
<i>Total</i>	186

Moderate fees may be assessed for various lab courses.

Journalism students must demonstrate a working knowledge of type-writing based upon a minimum rate of thirty words per minute. This proficiency must be demonstrated (by proof of a passing grade in a typing course or an examination given by the School of Journalism) before the student registers in Journalism 300. If the student cannot meet this requirement, he must enroll in Sec. 201a and receive a grade of *C* or better.

A student receiving a grade of *D* or lower in a journalism sequence course must repeat that course and receive a grade of *C* or better before advancing in that sequence.

Subject to the approval of the schools' director, undergraduate students may receive as much as 12 hours of journalism credit toward their degree for courses not taken in residence on the campus.

With the exception of Journalism 345, 346, and 370, admission to all journalism courses must be approved by the director or his representative.

Courses

300-3 The News. Study of the newspaper story with experience in writing and rewriting news; the fundamentals of copyreading. Prerequisite: 345, 346.
301-3, 302-3, 303-3 News Writing and Editing I, II, III. How to cover assignments and write news stories; preparation of copy for publication; writing headlines; laboratory exercises. Must be taken in I, II, III sequence. Prerequisite: 300.

310-6 (3,3) Radio T.V. News. (a) Radio TV News. (b) Cable television reporting. Researching, writing, and producing local affairs presentations for CATV systems. Primary attention given to community news. Must be taken in a,b, sequence. Prerequisite: 300, 301, 302, 303.

325-3 Telecommunications. The broad range of functions of telecommunications in society. Emphasis on the forces contributing to the emergence of CATV

as an instrument of local public affairs journalism. Prerequisite: consent of instructor.

330-3 Editorial Writing. The work and responsibility of the editor and editorial writer with emphasis upon editorial writing and thinking. Editorial problems, methods, policies, and style. Prerequisite: 303.

345-3 History of Journalism. Development of American journalism with emphasis upon the struggle for freedom of the press, leading editors, outstanding newspapers and periodicals.

346-3 Mass Media and Modern Society. Newspaper, radio and television, magazines and specialized publications, films, books, press associations, and feature syndicates. Their relationship to the institutions of modern society: government, church and school, and business and labor, with particular reference to economic and social factors.

349-2 Practicum. Study, observation, and participation in publication activities. Work required on *The Egyptian* newspaper. Prerequisite: consent of department.

350-3 The Community Newspaper. The small newspaper recognized as a distinct medium, performing a specialized function for its readers. Equal weight given to the problem of news presentation and to leadership with careful examination of news and editorial policies of representative newspapers.

351-3 Community Newspaper Management. Organization, operation, and policy of the revenue departments of the weekly and small daily newspapers with special attention to the circulation procedures, retail, general, and classified advertising problems, and other phases of management. Prerequisite: 350.

359-3 Magazine Careers and History. Consideration of various divisions in general circulation, specialized publications, and professional-technical journals. Magazine staff activity in editorial, layout, production, research, and promotion; free-lance writing.

369-3 Magazine Writing. The writing of magazine articles by the free-lancer and staff member. Prerequisites: 300, 301, 302.

370-3 Principles of Advertising. Advertising fundamentals in relation to modern business activities; economic and social aspects, research, media, appeals, production, schedules.

371-3 Advertising Salesmanship. Practical application of the principles of advertising copy and layout as related to the mechanics and psychology of space selling. Students engage in daily work with newspaper advertisers, handling specific assignments in various lines of business. Prerequisite: 370.

372-5 Advertising Copy, Layout, and Production. The principles and practices in the preparation of copy and layout for all types and forms of advertising, as well as study of the processes involved in the production of advertising. Prerequisite: 373.

373-3 Advertising Media and Markets. Manufacturers' advertising procedures related to campaigns, markets and market research, media, and organization of the advertising function. Prerequisite: 374.

374-3 Advertising Policies and Problems. Application of advertising principles to merchandising, sales, promotion, research. Prerequisite: 370 and Marketing 301.

376-4 Advertising Campaigns. Application of advertising principles and skills to the solution of a specific problem; coordination of strategy and technique. Prerequisite: 372.

382-3 Newspaper Promotion and Circulation. Prerequisite: senior standing.

383-6 (3,3) Newspaper Production Management. (a) Photography and typography in publication. Includes photography and printing processes, analysis of photographs, writing cutlines, preparation of picture pages, cropping and scaling. (b) The makeup of newspapers, copyfitting, head schedules, and the organization of newspaper production. Must be taken in a,b sequence. Prerequisite: 300.

385-1 to 2 Radio-TV Special Events. Prerequisite: 310.

389-3 Basic Research in Journalism. Introduction to the language of communication research and the relationship of research to the practice of journalism. Includes a survey of frequently used research techniques and an examination of current research reports.

390-3 Advanced Reporting. Covering city council meetings, courthouse, city hall, courts, society, and other special assignments. Prerequisite: 303.

391-3 Feature Writing. How to plan and write newspaper features and special articles. Prerequisite: 303.

393-3 Publicity Methods. Not open to students with a major in journalism and students who have had Journalism 300. Designed for students who do not plan a career in writing, but desire guidance and practice in writing for newspapers and magazines about their fields of specialization.

395-3 Introduction to Mass Communication Theory. Acquaints the student with current concepts in mass communication theory and empirical evidence derived from investigations generated by the theory. Contains three areas: the communication process, social and psychological effects on the new process, and mass communication and political behavior.

397-3 Special Publications. The function and operation of industrial, trade, and business publications. Relationships of management and personnel through the editorial policies and practices of such special publications. Prerequisite: 369.

398-3 Magazine Production and Layout. The editorial and production functions of the magazine. Application of the principles of article layout and makeup to editorial content. Printing production. Prerequisite: 383.

399-1 Senior Seminar. Contemporary newspaper policies as related to professional journalism. Prerequisite: last quarter majors.

401-3 International Journalism. A study of the history, development, current status and implications of the press and news services of other countries, and their relationship to the international communications system. Prerequisite: senior standing.

421-4 School Publications. Designed for the prospective journalism teacher or high school publication director. Deals with practical production problems of newspapers and yearbooks.

422-3 Teaching High School Journalism. Teaching methods of journalism in secondary schools, organization and course of study, bibliography, use of journalism courses for school publications production.

431-3 Public Relations. Study of current methods of planning and executing public relations policies; evaluation of media; preparation of campaigns. Prerequisite: senior journalism majors only.

432-4 Foundations of Mass Communications Theory. Construction of communication theory, development of communication models, and relation of empirical investigations to theories of mass communication. Prerequisite: graduate standing or consent of instructor.

433-8 (4,4) Research Theory and Design. (a) Research design, sample selection, and methods appropriate to field, experimental, and survey research. (b) Research Methods. Series of research projects utilizing a variety of research methods. Class discussion precedes and follows each project. Prerequisite: 432 or consent of instructor.

442-3 The Law of Journalism. Legal limitations and privileges affecting publishing, fair comment, criticism, contempt of court, right of privacy, copyright, and legal provisions affecting advertising. Prerequisite: senior journalism majors only.

445-4 Specialized Writing. Researching and writing about areas of special interest such as education, mental health, and home economics. Prerequisite: consent of instructor.

450-3 Mass Media Management. Basic economic theory of the firm. Management science. Operations research. Computer utilization. Media production technology. Readings and seminar discussions emphasizing application of these areas to mass media management. Prerequisite: 370, 383a, and GSB 211a, or equivalent, or consent of instructor.

455-3 Seminar on Media Problems. Readings and weekly seminar discussions on the role of the journalist in seeking solutions to the problems of mass media. Prerequisite: senior standing and consent of instructor.

475-3 Cablecommunication System Operations. The principles and practices of cablecommunication system management. The procurement and allocation of resources are examined with a view toward seeking a balance between the public interest of the municipality and its citizens and the private interest of the franchisees.

479-3 Role of Advertising in our Society. An exhaustive analysis of the literature covering such topics as: definitions and scope of advertising; advertising and the press; advertising as a social and economic force; evaluation of advertising, policies as related to the practices of specific business firms.

494-3 Criticism and Reviewing. Theory and practice of the critical analysis of literature and other arts.

- 498-1 to 12 Readings. Supervised readings. Not more than 6 hours may apply toward the master's degree. Prerequisite: consent of instructor.
- 501-3 Literature of Journalism.
- 530-2 Seminar in Press Freedom.
- 532-4 Seminar: Mass Communication Theory.
- 533-1 to 12 Research Problems in Journalism.
- 540-3 Philosophy of Journalism.
- 545-3 Studies in Journalism History.
- 590-3 Seminar in Journalism History.
- 591-1 to 12 Topical Seminar in Communication.
- 592-3 Communication and National Development.
- 595-0 Graduate Seminar.
- 598-1 to 12 Readings.
- 599-1 to 8 Thesis.
- 600-1 to 48 Dissertation.

Language Arts and Social Studies

Major

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i>	68
Must include GSA-16 hours; GSB 202, GSD 107, 101, 102, 153; GSE 201 and 2 hours in 100-114	
<i>Language Arts Requirements</i> ¹	55 ¹
GSD 101, 102, 153	
GSC 200, 201, 202, 210	
English 290, 300, 302b, 302a or c, 309b, 309a or c	
GSC 365 or English 471	
Instructional Materials 406 or English 410	
One course selected from GSC 209, 317 or English 302, 309 or GSC 393	
<i>Social Studies Requirements</i> ²	56 ²
GSB 104, 300a,b,c, 211, 212, 203	
Geography 300, 302	
Government 232	
History 200a,b,c	
Senior elective hours: World history-3, American history-3, Geography-3	
<i>Professional Education Requirements</i>	36
Guidance 305 (GSB 202 is prerequisite)	
Secondary Education 310, 315, 340, 407, 352-16	
<i>Electives</i>	9
<i>Total</i>	186

¹ Nine hours of GSD plus 13 hours of GSC courses required for major also satisfy General Studies requirements.

² Any 16 hours of GSB courses required for major also satisfy General Studies requirements.

Law Enforcement

Program, Major

(Also See Correctional Services)

Law enforcement is rapidly developing as a truly professional field as a wider range of knowledge and ability is required to meet the complexities of modern society.

The law enforcement student will not be enrolled in a program of “police skills” that would be taught in a police academy, such as firearms, crowd control, or personal defense. He will learn methods of crime control, criminal behavior, methods of crime detection, community problems in law enforcement, criminal law, and police administration, and will develop an understanding of people and of interpersonal relationships.

The student will spend one term prior to graduation working with a police agency under supervision.

Working police officers may enroll in the program on a part-time basis with the assurance that faculty members will help them to arrange classes compatibly with their duty schedule. In many cases, part-time students can take advantage of classes offered at various off-campus locations throughout the area.

An advisory committee made up of persons active in law enforcement assists the program. Current members are: Don Pebbles, criminal justice planner, Southeast Regional Planning and Development Agency, Harrisburg; James T. Moreland, special agent in charge, Springfield office of the Federal Bureau of Investigation; Capt. Dwight Pittman, commander of the Illinois State Police Training Academy, Springfield; Joe Dakin, Chief of Police, Carbondale; Thomas Leffler, security officer, Southern Illinois University at Carbondale; and Robert McCann, director of the Chicago City Police Training Academy.

A minimum of 96 hours credit is required for this major.

Associate In Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Law Enforcement

GSB 104, 202, 203, 212	16
GSD 101, 102, 153	9
Administration of Justice 201	4
Government 232	4
Sociology 372	4
Vocational and Technical Careers 102	3
Correctional Services—Law Enforcement 103, 105, 107, 113, 115, 205, 208, 209, 210, 213, 215, 221, 225	56
<i>Total</i>	96

Courses

(See Correctional Services and Law Enforcement)

Liberal Arts

Courses

259-3 to 80 Transfer Credit. For transfer of elective credits in Liberal Arts and Sciences subjects when credit is to be established by department evaluation. Prerequisite: junior standing.

300-1 to 4 Individual Interdisciplinary Readings. Readings of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines. Concurrent registration in 301 and/or 302 beyond a total of 4 hours per quarter requires the dean’s permission. Prerequisite: advance approval by the dean.

301-1 to 4 Individual Interdisciplinary Research. Research of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines. Concurrent registration in 300 and/or 302 beyond a total of 4 hours per quarter requires the dean’s permission. Prerequisite: advance approval by the dean.

302-1 to 4 Individual Interdisciplinary Field Study. Field study of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines. Concurrent registration in 300 and/or 301 beyond a total of 4 hours per quarter requires the dean's permission. Prerequisite: advance approval by the dean.

303-2 to 4 Interdisciplinary Studies. Offered in a variety of forms, including readings, research, or field study. Initiated by at least two faculty members from different departments. Approval by the dean is required during the quarter prior to its offering. May be repeated.

Linguistics

Department, Minor, Courses

The minor in linguistics (a minimum of 28 hours) draws upon the basic courses of the Department of Linguistics as well as upon the offerings of a number of other departments. It introduces the student to the structure of language, the historical development of languages, and the relation of language to the rest of culture. A minor in linguistics would be of special interest to students in anthropology, computer science, English, foreign languages, mathematics, philosophy, psychology, sociology, speech, and speech pathology.

<i>Required Core Courses</i>	20
Linguistics 300 or 401a, 401b, 402a, 403 or 405, 408	
<i>Electives</i> (Select from courses listed below)	8
Anthropology 401, 413, 418, 470; Engineering 222; English 300, 403; Foreign Languages 453; French 352; GSC 363; German 413; Linguistics 402b,c, 404, 415, 430, 431, 450, 497, 506a,* 570 *; Mathematics 426a,b; Philosophy 320, 420, 424, 425, 482; Psy- chology 315, 407; Romance Philology 410; Russian 415; Spanish 415; Speech 445a,b,c.	
<i>Total</i>	28

The elective courses for a minor must be worked out with an adviser and the chairman of the Department of Linguistics. Students who expect to take a minor in linguistics are advised to choose GSD 104 for the three-hour communications requirement under Area D.

* Only outstanding students who have the special permission of the graduate dean may enroll in 506a or 570 as undergraduates. The usual procedures for obtaining the permission of the graduate dean are to be followed for each student.

A special major in linguistics is also available. Consult the chairman of the department for additional information.

Courses

Students in courses in linguistics may be asked to purchase up to \$3.00 worth of workbooks and paper backs per course.

100-9 (3,3,3) Oral English for Foreign Students. Four class hours of oral English and one hour in-class composition. An elective for foreign students admitted to the University in a graduate or undergraduate program. Cannot substitute for English 105, but may be taken concurrently with 105. May be taken singly. Mandatory Pass/Fail.

300-4 Introduction to Linguistics. An introductory course dealing with the nature and structure of language.

401-8 (4,4) Introduction to Linguistics. (a) General linguistics, fundamentals of the nature, structure, and functioning of language. (b) Structural linguistics, methods of descriptive linguistics, and analytical procedures. May be taken singly.

402-9 to 12 (4,4,1-4) Phonetics. (a) Theory and practice of articulatory

- phonetics. (b) Theory and practice of instrumental phonetics. Prerequisite: 402a. (c) Transcription laboratory. Prerequisite: 402a.
- 403-4 English Phonology.** Analysis of spoken English, American, and British. Prerequisite: 401a, or b; and 402a, or equivalent.
- 404-4 American Dialects.** Phonemics of American English. Emphasis in the major American dialects. Prerequisite: 401a, or b; and 402a, or equivalent.
- 405-4 Structural Phonology.** Survey of phonological theory (phonemic and distinctive feature theory); examination of various phonological systems. Prerequisite: 402a.
- 408-4 Introduction to Transformational Syntax.** Basic concepts and formalism of transformational generative grammars. Prerequisite: 401a or consent of instructor.
- 410-15 (5,5,5) Intermediate Uncommon Languages.** Review of structure of modern spoken language. Introduction to written language. Emphasis on conversational style. (g,h,i) Vietnamese (p,q,r) Lao (s,t,u) Cambodian. The first two quarters carry undergraduate credit only. Prerequisite: GSC 250 or equivalent.
- 415-4 Sociolinguistics.** History, methodology, and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, marginal languages, and language planning. Prerequisite: one course in linguistics or consent of instructor.
- 420-12 (4,4,4) Advanced Uncommon Languages.** Advanced conversation and reading of third-year level materials in preparation for classes conducted in the language. Review of grammar. (g,h,i) Vietnamese (p,q,r) Lao (s,t,u) Cambodian. Prerequisite: 410 or equivalent.
- 430-20 (4,4,4,4,4) Grammatical Structures.** Detailed analysis of the structure of particular languages. May be repeated. Prerequisite: 401a and b, or equivalent.
- 431-4 The Structure of the English Verb.** Analysis of the English verb system. Special study of the modals and non-finites.
- 450-4 to 12 (4,4,4) Language Families.** Synchronic survey of language families or sub-families. May be repeated. Prerequisite: 401 a and b, or equivalent.
- 497-2 to 12 Readings in Linguistics.** Directed readings in selected topics. Prerequisite: consent of instructor and undergraduate status.
- 501-4 Contrastive Linguistics.**
- 504-4 Dialectology.**
- 505-4 Generative Phonology.**
- 506-8 (4,4) Historical Linguistics.**
- 508-4 Advanced Transformational Syntax.**
- 510-4 History of Linguistics.**
- 530-4 to 12 Historical Grammatical Structures.**
- 540-2 to 8 Studies in Linguistics.**
- 550-8 (4,4) Pro-seminar in Linguistics.**
- 570-3 Classroom Techniques in Teaching English as a Foreign Language.**
- 571-3 (1,2) Language Laboratories.**
- 572-3 Preparation of Teaching Materials in English as a Foreign Language.**
- 573-3 Practicum in EFL Materials Development.**
- 580-4 Seminar in Special Problems of English as a Foreign Language.**
- 581-6 (2,2,2) Methods Practicum in English as a Foreign Language.**
- 585-2 Teaching College Composition to Foreign Students.**
- 596-4 Stylistics.**
- 597-2 to 12 Readings in Linguistics**
- 599-2 to 9 Thesis.**

Marketing

Department, Major, Courses

Marketing deals with all activities required to link production of goods and services with their use. The emphasis in all courses is upon the development of an analytical approach to the creative solution of marketing problems. The department will assist students in arranging suitable course sequences to prepare for careers in such fields as retailing, sales manage-

ment, industrial marketing, physical distribution, promotional management, international marketing, and marketing administration.

Bachelor of Science Degree, SCHOOL OF BUSINESS

<i>General Studies Requirements</i>	68
For detailed description see School of Business information page 57.	
<i>Professional Business Core</i>	56-57
See page 57.	
<i>Requirements for a Major in Marketing (Effective Fall 1972)</i> ...	28 *
Marketing 329, 363, 390, 493	16
Marketing Electives	12
<i>Electives</i>	33-34
<i>Total</i>	186

* For information regarding requirements for concentration in marketing effective through Summer 1972, consult department or Academic Advisement Center, School of Business.

Courses

300-4 Internship in Marketing. Supervised work experience that relates to the student's academic program and career objectives. Not repeatable for credit. Prerequisite: prior approval of the department. Mandatory Pass/Fail.

301-4 Marketing Fundamentals. Management of a firm's marketing function within a dynamic operating environment. The role of marketing within the firm and its relationship to the economy. Prerequisite: Accounting 251a, Economics 214.

303-4 Behavioral Science in Business. Examination of the underlying determinants of human behavior in business settings. Prerequisite: GSD 110, GSB 201, or equivalent, or consent of instructor.

326-4 Quantitative Techniques in Marketing. An introduction to and survey of, mathematical tools of decision making in marketing situations. Application of these techniques to the analyses of marketing problems is emphasized. Prerequisite: 301, Mathematics 150a or 140a.

329-4 Marketing Channels. The methods and processes used in the distribution of consumer and industrial products and services. Emphasis is upon the ways in which certain basic distribution functions are carried out in an integrated channel system. The role of a variety of manufacturers, wholesalers and retailers as parts of this system is analyzed. Prerequisite: 301.

335-4 International Marketing. Analysis of international operations. Emphasis on the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms. Prerequisite: 301, consent of instructor.

341-4 Transportation. Transportation in business. Organization and economic aspects of the United States transportation system including rail, highway, air, pipeline, and water transportation. Regulatory problems of transportation. Current transportation developments and situations. Prerequisite: one course in economic principles.

363-4 Promotional Concepts. The role of promotional activities in the firm's marketing function. Advertising, personal selling, and sales promotion. The relationship of consumer behavior to the area of promotion. Prerequisite: 301.

390-4 Marketing Research and Analysis. The basic procedures and theory appropriate to solving various types of marketing problems in the context of business organization and decision models. Prerequisite: 301, one course in statistics.

401-4 Retail Management. Designed to present the basic principles and decision areas such as location, layout, organization, personnel, merchandise control, sales promotion, advertising, etc., of retail merchandising through a managerial perspective. Prerequisite: 301.

438-4 Sales Management. Analysis of the management of the sales effort within

the marketing system. Philosophies, concepts, and judgement criteria of the sales function in relationship to the total marketing program. Prerequisite: 363.

439-4 Industrial Marketing. Analysis of decision criteria related to the marketing of industrial products. Emphasis on program development, formulation of the marketing mix, and the behavioral relationships in the modern industrial organization. Prerequisite: 363.

450-4 Introduction to Managerial Marketing. Designed to give an over-all view of the field of marketing and the field of marketing policy decisions. Cases are used to illustrate theory covered. Prerequisite: Restricted to graduate students.

452-4 Physical Distribution Management. Integration of physical distribution activities of the firm into a system. Transportation and location as elements of the system. Inventories and service as constraints upon the system. Planning, operation, organization, and management of the system. Prerequisite: 301, Economics 215.

463-4 Advertising Management. Advertising from the viewpoint of business management. Develops an understanding of the role of advertising under various conditions. Problems of integrating advertising strategy into the firm's marketing program. Prerequisite: 363, 390.

493-4 Marketing Policies. A comprehensive and integrative view of marketing policy formulation. Marketing decisions analyzed and discussed. Prerequisites: 363, 390, and 4 additional hours in Marketing.

499-4 Undergraduate Seminar in Marketing. Aspects and issues in the field of marketing. Enrollment limited to senior students of high academic standing. Prerequisite: invitation; completion of 16 hours of Marketing.

Mathematics

Department, Major, Courses

Students intending to major in mathematics must plan schedules of mathematics courses numbered above 299 with a mathematics adviser. Mathematics grade must be at least C in courses numbered 150 or above.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Mathematics</i>	68
GSC-FL (French, German, or Russian recommended)	9 *
Mathematics 111-10 or advanced standing	(5), 5
Mathematics 150-10, 252-7, 221-3 (A student may take 150 and 252 by proficiency examination or he may substitute honors calculus, which allows extra credit, for them	20
Computer Science 202	4
Mathematics electives numbered above 299, excluding 308, 309, 311, 321, 410, 411, and 412, but including 319 (or 419a), 352 (or 452a), and at least 15 hours in courses other than 432 numbered above 399 and including one of the following two-quarter sequences: 419-6; 421-6; 426-6; 428, 429-6; 433-6; 435-6; 452-6; 475-6; 480-6; 483-6	30
Physics 211 (A block of courses on the approved list in the department office may be substituted for this; physics will count as GSA hours.)	(9)
<i>Electives</i>	50
<i>Total</i>	186

* GSC For. Lang. does not satisfy GSC requirements for a major in the College of Liberal Arts.

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i> (must include GSB 202)	68
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<i>Requirements for Major in Mathematics</i>	68
GSC-FL (French, German, or Russian recommended)	9
Mathematics 111-10 or advanced standing	(5), 5
Mathematics 150-10, 252-7, 221-3 (A student may take 150 and 252 by proficiency examination or he may substitute honors calculus, which allows extra credit, for them)	20
Computer Science 202	4
Mathematics electives numbered above 299, excluding 308, 309, 321, 410, 411, and 412, but including 311, 319 (or 419a), 335a, and at least 12 hours in courses numbered above 399	30
Physics 211a and 212a (211b,c and 212b,c recommended; counts as GSA hours)	(4)
<i>Professional Education Requirements</i>	(4), 32
Guidance 305 (GSB 202 is prerequisite)	4
Secondary Education 310, 352-16	20
Mathematics 311	(4)
Two courses from a list of restricted professional education electives; refer to the catalog section titled Secondary Education	8
Unconditional admission with a mathematics major into the Teacher Education Program requires a 3.5 average in mathematics courses above 149, including a grade of C or better in at least two mathematics courses numbered above 299 (not including Mathematics 308, 309, 311, 321, 400, 410, 411, 412, or 432.)	
Mathematics Department approval for Student Teaching requires a 3.25 average in mathematics courses numbered above 299, including a grade of C or better in Mathematics 311 and in at least five other mathematics courses (not including Mathematics 308, 309, 321, 400, 410, 411, 412, or 432).	
<i>Electives</i>	18
<i>Total</i>	186

Honors Work

Mathematics 159 and 259 provide honors material in calculus and analytic geometry for properly qualified freshman and sophomore students. Mathematics 395 and 495 are used for individual honors work for upper level undergraduates in mathematics.

Minor

A minor in mathematics must include Mathematics 221, 252a, and at least 9 hours of courses numbered above 252a other than 308, 309, 311, 321, 410, 411, or 412. At least a C is required in all mathematics courses numbered 150 and above.

Courses

108-3 Basic Transitional Mathematics. Intermediate topics in college algebra for students of at least C ability in mathematics who intend to study calculus or to take 111b later. Prerequisite: GSD 107.

111-10 (5,5) College Algebra and Trigonometry. For students who have had one and one-half years of algebra and one year of plane geometry in high school. Must be taken in a,b sequence. Math 108 is a substitute prerequisite to 111b.

140-6 (3,3) Short Course in Calculus. Limits, derivative, applications of derivative, max-min problems from business, economics, and physics; including discrete problems via continuous models, definite integral, use of tables, functions of two variables, partial derivatives, max-min problems, Lagrange multipliers. Prerequisite: 111a.

150-10 (5,5) Elementary Calculus and Analytic Geometry. Elementary differential and integral calculus with analytic geometry and applications. Definite integral and differentiation of transcendental functions. High ability students, in particular, entering freshmen qualified to start calculus and analytic geometry, should seek advice in the Department of Mathematics concerning the advantages of taking 159. Must be taken in a,b sequence. Prerequisite: 111b.

159-14 (7,7) Elementary Calculus—Honors. An honors version of 150 covering the topics of 150 as well as additional selected topics. No student receives credit for both 150a and 159a or for both 150b and 159b. Must be taken in a,b sequence. Prerequisite: consent of department.

221-3 Introduction to Linear Algebra. Vector spaces, linear dependence, systems of linear equations, linear transformations, matrices, and inner products. Examples and elementary problems. Credit is not given for both 221 and 321. Prerequisite: 150b.

252-7 (4,3) Intermediate Calculus and Analytic Geometry. Continuation of 150. Includes differential and integral calculus, applications, introduction to solid analytic geometry, infinite series. Must be taken in a,b sequence. Prerequisite: 150b or 159b.

259-11 (6,5) Intermediate Calculus—Honors. Covers topics of 252 and additional selected topics. Either part of this course may be substituted for the corresponding part of 252. Credit is not given for corresponding parts of both courses. Must be taken in a,b sequence. Prerequisite: 150b or 159b, and consent of department.

301-3 Fundamental Concepts. An introduction to fundamental concepts of mathematics—sets, functions, and relations and their basic properties. Prerequisite: 150b or consent of department.

305-6 (3,3) Applied Mathematics for the Physical Sciences. (a) Ordinary differential equations, and applications; (b) Additional topics in applied mathematics such as finite difference methods, Laplace transforms, and Fourier series. Must be taken in a,b sequence. Prerequisite: 252b.

308-3 Structure of the Real Number System. Whole numbers, the integers, the rational numbers, and the real numbers. Other numeration systems; the laws of arithmetic; algorithms. For elementary education major only. Prerequisite: 3 hours of college mathematics.

309-3 Intuitive Geometry. Geometric transformations, congruence, symmetry, similarity, area and volume, spherical geometry, and applications. Recommended for prospective elementary teachers. May not be used to satisfy requirements for a mathematics major.

311-4 The Teaching of Secondary Mathematics. A study of the nature and objectives of the secondary mathematics curriculum. Particular attention is given to the means of introducing new ideas into the high school program. For students preparing to be certified teachers of secondary mathematics. Three lectures and two laboratory hours per week. Does not count toward a mathematics major for Bachelor of Arts degree students. Prerequisite: 319, 335a.

319-3 Introduction to Abstract Algebra. The basic abstract algebraic structures. Prerequisite: 221 or consent of department.

321-3 Elementary Matrix Algebra. Matrix operations, determinants, matrix inversion, rank and equivalence, linear equations. Prerequisite: 140a or 150a.

325-3 Introduction to Number Theory. Properties of integers. Primes, divisibility, congruences, and Diophantine equations. Prerequisite: 221 or 252a or consent of department.

335-6 (3,3) Concepts of Geometry. An elementary introduction to various geometric systems to acquaint the student with the interrelationship between geometries of current interest. Topics include axiom systems, absolute plane geometry, Euclidean geometry, and non-Euclidean geometry. Must be taken in a,b sequence. Prerequisite: 221 or 252a or consent of department.

351-3 Vector Analysis. The algebra of vectors; vector valued functions; the

gradient, divergence, and curl operators in cartesian coordinates; volume, surface, and line integrals; the Gauss and Stokes theorems; Green's identities; curvilinear coordinates and coordinate transformations; coordinate-free definitions for the gradient, divergence, curl, and Laplacian operators; invariance properties of these operators. Prerequisite: 252b.

352-3 Introduction to Analysis. A rigorous treatment of concepts introduced in elementary calculus; such as limits, continuity, derivatives, and integration. Prerequisite: 221 and 252b or consent of department.

395-2 to 12 Readings in Mathematics. Supervised reading in selected subjects. Prerequisite: 4.00 grade point average in mathematics and consent of chairman.

400-3 History of Mathematics. An introduction to the development of major mathematical concepts. Particular attention given to the evolution of the abstract concept of space, to the evolution of abstract algebra, to the evolution of the function concept, and to the changes in the concept of rigor in the development of mathematics from 600 B.C. to the present time. Prerequisite: 319 and 352 or consent of instructor. Elective Pass/Fail.

401-3 Set Theory. Ordinal numbers, transfinite induction, cardinal numbers and their arithmetic properties, Cantor theorem, Schroeder-Berstein theorem, the axiom of choice and its equivalent forms, the continuum hypothesis. Prerequisite: 319 and 352 or consent of instructor. Elective Pass/Fail.

405-3 Intermediate Ordinary Differential Equations. Topics selected from linear systems, existence and uniqueness for initial value and boundary value problems, oscillation, and stability. Prerequisite: 305b or consent. Elective Pass/Fail.

406-3 Eigenfunction Methods in Applied Mathematics. Inner product spaces; orthonormal systems; Bessel's inequality; quadratic forms; Hermitian operators; eigenfunctions and eigenvalues; minimization properties of eigenfunction; the spectral theorem for a Hermitian matrix; functions of matrices; Sturm-Liouville differential operators; convergence properties of Fourier Series; the Legendre, Laguerre, Hermite, and Tchebycheff families of orthogonal polynomials; functions of a Sturm-Liouville operator; Green's functions; the Laplacian operator in 1, 2, and 3 dimensions. Prerequisite: 221, 350b, or consent of instructor. Elective Pass/Fail.

407-4 Introduction to Partial Differential Equations. First order linear and quasilinear partial differential equations, characteristics, second order linear partial differential equations, classification of types, boundary value and initial value problems, well posed problems, the wave equation, domain of dependence, range of influence, Laplace's equation and Dirichlet problems, the maximum principle, Poisson's integral, fundamental solution of the heat equation. Prerequisite: 305b, 351 or consent of instructor. Elective Pass/Fail.

410-8 (4,4) Statistical Analysis. Service course for students using statistical methods in their research activities. May not be used to satisfy requirements for a mathematics major. Includes elements of probability, statistical estimation, tests of significance, and the analysis of the general linear model (multiple linear regression, analysis of variance, and analysis of covariance). Three lectures and two recitation hours per week. Must be taken in a,b sequence. Prerequisite: 111b or GSD 109. Elective Pass/Fail.

411-3 Sample Survey Techniques. A service course. May not be used to satisfy requirements for a mathematics major. Introduction to the practical problems involved in conducting a sample survey and a comparison of basic survey designs. Prerequisite: 410b or consent of instructor. Elective Pass/Fail.

412-3 Probability Models. Service course. May not be used to satisfy requirements for a mathematics major. Applications of probability models to a variety of problems in the social and physical sciences with emphasis given to Markov chains. Prerequisite: 410b or consent of instructor. Elective Pass/Fail.

419-6 (3,3) Algebraic Structures. A study of the properties of such basic algebraic structures as groups, rings, fields. Must be taken in a,b sequence. Prerequisite: 319 or consent of department. Elective Pass/Fail.

421-6 (3,3) Linear Algebra. The theory of determinants and systems of linear equations; vector spaces, linear independence, bases, dimension; linear transformations, change of base, similarity; quadratic and Hermitian forms, orthogonal and unitary transformations; triangular and diagonal form; eigenvalues and eigenvectors; normal matrices; nilpotent and idempotent matrices, the spectral theorem. Must be taken in a,b sequence. Prerequisite: 221 and 252a or consent of department. Elective Pass/Fail.

425-3 Theory of Numbers. Selected topics from number theory. Prerequisite: 325 or consent of instructor. Elective Pass/Fail.

- 426-6 (3,3) Introduction to Mathematical Logic.** Classical propositional calculus and functional calculi of first and second order from the primitive basis. Consistency and completeness. Validity and satisfiability. Must be taken in a,b sequence. Prerequisite: 301 or 319 or 352 or consent of department. Elective Pass/Fail.
- 428-3 Discrete Structures.** (See Computer Science 442.) Prerequisite: 301 or 319 or consent of department. Elective Pass/Fail.
- 429-3 Applied Boolean Algebra.** (See Computer Science 445.) Prerequisite: 428 or Computer Science 442. Elective Pass/Fail.
- 430-4 Projective Geometry.** Introduction to the fundamental concepts of projective geometry. Topics usually include the study of conics, polar systems of conics, homogeneous coordinates, cross-ratio, harmonic sets, duality, projectivities, and involutions. Prerequisite: 221 and 252a or consent of instructor. Elective Pass/Fail.
- 432-4 Philosophy of Mathematics.** (See Philosophy 432.) Prerequisite: Philosophy 320 or 15 hours in mathematics. Elective Pass/Fail.
- 433-6 (3,3) Introduction to Topology.** Topological spaces, continuity and homeomorphisms, construction of topologies, separation, compactness, connectedness, completeness. Must be taken in a,b sequence. Prerequisite: 352 or consent of department. Elective Pass/Fail.
- 435-6 (3,3) Elementary Differential Geometry.** (a) Classical differential geometry of curves from the modern viewpoint with emphasis on Frenet-Serret formulas. (b) Geometric aspects of surfaces, motivated by the theory of curves. Includes basic definition on manifolds (vector field, differential forms, tensors, Lie brackets), manifolds with a linear connection, Riemannian geometry, submanifolds of \mathbb{R}^n with emphasis on (Gaussian and Riemannian) curvature. Prerequisite: 221 and 252b. Elective Pass/Fail.
- 440-2 to 4¹ Modern Algebra for Teachers.** An introduction to algebra as a logical system, including groups, rings, and fields. Prerequisite: consent of instructor. Elective Pass/Fail.
- 442-2 to 4¹ Survey of Geometry.** A survey of geometry, including projective geometry, topology, etc. Prerequisite: consent of instructor. Elective Pass/Fail.
- 451-3 Introduction to the Theory of Computation.** (See Computer Science 451.) Prerequisite: 428 and either 429 or consent of instructor. Elective Pass/Fail.
- 452-9 (3,3,3) Advanced Calculus.** Fundamental concepts of analysis: limits, continuity, differentiation, and integration. Major topics include partial differentiation, vector analysis, Riemann-Stieltjes integrals, multiple integrals, infinite series, improper integrals, uniform convergence, Fourier series, and line and surface integrals. Must be taken in a,b,c sequence. Prerequisite: 352 or consent of instructor. Elective Pass/Fail.
- 455-4 Introduction to Complex Variables and Applications.** Complex numbers, analytic functions, line integrals, the Cauchy-Goursat theorem and its implications, power series, Laurent series, polar and essential singularities, analytic continuation, contour integration and the residue theorem, conformal mapping, asymptotic expansions. Prerequisite: 252b. Elective Pass/Fail.
- 460-4 Transformation Geometry.** Geometry as the study of properties invariant under congruences, similarities, affine transformations, and projectivities. Prerequisite: 319 and 335a or consent of instructor. Elective Pass/Fail.
- 472-3 Introduction to Mathematical Programming.** (See Computer Science 472.) Prerequisite: 221 or 321. Elective Pass/Fail.
- 475-6 (3,3) Numerical Analysis I.** (See Computer Science 464.) Prerequisite: 221, 305a, and Computer Science 202. Elective Pass/Fail.
- 480-6 (3,3) Introduction to Probability.** Includes probability axioms, discrete and continuous distributions, moments in terms of Riemann-Stieltjes integrals, generating functions with emphasis on characteristic functions, and elementary limit theorems. Must be taken in a,b sequence. Prerequisite: 252b. Elective Pass/Fail.
- 481-3 Elements of Stochastic Processes.** An introduction including normal, Poisson, and Markov processes. Prerequisite: 480b. Elective Pass/Fail.
- 483-6 (3,3) Introduction to Statistics.** Development of the elements of statistical theory. (a) Probability axioms, probability distributions, moments, and moment generating functions. (b) Statistical inference: estimation, testing hypotheses, and the general linear model. Not recommended for graduate students in mathematics. Must be taken in a,b sequence. Prerequisite: 252b and 221 or 321. Elective Pass/Fail.
- 486-3 Design of Experiments.** Mathematical model development of the sta-

tistical design and analysis of experiments with emphasis on practical applications. Includes completely randomized, randomized block, Latin square, split plot, incomplete block, and response surface designs, as well as factorial and fractional factorial experiments. Students who have had 580b should enroll concurrently in 1 quarter hour of 550d. Prerequisite: 410b or 483b. Elective Pass/Fail.

487-3 Nonparametric Methods in Statistics. Discussion of confidence intervals and tests of hypotheses where no functional form is postulated for the population. Students who have had 580b should enroll concurrently in 1 quarter hour of 550d. Prerequisite: 410b, 480b, or 483b. Elective Pass/Fail.

488-3 Multivariate Statistical Methods. Introduction to multivariate statistical procedures with emphasis on applications. Multivariate general linear model, principal components, discriminant analysis, factor analysis. Students who have had 580b should enroll concurrently in 1 quarter hour of 550d. Prerequisite: 410b or 483b. Elective Pass/Fail.

495-1 to 10. Special Topics in Mathematics. Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Prerequisite: consent of chairman and instructor. Elective Pass/Fail.

501-9 (3,3,3) Real Analysis.

502-3 to 18 Advanced Topics in Ordinary Differential Equations.

505-9 (3,3,3) Theory of Ordinary Differential Equations.

507-9 (3,3,3) Partial Differential Equations.

510-9 (3,3,3) Mathematical Logic.

512-3 to 18 Advanced Topics in Mathematical Logic.

520-9 (3,3,3) Modern Algebra.

522-3 to 18 Advanced Topics in Algebra.

525-3 to 18 Advanced Topics in Number Theory.

527-3 Formal Languages.

528-3 Automata Theory.

529-3 Theory of Computability.

530-9 (3,3,3) General Topology.

531-9 (3,3,3) Algebraic Topology.

532-3 to 18 Advanced Topics in Topology.

536-3 Differential Geometry.

543-4¹ Probability for Teachers.

545-4¹ Intermediate Analysis for High School Teachers.

548-2 to 4¹ Trends in School Mathematics.

550-1 to 10 Seminar.

551-9 (3,3,3) Functional Analysis.

552-3 to 18 Advanced Topics in Analysis.

555-9 (3,3,3) Complex Analysis.

560-6 (3,3) Calculus of Variations.

572-6 (3,3) Numerical Analysis II.

580-9 (3,3,3) Statistical Theory.

581-9 (3,3,3) Advanced Probability Theory.

592-2 to 4¹ Research in Mathematics Education.

595-1 to 10 Special Project.

599-1 to 9 Thesis.

600-1 to 48 Dissertation.

¹These courses are open to candidates for the Master of Science in Education degree in mathematics, and to those who have received the consent of the chairman of mathematics.

Med Prep

Courses

400-1 to 9 (1 to 3, 1 to 3, 1 to 3) Medprep Seminar. Seminar on social, professional and scientific issues of interest to students planning a career in medicine. Required of Medprep participants. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to medprep students or consent of instructor.

401-1 to 18 (1 to 6, 1 to 6, 1 to 6) Medprep Tutorial. Individual instruction in academic areas required for admission to medical school. May be taken for credit only if student has not previously received credit for formal course work covering the same material. May be taken for graduate credit only with written

permission of the relevant department and the graduate dean. Prerequisite: restricted to medprep students.

402-1 to 8 (1 to 2, 1 to 2, 1 to 2, 1 to 2) Medprep Special Problems. Seminars on selected topics and field study as needed by students preparing for medical school. May be used for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to medprep students.

Media Technology (Library Assistant)

Program, Major, Courses

The broad field of media technology offers the technician trained in the library and audio-visual sciences a multitude of opportunities in business, industry, and education.

The student in media technology (library assistant) may choose to concentrate on one of three specialties: audio-visual equipment, graphics for audio-visual centers, or library assisting.

Each student will learn the basics of media equipment, reference tools, library services, photography, cataloging, preparation of media materials, and other skills common to the field. He will work in the area of his particular interest in one of three other programs offered in the school: electronics technology for the audio-visual specialist, commercial graphics—design for the graphics specialist, and secretarial and office specialties for the library assistant.

The student should expect to spend approximately \$160 for laboratory materials.

Prior to graduation, the student will spend a term in supervised internship in the university's Morris Library, Learning Resources Service, or in other selected institutions or businesses.

An advisory committee works closely with the faculty to help keep the program responsive to changing needs in the field. Current members are: Judith Ann Williford, director of the undergraduate library, Morris Library, Southern Illinois University at Carbondale; Jerry Hostetler, director of the film library, Learning Resources Service, Southern Illinois University at Carbondale; John Bauernfeind, director of the media center, Herrin Community Unit 4; James Ubel, director, Shawnee Library System, Carterville; Joe Birk, Encyclopedia Britannica, Jackson, Missouri; and Leslie Stillely, superintendent of Educational Service Region, Marion.

A minimum of 99 credit hours is required for this major.

Associate In Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Media Technology (Library Assistant)

GSB 202	4
GSD 101, 102, 153	9
Electronic Data Processing 107	3
Secretarial and Office Specialties 101a	3
Vocational and Technical Careers 102, 104	6
Media Technology 101, 103, 107, 109, 111, 203a,b 209, 211a,b, 213a,b, 215, 217	59
Electives	13
Recommended: Selected courses in commercial graphics, electronics technology, and secretarial and office specialties.	

Total 99

Courses

101-4 Introduction to Media Equipment. Students receive extensive training in the operations, maintenance, and scheduling of projection systems (16mm, 8mm, 2 x 2 slides, overhead projectors, and projection screens) and audio systems (tape recorders, public address, record players, speakers, microphones, and audio duplication systems). Lecture 2 hours. Laboratory 4 hours.

103-4 Introduction to Media Libraries. Introduction to the broad field of media technology, with basic information about the principal fields of media services and types of media programs. Study of current trends in the media field and the opportunities available at the subprofessional level. Lecture 2 hours. Laboratory 4 hours.

107-4 Media Reference Tools. Introduction to the basic sources, resources, and reference tools used in elementary, secondary, and university media centers. Lecture 2 hours. Laboratory 4 hours.

109-4 Cataloging of Printed Media. Students will catalog and classify printed media based on present-day practice with interpretation of the Anglo-American cataloging rules. Lecture 2 hours. Laboratory 4 hours.

111-4 Cataloging of Non-Printed Media. Students will catalog, classify, and prepare for circulation all types of non-printed media such as films, filmstrips, etc. Lecture 2 hours. Laboratory 4 hours. Prerequisite: 109.

203-8 (4,4) Preparation of Media Materials. Students receive lecture/laboratory problems leading to student mastery of graphic techniques essential for the production of non-projected media materials (charts, graphs, posters, bulletin boards, silk screening, duplication processes) and projected media materials (2 x 2 slides, overhead transparencies, video tapes). Lecture 2 hours. Laboratory 4 hours. Prerequisite: 101.

209-4 to 12 Media Intern. Students receive supervised training and work experience in a professional library, audio visual center, or media center. Students submit weekly reports and term reports of their activities. Periodic discussions are led by the coordinator and attended by other students. Media intern training includes work commensurate with abilities mastered in formal class programs and wider experience obtained from direct association with professional library media staff. Prerequisite: 20 credit hours of Media Technology courses.

211-4 Media Services. Students will work with the processes connected with ordering, check-in, claiming, and organization of all types of printed and non-printed media including serial publications, government documents, etc. Lecture 2 hours. Laboratory 4 hours. Prerequisite: 103, 107, and 109.

213-8 (4,4) Introduction to Photography. Students receive extensive work with 35mm cameras, 120 cameras, 4 x 5 cameras, and darkroom techniques. Students produce photographic prints, transparencies, copy work, photomurals, 2 x 2 color slides, and photo displays. Students are required to work with studio lights, correct for color balance, and provide maintenance of equipment. Lecture 2 hours. Laboratory 4 hours.

215-4 Multimedia Techniques. Students produce one major multi-media presentation and three minor multi-media productions. Students are required to analyze their audience, select the media for the message, produce the materials, rehearse the program, present the production, and evaluate its effectiveness. Lecture 2 hours. Laboratory 4 hours. Prerequisite: 203, and 213.

217-3 Seminar and Problems. Seminar students do research of literature that relate to the state of the art of Media Technology. Field trips and guest lecturers provide important data for students to evaluate in the merging role of printed and non-printed materials as utilized in Media Technology. Lecture 2 hours. Laboratory 2 hours. Prerequisite: 20 credit hours of Media Technology courses.

Microbiology

Department, Major, Courses

Microbiology deals with the study of microorganisms, examining various forms, their classification, growth, reproduction, heredity, biochemistry, ecology, and their relationship to other living organisms including man.

The following program of study prepares one for laboratory or teaching positions after the bachelor's degree or for graduate study leading to advanced degrees.

Opportunities for specialized training in diagnostic bacteriology, virology, immunology, genetics, biochemistry and industrial processes are available.

Bachelor of Arts Degree, COLLEGE OF SCIENCE

<i>General Studies Requirement **</i>	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i> 23-27	
1 year Mathematics	(5) + 5 to 8
GSC Foreign Language	9 *
2nd year Mathematics or FL 201a,b,c	9 to 10
<i>Requirements for Major in Microbiology</i>	83
Biology 305, 306, 307, 308	16
Microbiology 301, 302	10
Microbiology electives including a minimum of 9 hours in 400-level laboratory courses in microbiology	25
Chemistry 122a,b and 123a,b, 305a,b	20
Physics 206, 207	12
<i>Electives</i>	8-12
<i>Total</i>	186

* GSC FL will not satisfy the GSC requirement in the College of Science.

** Recommended substitutions: Physics 206 and 207 or 211 and 212, or 111 and 112 for GSA 101; Chemistry 122a,b, 123a,b and 305a,b for GSA 106. Advanced standing possible in GSA 115a,b.

Minor

A minor in microbiology consists of 24 hours, to include 301, 302, and other courses determined by the student in consultation with his microbiology adviser.

Courses

301-5 Principles of Microbiology. A survey of morphology, structure, metabolism, population dynamics, and heredity of the microbial agents, with particular emphasis on pure culture methods of study of the bacteria, viruses, and related organisms. Four hours lecture, 5 hours laboratory. Prerequisite: one year of college chemistry and GSA 201a or equivalent. Elective Pass/Fail.

302-5 General Microbiology. Differentiation and classification of the bacteria and other microorganisms; their biochemical activities; genetics; biological and physical interrelationships; their prevalence and importance in air, water, foods, and soil; and their economic exploitation by man. Three hours lecture, 5 hours laboratory. Prerequisite: 301. Elective Pass/Fail.

390-2 to 5 Undergraduate Research Participation. Faculty directed individual or group research. Prerequisites: 4.00 grade point average in microbiology or consent of the department.

401-1 Undergraduate Seminar. Prerequisite: senior standing and consent of instructor. This course may be taken for credit once only. Elective Pass/Fail.

403-3 Medical Bacteriology. A general survey of the mechanisms of infection, epidemiology, and immunity and the specific application of these principles to the symptomatology, diagnosis, treatment, and control of the more common bacterial infections of man. Three hours lecture. Prerequisite: 302.

404-2 Medical Bacteriology Laboratory. Procedures for the collection and handling of medical specimens for microbial examination and for cultivation and identification of the pathogenic organisms by their morphological, biochemical, and serological characteristics. Five hours laboratory. Prerequisite: or corequisite 403.

421-3 Microbiology of Foods Lecture. The relationships of microorganisms to the preparation and preservation of foods with consideration of the laws gov-

- erning sanitation, chemical preservatives, and fair dealing of the food producer. Three hours lecture. Prerequisite: 301.
- 422-2 Microbiology of Foods Laboratory.** Methods for preservation, sanitary inspection, and microbiological examination of foods. Four hours laboratory. Prerequisite: 421 or concurrent enrollment. Elective Pass/Fail.
- 423-3 Industrial Fermentation.** The application of the chemical activities of microorganisms to the industrial production of beverages, foods, antibiotics, and various commercial chemicals. Prerequisites: 301 and organic chemistry.
- 425A-3 Biochemistry and Physiology of Microorganisms.** The chemical basis of physiological functions in microbial cells. Prerequisites: 301 and organic chemistry. Elective Pass/Fail.
- 425B-3 Biochemistry and Physiology of Microorganisms, Lecture.** Continuation of 425A. Prerequisite: 425A. Elective Pass/Fail.
- 426A-3 Biochemistry and Physiology of Microorganisms.** Four hours laboratory and one hour discussion. Prerequisite: or corequisite 425A.
- 426B-3 Biochemistry and Physiology of Microorganisms, Laboratory.** Continuation of 426A. Prerequisite: 426A.
- 441-3 Virology Lecture.** General properties; classification and multiplication of bacterial and animal viruses; lysogeny; immunological and serological reactions; relation of viruses to cancer; and consideration of selected viral diseases of animals. Four hours lecture. Prerequisite: 302. Elective Pass/Fail.
- 442-3 Virology Laboratory.** Tissue culture methods, multiplication and assay of animal and bacterial viruses, purification, electron microscopy, interference, immunity. Six hours laboratory. Prerequisite: or corequisite 441.
- 451-3 Immunology Lecture.** Antigens, antibodies, and antigen-antibody reactions in vitro and in vivo, natural and acquired immunity. Four hours lecture. Prerequisite: 302. Elective Pass/Fail.
- 452-3 Immunology Laboratory.** Natural defense mechanisms and immune response, preparation of antigens and antibodies, serologic reactions, conjugated antibodies, electrophoresis, anaphylaxis. Six hours laboratory. Prerequisite: or corequisite 451 and senior or graduate status.
- 460-3 Genetics of Bacteria and Viruses Lecture.** Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing, and reactivation phenomena. Three hours lecture. Prerequisite: 302.
- 461-3 Genetics of Bacteria and Viruses Laboratory.** Six hours laboratory. Prerequisite: or corequisite 460. Elective Pass/Fail.
- 462-3 Fungal Genetics Lecture.** Mendelian and molecular genetics of neurospora and yeast. Mutant induction, sexual crosses, tetrad analysis, linkage, and mapping. Three hours lecture. Prerequisite: Biology 305.
- 463-3 Fungal Genetics Laboratory.** Six hours laboratory. Prerequisite: or corequisite 462 and consent of instructor.
- 500-1 Seminar.**
- 502-4 Evolution of Genetic Thought.**
- 503-2 Cytology of Microorganisms.**
- 504-5 Methods of Microbiological Research.**
- 511-1 to 15 Research.**
- 528-1 to 10 Readings in Microbiology.**
- 541-6 Advanced Virology.**
- 542-3 Molecular Virology.**
- 543-3 Molecular Virology Laboratory.**
- 562-3 Molecular Genetics.**
- 599-3 to 9 Thesis.**
- 600-3 to 48 Dissertation.**

Mortuary Science and Funeral Service

Program, Major, Courses

This is the only mortuary science program offered in a public university in Illinois. It is fully accredited by the American Board of Funeral Service Education and by the Illinois Department of Registration and Education. Enrollment is limited.

The program requires two full calendar years for completion, with seven quarters of on-campus instruction and one quarter of internship in a funeral home. In addition to specialized studies which prepare the student for the profession, he will have a number of courses which lead to under-

standing of the psychological, sociological and theological implications of death.

Faculty members are licensed funeral directors and embalmers with experience in the field. Professional courses are offered in the program's own preparation room-laboratory. Graduates of the program are prepared to take the state examination for licensing.

Persons active in the profession serve on the program's advisory committee. Current members are: Roger Ytterberg, Order of the Golden Rule, Springfield; Joseph McCracken, McCracken Funeral Home, Pana; Hugh Kenny, Chicago Funeral Directors Services Association; Donald Yurs, Yurs Funeral Home, St. Charles; James Couch, Couch Funeral Home, Chicago; William Froelich, Jr., Froelich Memorial Home, Gridley; Daniel A. Justen, Peter M. Justen and Son Funeral Home, McHenry; Joseph W. Schilling, Schilling Funeral Home, Mattoon; Nyle Huffman, Huffman Funeral Home, Carbondale; James R. Wilson, Wilson Funeral Home, Marion; and Robert W. Ninker, executive secretary, Illinois Funeral Directors Association, Springfield.

A minimum of 122 hours credit is required for this major.

Associate In Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Mortuary Science and Funeral Service

GSB 202	4
GSD 101, 102, 153	9
Health Education 401	3
Psychology 305 or Health Education 312	4
Secretary and Office Specialties 110a, 226a	8
Vocational and Technical Careers 115a	4
Mortuary Science and Funeral Service 101a,b, 110, 202a,b, 203, 206, 210a, 225a,b, 230a,b, 305, 308, 350, 375, 380	67
Electives	23
Required: Choice from at least two of the following GS areas: Humanities, Social Studies, Natural Science	
<i>Total</i>	122

Courses

101-6 (3,3) The Funeral History and Customs. (a) The student will trace the history of funeral service from ancient times through modern practices. Emphasized is the development of funeral practices in the United States. Lecture 3 hours. (b) The student studies the customs of various cultures throughout the world including religious, fraternal, and military rites in the United States. He will demonstrate a knowledge of funeral service organizations and will discuss topical areas of current discussion. Lecture 3 hours. Must be taken in a,b sequence.

110-4 Embalming Chemistry. The student will study the chemistry of the body, sanitation, toxicology, chemical change in deceased human remains, disinfection, and embalming fluids. His laboratory assignments will be designed to complement the lecture material. Lecture 3 hours. Laboratory 3 hours. Prerequisite: introductory course in chemistry.

202-6 (3,3) Restorative Art. (a) The student will study the anatomical structure of the cranial and facial areas of the human skull. He will describe the facial proportions and facial markings. His laboratory assignments will consist of modeling the various facial features. Lecture 2 hours. Laboratory 3 hours. (b) The student studies the methods and techniques used to restore facial features that might have been destroyed by traumatic and pathological conditions. He will demonstrate a knowledge of color and cosmetology theory. Laboratory assignments will include modeling, applying cosmetics, making

hair restorations and he will cast facial features. Lecture 2 hours. Laboratory 3 hours. Must be taken in a,b sequence.

203-3 Introduction to Embalming. The student will be introduced to techniques of embalming through a study of the body, sanitation, embalming agents, instruments, and methods of embalming. Lecture 3 hours.

206-5 Introductory Microbiology. The student will survey microbiology: morphology, structure, physiology, populations of microbial organisms, microbial destruction, immunology, and pathogenic agents. Lecture 3 hours. Laboratory 6 hours.

210-6 (3,3) Psychology of Funeral Services. (a) This course is designed to acquaint the student with an overview of Psychology as applied to funeral service: death, grief and mourning. Lecture 3 hours. (b) The student will examine interpersonal and public relations as they affect the funeral service practitioner in his relationship with the public he serves. Lecture 3 hours.

225-8 (4,4) Embalming Theory and Practice. (a) The student studies the theory, practices, and techniques of sanitation, restoration and preservation of deceased human remains. Emphasis is placed on the anatomy of the circulatory system, the autopsied case, and cavity embalming. His laboratory experience will consist of embalming deceased human remains and other related activities. Lecture 3 hours. Laboratory 3 hours. Prerequisite: 203. (b) The student studies the contents of the thoracic and abdominal cavities and the treatment of special cases that might be encountered in the embalming process. His laboratory experience is a continuation of 225a. Lecture 3 hours. Laboratory 3 hours. Must be taken in a,b sequence.

230-6 (3,3) Mortuary Anatomy. (a) The student will study the structure and function of the human body as a whole including: general organization, structural organization, tissues, skeletal system, nervous system and circulatory system. Lecture 3 hours. (b) The student will study: physiology of circulation, glands, respiratory system, digestive system, genito-urinary system, integument and special senses. Lecture 3 hours. Must be taken in a,b sequence.

305-4 Pathology. The cause, course, and effects of disease upon the human body. Ways in which tissue changes affect the embalming process. Lecture 4 hours. Prerequisite: 230.

308-3 Public Health Laws and Regulations. The student traces the laws and regulations that govern the practice of funeral service. The Illinois license law, Vital Statistics Act, transportation rules and social security regulations. The funeral director's responsibilities and relationships to local boards of health and the State Department of Public Health are emphasized. Lecture 3 hours.

350-5 Mortuary Management. Problems involved in the practice of funeral management. Includes: the funeral director's responsibilities from the first call until the completion of the last service rendered the family, funeral home operation and records, laws, ethics, and professional regulations. Lecture 5 hours.

375-12 Funeral Service Internship. The student will spend one quarter in a University approved funeral home learning in actual practice situations: functional organization, procedures, and policies of the establishment. He will perform duties and services as assigned by preceptor and coordinator to include surveillance of and participation in the execution of total services rendered to a family. Service reports and assignments are required to be completed by the student. Prerequisite: All other requirements of the mortuary science curriculum must be met.

380-2 Funeral Service Seminar. Formal discussions are held to evaluate the experiences and progress of the participants in the internship program. Preparations are made for the board examinations. Must be taken concurrently with 375. Mandatory Pass/Fail.

Music

School, Major, Courses

The requirements for entrance and for graduation as set forth in this bulletin are in accordance with the published regulations of the National Association of Schools of Music, of which this school is a member.

Students who wish to major in music are assumed to have acquired (1) extensive experience in performing with school groups or as a soloist, (2)

basic music reading ability, and (3) a strong sensitivity to music and a desire to communicate it to others. Those without such a background will have to complete additional preparation which may extend the time of graduation beyond four academic years. Music credits earned at other accredited institutions will apply toward requirements as approved by the dean of admissions and records, but the transferring student remains subject to evaluation by the appropriate music faculty for proper placement in the music curriculum.

All freshman and sophomore students with a major or minor in music must maintain satisfactory membership in one of the University bands (001a,b, or e), choirs (002), or orchestra (003) every quarter in residence. All junior and senior students with a major or minor in music must maintain satisfactory membership every quarter in one of the following: University bands (001a,b, or e), choirs (002), orchestra (003), accompanying lab (341), opera workshop (346), or collegium musicum (414). Exception to this requirement is made during the quarter of student teaching. Students also may elect additional large or small ensembles, not to exceed three in any one quarter. Those students whose principal applied field is piano or organ must include at least one quarter of accompanying lab (341).

Each student with a major or minor in music must designate a principal applied field and complete the credits specified for this selected specialization. Changes in the principal applied field are permissible so long as the student accumulates the required total and achieves the 340 level or 440 level as explained below.

Private lessons in the principal applied field are begun at the 140 level, for 2 credits per quarter, for all students first studying applied music at the University. Upon completion of each academic year of study (three quarters) the student will advance to next level of applied study—240, 340, 440, etc.—unless the faculty jury has instructed the adviser that the change in level should be delayed or accelerated. If a student's performing ability is inadequate to cope with the easy to medium grade music expected at the 140 level, the faculty may require him or her to start with one or more quarters of beginning class instruction (010). Such credits may be counted toward the total required in the principal applied field.

Credits in one's principal applied field are based on (1) private lessons with a member of the faculty, (2) weekly participation in studio hour (Mondays, at 10:00 A.M.), and (3) recorded attendance each quarter at five campus recitals or concerts, approved for the purpose by the School of Music faculty, in which the student is not a participant. Students who fail to fulfill either (2) or (3) above will receive a grade of incomplete, which can be removed only by making up the deficiency during the ensuing quarter.

A student who wishes to attempt the performance specialization in applied music must have prior approval of the appropriate faculty jury, and thereafter enrolls for and receives two lessons per week for 4 credits per quarter. Such students must complete at least one quarter at the 440 level, as well as the required number of credits in their principal applied field, and must perform a half or full recital in their junior year and a full recital in their senior year. All other Bachelor of Music candidates must complete at least one quarter of applied music study at the 340 level, and must perform at least a half recital, or the equivalent, as determined by their applied music teacher. All recitals are given subject to supervision and approval of the appropriate faculty jury. Students majoring in music are

expected to give at least one public solo performance each year.

A student may elect private instruction in a second field or fields, but this is for one credit per quarter since the studio hour and recital attendance requirements pertain only to the principal applied field.

Three quarters of class piano (010e) are required for those specializing in instrumental music education, and six terms are required of all other candidates for the Bachelor of Music degree. Part or all of this requirement may be waived by examination with a member of the class piano faculty. Class piano should be taken concurrently with music theory (105 and 205).

All students specializing in music education must complete one quarter of class voice, unless the requirement is waived by examination, before being approved by the faculty for student teaching.

Students not majoring or minoring in music may elect private applied music instruction if (1) they can exhibit sufficient ability, (2) they are participating simultaneously in one of the University performing groups, and (3) faculty loads will allow. Registration is at one credit per term, with no studio hour or recital attendance requirement. Those wishing such instruction should arrange for an interview and audition with the appropriate instructor.

All candidates for the Bachelor of Music degree must include GSA 361–3, Acoustics, within their General Studies program. Also, 18 credits in foreign language (ordinarily, a year of French and one of German) are required of those specializing in performance with voice as their principal applied field; six of these credits may be included as part of the GSC requirement and the remainder are taken in lieu of music electives. Similarly, those specializing in Music History-Literature must include 18 credits in one foreign language.

Financial Information

Special grants and awards are available to students enrolled in the School of Music who are qualified and in need of financial assistance. Opportunities for employment in the student work program are excellent. In addition, there are scholarships (tuition awards) and loan programs available through the University financial assistance office.

Beyond the general university tuition and fees, there are no additional charges for music lessons or use of practice rooms, nor for rental of instruments used in classes or performing groups; however, the student is responsible for purchase of his own solo literature and incidental supplies for music lessons and classes. Such costs normally range from \$5 to \$15 per quarter.

Bachelor of Music Degree, COLLEGE OF COMMUNICATIONS AND FINE ARTS

<i>General Studies Requirements</i> (including GSA 361–3)	68
<i>Requirements for Major in Music</i>	114
Music (theory) 105–12; 205–12; 326–6; 441–6 (3) +	33
Music (history) 106–3 and 357–9 (4) +	8
Music 010e–6 Class Piano or waiver by examination	6
Music (applied) 12 quarters of ensemble	12
One of the specializations listed below	55
<i>Performance</i>	
Music 140–440 principal field, 12 quarters	42
Music 461 and 462	4

Music electives (voice students take second foreign language)	9
<i>Music Theory-Composition</i>	
Music 140-440, principal field, 12 quarters	24
Music 309-4, 312-6, and 409-2	12
Music 444-6 or 481-6	6
Music electives	13
<i>Music History-Literature</i>	
Music 140-440, principal field, 12 quarters	24
Music 411 music literature	9
Music electives	13
Second year of foreign language	9
<i>Electives</i>	4
<i>Total</i>	<u>186</u>

Music Education Specialization

The following meet the requirements for the State Special Teaching Certificate.

<i>General Studies Requirements</i> (including GSA 361, GSB 202, GSB 212 or 300a)	68
<i>Requirements for Major in music with specialization in music education</i>	115
Music (theory) 105-12; 205-12; 309A-2 and 326-4 or 441-4	(3) + 27
Music (history) 106-3 and 357-9	(4) + 8
Music (applied) 11 quarters of ensemble	11
Music 140-440 principal applied field (9 quarters)	18
Music 010F-1 Class Voice or waiver by examination ...	1
Music 318a,b,c-4	4
Sec. Ed. 310-4; Guid. 305-4; Ed. Ad. and Found. 355-4	12
El. Ed. 351-8; Sec. Ed. 352-8	16
One of the specializations listed below:	18
<i>Instrumental Music Education</i>	
Music 010A,B,C,D-6	6
Music 010E-3 or waiver by examination	3
Music electives	3
Music 305i-3	3
Music 305v-3 or 451-3, or choral ensembles-3	3
<i>Choral Music Education</i>	
Music 010E-6 or waiver by examination	6
Music electives	6
Music 305v-3, 300a-3, or 451-3	6
<i>Electives</i>	3
<i>Total</i>	<u>186</u>

Music and Music Education Specialization

The following is a five year baccalaureate program allowing a full emphasis in applied music, or music theory-composition, or music history-literature, plus meeting requirements for the State Special Teaching Certificate.

<i>General Studies Requirements</i> (including GSA 361-3)	68
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<i>Requirements for Major in music with a double specialization in music and music education</i>	157
Music (theory) 105-12; 205-12; 309A-2; 326-6; 441-6 .. (3) +	35
Music (history) 106-3 and 357-9	(4) + 8
Music 140-440 principal applied field	28
Music 010A,B,C,D-6 or 300A-3 and 451-3	6
Music 010E-6	6
Music 010F-1	1
Music (applied) 14 quarters of ensemble	14
Music 318a,b,c	4
Music 305i or v	3
Sec. Ed. 310-4; Guid. 305-4; Ed. Ad. 355-4	12
El. Ed. 351-4 to 8; Sec. Ed. 352-8 to 12	16
Music electives to increase specialization in applied music, theory-composition, or history-literature	24
<i>Electives</i>	9
<i>Total</i>	234

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

These courses are for students who wish to major in music as part of their general cultural education. They may also be taken as background training by those who may plan to pursue advanced studies in such fields as music criticism and aesthetics.

Required courses are 105-12, 106-3, 140-6, 205-12, 240-6, 357-9, 001 or 002 or 003-6 and electives in music to complete a total of 63 hours. Students must comply with the studio hour and recital attendance requirements listed above under general requirements in music. GSC foreign language does not satisfy the GSC requirements in the College of Liberal Arts.

Minor in Music

The minor in music includes 105-12, 106-3, 140-6, 357-9, 001 or 002 or 003-3 for a total of 33 hours. Students must comply with the studio hour and recital attendance requirements listed above.

Courses

001-5 (1,1,1,1,1) Band. (a) Saluki Marching Band, (b) Symphonic Band, (c) Stage Band. Prerequisite: consent of instructor. (d) Laboratory Band, and (e) Wind Ensemble. Prerequisite: e by audition.

002-8 (1,1,1,1,1,1,1) (a) University Choir, (b) University Singers, (c) Male Glee Club, and (d) Women's Choral Ensemble. (e) Angel Flight Angelaires. (f) Southern Singers. (g) SIU Chorale. (h) Opera Chorus. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisite: consent of instructor.

003-2 Orchestra.

010-1 to 15 Class Applied Music. Offered in all areas of applied music except organ. These courses include the minimum instruction required for passing the proficiency examinations in piano and voice and they offer practical training in the basic principles of playing the instruments of the orchestra and band. They also include introductory techniques and methods for teaching instrumental and choral groups in the elementary and secondary schools.

a. Strings

b. Woodwinds

c. Brass

d. Percussion

e. Piano

f. Voice

g. Guitar

May be taken in any sequence. Each area offers graded instruction in the

various instruments at one credit per quarter, and may be repeated until the top level is reached. Prerequisite: major or minor in music, elementary education, or early childhood.

105-12 (4,4,4) Theory of Music. Fundamentals of music in sight singing, ear training, harmony, and keyboard harmony. For those planning a major or minor in music. Assumes performing ability, music reading facility, and basic keyboard facility or enroll concurrently in 010E. Prerequisite: 200 or music reading facility.

106-3 Survey of Music Literature. Characteristic forms and styles. Analysis and listening. Examples from the leading composers of each era. Prerequisite: major or minor in music.

140, 240, 340, 440, 540-1 to 4 Private Applied Music. Offered at 5 levels in the areas listed below. Prerequisite for 140: major or minor in music, or consent of instructor. Those with major or minor register for 2 credits unless previously approved for emphasis in applied music by their applied jury's; all others register for 1 credit. Requirements include weekly lesson time and studio hour, regular practice periods, and attendance at a specified number of recitals. May be repeated for three quarters at each level, unless applied jury requires additional quarters.

- a. Violin
- b. Viola
- c. Cello
- d. String Bass
- e. Flute
- f. Oboe
- g. Clarinet
- h. Bassoon
- i. Saxophone
- j. Percussion

- k. Piano
- l. French Horn
- m. Trumpet
- n. Trombone
- o. Tuba
- p. Baritone
- q. Voice
- r. Organ
- s. Harpsichord

200-3 Fundamentals of Music. Rudiments of music for those with little or no musical background. Recommended as a course preliminary to 300 (not for music concentrations). May be taken concurrently with 010e.

205-12 (4,4,4) Theory of Music. Advanced harmonic techniques, modulation, altered chords, chromatic harmony, counterpoint, and introduction to contemporary harmonic principles. Must be taken in a,b,c sequence. Prerequisite: 105c.

240-1 to 4 Private Applied Music. (See Music 140).

300-9 (3,3,3) Music Education—Elementary. Teaching music in the elementary grades. (a) For music majors only; (b) For nonmusic majors only, emphasizing work in grades 4-6; (c) For nonmusic majors only, emphasizing work in grades K-3. Prerequisite: for a, 105c; for b, 200 or equivalent; for c, 010e, or equivalent.

302-6 (3,3) Music Education. (a) Music in Special Education. (Same as Special Education 302a.) For non-music majors only. Prerequisite 200 or equivalent. 010G, class guitar recommended as an elective. (b) Music in Early Childhood. For non-music majors only. Prerequisite: one quarter of class piano or equivalent.

305I-3 Instrumental Problems and Materials. Administration of the school instrumental music program. Emphasis on library, physical facilities, organization of the marching band, arranging music for out-of-door performances.

305V-3 Vocal Problems, Materials, and Conducting. Vocal and psychological problems in handling choral groups, reading and acquaintance with a variety of choral materials at the high school level, and interpretation through conducting techniques.

309-4 (2,2) Arranging. (a) Rudiments of arranging, choral and instrumental. (b) Techniques of arranging for the small ensemble. Must be taken in a,b sequence. Prerequisite: 105c.

312-2 to 6 Composition. Original composition in the smaller forms for piano, voice, string quartet, and other small combinations. Prerequisite: 205c.

315-2 Opera Repertory.

318-6 (2,2,2) Conducting. (a) Basic conducting techniques; (b) Choral or instrumental conducting techniques. Prerequisite: 318a. (c) Conducting. Prerequisite: 318a.

326-6 (2,2,2) Analysis. The element of structure, form, and design in musical composition. Prerequisite: 205c.

331-2 Jazz Improvisation. Ear training, phrasing in extemporaneous playing,

use of chord symbols and chord progressions, special effects peculiar to jazz playing, and styles of playing. Prerequisite: 205c or audition.

340-1 to 4 Private Applied Music. (See Music 140.)

341-1 to 6 Accompanying Lab. A performance laboratory for students whose principal instrument is piano and who have attained sufficient skill to accompany the music soloist or performing group.

346-2 to 36 Opera Workshop. May be repeated for credit.

347-2 to 36 Music Theater Workshop. May be repeated for credit.

357-9 (3,3,3) Music History and Literature. Prerequisite: 105c, 106, and junior standing.

365-6 (1,1,1,1,1) Chamber Music. (a) Vocal; (b) String; (c) Woodwind; (d) Brass; (e) Percussion; (f) Keyboard. Any part may be repeated twelve quarters. Prerequisite: consent of instructor.

370-3 American Folk Music. American folk music from its foreign heritage to its current manifestations.

375-2 Advanced Aural Skills. Intensive study of intervals, chords, harmonic and melodic movement, rhythmic patterns, musical texture and structure, aural analysis. Prerequisite: 205c.

405-3 Seminar in Instrumental Music Education. Advanced problems of administration and supervision of public school instrumental music programs, selection of appropriate materials for study and development, rehearsal techniques, preparation and techniques for performances of all types. Prerequisite: 305I.

409-2 Band Arranging. Advanced methods and techniques in arranging for the concert and marching bands from public school to collegiate level. Includes methods of transcribing from orchestral, organ, and piano literature. Prerequisite: 309a or equivalent.

411-15 (3,3,3,3,3) Music Literature. (a) Symphonic. Development of the symphony and the symphonic poem to 1900; (b) Choral. The literature of the larger vocal forms such as the cantata and oratorio to 1900; (c) Chamber Music. Chamber music literature from the Renaissance to the present. (d) Piano. From the beginning to the present, including an introductory study of early harpsichord literature. (e) Organ. From the early Baroque to the present. Prerequisite: 357a,b,c or consent of instructor.

414-2 to 6 Collegium Musicum. Practicum in the preparation and performance of music from early times to the classical period. Prerequisite: Music major and/or consent of the department.

420-1 to 3 Music Education Practicum. A shop-laboratory course dealing with the selection, adjustments, maintenance, and repair of musical instruments.

430-2 Stage Band Arranging. The study and analysis of jazz harmony, melody, and rhythm as applied to modern instrumentation. Workshop wherein arrangements are written and played. Prerequisite: 309a.

440-1 to 4 Private Applied Music. (See Music 140.)

441-6 (2,2,2) Counterpoint. (a) 16th Century Counterpoint. Special counterpoint and creative writing in the style of Palestrina and his contemporaries. Prerequisite: 105c; (b) 18th Century Counterpoint. Analysis and creative writing in the contrapuntal-harmonic technique of Bach and his contemporaries. Prerequisite: 105c; (c) Canon and Fugue. Analysis and creative writing of the larger imitative forms. Prerequisite: 441b.

444-2 to 6. Intermediate Composition. Required of undergraduates with specialization in theory-composition, culminating with original works in contemporary idioms. Taught by individual instruction. Prerequisites: 312-6.

447-6 (3,3) Electronic Music. (a) Introduction to classical studio equipment and techniques; use of voltage controlled equipment. Individual laboratory experience available. (b) Emphasis on creative projects, more sophisticated sound experimentation and analysis. Enrollment limited. Must be taken in a,b sequence. Prerequisite: 499 or GSA 361; consent of instructor required.

451-2 to 3 Teaching General Classroom Music.

453-2 to 6 Choral Materials and Techniques. Demonstration and performance of choral rehearsal procedures; developing tone, diction, blend, and balance; concert production; performance of selected choral materials appropriate for junior and senior high school. Prerequisite: consent of instructor.

454-2 to 6 Instrumental Materials and Techniques. Demonstration and performance of instrumental music rehearsal procedures; developing tone, articulation, blend, and balance; concert production; performance of selected materials appropriate for junior and senior high school. Prerequisite: consent of instructor.

- 455-2 to 6 **Elementary Music Education Workshop.**
- 456-6 (3,3) **Music for Exceptional Children.** (a) Theories, applications, and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar, and tuned and untuned classroom instruments. (b) Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Prerequisite: Must be taken in a,b sequence. 302a or consent.
- 460-3 **Teaching Music Appreciation.** Principles and methods for secondary schools and colleges; theories upon which various methods and principles are based.
- 461-2 **Teaching Techniques and Materials for the Beginning and Intermediate Levels.** Designed to meet the needs of applied students in the Bachelor of Music or Master of Music degree programs in which the problems of private studio teaching and college-level teaching are discussed.
- 462-2 **Teaching Techniques and Materials for the Advanced Student.** Prerequisite: 461.
- 468-2 to 12 **Music Productions.** Study of the techniques involved in staging operas and musicals.
- 471-6 (3,3) **Ethnomusicology.** (Same as Anthropology 471) A survey of theory, method, and form in ethnomusicology, with concentration on selected geographical areas. (a) Oceania, Asia, and Africa. (b) Middle East, Europe, and the New World.
- 481-1 to 6 **Readings in Theory.**
- 482-1 to 6 **Readings in Music History and Literature.**
- 483-1 to 6 **Readings in Music Education.**
- 499-1 to 12 **Independent Study.** Opportunity for the capable student to engage in original investigations with faculty specialists. May be repeated for credit. Prerequisite: consent of instructor.
- 501-3 **Introduction to Graduate Study in Music.**
- 502-6 (2,2,2) **Analytic Techniques.**
- 503-3 to 4 **Objective Research Techniques in Music Education.**
- 504-6 (3,3) **Medieval and Renaissance Music.**
- 505-3 **Music of the Baroque Period.**
- 506-3 **Music of the Classical Period.**
- 507-3 **Music of the Romantic and Impressionistic Periods.**
- 508-3 **Music of the Twentieth Century.**
- 509-3 **The History and Philosophy of Music Education.**
- 512-3 **History of Opera.**
- 522-3 **Seminar: Music History and Literature.**
- 531-2 to 9 **Advanced Composition.**
- 535-3 **Contemporary Idioms.**
- 540-1 to 4 **Private Applied Music.** (See Music 140.)
- 545-3 to 9 **Pedagogy of Music Theory.**
- 546-3 **Musical Aesthetics.**
- 550-3 **Administration and Supervision of Music.**
- 556-2 to 6 **Advanced Conducting.**
- 560-2 to 3 **Seminar in Music Education.**
- 566-1 to 12 **Instrumental Ensembles.**
- 567-1 to 12 **Vocal Ensembles.**
- 568-2 to 12 **Opera Workshop.**
- 595-1 to 9 **Music Document.**
- 598-6 **Graduate Recital.**
- 599-3 to 9 **Thesis.**

Nursing

Pre-professional Program

The Nursing Division of Southern Illinois University at Edwardsville, offers an educational program leading to a Bachelor of Science degree in Nursing. The curriculum is designed to prepare qualified individuals to function competently as beginning professional nurse practitioners; to participate in providing a broad scope of health care in a variety of settings; to obtain a foundation for continued growth and graduate education. The curriculum assists students in developing the behaviors and abilities necessary to function therapeutically with people while achieving

greater self-direction, self-realization and professional identity in an era characterized by change.

The first two years of the four-year program may be completed at Southern Illinois University at Carbondale. During the first two years, the student must successfully complete all courses prerequisite to the nursing major. The student must then transfer to Southern Illinois University at Edwardsville at the beginning of the summer quarter or fall quarter after the sophomore year.

Required Courses for the First Two Years

GSA 101-4, 115-8, 209-4	16
GSB 202-4, 203-4, plus GSB electives	22
GSC electives (recommend GSC 208, one fine arts, and one literature course)	19
GSD 101, GSD 102, GSD 152 or 153, GSD 107, GSD 110	17
Chemistry 110-4, 240-4, 350-4	12
Microbiology 301	5
Physiology 300b	5

All students are strongly urged to seek quarterly academic advisement. The grade of C or above is required in all nursing courses, all science courses, and general studies area A.

Occupational Education

Department, Major, Courses

(Formerly Technical and Industrial Education)

Programs are designed to prepare persons for teaching, supervisory, and leadership roles in occupational education in schools, colleges, and industry. Students are made aware of and become knowledgeable about roles, relationships, and expertise in a variety of enterprises.

Enterprise teaching (formerly industrial arts) encompasses a broad area of study in elementary and secondary schools. It involves the study of (1) technological aspects of productive society under the headings: visual communications; energy conversion and power transmission; materials and processes; and electronics and instrumentation and (2) human aspects of the world of work in courses such as industrial sociology, industrial psychology, management and economics.

Secondary occupational teaching concerns specialized instruction in the vocational-technical occupations of machine-tool, electronics, drafting, automotives, nursing and other health, industrial-oriented, and personal and public service occupations. Persons following this program are certified to teach in high schools and area vocational schools. They may also teach in industry, private schools, and community junior colleges.

Occupational teaching involves instructing youth and adults in highly skilled occupational areas such as, dental hygiene, electronics, practical nursing, automotives, aviation, health, and commercial art, which require basic and intermediate knowledge of science and mathematics as well as advanced knowledge of applications in a defined line of endeavor.

Persons who wish to complete a degree immediately after high school are advised to prepare for enterprise teaching. People with work experience or post-secondary technical or vocational education in a technical institute or junior college are advised to prepare for secondary or technical teaching.

Bachelor of Science, COLLEGE OF EDUCATION

<i>General Studies Requirements</i> *	68
Guidance and Educational Psychology 305	4
GSD Mathematics or Mathematics-8	(5) + 3
Occupational Education 485, 493	6
<i>Specialization Groupings</i>	111
<i>Enterprise Teaching</i> : 100, 201-8, 305-8, 207, 307, 310-8, 420-8, 421, Sociology 338 or Psychology 323 or Psychology 320; Economics 214, 215; Administrative Sciences 340, 341; Educational Administration and Foundations 355; Secondary Education 310, 352-16; electives 19.	
<i>Secondary Occupational Teaching</i> : ** concentration specialty 50, 319-24, 488, 489, 490; Educational Administration and Foundation 355; Secondary Education 310, 352-16; electives 7.	
<i>Occupational Teaching</i> : ** concentration specialty 60, supporting areas 10, 319-24, 419-8, 488, 489, 490.	
Total	192

* General Studies Requirements for Occupational Education

GSA 101-4, 106-4

GSB 202-4, 212-4

GSC—Educational Administration and Foundations 355-4

GSD 101-3, 102-3, 152 or 153-3, GSD mathematics-8 or mathematics-8

GSE 201-3

** Students with industrial related teaching specialties are required to have three to six hours of graphics, depending upon adviser's evaluation.

Courses

100-4 Introduction to Enterprise. Classroom, laboratory, and library. Emphasis on instructing children and youths in career opportunities. Eye protection is required. Safety glasses may be purchased for approximately \$4.50.

201-6 (3,3) Communications. (a) Introduction to the language of industry involving technical sketching, projections and developments, graphic symbolism, printing, duplicating, photography, and copying. (b) Advanced concepts and techniques involving graphic projections, intersections, and developments; relief, offset, and silk screen printing; mimeograph, xerography, photography, and other processes. Eye protection is required. Safety glasses may be purchased for approximately \$4.50. A required apron may be purchased for approximately \$2.00. Elective Pass/Fail.

207-4 Energy Conversion Systems. Analysis by type, cost, and utilization factors of natural power sources, heat engines, turbines, electro mechanical converters, direct converters, and chemical converters. Develops concepts of input, output, and efficiency factors. Eye protection is required. Safety glasses may be purchased for approximately \$4.50. Elective Pass/Fail.

259-3 to 80 Occupational Subjects. This is a designation for occupational credit earned or for occupational proficiency. Credit is established by departmental evaluation.

302-4 Construction Methods for Primary Teachers. Various media such as wood, metal, and paper. Acquainting the primary teacher with the materials, tools, and processes which students at the primary level can manipulate and use in the classroom. Laboratory. Eye protection is required. Safety glasses may be purchased for approximately \$4.50. Miscellaneous material from local hardware stores will cost approximately \$1.50.

303-4 Diversified Crafts for Teachers and Recreational Leaders. Experience in constructional activities involving the use of wood, metals, leathers, plastics, reed, raffia, clay, and other materials adaptable to the needs and interests of camp counselors and elementary school leaders. Laboratory. Eye protection is required. Safety glasses may be purchased for approximately \$4.50. Miscellaneous material from local hardware stores will cost approximately \$1.50.

305A-4 The Behavior of Materials. The mechanical, chemical, electrical, thermal, and optical properties of solid, liquid, and gaseous materials. Emphasis

is placed on the responses of materials as they react to environmental changes. Eye protection is required. Safety glasses may be purchased for approximately \$4.50.

305B-4 Process Analysis. Development and application of an analysis model of selected occupational processes. Previous work experience and visitations to selected enterprises serve as resources. Eye protection is required. Safety glasses may be purchased for \$4.50.

307-4 Power Transmission Systems. Analysis by type, cost, and utilization factors of mechanical, electrical and fluid power transmitting, and fluid control system. Develops concepts of input, output, and efficiency factors. Eye protection is required. Safety glasses may be purchased for approximately \$4.50. Elective Pass/Fail.

310-8 (4,4) Electronics & Instrumentation. (a) Introduction to electron theory, optics and sound, electrostatics, circuit theory, control instrumentation, and automation. (b) Principles and applications of circuit theory, control instrumentation in open and closed systems, computer language, computer graphics, and numerical control, from the general education standpoint. Elective Pass/Fail.

319-3 to 24 Occupational Internship. Includes job skills and knowledges, management-worker relations, supervised instruction, conferences and evaluations. Prerequisite: consent of coordinator.

419-4 to 16 Student Teaching in Occupational Programs. Experience in special and post-secondary occupational programs. Prerequisite: 319, 490.

420-8 (4,4) Enterprise: The Man-Machine System. Classroom, laboratory, and library study of man-machine systems in a variety of industries and institutions with emphasis on teaching children and youth to understand the world of work. For advanced students and experienced teachers. Must be taken in a,b sequence. Eye protection is required. Safety glasses may be purchased for approximately \$4.50. Prerequisite: 20 hours in occupational education.

421-4 Principles of Enterprise Teaching. Problems and special methods of teaching in enterprise education programs. Prerequisite: 16 hours occupational education courses.

425-2 to 12 Practicum. Applications of occupational skills and knowledge. Co-operative arrangements with corporations and professional agencies provide opportunity to study under specialists. Prerequisite: 20 hours in specialty.

430-2 to 8 Special Problems. Assistance and guidance in the investigation and solution of occupational education problems. Prerequisite: consent of instructor and coordinator.

450-2 to 12 Advanced Occupational Skills and Knowledges. For experienced professionals seeking advanced techniques in specialized areas of occupational education. Prerequisite: intermediate level study in the specialty.

485-3 Principles and Philosophy of Vocational and Technical Education. (Same as Agricultural Industries 485, Home Economics Education 485, Secondary Education 485, Secretarial and Business Education 485.) Team teaching used. Gives an understanding of the nature and purpose of practical arts, vocational and technical education, their relationships and differences, and the place of each in preparing people for the world of work.

488-3 Analysis for Occupational Education. Fundamentals of analyzing occupations and careers for establishing units of instruction for occupational education courses. Required for occupational teachers, coordinators, and supervisors. An extra text is available for approximately \$2.00. Prerequisite: 12 hours in teaching specialty.

489-3 Organization of Subject Matter. Course and unit construction, preparation of materials for distribution to students, preparation of teacher-made tests, course evaluation and updating. Prerequisite: 488.

490-3 Principles of Occupational Teaching. Methods of teaching in occupational education programs. Required for occupational teachers, coordinators, and supervisors. Prerequisite: 12 hours in teaching specialty.

493-3 Audio-Visual Media for Occupational Education. Selection, development, analysis, and use of commercial and self-made software systems.

500-8 (4,4) Legislation, Organization, and Administration of Occupational Education.

502-4 Evaluation of Occupational Education Programs.

505-4 Administration and Supervision of Occupational Education.

506-4 Cooperative Programs.

510-4 Planning Occupational Education Facilities.

- 525-4 Cooperative Vocational-Technical Education.
- 540-4 Research in Occupational Education.
- 541-4 Occupational Information and Guidance.
- 550-4 College Teaching of Occupational Education.
- 560-2 to 12 (2 to 8 per quarter) New Developments in Occupational Education.
- 570-2 to 6 Special Investigations.
- 580-1 to 9 Seminar.
- 599-1 to 9 Thesis.

Philosophy

Department, Major, Courses

General Studies courses in philosophy are available at each level for use in partial satisfaction of the requirements in Area C. The prospective philosophy student is advised to elect at least one such course at each of the first two levels.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i>	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	21-25
1 year Math	(5) + 3 to 5
GSC Foreign Language	9 *
2nd year Math or Foreign Language 201a,b,c	9 to 11
<i>Requirements for Major in Philosophy</i>	45
Philosophy 381, 382, 383 plus any two of the following courses:	
Philosophy 300, 306, 320, 386, 387	15
Philosophy electives to complete 45 hours, 3 or 4 of which may be selected from philosophy courses in the first two levels of GSC, and at least 3 courses of which must be at the 400 level	30
<i>Minor</i> (consult with philosophy department chairman)	24
<i>Electives</i>	25-29
Total	186

* GSC Foreign Language does not satisfy GSC requirements for a major in liberal arts.

Minor

A minor in philosophy requires 24 hours, 6 or 7 of which may be selected from philosophy courses offered at the first two levels of General Studies and Philosophy and 12 of which should be selected from the courses listed above for the major.

Honors

Honors in philosophy will be granted to eligible majors who successfully complete three honors courses in philosophy (one in their junior year and two in their senior year, or *vice versa*), maintain a 4.25 average in Philosophy and a 4.000 overall grade point average, and have their written work in honors courses accepted by the departmental Honors Committee. These honors courses may be elected for credit by non-majors, but only by students approved by the department.

Courses

200-4 **Types of Philosophy: An Introduction.** Survey of the traditional

branches and problems of philosophy, such as religion, metaphysics, epistemology, ethics, political theory, aesthetics, and history. Elective Pass/Fail.

211-9 (3,3,3) An Introduction to Oriental Humanities. The literature, music, drama, visual art, and definitive cultural motifs of three great Asian traditions: (a) focuses on India; (b) on China; and (c) on Japan. May be taken in any order. Elective Pass/Fail.

300-4 Elementary Metaphysics. Presentation of answers to the most general problems of existence. An attempt to unify all scientific approaches to reality through the laying down of common principles. Elective Pass/Fail.

301-4 Philosophy of Religion. An analysis of problems in the psychology, metaphysics, and social effects of religion. Among topics discussed are the nature of mystical experience, the existence of God, and problems of suffering, prayer, and immortality. Elective Pass/Fail.

306-4 Nineteenth Century Philosophy. Survey of European philosophy from Kant to the end of the 19th century. Prerequisite: 383 or consent of department. Elective Pass/Fail.

310-3 Religious Foundations of Western Civilization. Examination of the historical backgrounds and contemporary expressions of Jewish, Catholic, and Protestant thought. Elective Pass/Fail.

311-3 Philosophies and Religions of India. Historical and comparative study of Hindu, Jain, and early Buddhist thought and practice. Elective Pass/Fail.

312-3 Philosophies and Religions of the Far East. Historical study of the religious and secular thought of China and Japan; Confucianism, Taoism, and the varieties of Mahayana Buddhism. Elective Pass/Fail.

320-4 Deductive Logic. Main forms of deductive inference. Emphasis on the use of the symbolism of modern logic to evaluate inferences. Elective Pass/Fail.

340-4 Ethical Theories. Nature of ethics and morality, ethical skepticism, emotivism, ethical relativism, and representative universalistic ethics. Bentham, Mill, Aristotle, Kant, Blanshard, and Brightman. Elective Pass/Fail.

342-4 Social Philosophy. One or more major social philosophies influential in present-day society, e.g., laissez-faire liberalism, Marxism, and socialism. Elective Pass/Fail.

345-3 Black Social Philosophy. Investigation of the social philosophy of such thinkers as Martin Luther King, Jr., Malcolm X, and Eldridge Cleaver. Emphasis on concepts and issues of particular relevance for Black Americans. Prerequisite: junior standing or permission of department. Elective Pass/Fail.

355-4 Philosophy of Education. (See Educational Administration and Foundations 355.) Elective Pass/Fail.

360-4 Philosophy of Art. The significance of art as a human activity, its nature and standards as seen in the problems of criticism, and the relation of art to other forms of knowledge. Elective Pass/Fail.

GSC 363-4. Philosophy. of Science.

381-3 Greek Philosophy. The thought of the pre-Socratics, Plato, and Aristotle. Elective Pass/Fail.

382-3 Graeco-Roman and Medieval Philosophies. Epicureanism, Stoicism, and medieval Christian thought. Elective Pass/Fail.

383-3 Early Modern Philosophy. Bacon, Hobbes, Descartes, Leibniz, Spinoza, and the British empiricists in the context of the scientific and general social outlook of the period. Elective Pass/Fail.

386-3 Early American Philosophy. From the colonial period to the Civil War. Elective Pass/Fail.

387-3 Recent American Philosophy. Thought of Howison, Royce, Peirce, James, Dewey, and others. Elective Pass/Fail.

389-3 Existential Philosophy. Surveys the two main sources of existentialism, the life philosophies of Kierkegaard and Nietzsche and the phenomenology of Husserl, and introduces the major philosophical themes of representative thinkers: J. P. Sartre, M. Heidegger, G. Marcel, and others. Elective Pass/Fail.

400-4 Contemporary Mind. Analysis of thought-patterns and motivations dominating the American mind during the present decade of the 20th century. Elective Pass/Fail.

406-4 Philosophy of Biology. Leading concepts of biological sciences: species, evolution, life, organism and part, etc. Abstract ideas of biology are related, wherever possible, to specific experiments recorded in scientific literature. Prerequisites: 300 or 320, and three laboratory or field courses in the biological sciences or consent of instructor. Elective Pass/Fail.

415-3 Logic of the Social Sciences. Logical and epistemological examination of the social studies as types of knowledge. Basic problems in philosophy of science with major emphasis upon social science: relationship of theory to fact, nature of induction, nature of causal law, testability, influence of value judgments, etc. Intended for students with considerable maturity in a social science or in philosophy. Elective Pass/Fail.

420-4 Theory of Logic. Propositions, analysis of terms, theory of inference, both formal and material. Prerequisite: 320. Elective Pass/Fail.

424-3 Advanced Formal Logic. Special relevance to philosophy students. Includes logical principles, many-valued logics, modal logics, and the logic of imperatives. Prerequisite: 320. Elective Pass/Fail.

425-3 Philosophy of Language. Introduction to basic problems in the philosophy of language, including alternative theories of meaning and reference and the relation between meaning and intention. Elective Pass/Fail.

432-4 Philosophy of Mathematics. Philosophical problems of mathematics. Epistemological issues raised by non-Euclidean geometry. Representative writers on foundations, including nominalists, intuitionists, logicists and formalists. Ontological commitment, conventionalist theories of mathematical truth, logical paradoxes, and alternative set theories; significance of the theorems of Godel and Skolem-Lowenheim. Prerequisite: 320 or 15 hours mathematics. Elective Pass/Fail.

441-4 Philosophy of Politics. (Same as Government 441.) Some of the central problems of modern political life, such as sovereignty, world government, authority and consent, the relations of economics and social studies to political theory. Prerequisite: GSC 102 or 340 or consent of instructor. Elective Pass/Fail.

443-4 Philosophy of History. Classical and contemporary reflections on the nature of history and historical knowledge as the basis for dealing with the humanities. Prerequisite: consent of instructor. Elective Pass/Fail.

460-4 Advanced Philosophy of Art. The definition of art, its relations to science, culture, and morals; the various types of art defined. Familiarity with at least one of the fine arts is assumed. Prerequisites: GSC 207 or 360, and six courses in music, painting, sculpture, literature, or drama. Elective Pass/Fail.

465-3 British Moralists. Texts and commentaries for 17th and 18th centuries. Moral philosophy of Hobbes, Locke, Cudworth, Hutcheson, Butler, Price, and Hume. Prerequisite: 340 or consent of department. Elective Pass/Fail.

471-8 (4,4) The Classic Greek Philosophers. (a) Plato. (b) Aristotle. Prerequisite: GSC 381 or consent of department. Elective Pass/Fail.

472-12 (4,4,4) Seventeenth Century Philosophers. (a) Descartes. (b) Locke. (c) Spinoza. Prerequisite: GSC 383 or consent of department. Elective Pass/Fail.

473-8 (4,4) Eighteenth Century Philosophers. (a) Hume. (b) Kant. Prerequisite: GSC 383 or consent of department. Elective Pass/Fail.

474-12 (4,4,4) Nineteenth Century Philosophers. (a) Hegel. (b) J. S. Mill. (c) Marx. Prerequisite: 306 or consent of department. Elective Pass/Fail.

477-4 Latin American Philosophy. A survey of philosophic thought in Latin America from colonial times through nineteenth century positivism and the reactions against it, up to recent trends. Reading of original texts in English translations. Discussions and reports. Elective Pass/Fail.

478-4 Seminar in Latin American Thought. (See Spanish 478.) Elective Pass/Fail.

482-3 Recent European Philosophy. Philosophical trends in Europe for the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism, and other developments. Language, history, culture, and politics. Elective Pass/Fail.

490-2 to 12 Special Problems. Hours and credits to be arranged. Courses for qualified seniors and graduates who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics for individual study and papers or for group study. Consent of instructor in all cases required. Elective Pass/Fail.

497-12 (4,4,4) Honors. Topic varies. Enrollment restricted to undergraduates. Prerequisite: consent of department. Elective Pass/Fail.

500-4 Metaphysics.

501-4 Philosophy of Religion.

503-4 Philosophical Ideas in Literature.

505-4 Philosophy of Science.

- 510-4 Indian Philosophy.
- 511-4 Chinese Philosophy.
- 512-4 Philosophy of Culture.
- 515-4 Theory of Nature.
- 520-4 Logic.
- 524-4 Analytic Philosophy.
- 530-4 Theory of Knowledge.
- 531-4 Whitehead.
- 540-4 Philosophy of Journalism.
- 542-4 Political and Legal Philosophy.
- 545-4 Ethics.
- 550-4 Theory of Value.
- 560-4 Aesthetics.
- 570-4 American Idealism.
- 572-4 Twentieth Century Philosophers.
- 575-8 (4,4) Phenomenology and Existential Philosophy.
- 577-12 (4,4,4) Dewey.
- 579-4 Bertrand Russell.
- 581-4 Plato.
- 582-4 Aristotle.
- 584-4 Medieval Philosophy.
- 585-4 British Empiricism.
- 586-4 Spinoza.
- 587-4 Hegel.
- 588-12 (4,4,4) Kant.
- 590-2 to 16 General Graduate Seminar.
- 591-1 to 5 Readings in Philosophy.
- 599-2 to 9 Thesis.
- 600-3 to 48 Dissertation.

Photography (See Cinema and Photography)

Physical Education for Men

Department, Major, Courses

The physical education major qualifies young people for positions as teachers, coaches, or specialists in public and private elementary or secondary schools, colleges, and universities as well as other social agencies which promote physical activity programs. Courses are designed to meet the requirements of state departments of education and other agencies which have adopted professional standards.

Complete and integrated experience in teaching physical education and assisting in coaching under qualified supervisors is provided in the co-operating schools of the area. Added experiences are gained through membership in the Physical Education Club; membership in professional associations; participation on intramural teams; assisting in service class testing; professional journals; and working with recreational and school groups in teaching techniques of various activities.

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i>	68
Required for Physical Education Majors	
GSA 209; GSB 202	
<i>Requirements for Major in Physical Education for Men</i>	55
Physiology 300	4
Physical Education for Men 100-16, 201, 220, 221, 303A, 303B,	
305, 320, 341, 350, 354, 355, 370, 376	51
<i>Professional Education Requirements</i>	28
See catalog section titled Secondary Education.	

<i>Electives</i>	35
(Recommended—Health Ed. 460, Recreation 470, GSA 115a, 115b, GSB 103; GSD 110)	
<i>Total</i>	186

Minor

A minor is 44 hours and must include 100–16, 220–1, 221–1, 303–6, 305, 350, 354, 370, 376, Physiology 300, and GSA 209.

Courses

100a–2 Methods of Teaching Swimming. Stresses techniques and methods of teaching applied to individual and group instruction. Basic strokes, underwater swimming, elementary diving, body and breath control, self support, and watermanship. Prerequisite for nonswimmers: audit beginner’s swimming course.

100b–1 Methods of Teaching Golf. To prepare the student to teach the fundamental aspects of golf, with emphasis on adaptation to varied approaches in teaching.

100c–1 Methods of Teaching Tennis. Enables the student to acquire, through practice, the knowledge and skills necessary to teach this activity; includes consideration of desirable teaching materials to enhance instruction.

100d–1 Methods of Teaching Individual and Team Activities. The teaching methods, techniques and individual skills in activities such as soccer, softball, and volleyball.

100e–1 Methods of Teaching Basic Rhythms. To aid students in achieving a broad repertoire of dances and arrangements suitable for inclusion in a comprehensive program of physical education. Emphasis on rhythmical fundamentals basic to all dance movements and incorporated into a balance program of dancing.

100f–2 Methods of Teaching Exercise. Provides a cognitive direction to exercise as a foundation for understanding types of exercises adapted to individual and group needs; the exercises of a broad scope applicable to all areas of human population and purposes; the practice of exercises, their analysis and applications.

100g–2 Methods of Teaching Football. Individual instruction and practice in all the fundamentals of the game such as passing, kicking, blocking, tackling, running. Emphasis on effective methods of teaching and coaching.

100h–2 Methods of Teaching Basketball. Deals with individual and team fundamentals with special emphasis on passing, pivoting, shooting, dribbling, and variety of play patterns concerned with offense and defense. Basic methods of teaching and coaching.

100i–2 Methods of Teaching Baseball. Development of the practical skills and ability to teach and coach the techniques of batting, fielding, and playing the various positions in the game. Must purchase own baseball glove.

100j–2 Methods of Teaching Track and Field. Students gain practical experience as a foundation for learning the techniques of teaching the running and field events. Emphasis on individual analysis of movement.

100k–2 Methods of Teaching Gymnastics. To develop individual techniques in stunts and tumbling, calisthenics, parallel bars, side horses, trampoline, and high bar; fundamental skills, individual and group methods of instruction.

100m–2 Methods of Teaching Wrestling. Enables the student to master the fundamental skills of wrestling as well as to teach the individual and group methods of wrestling instruction.

170–2 Varsity Football.

171–2 Varsity Basketball.

172–2 Varsity Track.

173–2 Varsity Tennis.

174–2 Varsity Gymnastics.

175–2 Varsity Baseball.

176–2 Varsity Golf.

177–2 Varsity Swimming.

178–2 Varsity Cross Country.

179–2 Varsity Wrestling.

201–2 Orientation Practicum in Physical Education. Evaluation procedures

applied to professional major students for the purpose of gaining insights into the suitability for professional orientation and status. An evaluation of personal abilities and characteristics. Involves laboratory tests and measurements. Utilized as a screening course for all entering majors. Must be scheduled as first course. Prerequisite: admission into teacher education.

213-3 Stage Movement. (See Theater 213.)

220-1 Recreational Activities and Games (Outdoor). Teaching methods, techniques, individual skills, and their application in teaching groups in a recreational environment. Archery, flag football, and related games as well as activities of a modified nature will be taught.

221-1 Recreational Activities and Games (Indoor).

230a-2 Classical Ballet. (See Theater 230A.)

230b-2 to 22 Intermediate and Advanced Ballet. (See Theater 230A.)

273-1 to 6 Dance Workshop. (See Theater 273.)

303-6 (3,3) Kinesiology. (a) Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical education activities. (b) Applied body mechanics with the application of mechanical laws and principles to performance in physical activities. Must be taken in a,b sequence. Prerequisite: Physiology 300, GSA 209.

305-3 Physical Education for the Atypical Student. Deals with the recognition of physical deviations from the normal student and with the provisions of special or modified physical education or recreational activities for such students. Prerequisites: Physiology 300.

306-1 Advanced Stunts and Tumbling. Permits students with special interests to advance their personal skills in a wide variety of gymnastic stunts and tumbling above the beginning level of fundamentals.

307-1 Advanced Apparatus. Permits students with special interests to advance their personal skills in a wide variety on gymnastic apparatus such as parallel bars, side horse, trampoline, rings, and high bar.

309-5 Methods of Teaching Dance. (See Theater 309.)

312-4 History and Philosophy of Dance. (See Theater 312.)

313-4 Dance Production. (See Theater 313.)

315-2 Scuba Diving. Includes elementary through advanced underwater swimming techniques and an openwater diving experience when weather permits. Leads to YMCA certification. Prerequisite: GSE 101b or consent of instructor.

318-1 Water Safety Instructor. Methods and techniques of teaching swimming, diving, and life saving. Techniques approved by the YMCA and the American Red Cross. Leads to certification as a leader-examiner by the YMCA and as water safety instructor by the ARC. Prerequisite: current senior life saving certification.

320-4 Physiology of Muscular Activity. Immediate and long range effects of muscular activity on body systems. Integrative nature of body functions and environmental influences on human performance efficiency. Laboratory to be arranged. Prerequisite: GSA 301.

330a-2 Theory of Basketball Coaching. Different types of offense and defense studied; special emphasis given to early season conditioning and practice, offensive and defensive drills, team strategy, rules of the game. Prerequisite: 100h or proficiency.

330b-2 Theory of Football Coaching. Deals with all phases of the game; offensive and defensive formation analyzed; strengths and weakness of each studied; various types of individual plays analyzed; rules discussed. Prerequisite: 100g or proficiency.

331a-2 Theory of Swimming Coaching. Treatment of foundations and principles underlying coaching methods; comparative study differences in prevailing theories and methods; development of programs of training in pre-season, mid-season, and post-season of competition. Prerequisite: 100a or proficiency.

331b-2 Theory of Baseball Coaching. A study of the strategy of the game; the conduct of daily practice; analysis of the rules and their application to play situations. Also effective methods of coaching for the best results. Prerequisite: 100i or proficiency.

331c-2 Theory of Track and Field Coaching. Theoretical concepts dealing with the effective performance in running and field events; special emphasis on methods of training for such events; methods of organizing and conducting track and field meets. Prerequisite: 100j or proficiency.

331d-2 Theory of Wrestling Coaching. Prepares students to develop program of wrestling; includes comparative knowledge of problems, techniques, materi-

als, and systems in coaching wrestling as well as the organization and administration of the wrestling program. Prerequisite: 100m or proficiency.

331e-2 Theory of Tennis Coaching. Theory of advanced strokes, strategy and tactics, scheduling and conducting matches, tournaments, exhibitions and clinics; officiating; organizing and promoting development programs. Prerequisite: 100c or proficiency.

331f-2 Theory of Gymnastic Coaching. Deals with all phases of gymnastics; organization of dual meets, championships, and exhibitional teams; practice schedules; care and purchase of equipment; development and evaluation of exercises and routines; techniques of judging. Prerequisite: 100k or proficiency.

335-2 Administration of Aquatics. The organization, administration, and supervision of aquatic programs in institutional and community swimming pools and camp waterfronts; the construction, operation, and maintenance of pools and waterfronts; personnel and program problems.

341-3 Principles of Physical Education. An understanding of the scientific foundations of physical education as implied by the accepted principles of psychology, physiology, sociology, biology, educational method of philosophy, anatomy, kinesiology, and related areas. Prerequisite: 303b, 320.

345a-1 Officiating of Fall Sports. Interpretation of rules in football, cross country, and soccer; techniques of officiating; code of ethics, for officials and players; problems of officiating. Officiating practice required.

345b-1 Officiating of Winter Sports. Interpretation of rules in basketball, wrestling, and swimming; techniques of officiating; code of ethics for officials and players; problems of officiating. Officiating practice required.

345c-1 Officiating of Spring Sports. Interpretation of rules in baseball, track and field, tennis and golf; techniques of officiating; code of ethics for officials and players; problems of officiating. Officiating practice required.

350-3 Methods and Materials for Teaching Physical Education Activities in the Elementary School. The organization and conduct of the program with special emphasis on program planning, evaluation of materials, observation and practice in creative rhythms, singing games, folk dancing, and games of low organization. Two hours lecture; 2 hours laboratory.

354-3 Organization and Administration of Physical Education and Athletics. The organization and conduct of the total program of physical education including interscholastic athletics based upon accepted educational policies and practices. Emphasis on problems of administration.

355-4 (2,2) Assisting Techniques. Involves a clinical experience as pre-student teaching in which the assignment may be to instructional classes or groups with college freshman or children in community sponsored programs. Includes a supplementary meeting in seminar for experience interchange. Must be taken in a,b sequence. Prerequisite: junior year and consent of instructor.

370-4 Tests and Measurements in Physical Education. Measurements as an aid in determining student needs, curriculum construction, teaching effectiveness, and the attainment of educational objectives. Includes the selection, administration, and interpretation of tests. Three hours lecture; 2 hours laboratory.

374-1 Advance Folk Dance. (See Theater 374.)

376-3 Care and Prevention of Athletic Injuries. The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities. Two hours lecture; 2 hours laboratory. Prerequisite: Physiology 300.

377-1 Horseback Riding. Fee required and self transportation.

378-1 Canoeing and Boating. Prerequisite: Intermediate Swimming or equivalent.

379-1 Preclassic Dance Forms (See Theater 379.)

400-4 Evaluation in Physical Education. Historical background of measurement in physical education; selection and evaluation of contemporary testing devices; structure and use of tests; administering the testing program; and interpretation and application of results. Fulfills the tests and measurements course requirements for the Master of Science degree.

402-4 Organization and Administration of Intramural and Extramural Activities. Planning intramural programs of sports; planning and coordinating extramural activities commonly associated with physical education.

403-4 The Adaptation of Physical and Recreational Activities for the Special

Student. Recognition of problems and planning of programs for students with special problems.

404-2 to 4 The Teaching of Sports. Teaching methods, officiating, organization, safety precautions, and selecting equipment for sports.

406-4 Basic Concepts of Physical Education. The place of physical education in the school program, and the concepts underlying the program. (Required of all students not presenting the undergraduate courses 354 or 340.)

407-2 to 4 Advanced Theory and Techniques in the Prevention and Rehabilitation of Athletic Injuries. Theoretical and practical methods of preventing and treating athletic injuries.

408-2 to 4 Workshop: Physical Fitness—Its Role and Application in Education. Improvement of programs and teaching techniques involved in the development of various aspects of physical fitness. Units on postural status; body weight control; tension factors, causes, and control; exercise tolerance; and general body mechanics and control.

410-4 Behavioral Foundations of Coaching. Behavioral problems of the athlete and coach and possible solutions to such problems. Application of behavioral principles and theories as a basis for understanding the interaction between coach and student in the athletic environment. Prerequisite: Guidance 305, or equivalent; or consent of instructor.

416-4 Current Theories and Practices in the Teaching of Dance. (Same as Physical Education—Women 416 and Theater 416.) History and evolution of dance; place of dance in education.

420-4 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: GSA 301.

475-2 to 4 Individual Research. (Selected areas with 2 to 4 hours in each.)

500-4 Techniques of Research.

501-4 Curriculum in Physical Education.

502-4 Foundations of Motor Skills.

503-4 Seminar in Physical Education.

504-4 Research Project in Physical Education.

508-4 Administration of Interschool Athletics.

509-4 Supervision of Physical Education.

510-4 Motor Development.

511-4 Analysis of Human Physical Movement.

513-4 Perceptual Motor Learning of Physical Skills.

514-4 Advanced Laboratory Techniques for Physical Exercise.

515-4 Body Composition and Human Physical Performance.

517-4 Athletic and Physical Education Facility, Design, Construction, and Maintenance.

520-4 Metabolic Analysis of Human Activity.

525-1 to 6 Readings in Physical Education.

599-1 to 9 Thesis.

600-2 to 48 Dissertation.

Physical Education for Women

Department, Major, Courses

The physical education for women major qualifies young people for positions as teachers, coaches, or specialists in public and private elementary or secondary schools, colleges, and universities, as well as in other social agencies which promote physical activity programs. Courses are designed to meet the requirements of state departments of education and other agencies which have adopted professional standards.

Complete and integrated experience in teaching physical education and assisting in coaching under qualified supervisors is provided in the cooperating schools in the area. Added experiences are gained through membership in the Physical Education Club, membership in professional organizations, participation on intramural and inter-collegiate teams, assisting in service classes, and working with recreational and school groups in teaching techniques of various activities.

Bachelor of Science Degree, COLLEGE OF EDUCATION

General Studies Requirements 68
 GSA 209, GSD 153, GSE 201

Requirements for Major in Physical Education for Women 68
 Physical Education for Women 115d, 115i, 115k, 115n, 115o, 115p, plus 3 of the following 115a, 115b, 115c, 115e, 115f, 115h, 115j, 115l, 115g, 115m; 209, 210, 302, 303, 304-9, 309a or b, 320, 350, 351, 352, 353, 354, 370 58
 First Aid 2-4
 Electives in Physical Education for Women 6-8
 A minimum of 5 of these elective hours must be in methods courses.

Minor 24
 Required for standard high school certificates, not required for standard special certificates

Professional Education Requirements 29
 Refer to bulletin section titled Secondary Education

Total 189
 Anyone who transfers from another university and wishes to major in physical education for women must complete a minimum of 16 hours in physical education senior college courses at Southern Illinois University at Carbondale.

A 3.25 average in the major is required for student teaching.

Minor in Dance

Requirements for Minor in Dance 31
 Physical Education for Women 115f, 115h, 115j, 209, 210, 309a, 309b, 312, 313, 416, GSE 113e, GSE 113f or Physical Education for Women 230a 27
 Dance Activity Club (non-credit) (Public performance required)
 Electives (At least 2 of the following must be taken for a minimum of 4 hours) Physical Education for Women 230b, 240, 374, GSE 113h 4
 Suggested Courses: Physical Education for Women 115o, 213, 379, 304d, 444, GSC 203, 207, Theater 305, Music 346

Minor in Physical Education for Women

Requirements for Minor in Physical Education for Women with Specialization for the High School Teacher 30
 Health Education 334s
 Physical Education for Women 115f and 115j, or 115h, 302, 209, 304-10, 309a or b, 353, 354, plus 5-6 additional activity courses

Requirements for Minor in Physical Education for Women with Specialization for the Elementary School Teacher 30
 Physical Education for Women 115f, 115j, 115n, 115o, 209, 210, 304d, 304j, 309a, 319 or 350, 354, 356b, plus 6 hours of electives from 115c, 115d, 115h, 115i, 115k, 115l, 115p, 304a, 304c, 304f, 304k, 309b, 351, 353, 355, 356a, Health Education 334s

Activity courses taken as prerequisites for methods courses should be physical education for women courses. A grade of C must be obtained in activity courses which are applied as prerequisites for physical education for women method courses.

If GSE courses are taken in lieu of physical education for women

courses, a *C* level of proficiency according to physical education for women standards must be demonstrated before unconditional acceptance in the respective methods course is granted.

Twelve-Hour Emphasis in Teaching Physical Education in the Elementary School

For students who do not wish to major or minor in physical education but who would like to become better prepared than basic requirements provide in the area of physical education, the following twelve-hour emphasis is recommended.

Required Courses (in addition to Physical Education for Women 319) 12

Physical Education for Women 209, 210, 356b, 2 hours of Physical Education for Women or GSE activity courses * (Physical Education for Women 115c, 115d, 115f, 115h, 115i, 115j, 115k, 115l, 115n, 115o, 115p), 3 hours of methods courses (Physical Education for Women 304a, 304c, 304d, 304f, 304j, 304k, 355, 309a, 309b)

Activity courses taken as prerequisites for method courses should be physical education for women courses. A grade of *C* must be obtained in activity courses which are applied as prerequisites for physical education for women method courses.

* If GSE courses are taken in lieu of Physical Education for Women courses, a *C* level of proficiency according to Physical Education for Women standards must be demonstrated before unconditional acceptance in the respective methods course is granted.

Courses

115a-1 Archery. Physical education uniform, tennis shoes, and current rule book required.

115b-1 Badminton. Physical education uniform, tennis shoes, and current rule book required.

115c-1 Basketball. Physical education uniform, tennis shoes, and current rule book required.

115d-1 Exercise for Fitness. Physical education uniform and tennis shoes required.

115e-1 Field Hockey. Physical education uniform, tennis shoes, and current rule book required.

115f-1 Folk Dancing. Physical education uniform and tennis shoes required.

115g-1 Golf. Physical education uniform, tennis shoes, and current rule book required.

115h-1 Beginning Contemporary Dance. Physical education uniform and tennis shoes required.

115i-1 Soccer and Speedball. Physical education uniform, tennis shoes, and current rule book required.

115j-1 Square and Social Dance. Physical Education uniform and tennis shoes required.

115k-1 Softball. Physical education uniform, tennis shoes, and current rule book required.

115l-1 Intermediate Swimming. Bathing cap and current rule book required. Prerequisite: Pass beginning swimming test.

115m-1 Tennis. Physical education uniform, tennis shoes, and current rule book required.

115n-1 Track and Field. Physical education uniform, tennis shoes, and current rule book required.

115o-1 Tumbling and Gymnastics. Physical education uniform, tennis shoes, and current rule book required.

115p-1 Volleyball. Physical education uniform, tennis shoes, and current rule book required.

209-2 Rhythmic Analysis. A study of the function and component factors of music as they relate to dance and the teaching of dance. Physical education uniform and tennis shoes required. Prerequisite: 115f,h.

210-2 Motor Learning. A course designed to teach, compare, and contrast

principles of learning psychomotor skills to more general principles of learning, to show application of principles of programmed learning to the learning of psychomotor skills, and to present selected research studies in motor learning. Prerequisite: sophomore standing.

213-3 Stage Movement. (See Theater 213.)

218-1 Intermediate Fencing. Prerequisite: GSE 114M or equivalent.

229-1 Intermediate Golf. Prerequisite: 115g.

230A-2 Beginning Techniques of Classical Ballet. (See Theater 230A.) Physical education uniform and ballet shoes required.

230B-2 to 22 Intermediate and Advanced Ballet. (See Theater 230B.) Prerequisite: 230A, and consent of instructor.

240-2 to 24 Theory and Techniques of Contemporary Dance. The study of contemporary dance including muscular sensitivity, control of the dance instrument, exploration of time, space, shape, and motion leading to the development of aesthetic perception. Prerequisite: 115h or GSE 113d.

271-1 Sailing.

273-1 to 6 Dance Workshop. (See Theater 273.)

301-2 Techniques of Teaching Recreational Sports. Analysis and methods of teaching badminton, deck tennis, volley tennis, table tennis, and other recreational sports.

302-1 Teaching Practicum. A course designed to give major students an opportunity to observe and to assist in teaching activity courses under the direct supervision of college instructors. Physical education uniform and tennis shoes required. Prerequisite: departmental consent and junior standing. Mandatory Pass/Fail.

303-4 Kinesiology. The mechanical analysis of physical education activities through the study of joint and muscle action. Prerequisite: anatomy.

304-24 (2,2,3,2,3,2,2,2,2,2) Techniques of Teaching Sports. Methods of teaching, construction of daily lesson plans, and analysis of techniques. Physical education uniform, tennis shoes, and current rule book is required for each 304 class. For each class including techniques of officiating, a minimal fee is charged. (a) Methods of Teaching soccer-speedball. Prerequisite: 115i, 210; (b) Methods of Teaching Field Hockey. Prerequisite: 115E, 210; (c) Methods of Teaching Basketball. Prerequisite: 115C, 210; (d) Methods of Teaching Gymnastics, Tumbling and Trampoline. Prerequisite: 115o, 210; (e) Methods of Teaching Tennis. Prerequisite: 115m, 210; (f) Methods of Teaching Volleyball. Prerequisite: 115p, 210; (g) Methods of Teaching Archery. Prerequisite: 115a, 210; (h) Methods of Teaching Badminton. Prerequisite: 115b, 210; (i) Methods of Teaching Golf. Prerequisite: 115g, 210; (j) Methods of Teaching Track and Field. Prerequisite: 115n, 210; (k) Methods of Teaching Softball. Prerequisite: 115k, 210.

309-6 (3,3) Methods of Teaching Dance. Deals with teaching each of the various types of dance, including fundamental progressions and composition in each type. Physical education uniform and tennis shoes required. (a) Folk, social, and square dance. Fee required. Prerequisite: 115f, 115j, 209, 210. (b) Modern dance. Prerequisite: 115h, 209, 210.

312-4 History and Philosophy of Dance. The history and development of dance from primitive to contemporary forms. Prerequisite: 115h, GSE 113d, or 240.

313-4 Dance Production. Advanced dance techniques and choreography. Choreographic emphasis including staging and production of dance. Prerequisite: GSE 113e or consent of instructor.

316-1 Advanced Swimming. Bathing cap required. Prerequisite: 115L.

318-1 Water Safety Instructor. Development of personal skills and methods of teaching swimming and lifesaving. American Red Cross Water Safety Instructor Certificate may be earned. Bathing cap required. Prerequisite: current senior lifesaving card.

319-4 Teaching Elementary School Group Activities. Study of age characteristics, planning of activity programs for all age levels, techniques of teaching activities to elementary grades, fulfillment of the Illinois requirements for elementary school teachers. Tennis shoes required. Dress must permit ease of movement. Prerequisite: Psychology 301 or Guidance 305.

320-4 Physiology of Muscular Activity. Immediate and long range effects of muscular activity on both systems. Integrative nature of body functions and environmental influences on human performance efficiency. Laboratory to be arranged. Prerequisite: GSA 301.

328-1 Intermediate Tennis. Prerequisite: 115m.

348-2 to 4 Camp and Community Leadership. Fundamentals of Scouting, Camping, and counseling. A weekend camping trip required.

350-4 Teaching Physical Education in the Elementary School. For supervisors and teachers of physical education. Curriculum planning, based on grade characteristics and educational philosophy, presentation of skills including skill tests, lead-up games, stunts and tumbling, games of low organization, creative rhythms, singing games, and folk dance. Second level (advanced course 356B). Physical education uniform and tennis shoes required. Open only to physical education majors. Prerequisite: 210, and Psychology 301 or Guidance 305.

351-2 Physical Education for Special Students. Techniques of physical examination, postural defects and their correction, activities suitable for the atypical program building, and correlation of this program with the physical education curriculum. Prerequisite: junior standing.

352-2 History of Physical Education. A study of the background and development of physical education.

353-4 Organization and Administration of Physical Education. Criteria for the selection of activities, the organization of classes, the policies and the personnel, the physical plant and its upkeep, the planning, utilization and care of equipment in the physical education program. Prerequisite: 354.

354-2 Principles and Philosophies of Physical Education. The scientific foundations applied to physical education.

355-3 (or 4) Methods of Teaching Swimming. Methods of teaching swimming and lifesaving. (First level) Bathing cap required. Prerequisite: 115L, 210, or equivalent.

356-9 (3,3,3) Advanced Methods of Teaching Physical Education. (a) Special Students (Second level). Physical education uniform and tennis shoes required. Prerequisite: 351. (b) Elementary Schools (Second level). Physical education uniform and tennis shoes required. Prerequisite: 350. (c) Swimming (Second level). Bathing cap required. Prerequisite: 355.

362-1 to 4 Teaching Basic Activities to Junior and Senior High School Girls. Teaching badminton, softball, basic movement and recreational games.

369-4 Improving Teaching Through Testing (Workshop). Teaching aids, diagnostic measures, practices, and standardized tests for a variety of physical skills. Principles of programmed learning applied to psychomotor tasks.

370-4 Tests and Measurements in Physical Education. The theory of measurement in health and physical education, the selection and administration of appropriate tests and the interpretation of results. Projects required. Prerequisite: junior standing.

374-1 Advanced Folk Dance. Prerequisite: 115f.

376-3 Emergency Care and Prevention of Athletic Injury. The theoretical and practical methods of preventing and treating athletic injuries, techniques of taping and bandaging, emergency first aid, massage, use of physical therapy modalities. Lecture and laboratory sessions. Prerequisite: Physiology 300 and GSA 301.

379-3 Preclassic Dance Forms. (Same as Theater 379). Lectures and readings in dance of the 16th, 17th and early 18th centuries. Study and execution of representative preclassic dances. Prerequisite: 230 and 240.

400-4 Evaluation in Physical Education. Historical background of measurement in physical education, selection and evaluation of contemporary testing devices, structure and use of tests, administering the testing program, and interpretation and application of results. Fulfills the tests and measurements course requirements for the Master of Science degree.

402-4 Organization and Administration of Intramural and Extramural Activities. Planning intramural programs of sports, planning and coordinating extramural activities commonly associated with physical education.

403-4 The Adaptation of Physical and Recreational Activities for the Special Student. Recognition of problems and planning of programs for students with special problems.

404-2 to 4 The Teaching of Sports. Teaching methods, officiating, class organization, analysis of skills, and the application of the principles of motor learning.

406-4 Basic Concepts of Physical Education. The place of physical education in the school program and the concepts underlying the program. (Required of all students not presenting the courses 354 or 340.)

407-2 to 4 Advanced Theory and Techniques in the Prevention and Rehabilita-

tion of Athletic Injuries. Theoretical and practical methods of preventing and treating athletic injuries.

408-2 to 4 Physical Fitness—Its Role and Application in Education. Improvement of programs and teaching techniques involved in the development of various aspects of physical fitness, Units on postural status, body weight control, tension factors, causes, and control, exercise tolerance, and general body mechanics and control.

410-4 Behavioral Foundations of Coaching. Behavioral problems of the athlete and coach and possible solutions to such problems. Application of behavioral principles and theories as a basis for understanding the interaction between coach and student in the athletic environment. Prerequisite: Guidance 305 or equivalent; consent of the instructor.

415-4 Workshop in Gymnastics for Women. For undergraduates and graduates. Techniques and theory of teaching, coaching, judging official performances, conducting gymnastic meets, clinics, and demonstrations. Spotting and analysis of performance.

416-4 Current Theories and Practices in the Teaching of Dance. (Same as Physical Education—Men 416.) History and evaluation of dance. Place of dance in education. Prerequisite: 115h or GSE 113d, 240.

420-4 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and functions of body organs, specific effect of exercise on the muscular system. Purchase of laboratory manual required. Prerequisite: GSA 209.

444-2 to 8 Contemporary Dance Workshop. Dance technique and theory, composition, improvisation, and production. Advanced study of the problems of choreography and production in their presentation as theater. Public performance is required. Prerequisite: 1 year of technique and theory or equivalent. Mandatory Pass/Fail for undergraduates.

475-2 to 4 Individual Research. The selection, investigation, and writing of a research topic under supervision of an instructor. (a) dance; (b) kinesiology; (c) measurement; (d) motor development; (e) physiology of exercise, and (f) history and philosophy.

500-4 Techniques of Research.

501-4 Curriculum in Physical Education.

502-4 Foundations of Motor Skills.

503-4 Seminar in Physical Education.

504-4 Research Project in Physical Education.

508-4 Administration of Interschool Athletics.

509-4 Supervision of Physical Education.

510-4 Motor Development.

511-4 Analysis of Human Physical Movement.

513-4 Perceptual Motor Learning of Physical Skills.

514-4 Advanced Laboratory Techniques for Physical Exercise.

515-4 Body Composition and Human Physical Performance.

517-4 Athletic and Physical Education Facility, Design, Construction, and Maintenance.

520-4 Metabolic Analysis of Human Activity.

525-1 to 6 Readings in Physical Education.

599-1 to 9 Thesis.

600-2 to 48 Dissertation.

Physical Therapy Assistant

Program, Major, Courses

The physical therapy assistant works with the registered physical therapist under the prescriptions of a physician to treat disabilities resulting from birth defects, disease or injury.

The student will learn massage, exercise, ultra-sound, hydrotherapy, and other therapeutic techniques in actual practice in the university's Clinical Center. He will work with professional therapists in learning such complex procedures as administering manual muscle tests, electrical muscle and nerve tests, and other evaluative measures.

Before graduation the student will serve a three-month internship in two separate hospitals away from the university campus.

The student should expect to spend approximately \$60.00 for uniforms and insurance.

This is the only university-level physical therapy assistant program of its kind. It is served by an advisory committee which provides supportive expertise. Current members are David Collins, chief physical therapist, St. Mary's Hospital, Decatur; Mrs. Virginia Daniel, chairman, Department of Physical Therapy, Chicago Medical College; Dr. Harold Kaplan, Department of Physiology, Southern Illinois University at Carbondale; Dr. Bruce Safman, Mercy Hospital, Champaign; H. Ruffin Walden III, chief physical therapist, Memorial; and Miss Elizabeth Wood, educational director of the physical therapy program of Northwestern University Medical School, Chicago.

A minimum of 106 credit hours is required for this major.

Associate in Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Physical Therapy Assistant

GSA 101, 106, 115a,b, 209	20
GSB 202, 203	8
GSC 100 or 101	3
GSD 101, 102, 107 and 152 or 153	14
GSE	1
Health Education 334a	4
Occupational Education 303	4
Physical Education for Men 303a,b	6
Physiology 300	4
Psychology 303 or 304 or 305	4
Physical Therapy Assistant 100a,b, 202, 203, 205, 207, 209, 213, 214, 321, 322	31
Electives	7
Total	106

Courses

100-2 (1,1) Physical Therapy Orientation. The student will be able to describe the historical background, professional ethics, and legal aspects of physical therapy practice. He will be able to understand the relationship of physical therapy to total health care. Lecture 1 hour, laboratory 1 hour.

202-3 Physical Rehabilitative Techniques. The student will be able to demonstrate rehabilitative procedures such as bed positioning, range of motion exercises, transfer activities and gait training. He will understand the concepts of total rehabilitation. Lecture 2 hours, laboratory 2 hours. Prerequisite: 100.

203-2 Pathology. The student will be able to understand the fundamental basis of disease. Emphasis will be placed on those conditions treated through physical therapy procedures. The student will be able to describe the process of inflammation and repair of bone and soft tissue injuries. Lecture 2 hours. Prerequisite: GSA 301.

205-3 Physical Therapy Science. The student will be able to describe selected medical and surgical conditions from the standpoint of etiology, clinical signs and symptoms, and physical therapy treatment. Lecture 3 hours. Prerequisite: 100-2.

207-2 Massage. The student will be able to demonstrate massage techniques for specific conditions through role playing and supervised application of massage to selected patients. He will understand the scientific principles of massage and be aware of indications and contraindications for massage. Lecture 1 hour. Laboratory 2 hours. Prerequisite: 100 and 202.

209-3 Therapeutic Exercise. The student will be able to administer therapeutic exercise techniques for specific clinical conditions through demonstrations and supervised application of exercise to selected patients. He will understand the scientific principles of therapeutic exercise and acquire the skills to effectively

and safely utilize exercise equipment. Lecture 2 hours. Laboratory 2 hours. Prerequisite: PHSL 300.

213-3 Therapeutic Modalities. The student will be able to demonstrate procedures used in the safe application of local heat and cold and understand their physiologic effects. The student will be able to describe the indication and contraindications for the use of heat and cold. Lecture 2 hours, laboratory 2 hours. Prerequisite: GSA 101-8.

214-3 Physical Therapy Science Practicum. The student will be able to carry out routine physical therapy procedures with selected patients. He will be able to assist in maintaining records and develop cooperative spirit with other members of the department. He will be able to relate to the patient in a professional manner and recognize limits of his professional competence. Lecture 1 hour. Laboratory 6 hours. Prerequisite: 207, 209 and 213.

321-8 Clinical Internship. The student will be able to apply previously learned theories and techniques of patient care through closely supervised practicum experience in two large general hospitals. Prerequisite: Completion of all other requirements of physical therapy curriculum with a minimum grade average of 3.0.

322-2 Clinical Seminar. The student will be able to discuss with the coordinator of the program patient care and problems encountered during internship. He will have the opportunity to evaluate his educational experience at Southern Illinois University and his clinical internship experience. This course must be taken concurrently with 321. Mandatory Pass/Fail.

Physics and Astronomy

Department, Major (Physics), Courses

The undergraduate major in physics leading to the Bachelor of Arts degree provides for a mastery of basic principles and methods of classical and modern physics and for flexibility in application through a breadth of covering in the field. Students considering a major in physics are urged to consult with the undergraduate adviser of the physics department.

Bachelor of Arts Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i> (Substitute GSA-1 and GSD mathematics)	55
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	29
GSC Foreign Language (French, German, or Russian recommended)	9 *
Mathematics 111-10 and 150-10	20
<i>Requirements for Major in Physics</i>	86-87
Chemistry 115-5 ¹ and 122a-3 and 123a-2, or 122a-3 and 123a-2 and 122b-3 and 123b-2 (240-4 may be taken in lieu of 122b and 123b)	9-10
Mathematics 252-7, 306-6, and 407-4	17
Physics 111-9 and 112-3 or 206-9 and 207-3, or 211-9 and 212-3; 301, 304, 305, 307, 309, 310, 401, 404, 410a, 415; plus 4 hours from 311, 312, and 418	60
<i>Electives</i>	15-16
Recommended: Chemistry 122c and 123c, 305, 460 or 461; Engineering 222, 313, 361, 402, 418, 420; GSB 211, 311, Geology 416, 435; Mathematics 221, 406, 421, 452, 455, 475, 480, 481, 483; Physics 300, 302, 405, 410b	
Total	186

* GSC Foreign Language does not satisfy the GSC requirement in the College of Science.

¹ For students who do not pass a proficiency examination in chemistry.

Bachelor of Science Degree, COLLEGE OF EDUCATION

For this degree the requirements differ from those for the Bachelor of Arts degree in the following respects: No foreign language is required, but 6 hours of GSC-FL may be counted toward the GSC requirement in the College of Education. Thirty-three hours of 300 or above physics courses, including 301, 305, 415-12 and 6 hours of laboratory courses selected from 307, 311, 312, and 418 are required for the major in physics. To obtain the degree of Bachelor of Science in the College of Education students must satisfy requirements of that college. Professional education requirements may be found in the section of this catalog titled secondary education. It should be noted that prerequisites for the required course Guidance 305 are GSB 202-4 and admission to the teacher education program.

Minor

A minor in physics requires 24 hours and must include Physics 111-9 and 112-3, or 206-9 and 207-3, or 211-9 and 212-3 and two of the following: 300-4, 310-3 and 311-1, or 309-3 and 312-2 (no calculus prerequisite). Students having completed calculus may select 304-3, and those taking differential equations may select from 301-3 and 305a,b to meet requirements.

Courses

111-9 (3,3,3) College Physics-Honors. Restricted to freshmen. May be taken beginning with either the fall or the winter quarter. Prerequisite: advanced standing in Mathematics 111a and consent of department. Elective Pass/Fail.

112-3 (1,1,1) College Physics Laboratory. Three hours of laboratory per week. Prerequisite: concurrent enrollment in 111. Elective Pass/Fail.

206-9 (3,3,3) College Physics. Designed to meet preprofessional requirements and the needs of all students in the sciences, except physics and engineering. Must be taken in a,b,c or a,c,b sequence. Prerequisite: Math 111b. Elective Pass/Fail.

207-3 (1,1,1) College Physics Laboratory. One 3-hour laboratory period per week, taken concurrently with 206. Elective Pass/Fail.

211-9 (3,3,3) University Physics. A basic course using calculus for science, mathematics, and pre-engineering students. Laboratory. (a) Mechanics. (b) Light, sound, and heat. (c) Electricity and magnetism. Prerequisite: Mathematics 150b or concurrent enrollment. Elective Pass/Fail.

212-3 (1,1,1) University Physics Laboratory. Three hours per week. Prerequisite: concurrent enrollment in 211. Elective Pass/Fail.

300-4 Introduction to Modern Physics. Continuation of 211. Three lectures, one recitation, and one three-hour laboratory per week. Prerequisite: 111, or 206, or 211. Elective Pass/Fail.

301-3 Mechanics. Intermediate theoretical particle mechanics using vector analysis. Prerequisites: 111a, 206a, or 211a; Mathematics 305a, or concurrent enrollment, or consent of instructor. Elective Pass/Fail.

302-3 Astronomy-Honors. Current knowledge of the universe and the gathering of that knowledge. Includes properties of the solar system and theories of its origin, the structure and evolution of stars. Supplemented by occasional hours of evening observation. Prerequisite: Mathematics 150b and one of GSA 101, Physics 111a, 206a, or 211a, or consent of instructor. Elective Pass/Fail.

304-3 Thermodynamics. A macroscopic study of the thermal properties of matter and the laws of thermodynamics. Prerequisites: 111b, 206b, or 211b and Mathematics 252b. Elective Pass/Fail.

305-6 (3,3) Introduction to Electric Theory. Vector treatment of the theory, electrostatics in vacua and in matter, steady currents, electromagnetism and quasi-steady currents. Prerequisites: 111, 206, or 211; Mathematics 305a, or concurrent enrollment, or consent of instructor. Elective Pass/Fail.

307-2 Electrical Measurements. A laboratory course illustrating basic electri-

cal and magnetic properties and emphasizing precision in their measurement. Prerequisite: 305b or concurrent enrollment. Elective Pass/Fail.

309-3 Electric Circuits. Electron tube and transistor circuit principles with applications to radio receivers, transmitters, and power supplies. Prerequisite: 111c, 206c, or 211c. Elective Pass/Fail.

310-3 Light. Light propagation and optical instruments: reflection, refraction, interference, diffraction, and polarization of light. Prerequisite: 111b, 206b, or 211b. Elective Pass/Fail.

311-1 Optics Laboratory. Advanced experiments in geometrical and physical optics. Three laboratory hours per week. Prerequisite: 310 or concurrent enrollment. Elective Pass/Fail.

312-2 Electric Circuits Laboratory. Laboratory studies of properties of electron tubes and transistors and basic circuits employing them in power supplies, amplifiers, and oscillators. Prerequisite: 309 or concurrent enrollment. Elective Pass/Fail.

401-3 Mechanics. Rigid body mechanics, normal coordinates, mechanics of continuous media, and advanced principles. Prerequisites: 301, Mathematics 407 or consent of instructor. Elective Pass/Fail.

404-6 (3,3) Physical Electronics. Kinetic theory and statistical mechanics with applications to electronic conduction in solids, vacuum, and gases, electron emission and ballistics; Bose-Einstein and Fermi statistics, electron theory of metals; semiconductors; quantum physical phenomena of the solid state. Prerequisite: 304, 305, 401 (or consent of instructor). Elective Pass/Fail.

405-3 Electronics. Advanced theory and application of vacuum tubes and semiconductor devices as circuit elements in power supplies, oscillators, amplifiers, and shaping circuits. Prerequisites: 305 and 309 or consent of instructor. Elective Pass/Fail.

410-6 (3,3) Introduction to Electromagnetic Wave Theory. A theoretical study of electromagnetic wave generation, propagation, and detection, with applications to microwaves and modern optics. Prerequisites: 305, 310. Elective Pass/Fail.

415-12 (3,3,3,3) Modern Physics. Elements of wave mechanics, special relativity, atomic, molecular, and nuclear physics. Prerequisites: 301, 305, Mathematics 407 or consent of instructor. Elective Pass/Fail.

418-1 to 4 Modern Physics Laboratory. Elective Pass/Fail.

420-2 to 5 Special Projects. Each student is assigned to a definite investigative topic. Adapted to advanced undergraduate students. Prerequisite: 301, 305. Elective Pass/Fail.

447-5 Topics in Classical Physics. Assists experienced teachers to improve their understanding of classical physics and the strategy of presenting it. Emphasis on demonstration of phenomena as basic strategy in the introduction of new material. Attention given to the design of demonstration apparatus. Related laboratory experience is an integral part of the course. Prerequisite: consent of department. Elective Pass/Fail.

448-5 Topics in Modern Physics. Assists experienced teachers to extend their understanding of modern physics. Lectures and demonstrations aim at improvement of the means of presenting the ideas of modern physics. Related laboratory experience is an integral part of this course. Prerequisite: consent of department. Elective Pass/Fail.

449-3 (1,1,1) In-Service Institute for Teachers of Physics. A series of lectures, demonstrations, discussions, and films to assist teachers of high school physics in meeting their classroom problems and responsibility. Prerequisite: consent of department. Elective Pass/Fail.

504-12 (4,4,4) X-Ray Diffraction and Lattice Dynamics.

510-9 (3,3,3) Classical Mechanics.

511-9 (3,3,3) Mathematical Methods in Physics.

520-2 to 5 Special Projects.

530-9 (3,3,3) Electromagnetic Theory.

531-9 (3,3,3) Quantum Mechanics.

532-9 (3,3,3) Advanced Quantum Mechanics.

540-9 (3,3,3) Nuclear Physics.

550-9 (3,3,3) Atomic and Molecular Spectra.

560-9 (3,3,3) Statistical Mechanics.

570-9 (3,3,3) Solid State Physics.

575-1 to 4 Graduate Seminar.

580-3 to 6 Selected Topics in Physics.

590-1 to 9 Thesis.

592-1 Colloquy in Molecular Science.
 597-3 to 45 Special Topics in Molecular Science.
 598-3 to 25 Special Projects in Molecular Science.
 599-1 to 9 Thesis.
 600-1 to 48 Dissertation.

Physiology

Department, Major, Courses

Bachelor of Arts Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i>	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i>	28-29 *
Mathematics 111-10 and 150-10 and one year of foreign language-9 or Mathematics 111-10 and GSC Foreign Language-9 and FL 201-9	
<i>Requirements for Major in Physiology</i>	78
A background of basic courses in physical sciences is required	30
Courses in Physiology or closely related sciences, which must include Biology 305, 306, 307, 308-16	48
<i>Electives</i>	<u>11-12</u>
<i>Total</i>	<u>186</u>

* GSC FL does not satisfy the GSC requirement in the College of Science

Minor

A minor in physiology requires a minimum of 24 hours of courses in physiology or closely related sciences.

Junior-Senior Honors Program

Juniors who have shown outstanding ability in biology courses and related subjects in their freshman and sophomore years may apply for acceptance into the Honors Program. Honors students do independent study in the physiological sciences (Physiology 456) during their junior and senior years.

Courses

300-4 to 5 Human Anatomy. Lectures, demonstrations, and periodic observation of the prosected body. Lectures confined to bones, joints, muscles, and nerves. Primarily for students in physical education. Four hours lecture per week for 4 quarter hours of credit. One section, 300b, spring term, is reserved chiefly for nursing, mortuary science, and some biology students. All bodily systems are reviewed. Four lecture and 2 laboratory sessions per week earn 5 quarter hours in the 300b section.

410-15 (5,5,5) Advanced Anatomy. Primarily for students with a major in physiology or related sciences. Laboratory sessions involve dissection of the human body. 2 hours lecture and 6 hours laboratory per week. Prerequisite: consent of instructor.

414-4 Anatomy and Physiology of Speech and Hearing Mechanisms. Covers anatomy and physiology of the vocal apparatus and the hearing apparatus. 3 hours lecture and 2 hours laboratory per week. Prerequisite: consent of instructor required for graduate students.

415-7 (3,4) Experimental Animal Surgery. Principles of surgery as applied in animal research. Course covers animal preparation, anesthesia, instruments, selected surgical procedures, care of animal quarters. Part (a) (2 lectures and 1 two-hour laboratory per week) is preparatory for part (b) (2 lectures and 2

two-hour laboratories per week) or for Animal Industries 502 (large animal surgery course.)

417-8 (4,4) Principles of Pharmacology. Action of drugs and other chemical substances on living organisms; pharmacodynamics, chemotherapy, toxicology, and therapeutics. Three lectures and 1 two-hour laboratory per week. Prerequisites: basic courses in chemistry and biology.

426-4 Comparative Endocrinology. (Same as Zoology 426.) Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues. Includes ablation and histology of glands, and chemical and bioassays with vertebrates and invertebrates. Prerequisite: Biology 308 and consent of instructor.

430-6 (3,3) Cellular Physiology. Structure and function of living cells and cell materials; chemical and physical analysis of biological activity at the cellular level. 3 lectures per week.

433-4 Comparative Physiology. Comparisons of physiological processes in animal phyla, with emphasis on developmental aspects of organ and organ system function. 3 lectures and 1 two-hour laboratory per week.

440-3 Electron Microscopy. Open to students with advanced knowledge of natural or physical sciences. Course provides lectures, demonstrations, and practical experience in specimen preparation and use of the electron microscope. 2 lectures and 1 two-hour laboratory per week.

450-1 to 16 Special Problems in Physiology. Eight hours laboratory. Prerequisite: consent of department.

456-4 to 12 Independent Research for Honors. Supervised research and investigation in different branches of physiology. Undergraduate honors students only. Prerequisite: consent of instructor and chairman.

460-15 (5,5,5) Mammalian Physiology. Functions of mammalian organ systems, with emphasis on man. (a) blood, circulation, and respiration; (b) digestion, excretion, and endocrines; and (c) nervous system and sense organs. 3 lectures and 2 two-hour laboratories per week.

465-6 (3,3) Biophysics. Physical analysis of biological systems, physical properties of biological materials, molecular biophysics, effects of physical environmental factors on living organisms, theoretical biophysics. 3 lectures per week. Prerequisites: 1 year of college physics, 1 year of college mathematics, 1 year of college biology.

471-3 Biophysical Instrumentation. Construction and maintenance of biophysical instruments. 1 lecture, 2 two-hour laboratories per week. Prerequisite: Engineering 410 or equivalent electronics background, permission of instructor.

500-1 Advanced Seminar in Physiological Sciences.

519-4 Advanced Endocrinology.

520-3 Physiological Techniques.

521-1 to 4 Readings or Special Research in Physiology.

540-8 (4,4) Advanced Comparative Physiology.

565-4 Advanced Biophysics.

580-2 to 18 (2 to 3 for each topic) Current Topics in Physiology. Readings and group discussions in areas of current interest. (a) Biological structure. (b) Biophysics. (c) Cardiovascular physiology. (d) Cellular physiology. (e) Endocrinology and pharmacology. (f) Metabolism. (g) Neurophysiology. Prerequisite: background in biological sciences and consent of instructor.

599-1 to 9 Thesis Research.

600-1 to 48 Doctoral Dissertation Research.

Plant Industries

Department, Major, Courses

The Department of Plant Industries includes crop production, horticulture, and soils. There are many widely varied opportunities for students with an interest in plants or soils. Students may choose a general specialization within the department and select most of their upper division credits from a wide choice of electives throughout the School of Agriculture and the University. If interests are more specialized, students may elect the science option and specialize in one particular area, or may elect a specialization which will combine a broad background in plants and soils with selected business courses and business related electives.

Students selecting the Urban Landscape Management specialization can prepare for interesting careers in landscaping or gardening in parks, playgrounds, residential or industrial areas, road and street parkway improvement and maintenance, and in other public and private work to make the environment more pleasing and useful. For further details on this specialization, see the General Agriculture program described elsewhere in this bulletin.

Opportunities for individual students, work in special problems, and seminars are available and students in all specializations are urged to make use of them to meet the goals and needs of their respective programs.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, SCHOOL OF AGRICULTURE

	<i>Specializations</i>		
	General	Science	Business
<i>General Studies Requirements</i>	68	68	68
GSA 101	—	4	—
GSA 106 or chemistry substitute ¹ ...	4	—	4
Chemistry 122a,b and 123a,b	—	10	—
GSA 115a,b	8	8	8
GSB—Agricultural Industries 204 substituted for GSB 211	4	4	4
GSB 202 or 203	—	—	4
GSD 101 and 102	6	6	6
GSD 153	3	3	3
GSD 107	5	—	5
Mathematics 111a	—	5	—
<i>Requirements for Major in Plant Industries</i>	60	76	76
Agricultural Industries 350	5	—	—
Animal Industries 121 and 122	5	—	—
Courses in two other departments in agriculture	—	8	8
Plant Industries 109, 264, 301, 381 ..	14	14	14
Other Plant Industries courses	18	18	18
Other agriculture electives	18	12	12
Mathematics, ² physical sciences or biological sciences including Botany 320	—	24	—
Accounting 250, Administrative Sciences 301 or 340, Marketing 301 or Agriculture Industries 354	—	—	12
Business electives and supporting courses	—	—	12
<i>Electives</i>	58	42	42
<i>Total</i>	<u>186</u>	<u>186</u>	<u>186</u>

¹ Chemistry 110, 240, or 122 and 123 (4–10 hours) can be substituted for GSA 106.

² Mathematics 111b required.

Courses

109-4 Principles of Field Crop Production. Plant development and production of important field crops emphasizing crops of the midwestern United States, plant classification and botanical structure; essential plant processes; crop

- ecology; crop improvement; seeds and seeding; crop production practices. Field trip. Elective Pass/Fail.
- 264-4 General Horticulture.** General principles of plant propagation, vegetable growing, fruit growing, landscape gardening, and floriculture. Field trip. Seniors cannot enroll without consent of department. Elective Pass/Fail.
- 301-5 Soil Science.** Basic concepts of soil formation, classification, characteristics, chemistry, physics, and microbiology and their relation to plant growth. Familiarizes the student with the practical application of theories. Prerequisite: one course in chemistry. Elective Pass/Fail.
- 302-3 to 4 Advanced Soil Science.** Basic principles of soil physics, chemistry and fertility as they relate to plant production. Prerequisite: 301. Elective Pass/Fail.
- 303-3 Landscape Plant Materials.** Classification, identification, landscape characteristics, and function of landscape plants, and ecological considerations in their selection and use. Prerequisite: an introductory biology course.
- 304-5 (3,2) Landscape Design.** (a) Introduction to theory and principles of landscape design as applied to the modern home. Property selection and climate control. Elective Pass/Fail. (b) Laboratory. Practical application in modern methods of property planning including the individual components of the completed landscape plan and selection of plants.
- 306-5 (3,2) Soil and Water Conservation.** (Same as Agricultural Industries 306.) (a) The study of the theoretical factors affecting soil erosion and excessive water run-off, including practices of water management and soil conservation. Prerequisite: 301. Elective Pass/Fail. (b) Laboratory. Practical structure methods of controlling water run-off and soil erosion. Prerequisite: 306a or concurrent enrollment.
- 309-4 Field Crop Production.** Principles of growth and production of common field crops: cereals, forages, and miscellaneous crops; growth characteristics; adaptation; improvement; culture; diseases and insects and their control; utilization. Prerequisite: an introductory biology course. Elective Pass/Fail.
- 310-4 Morphology of Crop Plants.** Cellular structure, vegetative and reproductive development, and gross morphology of the major crop plants. Utilization of crop plant parts. Prerequisite: one course in introductory biology or equivalent. Elective Pass/Fail.
- 315-4 Plant Genetics.** Principles of genetics and evolution of plants. Prerequisite: GSA 201b. Elective Pass/Fail.
- 316-4 Small Fruits.** Production of strawberries, brambles, grapes, and miscellaneous small fruits. Prerequisite: an introductory biology course or consent of department.
- 324-4 Orchardling.** Commercial tree fruit growing, physiology, orchard practices, pest control, harvesting, and marketing. Prerequisites: 264 or an introductory biology course.
- 347-3 Garden Flowers.** Culture, identification, and use of flowering bulbs, annuals, biennials, and perennials in the home flower garden. Prerequisite: an introductory course in biology or consent of department. Elective Pass/Fail.
- 359-3 to 5 Intern Program.** Work experience program in either an agricultural agency of the government or agri-business. Prerequisite: junior standing.
- 381-1 to 2 Plant Science Seminar.** Recent scientific developments in the field of plant science. Limited to senior students. Maximum one hour per term.
- 390-1 to 6 Special Studies in Plant Industries.** Assignments involving research and individual problems. Prerequisite: consent of chairman.
- 391-1 to 6 Honors in Plant Industries.** Independent undergraduate research sufficiently important to require 3 hours per week of productive effort for each credit hour. Prerequisite: junior standing, GPA of 4.0 with a 4.25 in the major, and consent of department chairman.
- 401-4 Soil Physics.** Physical properties of the soil; factors affecting them, their measurements, evaluation, and influence in determination of soil productivity. Prerequisite: 301.
- 402-4 Soil Morphology and Classification.** Morphology and soil formation, description and identification of soil profiles, classification of soils, techniques of soil mapping, and interpretation of survey data. Field trips cost approximately \$6.00. Prerequisite: 301.
- 403-4 Basic Soil-Plant Relationships.** The soil as a substrate for plant growth. The properties of the soil important in supplying the necessary mineral nutrients, water and oxygen and for providing an environment conducive for the elaboration of the root system. Prerequisite: 301. Elective Pass/Fail.
- 404-3 Turf Management.** Principles and methods of establishing and main-

taining turf for homes, recreational areas, and public grounds. Study of basic plant and soil materials, fertility, culture, water management, and pest control as related to turf-grasses in variable environments. Field trips. Prerequisite: an introductory biology course.

406-5 Radioisotopes, Principles, and Practices. Principles of radioisotope technology as applied to agricultural and biological sciences. Prerequisite: general chemistry and biochemistry or equivalent.

407-5 (3,2) Fertilizers and Soil Fertility. (a) Lecture. The uses of fertilizer material; effects of various fertilizers on soils and crops; fertility maintenance and soil management. Prerequisite: one course in soils; Elective Pass/Fail. (b) Laboratory. The laboratory study of the chemistry and fertility of soils. Parallels the theoretical presentation given in 407a. Prerequisite: 407a or concurrent enrollment.

408-4 World Crop Production Problems. Ecological and physiological factors influencing production in various areas of the world. Natural limitations on crop production. Non-agricultural factors influencing world crop output. Prerequisite: 109. Elective Pass/Fail.

409-3 Crop Physiology and Ecology. The effects and significance of physiological and ecological parameters on crop yields. Prerequisite: Botany 320 or consent of instructor.

410-4 Pest Control Principles and Operations. Pests and pest damage to plants; principles of pest control; control strategy and influence of pest control operations. Field trips. Prerequisite: Zoology 316 or equivalent, or consent of department.

415-4 Plant Breeding. Principles of plant breeding emphasized together with their application to the practical breeding of horticultural, agronomic, and forest plants. Prerequisite: any course in genetics. Elective Pass/Fail.

418-4 Weeds and Their Control. Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction. Mechanical, biological, and chemical control of weeds. State and federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field trips. Prerequisite: an introductory biology course. Elective Pass/Fail.

419-4 Forage Crop Management. Forage crop production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to animal production, soil conservation, crop rotation, and land use. Field trip costs approximately \$3.00. Prerequisite: one course in introductory biology or equivalent. Elective Pass/Fail.

424-5 (3,2) Soil Microbiology. (a) Lecture. A study of the numbers, characteristics, and biochemical activities of soil micro-organisms, with particular consideration of their role in the transformations of organic matter, nitrogen, and minerals as related to soil fertility and management. Prerequisite: one course in microbiology or soils; Elective Pass/Fail. (b) Laboratory. Experiments designed to determine numbers, and to study the characteristics and biochemical activities of the soil microflora as related to fertility. Prerequisites: 424a, or concurrent enrollment.

437-4 Vegetable Production. Culture, harvesting, and marketing of vegetables. Field trips. Two hours laboratory. Prerequisite: 264 or consent of department. Elective Pass/Fail.

438-3 Advanced Studies in Vegetable Crops. Genetics, morphological, and physiological factors influencing the production of vegetable crops. Offered in alternate years. Prerequisite: 264, Botany 320 or consent of department.

440-5 Plant Propagation. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Prerequisite: 264.

444-4 Floriculture. Principles of greenhouse management governing production, timing, and marketing of the major floricultural crops grown in the commercial greenhouse. Requires student-financed field trip. Prerequisite: 264. Elective Pass/Fail.

507-3 Advanced Soil Fertility.

518-4 Principles of Herbicide Action.

520-1 to 6 Readings.

533-5 Growth and Development in Plants.

575-1 to 6 Research.

581-1 to 6 Seminar.

588-1 to 12 International Graduate Studies.

590-1 to 4 Special Studies in Plant Industries.

599-1 to 9 Thesis.

President's Scholars

Courses

111-0 Freshman Honors Colloquium. Open to freshman in the 90th percentile on SIU predicted grade point average.

251-1 to 12 Honors Seminar. Prerequisite: President's Scholar status.

351a-1 to 12 Honors Seminar. Credit earned for these seminars may be used to satisfy up to nine hours of the requirement for General Studies Area A.

351b-1 to 12 Honors Seminar. Credit earned for these seminars may be used to satisfy up to nine hours of the requirement for General Studies Area B.

351c-1 to 12 Honors Seminar. Credit earned for these seminars may be used to satisfy up to nine hours of the requirement for General Studies Area C.

351d-1 to 12 Honors Seminar. Organization and communication of ideas. Credit earned for these seminars may possibly be used to satisfy a part of the requirement in General Studies Area D. Check with the dean of the General Studies Division if this is a consideration.

351e-1 to 12 Honors Seminar. Credit earned for these seminars may be used to satisfy up to six hours of the requirement for General Studies Area E.

399-2 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of President's Scholar Program and a faculty member of a subject-matter department. Prerequisite: consent of President's Scholar Program.

499-3 to 9 Undergraduate Honors Thesis. Preparation of honors thesis under supervision of a committee consisting of one or more faculty members in appropriate disciplines and a representative of the President's Scholar Program. Prerequisite: consent of department and the President's Scholars Program Committee.

Professional Education Experiences

Department

Supervised student teaching is conducted in cooperating public schools in Southern Illinois, suburban Chicago, and the Chicago city schools. The College of Education requires 16 hours of student teaching for the Bachelor of Science degree. Students are expected to enroll for the entire 16 hours during one quarter.

One of the following professional quarter plans of student teaching must be pursued by the student with the approval of the chairman of the Department of Professional Education Experiences.

The student teacher, under all plans, must follow the same daily schedule as his public school cooperating teacher. This means that the student teacher is to remain in school for the entire day and to participate in whatever extra-curricular activities his cooperating teacher participates.

During the professional quarter, the student teacher is expected to follow the school calendar of the school district in which he has been placed. During the time in which university students are student teaching, it may therefore be necessary for them to follow a calendar different from the quarterly University calendar. When this is necessary, the chairman of the Department of Professional Education Experiences will inform the student sufficiently far enough in advance in order that the student may make necessary arrangements.

Student teaching is a full professional commitment on the part of the student and is considered a professional quarter of experience in the field carrying 16 hours of credit. Additional hours can be taken only on a regular overload basis with special permission from the chairman of the Department of Professional Education Experiences and the Assistant Dean of Student Personnel Services.

No student may pursue a student teaching assignment other than one

described under one of the several professional quarter plans unless approved by the chairman of the Department of Professional Education Experiences. To request such approval, the student must complete the form, *Petition for Special Student Teaching Consideration*. This form may be secured from the Office of the chairman of the Department of Professional Education Experiences, Room 135, Wham Education Building.

Since student teaching is designed in terms of the needs of beginning teachers for complete and integrated experience, and since more than one supervisor may be in charge of the work done by the student teacher, no part of the work may be dropped by the student teacher with the expectation of continuing the remainder of the work for credit. Furthermore, if one supervisor finds it necessary to drop a student teacher from a part of the program, the College of Education reserves the right to require such student teacher to drop all of his program of assigned student teaching rather than merely a part of it.

If one wishes to student teach during the Fall, Winter, or Spring quarters of the academic year, it is necessary that his Final Application for Student Teaching be submitted prior to March 15 of the academic year preceding the quarter in which he wishes to student teach. Announcements will appear in the *Daily Egyptian*; major departments; and all academic advisement units will be notified. Students are scheduled for either Fall, Winter, or Spring quarter of the following year on the basis of information given on the application.

Application for student teaching during the summer sessions should be made not later than February 1 of the year they want an assignment. Application blanks may be secured from the office of the chairman of the Department of Professional Education Experiences.

Students are cautioned not to commit themselves to local housing for the quarter in which they may be doing student teaching. A housing contract cannot be used as justification for needing an assignment to a local school for the professional quarter. If the student is living in university housing, he should notify the housing office of the quarter he will be off-campus for the professional quarter.

Elementary Professional Quarter

This professional quarter is devoted to full-time student teaching in one of the elementary grades, 1 through 6, in an approved off-campus center. The student earns 16 hours of credit and is expected to participate in the instructional program, curricular as well as extra-curricular, for the entire school day, following exactly the schedule of his cooperating teacher.

Students register for Elementary Education 351 (student teaching) for 16 hours of credit.

Early-Childhood Education Professional Quarter

This professional quarter is devoted to full-time student teaching in either kindergarten or one of the primary grades in an approved off-campus center. The student must indicate his preference at the time of filing the Final Application for Student Teaching. The student earns 16 hours of credit and is expected to participate in the instructional program, curricular as well as extra-curricular, for the entire school day, following exactly the schedule of his cooperating teacher.

Students register for Elementary Education 350 (student teaching) for 16 hours of credit.

Secondary Professional Quarter

(EXCEPT VOCATIONAL AGRICULTURE AND VOCATIONAL HOME ECONOMICS)

This professional quarter is designed for the student who wishes to student teach in a specific subject matter area in one of the approved off-campus secondary schools, grades 7 through 12. The student is placed in an assignment which is consistent with his teaching major. The student earns 16 hours of credit and is expected to participate in the instructional program, curricular as well as extra-curricular, for the entire school day, following exactly the schedule of his cooperating teacher(s).

Students register for Secondary Education 352 (student teaching) for 16 hours of credit. Students register for the section consistent with their teaching major.

Vocational Agriculture Professional Quarter

Seniors preparing to be teachers of vocational agriculture do their student teaching in a professional quarter. The first week of the quarter is spent in an approved public school center. The 2nd and 3rd weeks of the quarter are spent on-campus in an intensive study of methods. Weeks 4 through 11 are given to supervised teaching in the same public school center. The last week of the quarter is spent on-campus for further intensive work in the evaluation of the student teaching experience.

Students may participate in this professional quarter only during the Fall or Winter quarters. The student registers for Agriculture Industries 309 for 4 hours of credit and Agriculture Industries 312 for 12 hours of credit.

The student is responsible for transportation to and from the center and also housing. It is recommended but not mandatory that the student teacher reside in the community while teaching. He is expected to remain on duty as long as the supervising teacher requires. He makes necessary visits after school hours to the homes of students to observe supervised farming programs. This may be true also for Saturday mornings. The student teacher is expected to attend all evening meetings such as the FFA, PTA, and adult farmer classes.

Vocational Home Economics Professional Quarter

This professional quarter is for students preparing to teach home economics at the secondary school level. During the first two weeks of this quarter, the student participates in an intensive study of methods. Weeks 3 through 11 are given to supervised teaching in an approved public school center. During the final week of the quarter, the student is on-campus for further intensive work in the evaluation of the student teaching experience.

The student registers for Secondary Education 352 (student teaching) for 12 hours of credit and Home Economics Education 310 for 4 hours of credit. The student is expected to participate in the instructional program, curricular as well as extra-curricular, for the entire school day, following exactly the schedule of his cooperating teacher.

In the off-campus student-teaching centers, students are assisted in locating housing by the university supervisors of home economics education and the local public school teacher. Students who live in University housing should indicate to the coordinator of housing the time when they will be off-campus for student teaching or Home Management House

residence so that adjustments in contracts can be made. Students living in housing other than university housing should make arrangements directly with those involved.

Student Teaching Prerequisites

1. Each student must have made formal application for entrance into the Teacher Education Program and must present his verification of the approved application when applying for student teaching.

2. A student must have 128 quarter hours of credit with a minimum of a 3.25 cumulative average before beginning work in student teaching.

3. The student is responsible for having all transcripts of credit earned at colleges or universities other than Southern Illinois University on file in the office of the chairman of the Department of Professional Education Experiences. (This requirement does not apply for hours of credit earned at Southern Illinois University at Carbondale.)

4. Before student teaching, the student in secondary education must have at least 30 quarter hours in the subject which he proposes to teach. Such credit must meet the approval of the respective department chairman. Each secondary student must have major academic training in a public school teaching subject.

5. Each student must have at least 11 quarter hours in professional education courses prior to doing student teaching. He must have successfully completed a course in each of the subjects listed under the appropriate heading below:

Secondary: general psychology, educational psychology, secondary teaching methods (a special secondary methods course is accepted only for teaching in the respective major teaching area), and history and principles of secondary education.

Elementary: general psychology, educational psychology, reading methods, general elementary methods, and two additional special methods courses in elementary education.

Early Childhood Education: general psychology, educational or child psychology, reading methods, kindergarten primary methods, Elementary Education 203 and 309. Music 200 or two levels of Music 010e are required of all students majoring in Early Childhood Education.

6. Previous to student teaching, all students must have completed GSD 101 and GSD 102 with a minimum grade of *C* in each course. Further, all students must complete a GSC English 200- or 300-level course with a minimum grade of *C*. If a student has a *B* or better in each course, GSD 101 and GSD 102, he may waive the GSC English 200- or 300-level requirement.

7. The student must have established at least one quarter of residence at Southern Illinois University, earning a minimum of 16 quarter hours of credit, prior to any student teaching assignment.

8. Every student teacher must have a health clearance from the University Health Service. The health clearance consists of a tuberculin test. If it is not convenient to come to the Health Service in Carbondale, the student may have a tuberculin test by his own medical doctor. The health clearance must be filed with the chairman of the Department of Professional Education Experiences.

Clinical Experiences Other Than Student Teaching

Other opportunities are provided for students in the Teacher Education

Program to observe and participate in the teaching-learning process in a clinical setting. This setting might be a public school classroom; this setting might also be in the on-campus Teaching Skills Laboratory.

In conjunction with observation and participation in a public school classroom, the student might elect either of the two following programs.

EARLY FALL FIELD EXPERIENCE

The student observes and participates for the opening two or three weeks of the public school year in a classroom in a cooperating school district. This observation is under the direction of the public school cooperating teacher and a University Supervisor from the Department of Professional Education Experiences. The student spends the entire school day for this period of time gaining insights into the procedures utilized in beginning the school year. Every effort is made to place the student in a location which will be consistent with his student teaching assignment.

The student registers for either Elementary Education 301 or Secondary Education 301 for 2 hours of credit. Due to the nature of this experience, it is available only during the Fall quarter. The student *must also* submit an application to the Department of Professional Education Experiences in order that placement can be secured. Application must be made by April 1 of the year the student wishes an assignment.

INSTRUCTIONAL ANALYSIS AND FIELD WORK

The student observes and participates in a public school classroom under the direction of the public school cooperating teacher and the University Supervisor from the Department of Professional Education Experiences. In this capacity the student will have an opportunity to perform many duties related to the teaching-learning process. These might include: preparing instructional materials, "setting-up" instructional equipment, evaluating student work, tutoring an individual student, working with a small group of students under the guidance of the cooperating teacher, etc. For this experience, the student might spend one entire day per week in a designated classroom, a specified number of mornings or afternoons, a block of one or two hours every day, or another arrangement that would be deemed beneficial.

The student registers for either Elementary Education 312 or Secondary Education 312 for from 2 to 8 hours of credit. The student *must also* submit an application to the Department of Professional Education Experiences in order that placement can be secured. At the time the application is submitted, the student should make an appointment with the Coordinator of Pre-Student Teaching Field Experiences in order to determine the time commitment and credit involved. This application must occur by the end of the ninth week of the quarter preceding the experience.

TEACHING SKILLS LABORATORY

In conjunction with the on-campus Teaching Skills Laboratory, the student can engage in various activities which are designed to assist him in acquiring, practicing, and evaluating the specific skills associated with the teaching process. The student can view video-tapes for the purpose of analysis of instructional processes. He can view various "demonstration tapes" which will be designed, along with related study guides, to assist him in specific teaching skills. Through "micro-teaching" arrangements, the student can practice these skills and arrive, eventually, at an evaluation of how effectively he can employ those skills.

The main objective of such a laboratory is to assist the student in focusing on the various processes that teachers employ in effective instructional procedures. The student can gain credit for participation in the various programs of the lab by registering for Elementary Education 312 or Secondary Education 312. Consultation with the coordinator of the teaching skills laboratory will be necessary in order to determine the number of hours of credit.

Admission to the Teacher Education Program

Information concerning admission to the teacher education program is included in Chapter Three of this bulletin under the overall heading College of Education.

Psychology

Department, Major, Courses

The undergraduate major in psychology is primarily aimed at providing broad general education rather than specialized professional training in psychology; to become a professional psychologist the student must usually complete from two to four years of postgraduate study.

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i>	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i> 23–24	
One year mathematics (111–10 or approved option) ... (5) + 5	
GSC FL	9 *
Second Year FL, or Mathematics 150–10 (or approved option)	9–10
<i>Requirements for Major in Psychology</i>	40
GSB 202, GSA 209	(8)
Mathematics 111	(10)
Psychology 211	8
Psychology electives	32
At least two courses from 301, 303, 304, 305, 307; 320, 322; any two courses from 311, 312, 314, 315, 316; any two courses from 404, 407, 408, 414, 421, 425, 431, 440, 451, 461, 465, 467, 479, 490; and any two additional courses from those listed above and/or 295, 399b, 490, 495	
<i>Electives</i>	54–55
<i>Total</i>	186

* GSC Foreign Language does not satisfy GSC requirements in the College of Liberal Arts

Minor

A minor in psychology consists of 24 hours of psychology courses.

Junior–Senior Honors Program

A small number of students are selected each year for the honors program. Selection criteria are promising academic performance (4.0 overall GPA and 4.25 psychology GPA minimum), expressed interest, and recommendation of department adviser. Emphasis is on small seminar and individual research work by the student.

Courses

101–4 Developing Effective Relationships. Literature relevant to human inter-

action. Personalized learning experience. Student is encouraged to make immediate use of relevant information in developing more effective relationships with peers, parents, and significant others. Examination of personal beliefs and values.

211-8 (4,4) Principles and Methods of Psychology. An introduction to the experimental methods utilized in the study of behavior. (a) The application of methods to the study of sensation, perception, and learning; (b) the analysis and interpretation of data. Lecture and laboratory. Prerequisite: GSB 202. **295-1 to 18 Undergraduate Seminar: Selected Topics.** Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: consent of instructor.

301-4 Child Psychology. A study of the biological and psychological development of the child from birth through puberty, and of relevant research methods and results. Prerequisite: GSB 202. Elective Pass/Fail.

GSA 302-3 Biological Psychology.

303-4 Adolescent Psychology. Examines the physical and psychological development of the adolescent, and the relevance of childhood development to adolescent problems. Prerequisite: GSB 202. Elective Pass/Fail.

304-4 Psychology of Maturity and Old Age. A consideration of psychological factors in later maturity and old age and their concomitant problems, both individual and societal. Prerequisite: GSB 202. Elective Pass/Fail.

305-4 Psychology of Personality. A study of the inferred patterns underlying an individual's unique reactions to his environment. Investigates the motivations, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: GSB 202. Elective Pass/Fail.

307-4 Social Psychology. Introduction to the study of the individual's interaction with his social environment. Considers problems of social learning, attitude formation, communication, social influence processes and group behavior. Prerequisite: GSB 202. Elective Pass/Fail.

311-4 Experimental Psychology: Learning. Investigates the processes governing behavioral change. Experimental studies of conditioning, memory, and forgetting will be emphasized. Laboratory work will include the design and conduct of experiments with humans and animals. Lecture and laboratory. Prerequisite: 211a,b.

312-4 Experimental Psychology: Perception. Investigates the variables influencing an organism's stimulation by his environment. The structure and operation of the sense organs as well as complex perceptual phenomena are examined in lectures and laboratory. Prerequisite: 211a,b.

313-4 Experimental Psychology: Motivation. An examination of both biological and social variables influencing the activation, direction, and maintenance of behavior. Laboratory work will examine the effects of motivation upon behavior. Lecture and laboratory. Prerequisite: 211a,b.

314-4 Experimental Psychology: Physiological. The role of the nervous and endocrine systems in the behavior of organisms. Lecture and laboratory. Prerequisite: GSB 202 and GSA 301 and not taken concurrently with GSA 302.

315-4 Experimental Psychology: Cognitive Processes. Considers the human being as an information-processing and decision-making device and examines ways in which information is selected, stored, retrieved, and translated into behavior. Lectures, demonstration experiments, and original research. Prerequisite: 211b.

316-4 Experimental Psychology: Social. Covers many of the basic content areas in experimental social psychology through textbook readings, lecture materials and laboratory experiences. The laboratory will require an increasing involvement on the part of the students, beginning with demonstration experiments and concluding with experiments run, analyzed and written up completely by the student. A variety of research topics and techniques will be studied. Prerequisite: 211b, 307.

320-4 Industrial Psychology. A study of the use of psychological methods in the analysis of human factors problems in business and industry. Prerequisite: GSB 202. Elective Pass/Fail.

322-4 Personnel Psychology. A study of the use of psychological methods in the selection, placement, and evaluation of personnel in business and industry. Prerequisite: GSB 202. Elective Pass/Fail.

323-4 Psychology of Employee Relations. Job satisfaction and morale, psychological aspects of labor relations, interviewing methods, and human relations training. Lecture. Prerequisite: GSB 202. Elective Pass/Fail.

330-4 Psychology Applied to Personal Adjustment. Reviews psychological

methods, particularly behavior modification, self-control, social learning, and self-understanding procedures, potentially useful in self-improvement. Training and practice are given using techniques individually designed to help the student learn to modify his own behavior in ways he wants to change. Personal problems discussed in small groups and/or with instructor. Effectiveness objectively assessed. Prerequisite: 8 hours of psychology.

399a-1 to 9, 399b-1 to 12 Research and Investigation: Honors. Intensive study in selected areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Prerequisite: consent of chairman. (a) For juniors. (b) For seniors.

404-4 Theories of Perception. An examination of the different theories concerned with an organism's sensory contact with his environment. Physiological, social, and organizational theories of perception will be considered. Prerequisite: 211b or consent of instructor.

407-4 Theories of Learning. Consideration of contemporary theories and their relation to experimental data. Prerequisite: 211a,b or consent of instructor.

408-4 Theories of Motivation. Systematic analysis of the concept of motivation with emphasis on its utility as an explanatory component of general behavior theory. Prerequisite: 211b or consent of instructor.

411-4 Seminar in Psychological Principles of Training. Undergraduate seminar. In depth coverage of those areas in which the principles of learning derived from laboratory research can be applied to practical problems. Prerequisite: GSB 202, Psychology 311.

414-4 Advances in Physiological Psychology. Reading and discussion of articles dealing with recent significant advances in the neuroendocrine bases of behavior. Prerequisite: 314, or consent of instructor.

415-4 Psychopharmacology. The effects of drugs on psychological processes and on the behavior of humans and animals. These effects related to the physiological and biochemical alterations that drugs produce. Prerequisite: Chemistry 122a and 123a or Psychology 314 and GSA 301, and GSB 202, or consent of instructor.

421-4 Psychological Tests and Measurements. Principles of psychological measurement, including errors of measurement, techniques for estimating reliability and validity, techniques of test construction, and problems in assessment and prediction. The laboratory will include the use of selected instruments. Lecture and laboratory. Prerequisite: 8 hours of psychology.

425-4 Mathematical Psychology. Survey of mathematical models of behavior, elementary models of learning, perception, and decision making. Prerequisite: 211b or consent of instructor. Elective Pass/Fail.

431-4 Psychopathology. Classification, description, etiology and treatment of the disorders of personality organization and behavioral integration. Observations in a state mental hospital setting. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

440-4 Theories of Personality. A review and critical evaluation of major personality theories and their supporting evidence. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

451-4 Advanced Child Psychology. An examination of the concepts, methods, and problems of human development with consideration of both its psychological and psychosocial aspects. Prerequisite: 211b, 301 or consent of instructor.

459-4 Theory and Practice in the Preschool. Designed for those in nursery education and related fields. Examines the variety of topics and provides lectures, demonstrations, and practicum experience in the child study cooperative nursery. Prerequisite: consent of instructor.

461-4 Advanced Social Psychology. Examines current areas of interest in the study of social behavior: language behavior, communication, social influence, attitude change, interpersonal perception, etc. Emphasis is on the individual in the social context. Prerequisite: 307 or consent of instructor.

465-4 Group Dynamics and Individual Behavior. Examination of research and theory in the area of small-group interaction. Examines such topics as group structure and function, group-solving, leadership, etc. Prerequisite: 307 or consent of instructor. Elective Pass/Fail.

467-4 Psychology of Black Americans. Critical examination of the issues in research and theory. Psychological differences between Black and white Americans. Includes self-concept, personality and temperament, intellectual functioning, behavioral genetics, socialization practices, and intergroup and intragroup relations. Prerequisite: 307 and GSB 202.

479-4 Animal Behavior. (See Zoology 479.)

- 490-1 to 16 Independent Projects. Independent readings and projects in psychology. Prerequisite: consent of instructor. Mandatory Pass/Fail.
- 495-1 to 18 Seminar: Selected Topics. Varied content. To be offered from time to time as need exists and as faculty interest and time permit. Prerequisite: consent of instructor.
- 509-4 Instrumentation in Behavioral Science.
- 510-4 History and Systems.
- 512-4 Sensory Processes.
- 514-8 (4,4) Physiological Psychology.
- 516-4 Learning Processes.
- 522-12 (4,4,4) Research Design and Inference.
- 523-2 Research Seminar. Evaluation of Research.
- 524-4 Multivariate Methods in Psychology.
- 525-4 Mental Test Theory.
- 526-4 Experimental Design in Psychology.
- 530-4 Personality Theory and Dynamics.
- 531-8 Advanced Psychopathology.
- 532-2 Experimental Approaches to Personality.
- 533-3 Experimental Approaches to Psychopathology.
- 536-4 Fundamentals of Counseling.
- 537-4 Counseling and Psychotherapy.
- 538-2 Group Psychotherapy.
- 539-4 Experimental Approaches to Psychotherapy.
- 541-4 Psychodiagnostics I.
- 543-6 (4,2) Psychodiagnostics II.
- 545-2 Psychodiagnosis III.
- 547-4 Assessment Procedures in Counseling.
- 552-4 Experimental Child Psychology.
- 554-2 Developmental Theory.
- 556-2 Psychological Treatment of the Child.
- 561-4 Social Influence Processes.
- 562-4 Observational Techniques and Content Analysis.
- 564-4 Communication and Group Behavior.
- 571-4 Industrial Motivation and Morale.
- 573-2 Selection and Placement.
- 574-2 Psychology of Industrial Relations.
- 576-2 to 4 Human Engineering.
- 581-4 Psychophysical Methods.
- 590-1 to 16 Readings in Psychology.
- 591-1 to 36 Research in Psychology.
- 593-1 to 18 Practicum in Psychology.
- 595-1 to 18 Advanced Seminar.
- 598-2 Ethical and Professional Problems in Psychology.
- 599-1 to 9 Thesis.
- 600-1 to 45 Dissertation.

Radio-Television

Department, Major, Courses

Bachelor of Science Degree, COLLEGE OF COMMUNICATIONS AND FINE ARTS

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Radio-Television</i>	48
<i>Minor in a Related Area</i>	24
<i>Electives</i>	46
<i>Total</i>	186

Radio-Television 300m,p, and s must each be completed with at least a grade of C before any other courses in the Department of Radio-Television are taken. A student must have completed 48 quarter hours of university credit before entering either Radio-Television 300m,p, or s; students with 67 quarter hours or more may take two of the entry courses and students

with 96 quarter hours or more may take all three in their entering quarter.

Not more than 56 hours of radio-television courses may be counted toward the first 186 hours required for graduation.

Students may elect to pursue the following specializations: performance, program and administration, television production, radio production, writing, news and public affairs, or may choose the general sequence.

Each student with a major in radio-television regardless of which specialization he may pursue must complete Radio-Television 384 and 393.

Each student with a major in radio-television must by the end of his sophomore year:

1. Either achieve a grade of *B* in both GSD 101 and 102 or a grade of *C* in English 290.
2. Either demonstrate proficiency in typing at 30 words per minute by passing a test administered by the radio-television department, or pass Secretarial and Business Education 201a with a grade of *B*.

Courses

300M-5 Radio-Television/Writing/Performance/Production. Introduction to techniques necessary for writing, performance, and production. Production sequence introduces students to basic radio and television equipment. Laboratory hours required. Extra fee for books and supplies \$15.00. NOTE: R-T 300M, 300P and 300S are all prerequisites for Radio-Television majors for all other courses. Students must attain a grade of *C* in these courses before taking other courses in the department.

300P-5 Programming and Analysis. A comprehensive examination of broadcast programming and audience analysis. Included are criteria for the evaluation of program content. NOTE: R-T 300M, 300P and 300S are all prerequisites for R-T majors for all other courses. Students must attain a grade of *C* in these courses before taking other courses in the department.

300S-5 Foundations of Radio-Television. Examination of the history and governmental control of the American system of broadcasting, including discussions of the industry and economics of broadcasting. NOTE: R-T 300M, 300P, and 300S are all prerequisites for R-T majors for all other courses. Students must attain a grade of *C* in these courses before taking other courses in the department.

302-2 Basic Radio Production. Correct techniques for radio communication through a basic understanding of the equipment and facilities for radio production. Laboratory hours required. Prerequisite: *C* grade in 300M, 300P, 300S.

303-3 Basic Television Production. Correct techniques for television communication through a basic understanding of the equipment and facilities for television production. Laboratory hours required. Prerequisite: *C* grade in 300M, 300P, 300S.

310-3 Radio-TV News. The basic techniques of writing, re-writing and editing news from local and wire service sources, for presentation on radio and television. Actual experience with the WSIU and WSIU-TV facilities is stressed. Prerequisite: *C* grade in 300M, 300P, 300S; 352.

325-3 Cable Communications. Legal-historical-economic survey of the new cable technology and the cable communications system. Industry trends and patterns of growth, agency rules, governmental policy statements, and scholarly studies. Prerequisite: *C* grade in 300M, 300P, 300S.

335-4 CATV Programming/Production. Presents theoretical approaches to programming for cable systems originating programs, as well as practical workshop experience in creating and producing such programming. Laboratory hours required. Prerequisite: *C* grade in 300M, P, and S; 325.

340-4 Analysis of Broadcast Production. An examination of existing broadcast techniques to develop the student's sensitivity to and perception of broadcasting production as a tool for communication. Requires several written critical analysis of current broadcast programs and production techniques. Prerequisites: *C* grade in 300M, 300P, 300S.

351-3 Programs and Audiences. The interworking of audiences upon programming, and programming on audiences. Methods of audience and program research, and an investigation of the factors that influence programming decisions. Prerequisites: *C* grade in 300M, 300P, 300S.

352-3 Broadcast Laws and Policies. Legal aspects of broadcasting in America. Precedent legal cases and actions by the Federal Communications Commission. Industry and network codes. International agreements. Prerequisite: *C* grade in 300M, 300P, 300S.

360-3 Radio Announcing. Radio announcing techniques and extensive practice for various announcing situations, with numerous audio recordings. Emphasis is placed on vocal development and interpretation. Laboratory hours required. Prerequisites: *B* grade in 300M or consent of instructor, *C* grade in 300P, 300S; Theater 203.

361-3 Television Announcing. Television announcing techniques and extensive practice for such situations as voice-over-film, special events, on-camera studio programs, and commercial presentations. Television studio facilities and video tape facilities for practice and performance. Laboratory hours required. Prerequisite: minimum grade of *B* in 300M or consent of instructor, *C* grade in 300P, 300S; Theater 203.

363-4 Intermediate Radio Production. Techniques of producing, directing, writing, and performing radio production announcements, with emphasis on creative use of sound effects and music. Laboratory hours required. Prerequisites: *C* grade in 300M, 300P, 300S; 302.

369-4 Television Directing. Instruction and laboratory experience in the directing of television programs, and in control room directing. Basic techniques in studio program directing including news and interviews. Laboratory hours required. Prerequisites: *C* grade in 300M, 300P, 300S; 303, 340, 374.

370-3 Television Newsfilm Production. Technique of filming short news stories and features. Each student will produce two short television films using standard 16mm equipment. Laboratory hours required. Extra fee for supplies and processing, \$20.00. Prerequisites: *C* grade in 300M, 300P, 300S.

371-3 Techniques of Staging, Lighting and Graphics for Television. A study of television studio set design, the various techniques of studio lighting, and the special demands of the graphic arts in television production. Laboratory hours required. Prerequisite: *C* grade in 300M, 300P, 300S; 303 or consent of instructor.

374-2 Television Studio Operations. Involvement in color television productions for WSIU-TV and closed-circuit operations, both videotaped and live. Laboratory hours required, to be arranged during first lecture period of the quarter. Must be taken for 2 hours credit the first time; then may be taken for 1 hour credit per quarter, for up to 4 hours total. Prerequisites: *C* grade in 300M, 300P, 300S; 303.

375-1 or 2 Individual Study. Assignments to be made through consultation with radio-television instructors. May be repeated, but for no more than a total of 4 hours. Prerequisites: *C* grade in 300M, 300P, 300S, and consent of the instructor.

377-3 Radio and TV Advertising. Study and practical radio-television experience in designing and developing promotional and publicity campaigns for the radio and television media. Scope of study includes radio and television advertising and sales techniques, methods and skills. Prerequisite: *C* grade in 300M, 300P, 300S.

380-2 Advanced Newsfilm Production. Intensive exercise in filming spot news and sound-on-film features. Laboratory hours required. Prerequisites: *C* grade in 300M, 300P, 300S; 370 or Cinema & Photography 355 and consent.

383-4 Broadcast Writing. Various forms for radio and television including continuity, spot, feature, and program. Prerequisite: *C* grade in 300M, 300P, 300S; 302, 303.

384-2 Radio-Television Practicum. Practical experience in broadcast operations. Required of all majors, and to be taken at the end of the student's chosen sequence. Prerequisite: varies depending on chosen sequence.

386-3 Advanced Radio Production. Student is given actual on-air radio production responsibilities as well as independent creative audio production. Laboratory hours required. Prerequisites: *C* grade in 300M, 300P, 300S; 302, 340, Theater 203, FCC Third Phone License with broadcast endorsement, or consent of instructor.

387-4 Advanced Television Production. The merging of all aspects of television communication to produce the complete television program, with emphasis on writing and producing. Laboratory hours required. Prerequisites: *C* grade in 300M, 300P, 300S; 303, 340, 369, 374, 383, and consent.

390-5 Broadcast Station Management. Objectives, procedures, equipment,

costs, and policies in radio and television station development, management and operation. Prerequisites: C grade in 300M, 300P, 300S; 351, 352, 377.

393-3 Radio, Television, and Society. The interrelation of radio and television with social habit patterns and with economic and political systems. Prerequisite: C grade in 300M, 300P, 300S; completion of 144 hours.

399-5 Internship Program. News, production, performance or management/sales work experience within a non-university professional organization. The student will be provided an educational experience beyond that available at the University. Prerequisites: junior standing, 4.0 average in major, specific courses completed in major and selection committee consent.

430-3 Public Affairs and the Radio-TV Establishment. Interdisciplinary examination of selected current major public issues and study of broadcast management's responses to those issues. Operational organization and reorganization, policy development, and procurement and allocation of personnel and other resources as responses to the developing public affairs commitment. Prerequisite: C grade in 300M, 300P, 300S.

453-3 Radio-TV in Education. History and role of radio and television in education. Philosophies for education by radio and television. Analysis of types of educational broadcasting, including in-school broadcasting, adult education, and service programs. Prerequisite: C grade in 300M, 300P, 300S.

464-3 Instruments of Public Affairs, Television Programming. Study and practice of sophisticated film and studio tools and techniques necessary for creation of public affairs television programming. Prerequisite: C grade in 300M, 300P, 300S.

467-3 Radio-Television Production Survey. Production problems including writing, announcing, production, direction, sales, and management. For non-majors only.

470-4 Documentary Film Production. For the student with a serious interest in the television documentary. Students work in teams researching, writing, shooting, and editing films on subjects related to history, culture, and social issues. Prerequisite: C grade in 300M, 300P, 300S; 370 or Cinema & Photography 355. Mandatory Pass/Fail.

475-1 to 8 Individual Study. May be repeated for a total of 8 hours, but for no more than 4 hours in one quarter. Assignments made by radio-television instructor. Prerequisite: C grade in 300M, 300P, 300S and consent of instructor.

481-4 ITV Administration, Production, Utilization. Development of ITV production with emphasis on the use of instructional objectives, the relationship of the users' manual to the instructional series, and the functions of various personnel in the administration of instructional television. Prerequisites: C grade in 300M, 300P, 300S.

490-8 Theatre-Television Workshop. (Same as Theater 490.) Experimental workshop in television drama. Laboratory hours required. Offered summers only. Limited to six students from each department. Prerequisite: C grade in 300M, 300P, 300S; 303, 387 and consent. Mandatory Pass/Fail.

Recreation

Department, Major, Courses

The Department of Recreation prepares the student for positions in the management of man's leisure time pursuits. The department builds its curriculum on a broad General Studies foundation, offers professional and skills courses within the Department of Recreation, and draws from many related departments of the university for competencies and skills in the preparation of leaders for the recreation profession.

The curriculum emphasizes the practical as well as the theoretical aspects of recreation by offering practicums, supervised field experience, and internships in various recreating settings throughout Illinois and the nation.

Students admitted to the Department of Recreation must meet the College of Education requirements and follow their procedures for acceptance. In order to be admitted to practicum courses, students must have a GPA of 3.25 and the consent of the instructor. Students who do not meet the

College of Education requirements must be screened and approved by the department undergraduate faculty.

Students majoring in recreation are required to complete 68 hours of General Studies, 67 hours of professional courses, a total of 16 hours of practicum and leadership experience in at least two areas of interest, and work closely with the department advisers in selecting electives for their chosen area of specialization or option.

The Department of Recreation offers courses leading to specialization in (1) park and community recreation, (2) recreation for special populations, (3) outdoor recreation, (4) commercial recreation management, and (5) outdoor education.

Students majoring in recreation who wish to teach in the public schools must complete a teaching major and fulfill the requirements of the College of Education.

Students majoring in recreation should start early in their college careers developing skills and competencies in music, dance, arts and crafts, literature, sports and games, nature, drama, and other leisure and cultural areas. The American Red Cross life saving certificate, American Camping Association campcraft certificate, workshop certificates in recreation sponsored by the state and national recreation and park associations, and other certificates in instructional areas are desirable in preparation for positions in recreation management.

As soon as possible the recreation major will decide on one of the five specializations and elect courses for his area of specialization. The undergraduate advisers in the Department of Recreation are available to students to explain job opportunities and to outline required and elective courses for their chosen option.

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Recreation</i>	83
Administration of Justice 473	4
English 290	3
GSB 203, 321	7
GSD 110	3
Guidance 305	4
Health Education 334s	4
Instructional Materials 417	4
Psychology 305, 307	8
Recreation 300, 302, 305, 310, 320, 365, 380, 425, 490	42
Speech 102 or 303	4
<i>One of the Following Five Specializations</i>	20-33
Park and Community Recreation	
Administrative Sciences 340	4
Community Development 401	4
Recreation 315, 325, 330, 340, 470	16
Recreation for Special Populations	
Psychology 304 or equivalent	4
Recreation 315, 325, 330, 340	12
Special Education 400	4
Outdoor Recreation	
GSA 312, 340	6
Administrative Sciences 340	4
Plant Industries 404	3

Recreation 301, 330, 368	11
Commercial Recreation Management	
Accounting 251a,b	8
Administrative Sciences 170, 301, 340	12
Finance 320	4
Outdoor Education	
GSA 312, 340	6
GSB 321	3
Recreation 301	4
Educational Administration and Foundations 355	4
Guidance 442	4
Psychology 301, 303	8
Instructional Materials 417	4
<i>Electives</i>	2-15
Total	<u>186</u>

Courses

300-4 Introduction to Recreation. Basic philosophical and historical foundations and development of leisure and recreation in light of economic, political, and social change. Prerequisite: Restricted to consent of department.

301-4 Outdoor Education. To acquaint students with the philosophy and techniques of teaching in the out-of-doors. Ways and means of various outdoor learning experiences. Prerequisite: 300 and 305 or consent of department.

302-4 Institutional Recreation. Philosophy, objectives, and basic concepts of therapeutic recreation. Emphasis on rehabilitation needs and "team" approach in institutional and community setting. Students will be required to arrange for transportation for a minimum of three field trips. Prerequisites: 305.

305-4 Programs in Recreation. Essential elements and basic principles involved in organization and administration of various types of recreation programs. Emphasis on leadership processes. Prerequisite: 300 or consent of department.

310-3 Social Recreation. Acquaints the student with the various recreation skills and leadership techniques in activities suitable for a variety of recreation settings and population groups. Prerequisite: 300 and 305 or consent of department.

315-3 Dramatics in Recreation. Principles, materials, and techniques of producing all types of dramatic activities for recreation with emphasis upon impromptu and informal dramatics. Prerequisite: 300 and 305 or consent of department.

320-4 Nature Interpretation. (Same as Conservation and Outdoor Education 320.) Acquaints the student with opportunities for the interpretations of the natural phenomenon. Avocational as well as the vocational aspects of natural resources. Prerequisite: 300 and 305 or consent of department.

325-3 Leisurecrafts. Methods and materials in arts and crafts projects suitable for playgrounds, recreation centers, clubs, and camps. Emphasis on use and care of simple tools, use of native and inexpensive materials, and creativity. Prerequisite: 300 and 305 or consent of department.

330-3 Campcraft. Leadership skills in the use of native materials and simple tools; identification and dietary use of wild fruits, berries and plants; outdoor cooking; construction of shelters and camp facilities; and other campcrafts. Course materials and field trips expenses shared by students. Prerequisite: 305 or consent of department.

335-3 Music and Dance in Recreation. Acquaints the student with methods, materials, and leadership techniques in music, dance, and rhythmic activities for a variety of recreation settings and population groups. Prerequisite: 305.

340-3 Recreation for Special Populations. Methods, materials, and leadership techniques for conducting social recreation for the physically handicapped, the mentally retarded, the aged, and other special populations. Students will be required to arrange for transportation for a minimum of three field trips. Prerequisite: 302.

360-4 Playground Administration. Prerequisite: 300 and 305 or consent of department.

365-4 Organization and Administration of Community Recreation. Administra-

tive procedures in park and recreation departments—organization, finance, personnel, facilities, program, public relations, and other areas of administration. Prerequisites: 300, 305 and 15 hours in recreation or consent of department.

368-4 Camp Management. Principles and procedures of selection and supervision of personnel, program planning, food preparation, health and safety, camp maintenance, evaluation, and other responsibilities of camp administration. Prerequisites: 300, 305, and 15 hours in recreation or consent of department.

380-2 to 8 Field Work. Supervised leadership experience in a public or private agency with emphasis on recreation activities common to such organizational programs. Student will be expected to furnish transportation. Prerequisite: 20 hours in recreation and consent of instructor.

425-4 Areas and Facilities. All phases of principles, development, maintenance and construction of areas and facilities used in a recreation setting. Stress is put on selection and supervision of maintenance personnel. There is a maximum fee of \$5.00 for course materials in lieu of textbook. Prerequisite: 305.

450-4 Performing Arts in Recreation and Education. Principles, materials, and techniques of producing all types of drama, music, and dance activities for a variety of recreation and education settings and population groups. Prerequisite: 300 and 305 or consent of department.

470-4 School and Community Recreation. The role of the public schools in community recreation. Emphasis on current practices and trends in curriculum content, adult education, extracurricular activities, after-school and vacation programs, and cooperative programs with other agencies. Prerequisite: 300 and 305 or consent of department.

480-2 to 16 Practicum in Outdoor Education. A supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching, and program leadership in an outdoor, conservation, or environmental education setting. Prerequisite: consent of instructor.

490-8 to 16 Internship in Recreation. Supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching, and program leadership in schools, community, industrial, agency, park, institutional and other recreational situations. Prerequisite: 20 hours recreation courses.

500-4 Principles of Recreation.

510-4 Outdoor Education Workshop.

520-4 Recreation Administration Workshop.

525-4 Special Population Workshop.

530-4 Recreation Program Workshop.

540-4 Planning Outdoor Areas for Education and Recreation.

560-4 Seminar in Environmental and Outdoor Education.

570-4 Seminar in Leisure and Recreation.

596-2 to 9 Independent Study.

599-5 to 9 Thesis.

Rehabilitation

Institute, Major (graduate only), Courses

Courses

414-1 to 16 Developing Employment Opportunities. Trains rehabilitation personnel in the attitudes, methods, and skills pertinent to placement of handicapped persons in competitive and other occupations. Prerequisite: consent of instructor.

417-4 Rehabilitation of the Economically Deprived. Analysis of employment problems of the economically deprived with attention to training, counseling, and programs for rehabilitation.

420-3 to 4 Human Development and Behavior. Consideration of human development from the framework of the major theories. Acquisition and maintenance of diverse behavior patterns. Prerequisite: advance standing.

480-2 to 4 An Introduction to Rehabilitation. The philosophy, procedures, and practices underlying the rehabilitation movement, including the history and legislation that have contributed to its rapid development.

481-2 An Introduction to Employment and Developmental Services. The development and growth of employment services and special youth centers, current social needs and trends, and the organizational patterns in such centers.

- 485-4 **Scientific Methods in the Behavioral Sciences.** Scientific methods as an approach to the investigation of human behavior including consideration of various systems of behavior theory and practice.
- 486-4 **Introduction to Behavior Modification.** Overview of the field of behavior modification, its procedures, techniques, and methods. A survey of current literature examining the various populations being utilized.
- 490-1 to 6 **Readings in Rehabilitation.** Select readings in rehabilitation supervised by the staff. Prerequisite: consent of instructor.
- 501-6 (2,2,2) **Rehabilitation Administration.**
- 503-2 **Case Management in Rehabilitation.**
- 511-2 to 4 **Vocational Development and Occupational Choice.**
- 519-2 to 3 **Selection, Placement, and Follow-up.**
- 520-4 **Functional Analysis of Behavior.**
- 521-4 **Child Behavior.**
- 526-4 **Complex Human Behavior.**
- 531-2 to 4 **Vocational Appraisal.**
- 532-3 to 4 **Assessment Procedures in Rehabilitation.**
- 533-4 **Measurement in Behavior Change.**
- 535-4 **Schedules of Reinforcement.**
- 536A-4 **Individual Assessment in Rehabilitation.**
- 537-4 **Diagnostic Procedures for Special Populations.**
- 539-1 to 6 **Behavioral Programming.**
- 541-1 to 6 **Medical Aspects of Rehabilitation.**
- 543-4 **Structural Basis of Behavior.**
- 551-3 to 4 **General Rehabilitation Counseling.**
- 552-4 **Rehabilitation Counseling Research.**
- 555-2 **Rehabilitation Counseling with Mentally Retarded.**
- 556-2 to 4 **Group Procedures in Rehabilitation.**
- 558-4 **Programmed Instruction and Behavior.**
- 561-2 to 3 **Psycho-social Aspects of Disability.**
- 563-4 to 8 **Aversive Control and Aggressive Behavior.**
- 564-4 **Sexual Behavior.**
- 565-4 **Verbal Behavior.**
- 567-4 **School-Related Behavior.**
- 571-1 to 6 **Seminar in Selected Topics.**
- 574-1 to 12 **Seminar in Pastoral Counseling.**
- 576-1 to 12 **Seminar in Behavior Modification.**
- 578-1 to 6 **Seminar in Correctional Rehabilitation Counseling.**
- 585-1 to 24 **Practicum in Rehabilitation.**
- 589-0 to 12 **Internship in Rehabilitation.**
- 590-1 to 16 **Independent Projects.**
- 591-1 to 16 **Research in Rehabilitation.**
- 599-1 to 9 **Thesis.**

Religious Studies

Minor, Courses

Religious studies examines religious attitudes and behaviors from their earliest beginnings through their dominant forms, east and west, to their modern developments pointing continually to the question: How is religion possible today? Study of this kind makes a significant contribution to a liberal education in the humanities and social sciences and also provides a useful base for graduate study in religion or in any of the helping professions such as the ministry, medicine, psychiatry, law, social work, public service, or the arts.

Students wishing to construct a special major in religious studies and certain related departments should consult with the religious studies director.

Minor

Students may take a minor in religious studies by completing at least 30 hours from the list below or from related courses in other departments

(e.g., GSC 102, Philosophy 301, 310, 311, 312, Sociology 351). Students may offer additional courses in other departments as counting toward a religious studies minor upon approval of the religious studies director.

Courses

301-3 Contemporary Western Religious Thought. A critical evaluation of current religious thought and movements.

320-6 (3,3) Biblical Studies. (a) Old Testament History and Literature; (b) New Testament History and Literature. Prerequisite: junior standing or consent of instructor.

330-9 (3,3,3) History of Western Religious Thought. (a) Early and Medieval; (b) Reformation Era; (c) Post Reformation and Modern. Prerequisite: junior standing or consent of instructor.

331-9 (3,3,3) Religions in America. The origin and growth of American Protestantism, Catholicism, and Judaism as well as cults and protests arising outside these. (a) The colonial period-faith and reason. (b) The nineteenth century—The age of reform. (c) The twentieth century-religious ferment. Prerequisite: sophomore standing, consent of instructor.

340-3 History of Ideas in Judaism. Ancient and modern developments in Jewish law, cult, prophetism, sects, mysticism, realism, and utopia. Prerequisite: GSC 215, Philosophy 310, or consent of the instructor.

341-4 Themes in Greek Tragedies and the New Testament. (Same as Greek 341) Greek tragedies and passages from the Synoptic Gospels and the Letters of Paul showing similarities and differences in their treatment of such themes as freedom, law, love, and justice. Prerequisite: GSC 330 or 332 or drama course or Classical Studies 420 and GSC 215 or Philosophy 310 or consent of instructor.

352-4 Urban Ethics. Sociological, historical, imaginative, and strategic methods applied to studies of black, ethnic, street-corner, sub-urban, pre-urban, post-urban communities. Problems considered: time, space, justice, oppression, evil, utopia. Basic question: is urban life possible?

353-4 Social Ethical Styles. Methods of identifying social problems, criticizing the ethical arrangements of social groups, and developing strategies for effective and humane life. Sample problem areas: sexism, technocracy, sexuality, revolution, militarism, celebration, racism, communal life. Principal question: How can humanity be created?

360-8 (4,4) The Religious Image. The uses of artistic media for conveying religious trends, insights, and doctrines. All materials past and present to be studied in historical context. (a) Literary. (b) Visual.

376-1 to 4 Honors Readings in Religion. Topics selected by student and instructor which ordinarily are not covered in depth in regular course offerings. Prerequisite: consent of department.

Secondary Education

Department, Courses

One who is preparing to teach in junior high school or high school does not major in secondary education but must major in any of the areas listed below.

The Department of Secondary Education concerns itself with the sequences of professional education courses that lead to certification for teaching in the junior high school and the high school. In addition, it advises students concerning major and minor preparation.

Bachelor of Science Degree, COLLEGE OF EDUCATION

A student in the College of Education who is preparing to teach in junior high school or high school may select academic majors and minors from the following:

<i>Teaching Area</i>	<i>Major</i>	<i>Minor</i>
Agricultural Education	X	
Art		X

Biological Sciences	X	X
Black American Studies		X
Botany ¹	X	X
Business Teacher Education	X	X
Chemistry	X	X
Driver and Safety Education		X
Earth Science		X
Economics	X	X
English	X	X
Foreign Languages	X	X
General Science	X	
Geography	X	X
Government	X	X
Health Education	X	X
History	X	X
Home Economics Education	X	
Instructional Materials		X
Language Arts and Social Studies	X	
Mathematics	X	X
Microbiology		X
Music	X	X
Occupational Education	X	
Philosophy		X
Physical Education for Men	X	X
Physical Education for Women	X	X
Physics	X	X
Physiology		X
Psychology		X
Social Studies	X	
Sociology		X
Speech	X	X
Theater		X
Zoology ¹	X	X

¹ A student with a major in botany or zoology should have a minor in the other in order to meet certification standards for teaching biology at the high school level.

Standard High School Certificate

In addition to entering the secondary education program directly from within the College of Education, a student may enter the program of the College of Education by transfer (1) from the General Studies program (provided he has attained 48 quarter hours), (2) from other academic units, or (3) from other institutions. In each case, he is subject to the requirements for meeting State of Illinois Standard High School Certificate requirements.

1. He must meet the requirements related to the state and federal constitutions satisfied by one of the following: GSB 212, 300a, other courses listed in Chapter 3, or by written notification from another institution.

2. He must meet the requirements in health and physical education which can be satisfied by taking any two hours in courses in GSE 100-114 and three hours in GSE 201.

3. There is no general requirement in foreign language in the Department of Secondary Education except in those situations where the student must meet a foreign language requirement as part of his academic major.

4. He must complete either one major of at least 48 hours or one major of 36 hours and two minors with a sufficient number of hours to meet the teaching requirements for each.

5. He must, if working for certification at the secondary level, complete the following sequence of professional education courses, for at least 32 hours.

Guidance 305 (GSB 202 is prerequisite)	4
Secondary Education 310	4
Secondary Education 315 or Special Methods (i.e., Secondary Education 487, 488 or other departmental methods)	3-4
Secondary Education 352	16
Select at least two courses from the following list of restricted professional education electives	6-8
Agricultural Industries 311	4
Art 308	3
Educational Administration and Foundations 355	4
Guidance and Educational Psychology 422	4
Home Economics Education 310	4
Instructional Materials 417	4
Secondary Education 407a	4
Secondary Education 340	4
Secondary Education 312	4
Secondary Education 495	4
Secondary Education 315 ¹	4
Occupational Education 493	3

6. He must satisfy the Student Teaching prerequisites. Anyone who wishes to qualify for the Standard Special Certificate for grades K through 12 should see below.

A student in an academic unit other than the College of Education who desires to obtain a standard High School Certificate should follow the teacher preparation program as described in this bulletin.

¹ Secondary Education 315 may not be selected from this list if it has been taken previously as a requirement.

Standard Special Certificate

The standard special certificate is valid for four years for teaching the special subject or subjects named on the certificate in grades kindergarten through 12. Special subjects for which students at Southern Illinois University at Carbondale may qualify for a standard special certificate include physical education for men, physical education for women, art, and music. This certificate may be issued to one who has a bachelor's degree and presents certified evidence of having earned credit as follows:

<i>General Studies Requirements</i>	68
<i>Professional Education Requirements</i>	32
Guidance 305 (GSB 202 is prerequisite)	4
Secondary Education 310	4
Secondary Education 315	4
Special Methods (i.e., departmental methods)	3-4
Secondary Education 352	16
Select at least two courses from the following list of restricted professional education electives	6-8
Agriculture Industries 311	4
Art 308	3
Educational Administration and Foundations 355	4

Guidance and Educational Psychology 422	4
Home Economics Education 310	4
Instructional Materials 417	4
Secondary Education 407a	4
Secondary Education 340	4
Secondary Education 312	4
Secondary Education 495	4
Secondary Education 315 ¹	4
Occupational Education 493	3
<i>Electives</i> ² (refer to academic major)	
Total	186

¹ Secondary Education 315 may not be selected from this list if it has been taken previously as a requirement.

² The number of hours of electives will depend upon the major field selected. The total of General Studies requirements, professional education requirements, the major, and elective hours must total at least 186 quarter hours.

Courses

Students may be required by their instructor to purchase instructional materials to supplement those available through the book rental system provided that total cost does not exceed eight dollars per course.

301-2 Early Fall Field Experience. Acquaints prospective secondary teachers early in their professional program with the teaching-learning process in relevant classrooms. Minimum period of two weeks in early September. Enrollment must be arranged through the Office of Professional Education Experiences.

310-4 History and Principles of Secondary Education. This course presents the nature, objectives, and current practices found in secondary schools throughout America. Prerequisite: Guidance 305 or Psychology 303, admission to the teacher education program, completion of 18 or more quarter hours in a declared concentration.

312-2 to 8 Instructional Analysis and Field Work. Analysis of classroom interaction in public schools. Allows the teacher education student to move into classrooms for direct observation and participation. May be taken in two hour blocks up to eight hours credit. Enrollment must be arranged through the Office of Professional Education Experiences. Prerequisite: 310 and admission to teacher education program.

315-4 Secondary School Methods. Various types of procedures used for effective classroom teaching constitute the basis of study and discussion. The problem approach and unit method are stressed. Prerequisite: 310 or concurrent enrollment.

340-4 Teaching Reading in High School. A foundation course in how to teach reading in junior and senior high school: developmental and remedial reading programs; appraisal of reading abilities; methods and materials of instruction. Prerequisite: Guidance 305.

352-8 to 16 Secondary Student Teaching. Enrollment in this course must be arranged through the Office of Professional Education Experiences.

375-2 to 4 Individual Research. Selection, investigation, and writing of a research topic, in one of the following areas: (a) Curriculum. (b) Instruction. (c) Language arts. (d) Science. (e) Reading. (f) Social studies. (g) Problems in secondary education. (h) Junior high school methodology. Prerequisite: 310 arrangement with chairman or appropriate advisor for the study area.

402-4 Aerospace Education Workshop. Teachers learn about current developments in this area and how to incorporate aerospace information into existing curricula. They study in some detail the social, political, and economic consequences of this era.

407-8 (4,4) The Middle and Junior High School. (a) Organization, administration, and curriculum. (b) Workshop. Enables teachers to discover and evaluate new content, methods, and materials available and develops teacher-made functional instructional models. Must be taken in a,b sequence. Middle or junior high school teaching experience may be substituted for (a) as a prerequisite to (b). Prerequisite: 310.

- 485-3 Principles and Philosophies of Vocational and Technical Education. (See Occupational Education 485.)
- 487-4 Teaching the Natural Sciences in Secondary Schools. Objectives of science education; instruction methods and techniques appropriate for teaching science; desirable equipment, audio-visual aids, and instructional material; development of a course outline and at least one instruction unit. Prerequisite: 310 or concurrent.
- 488-4 Teaching Social Studies in Secondary Schools. Deals with objectives, scope and sequence of curriculum, methods of teaching different courses and age groups, materials and evaluation. Prerequisite: 310 or concurrent enrollment.
- 490-4 Workshop in Economics Education. (See Economics 490.)
- 495-2 to 4 Seminar in Problems Related to Teaching Disadvantaged Youth. Prerequisite: 310.
- 498-2 to 6 Field Study Abroad. Orientation and study before travel; readings, reports, and planned travel. Includes visits to cultural and educational institutions. Prerequisite: consent of instructor.
- 506-4 Reading in the Secondary School.
- 507-2 to 4 Readings in Reading.
- 508-4 Current Developments in Selected Subject Areas in Secondary Schools.
- 509-4 to 8 Practicum in Reading.
- 510-4 to 8 Seminar: Problems in Reading.
- 514-4 Organization and Administration of Reading Programs.
- 516-4 to 12 Internship in Reading.
- 518-4 Supervision of Professional Education Experiences.
- 521-12 (4,4,4) Diagnosis and Correction of Reading Disabilities.
- 560-2 to 12 (2 to 8 per quarter). New Developments in Occupational Education.
- 561-4 Curriculum.
- 562-4 Secondary School Curriculum.
- 564-4 Secondary Principalship.
- 566-4 Seminar in Instruction.
- 570-4 Student Activities.
- 571-4 Seminar in Curriculum.
- 572-4 Seminar: Research and Evaluation in Secondary Education.
- 575-2 to 4 Individual Research.
- 588-4 Social Studies Education in the Secondary School Curriculum.
- 591-4 Workshop in Secondary Education.
- 596-5 to 9 Independent Investigation.
- 597-4 Seminar in Proposal Development.
- 598-2 to 12 Practicum.
- 599-3 to 9 Thesis.
- 600-1 to 48 Dissertation.

Secretarial and Business Education

Department, Major (See Business Teacher Education), Courses

The Department of Secretarial and Business Education offers a business teacher education major, the purpose of which is to prepare business teachers for work in high schools, community colleges, and other institutions in which business subjects are taught.

Students who prepare to teach business subjects also become qualified for work in business and industry, particularly in secretarial, accounting, marketing, and management positions. Upon graduation, then, business teacher education majors have job opportunities in two areas: (1) working as teachers, supervisors, or administrators in educational institutions; and (2) working as secretaries, accountants, office managers, and in other positions in business and industry.

Courses

Tests are given during the first week of all shorthand and typewriting courses to insure the correct placement of students in classes.

- 201-9 (3,3,3) Typewriting. Mastery of the keyboard, speed and accuracy in

the touch operation of the typewriter, and skill and knowledge needed for vocational and personal uses. Must be taken in a,b,c sequence. (a) May not be taken for credit by students who have had previous high school or other formal instruction in typewriting; (b) Prerequisite: 201a or equivalent. (c) Prerequisite: 201b or equivalent.

221-12 (4,4,4) Shorthand and Transcription. The Gregg shorthand system and the development of skill and knowledge required in taking dictation and transcribing it on the typewriter. (a) May not be taken for credit by students who have had previous high school or other formal instruction in shorthand. (b), (c) Must be taken in a,b,c sequence.

241-1 Duplicating. Skills and knowledges in the preparation of master copies and stencils and the operation of liquid and stencil duplicators. Prerequisite: 201a or equivalent.

242-1 Calculating Machines for Accountants. Fundamental knowledges and skills needed by accountants in the selection and use of calculating machines. Emphasis on special problems encountered by accountants.

243-1 Key punch. Emphasis on skill development and solving special problems, such as setting up program cards, determining fields, and tabulating numerical copy. Prerequisite: 201a or equivalent.

304-3 Advanced Typewriting. Emphasis on development of advanced typewriting skills and knowledges and their application in typing office style copy including statistical reports; tabulation of unarranged materials; business correspondence; legal, medical, governmental, and technical typewriting problems; typing from rough draft copy; and voice writing machine transcription. Prerequisite: 201c or equivalent.

317-4 Applications and Fundamentals of Data Processing in Business Education. Data processing taught in high school business classes. Emphasis on vocabulary development, unit record equipment, concepts of programming, fundamentals of computer mathematics and applications, and flow charting.

324-8 (4,4) Advanced Shorthand and Transcription. The development of high-level dictation and transcription skills and knowledges. Must be taken in a,b sequence. Prerequisite: 221c or equivalent.

326-4 Executive Secretarial Procedures. For secretaries and administrative assistants, covering personality and human relationships, office mail, office equipment, travel, sources of information, communications, and business reports. Prerequisite: 201c or equivalent.

341-4 Office Calculating Machines. Operation of basic types of office calculating machines, emphasizing the characteristic uses of each kind of machine in the office. Laboratory practice required on electronic, key driven, printing, and rotary calculators and on ten-key and full-keyboard adding-listing machines.

351-3 Teaching Typewriting. Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, standards of achievement, review of course content, and evaluation of pupil performance. Prerequisite: 304 or equivalent.

352-3 Teaching Shorthand and Transcription. Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, review of course content, standards of achievement, and evaluation of pupil performance. Prerequisite: 324a or equivalent.

353-3 Teaching General Business Subjects. Development and use of instructional methods and materials, review of course content, and the evaluation of pupil progress in such basic business subjects as general business, consumer education, and business law.

354-4 Teaching Office Practice and Office Machines. Instructional methods and materials for and the evaluation of pupil performance in office practice, clerical practice, and office machines. Review of course content. Prerequisite: 326 or equivalent and 341 or equivalent.

355-4 Teaching Bookkeeping and Accounting. Teaching procedures, instructional materials, and evaluation of pupil progress in bookkeeping and accounting; instruction and practice in operations taught in high school and community college bookkeeping-accounting classes. Prerequisite: Accounting 251b or equivalent.

409-4 Teaching Distributive Education. For those who plan to become teacher-coordinators of vocational cooperative or in-school distributive education programs. Emphasis on the planning of facilities; selection and review of course content; preparation of instructional materials; organization and arrangement of units; related instruction; simulated block and project plans; and student evaluation. Prerequisite: Marketing 301.

410-4 Teaching Consumer Education. For teaching in secondary schools and junior colleges. Emphasis on meeting state requirements for teachers of consumer education in Illinois. Selection and study of course content; preparation of instructional materials; organization and arrangement of units of study; and planning an evaluation program. Prerequisite: GSB 346, or Finance 305, or equivalent.

411-1 to 6 Workshop in Business Education. Major issues in business teacher education. Offered during one or two weeks of the summer session. Prerequisite: senior standing.

412-4 Teaching Data Processing. Instructional methods and materials for and the evaluation of pupil progress in data processing. Prerequisite: 317 or Data Processing 101a.

414-6 (3,3) Organization and Administration of Project Plan and Cooperative Vocational Business Education Programs. (a) Philosophy and objectives of cooperative vocational programs, methods of selecting students and work stations, and placing and coordinating students in supervised cooperative work stations. (b) Preparation of instructional materials, job analysis, conducting related information classes, evaluating workers and work stations, advisory committees, public relations aspects of cooperative programs. Prerequisite: consent of instructor.

415-6 Supervised Business Experience and Related Study. Prepares teachers and coordinators in accordance with the requirements of the Illinois State plan for the administration of vocational education. Principles and problems of coordinating in-school or cooperative vocational business education programs; supervised occupational experience; classroom analysis and evaluation of on-the-job experiences of the members of the class in relation to their future work as coordinators and vocational teachers. Prerequisite: consent of instructor.

426-4 Office Management. Principles of management applied to office problems. Emphasis on the role of the office in business management; office organization; physical facilities and layout of office; office services, procedures, standards, and controls; and records management.

427-4 Records Administration. The value of records, their creation, control, retention, and disposition. Application of principles to such records as medical, legal, educational, industrial, and governmental.

485-4 Principles and Philosophies of Vocational and Technical Education. (See Occupational Education 485.)

500-4 Principles and Problems of Business Education.

502-4 Research in Business Education.

503-4 Tests and Measurements in Business Education.

508-4 Administration and Supervision in Business Education.

509-4 Improvement of Instruction in General (Basic) Business Subjects.

510-4 Improvement of Instruction in Secretarial Subjects.

525-4 Cooperative Vocational-Technical Education.

590-1 to 5 Readings in Business Education.

591-2 to 5 Individual Research in Business Education.

599-1 to 9 Thesis.

Secretarial and Office Specialties

Program, Major, Courses

The business world offers many opportunities for secretarial and office personnel with special interests and extensive skills in specific areas. Both men and women find this a rewarding career field.

A student may earn credit by class attendance; transferring credits from an accredited post-secondary school, such as a community college; passing a proficiency examination; or credit granted for work experience.

The student may prepare for a position in a field of special interest by working with an adviser to choose from a variety of allied health, technical, graphic, and business courses to build upon the basic secretarial requirements in creating an individualized program of study. The student interested in legal secretarial work might take additional courses in legal shorthand, jury charge, two-voice testimony, legal office procedures, and business law. One who wishes to become a medical secretary might de-

velop a program including courses in physiology, medical shorthand, and medical office procedures. The student working toward a specialization for insurance secretaries might take courses in business forms design, technical writing, insurance, machine transcription, and office administration and supervision. A program leading to a specialization for the international service secretary might include courses in international relations, current events, a foreign language, office procedures, and business law. Other possible specializations include engineering secretary, administrative assistant, technical secretary, or graphics and design secretary. Students in all areas of specialization will receive on-the-job training in an office related to their area of specialization.

Court and conference reporting is offered as a third-year specialization beyond the associate-degree secretarial program. Students combine classroom instruction with actual courtroom experience in the company of an official reporter in preparation for the National Shorthand Reporters Association examination.

An advisory committee composed of professional secretaries and business executives serves the program. Current members are: Avis Cardwell, official circuit court reporter, Murphysboro; Charles Cox, supervisor of personnel services, Olin Corporation, Marion; Rosemary Hendricks, secretary development and manuals coordinator, Eli Lilly and Company, Indianapolis; Pearl Roberts, certified professional secretary, Johnston City; Deborah Silkwood, administrator, Doctors Hospital, Carbondale; L. Nadine Sams, insurance secretary, Massachusetts Mutual, Mattoon; and Maria Palaez, bilingual secretary, Latin American Institute, Southern Illinois University at Carbondale.

A total of 96 hours credit is required for this major.

Associate in Art Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Secretarial and Office Specialties

GSB 202, 212	8
GSD 101, 102, 153	9
Secretarial and Office Specialties 101a,b,c, 104a,b,c, 107, 109, 110a ..	37
Electives (to be chosen in consultation with adviser)	42
<i>Total</i>	<u>96</u>

Courses

109-3 Calculating Machines. Development of operational skill on the key-driven calculator, ten-key adding machine, full-key adding machine, rotary calculator, accounting machines, and electronic display calculators. Lecture 1 hour. Laboratory 4 hours.

110-4 Accounting. Basic structure of accounting-ledger, journal posting, trial balance, accounting cycles, sales and cash receipts, purchase and cash payments, notes, deferrals and accruals, accounts receivable, inventory and plant assets, accounting systems, concepts, and control. Payroll and sales taxes.

126-3 Fundamentals of Business. This survey of business services provides a general knowledge of the modern business world and a basis for determining occupational possibilities and requirements. Lecture 3 hours.

127-6 (3,3) Salesmanship. Principles and techniques of selling. (a) Basic principles of salesmanship. Personality requirements, techniques of making sales in the retail stores, retail sales problems and ways to solve them. (b) Analysis of the techniques of prospecting used in specialized selling; determining customer needs, presenting merchandise, meeting objections, and professionally assisting customers. Lecture 3 hours. May be taken in a,b or b,a sequence.

201-4 Accounting. An advanced study of accounting record, merchandising and

manufacturing accounts, end-of-year procedures, corrections of profit of prior periods, accounting statements, current assets, and long-term investments. Lecture 3 hours. Laboratory 2 hours.

203-4 Insurance. Provides a general knowledge of the nature of risk bearing, insurance contracts, life and health insurance, and the governmental regulations of insurance. Lecture 4 hours.

208-6 Insurance Shorthand and Transcription. Insurance vocabulary is emphasized, in writing shorthand and transcribing notes. Speed for dictation is maintained at a minimum of 100 words per minute for 5 minutes with 95 percent accuracy. Special shortcuts for writing insurance terms are stressed. Lecture 4 hours. Laboratory 4 hours.

226-8 (4,4) Business Law. (a) Introduction to the history and philosophy of law, contract law, and agency law. Lecture 4 hours. (b) Negotiable instruments law, sales law, suretyship law. Lecture 4 hours. Must be taken in a,b sequence.

227-4 Office Administration and Supervision. Principles of management as applied to office work. Emphasis on the role of the office in business management; office organization; physical facilities of the office; office services, procedures, standards, and controls; and records management. Lecture 4 hours. Prerequisite: 126.

Social Studies

Major

Bachelor of Science Degree, COLLEGE OF EDUCATION

<i>General Studies Requirements</i> ¹				68
<i>Requirements for Major in Social Studies</i>				96 ²
	<i>Required Courses</i>		<i>Electives</i>	<i>Total</i>
U.S. History	GSB 300a,b,c	9	3	12
World History	GSB 200a,b,c	9	3	12
Economics	GSB 211; Econ 214, 215 ..	12	0-12 ³	12-24 ⁴
Geography	Geog 300	4	8-20 ³	12-24 ⁴
Government	GSB 212; Govt 232	8	4-16 ³	12-24 ⁴
Sociology	GSB 203; Soc 301	8	4-16 ³	12-24 ⁴
<i>Professional Education Requirements</i>				36
Guidance 305 (GSB 202 is prerequisite)				4
Secondary Education 310, 488, 352-16				24
Two courses to be selected from a list of restricted professional education electives. Refer to the catalog section titled Secondary Education				8
<i>Total</i>				188

¹ General Studies requirements must include 2 hours in courses GSE 100-114, GSE 201, GSB 202, GSC 200 or 300 level literature (3-4 hours). GSC waived only if student has at least a B in both GSD 101 and 102. In addition, any 16 hours of the following General Studies courses which are required for the major will also satisfy General Studies requirements.

² The 96 required hours are obtained by taking a minimum of 12 hours in U.S. history and 12 hours in world history, 24 hours in each of two of the other fields; and 12 hours in each of the remaining two fields. Choices of 24 hour and 12 hour concentrations remain with the student.

³ The hours of electives needed will depend upon the student's choice of 24 hour and 12 hour concentrations.

⁴ The total hours in an area will also depend upon the student's choice of 24 hour and 12 hour concentrations.

Social Welfare

Program, Major, Courses

The social welfare program offers an interdisciplinary curriculum and field work experience leading to a Bachelor of Science degree in social welfare for persons planning a career in social work or one of the other service professions.

Bachelor of Science Degree, COLLEGE OF HUMAN RESOURCES

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Social Welfare</i>	68
Social Welfare 375, 383, 460, 481a,b, 482, 483, 485, 490	44
Government 438 and at least one of the following: 232, 340, 360, 361, 420, 425, 463	8
Sociology 308 and at least one of the following: 301, 302, 333, 335, 340, 372, 426, 427, 435, 452, 460, 472, 473	8
Psychology: At least two of the following: 301, 303, 304, 305, 307, 330, 431, 440, 465	8
<i>Electives</i>	50
Recommended Electives: Child and Family 237, 366; Community Development 401; Economics (one of the following) 214, 215, 422 or 436; Family Economics and Management 302; Rehabilita- tion 420, 486	
<i>Total</i>	186

Courses

375-4 Social Welfare as a Social Institution. Interdependence of social, cultural, political and economic factors in the history, theory and practice of social welfare, with special reference to development of the social work profession in response to welfare problems.

383-4 Introduction to Interviewing. Theory and practice of interviewing as a means of gaining information, and of understanding and imparting the same. Focus is on the interview as a tool in social work, but principles are generally applicable.

391-3 Social Services and Minority Groups. Exploration of the needs, experiences, and attitudes of minority groups pertaining to social welfare services. Implications for policy and programs in such areas of service as physical and mental health, child welfare, family planning, income maintenance, recreation, education, training, and employment. Prerequisite: 375.

396-1 to 6 Readings in Social Welfare. Varying topics not ordinarily covered in depth in regular courses and of specific interest to advanced students. Prerequisite: consent of instructor.

460-4 Methods of Social Research. Principles and methods of scientific inquiry applied to social work research and practice. Required for undergraduates. Not for graduate credit. Prerequisite: statistics.

481-8 (4,4) Processes in Social Work (a) Analysis of generic base of social work and of theory, rationale and practice of casework (b) Analysis of social group work, community welfare organization methods and interventive techniques. Prerequisite: 375.

482-8 Social Work in Selected Agencies. At least 16 hours per week of supervised experience in a social agency with concurrent weekly seminar. Not for graduate credit. Prerequisite 481 and consent of instructor.

483-8 Advanced Field Practicum. Supervised field work experience in a social agency with concurrent weekly seminar. Sixteen hours per week. Not for graduate credit. Elective for undergraduates. Prerequisite: 482 and consent of instructor.

485-4 Integrative Methods in Social Work. A team-teaching seminar approach to exploring the interrelationship of casework, groupwork, and community work in synthesizing a gestalt impact on intervention and problem-solving techniques. Not for graduate credit. Prerequisite: 481, 482.

490-4 Seminar on Problems and Issues in Social Welfare. Critical evaluation of contemporary social work practice, innovations, social policy and planning. Prerequisite: 481.

491-3 Comparative Social Welfare Systems. An examination of social welfare policies and practices in other countries and by international organizations. Prerequisite: 375.

496-1 to 6 Independent Research in Social Welfare. Not for graduate students. Prerequisite: consent of instructor.

Sociology

Department, Major, Courses

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i>	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i> 21-25	
1 year Mathematics	(5) + 3 to 5
GSC Foreign Language *	9
2nd year Mathematics or Foreign Language 201a,b,c	9 to 11
<i>Requirements for Major in Sociology</i>	42
GSB 203	4
Sociology 497-Senior Seminar	4
Sociology—Two 400-level courses	8
Sociology electives	26
<i>Electives</i>	51-55
<i>Total</i>	186

* GSC Foreign Language does not satisfy GSC requirements in Liberal Arts.

Minor

A minor in sociology consists of a minimum of 24 hours.

Honors Program

The department offers an honors program for academically outstanding sociology majors. Qualifications for acceptance into this program consist of: (1) an overall grade point average of at least 4.00, (2) completion of 12 hours in sociology courses with a grade point average of at least 4.25. Three honors courses are offered at the junior and senior class levels. For details, qualified students interested in this program should consult the director of undergraduate studies in the sociology department.

Courses

Courses in sociology are listed according to numerical order. However, the second digit in the course number indicates its field as follows:

- 00-09 General Sociology
- 10-19 Methodology and Research Techniques
- 20-29 Social Psychology
- 30-39 Social Organization and Structure
- 40-49 Family
- 50-59 Sociology of Knowledge
- 60-69 Social Disorganization and Deviance
- 70-79 Special Fields
- 80-89 Applied Field

301-4 Principles of Sociology. The structure and functions of social relationship systems, both simple and complex. Analysis of processes of social differentiation, integration, and disorganization. Prerequisite: junior standing. Elective Pass/Fail.

302-4 Contemporary Social Problems. Discussion and analysis of selected contemporary social problems with consideration of alternative courses of action. Prerequisite: one sociology course. Elective Pass/Fail.

305-4 Social Institutions. Concepts of institutions; origins, development, and variability of institutions; lag and change. Prerequisite: GSB 203 or 301. Elective Pass/Fail.

306-4 Social Control. The means and principles of social controls; social institutions as factors in control; techniques of directing social action. Prerequisite: GSB 203 or 301. Elective Pass/Fail.

308-4 Statistics for Social Science. Methods and application of statistics in

the social sciences. Statistical methods in demography, ecology, testing and guidance, social problems. Examination of empirical studies in these and related areas. Prerequisite: 301, or GSB 203, or consent of instructor. Elective Pass/Fail.

312-4 Elements of Sociological Research. Types of research. Principles and steps in research procedure. Selected techniques. Prerequisite: 308, or equivalent, or consent of instructor. Elective Pass/Fail.

GSB 321-3 Socialization of the Individual.

GSB 325-3 Race and Minority Relations.

332-4 Social Organization. An examination of the determinants of social organization; intensive analysis of institutional configurations, social stratification, and systems of social control; review of writings. Prerequisite: 301. Elective Pass/Fail.

333-4 Community Organization. Factors involved in community organization; types, aims, and objectives; community diagnosis; individual case study of specific community. Prerequisite: 301 or GSB 203. Elective Pass/Fail.

335-4 Urban Sociology. The rise, development, structure, culture, planning, and problems in early and modern cities. Prerequisite: 301 or GSB 203. Elective Pass/Fail.

338-4 Industrial Sociology. Social organization and processes within the formal and informal structure of the industrial unit; research and experimental materials concerning social determinants of morale, status and role of the worker. Prerequisite: GSB or 301. Elective Pass/Fail.

340-4 The Family. The family in historic and contemporary society; evolution of the modern family; changes in family functions, structures, and roles. Prerequisite: GSB 203 or 301. Elective Pass/Fail.

GSB 341-3 Marriage as a Social Institution.

351-4 Sociology of Religion. Function of religious institutions in society and their relationship to other major social institutions; role in social control and group solidarity. Prerequisite: GSB 203 or 301. Elective Pass/Fail.

352-4 Urban Ethics. (See Religious Studies 352.) Elective Pass/Fail.

371-4 Population and Migration. Characteristics of population, problems of growth, composition, distribution, differential fertility, international and internal migration. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

372-4 Criminology. The nature of crime; criminal statistics; casual factors; theories and procedures in prevention and treatment. Prerequisite: GSB 203 or 301. Elective Pass/Fail.

374-4 Sociology of Education. Methods, principles, and data of sociology applied to the school situation; relation of the school to other institutions and groups. Prerequisite: consent of instructor, or GSB 203 or 301. Elective Pass/Fail.

396-1 to 5 Readings in Sociology. Elective Pass/Fail.

396h-1 to 4 Honors Readings in Sociology. Topics selected jointly by student and instructor which ordinarily are not covered in depth in regular course offerings. Prerequisite: consent of department. Prerequisite: consent of instructor. Elective Pass/Fail.

397h-6 (3,3) Honors Seminar in Sociology. Varying sociological topics studied in depth and breadth. Maximum opportunity for student participation in the exploration of the subject. May be repeated for a total of two quarters. Prerequisite: consent of department. Elective Pass/Fail.

406-4 Social Change. Processes of social change in the modern world; culture lag and conflict of norms; individual and social problems arising from conflicting systems of social values and cultural norms. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.

415-3 Logic of the Social Sciences. (See Philosophy 415.) Elective Pass/Fail.

424-4 Collective Behavior. The behavior of people in large groups; collective interstimulations and emotions; crowds, audiences, and publics; mass stimuli and mass response. Prerequisite: GSB 321 or consent of instructor. Elective Pass/Fail.

426-4 Social Factors in Behavior and Personality. How group situations and values affect behavior and shape personality; development of concepts, role-concepts, attitudes, values; theories of motivation; self-concepts; conflicting social values in relation to individual motivation. Prerequisite: GSB 321 or Psychology 305, or consent of instructor. Elective Pass/Fail.

427-4 Personality and Social Adjustment. Basic mechanisms of adjustive behavior; concepts and criteria of personal integration and social adjustment; varieties of adjustive and nonadjustive behavior; theories of personal organ-

- ization and disorganization; selected problems. Prerequisite: GSB 321 or Psychology 305 or consent of instructor. Elective Pass/Fail.
- 435-4 Social Stratification.** A comparative study of social class systems, with emphasis on the American systems. Relationships of class position to behavior in family, religion, politics, etc. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.
- 437-4 Sociology of Rural Development.** Development in the United States and other countries. Conceptions of rural, urban, developed, and underdeveloped considered. Analytic frames of reference for treating these phenomena compared. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.
- 438-4 Sociology of Occupations and Professions.** Natural history and institutional aspects of occupations in our society, cultural context of occupations in both primitive and modern society, preparation for jobs, human values in work, promotion and discharge, mobility, retirement. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.
- 450-4 Social Thought I: Before 1800.** The ideological basis of Western society. The classical foundations. Trends of thought from the Renaissance to the Enlightenment. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.
- 451-4 Social Thought from Romanticism to Realism.** Rise and development of scientific social thought. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.
- 452-4 Black Social Thought.** Original works of black writers from the standpoint of problems and prospects of black people in America, and the social context in which these works developed. Relevance of these writings to understanding the current racial situation in the United States considered. Prerequisite: one sociology course and consent of instructor. Elective Pass/Fail.
- 453-4 Social Movements.** A sociological study of modern social movements; social and cultural backgrounds, forms of expression and organization; social structure of social movements, their role and function in modern society. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.
- 454-4 Sociology of Science.** Emphasis on the origins and growth of science in historical perspective, reciprocal relations between science and society in the twentieth century, science as a social system, differentiation within and relations between disciplines, and implications of the social organization of scientific research and funding. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.
- 460-4 Sociology of Medicine.** Man and his adaptation to illness, the sick role, the doctor patient relationship, the organization of medical care and health institutions in the United States, and the role of the sociologist in the health fields. Prerequisite: two sociology courses or consent of instructor. Elective Pass/Fail.
- 471-4 Principles of Demography.** Techniques in analyzing and evaluating data on human population; composition, birth and death rates, life tables, migration data, estimates of future trend. Practical uses of demographic techniques. Prerequisites: consent of instructor. Elective Pass/Fail.
- 472-4 The American Correctional System.** (See Administration of Justice 472.) Elective Pass/Fail.
- 473-4 Juvenile Delinquency.** (Same as Administration of Justice 473.) Nature of juvenile delinquency; relationship to theories of deviant behavior; efforts at prevention and control. Prerequisite: two sociology or psychology courses or consent of instructor. Elective Pass/Fail.
- 497-4 Senior Seminar.** Contemporary issues in sociology and the analysis of these issues. Prerequisite: senior standing with 20 hours in sociology or consent of instructor. Elective Pass/Fail.
- 498-8 (4,4) Individual Research.** With a faculty member the student arranges a research topic resulting in a paper or report. Prerequisite: senior standing with 20 hours of sociology and consent of instructor. Elective Pass/Fail.
- 498h-1 to 4 Honors Independent Research.** Advanced research study of a problem. Not for graduate students. Prerequisite: consent of department. Elective Pass/Fail.
- 499-4 Special Projects.** The class works in groups or in concert in the development and completion of a theoretical or applied project. Prerequisite: 308, 312, and senior standing with 20 hours of sociology or consent of instructor. Elective Pass/Fail.
- 501-4 Survey of Sociological Theory.**

- 502-4 Seminar in European Sociological Theory: 1800-1910.
 503-4 Seminar in European Sociological Theory: 1910 to the Present.
 504-4 Seminar in American Sociology.
 506-4 Seminar in Contemporary Sociological Theory.
 512-6 to 7 (4,2 to 3) Sociological Research.
 519-4 Methodological Foundations of the Social Sciences.
 521-4 Seminar in Social Psychology.
 522-4 Sociology of Small Groups.
 526-12 (4,4,4) Quantitative Methods in Sociology.
 529-4 Sampling and Inference in Social Research.
 530-2 to 4 Selected Topics in Social Research.
 532-4 Urban Social Structure.
 533-4 Ecology of Human Communities.
 534-4 Seminar in Intergroup Relations.
 537-4 Sociology of Law.
 538-4 Seminar in Industrial Sociology.
 539-4 Sociology of Bureaucracy.
 542-4 Seminar on the Family.
 543-4 Seminar in Family Variability.
 544-4 Seminar in Family Research.
 545-4 The Family and Social Change.
 551-4 Seminar in the Sociology of Religion.
 561-4 Alcohol and Society.
 562-4 Deviance and Disorganization.
 563-4 Research Problems in Deviance and Disorganization.
 564-4 Social Factors in Mental Disorders.
 566-4 Community Organization and Disorganization.
 572-4 Seminar in Criminology.
 591-2 to 6 Individual Research.
 596-2 to 12 Readings in Sociology.
 599-2 to 9 Thesis.
 600-1 to 48 Dissertation.

Special Major

Major

In addition to the regular major, the University encourages a student with special needs and interests to design his own major. He may develop a special major in the following manner:

1. The student should consult a faculty member about a possible program.
2. The student should draft a program which is coherent and unified, showing the courses he plans to take, and explaining the purpose of his program.
3. The completed program should have the support of at least one faculty sponsor and the dean or deans of the academic units involved.
4. Final approval including the title designation of the major must come from the vice president for academic affairs or his representative.

Approval of a special major does not exempt a student from any University requirements or from any of the requirements of the academic unit from which his degree will be awarded.

Special Education

Department, Major, Courses

Each area of specialization in special education leads to certification for teachers of a specific kind of exceptional child.

Students who are majoring in other areas of education may qualify for the above-mentioned special certificate for teachers of exceptional children by taking variable hours of additional course work in a specific area of

exceptionality. Usually this course work can be taken in place of regular electives, and can be obtained in the junior and senior years. This permits a student, by time of graduation, to qualify for both his regular teaching certificate and the special certificate.

Bachelor of Science Degree, COLLEGE OF EDUCATION

Students may pursue a major in special education with program emphasis in one of three areas of specialization: the behaviorally disordered, the mentally retarded, and learning disabled.

<i>General Studies Requirements</i>	68
GSA	16
GSB (Including 202 and 300b or c)	16
GSC (Including 100, 101, and any one of 201, 202, 209, 210)	16
GSD 101, 102, 153, and 107	14
GSE (Including 201 and 2 activities)	6
<i>Requirements for a Major in Special Education</i>	113-138
Art 300 or Occupational Education 303	4
Music 300a,b, or c	3
Physical Education for Women 319	4
Mathematics 308 and 309	6
Elementary Education Requirements	52-65
GSB 331 or Educational Administration and Foundations 355	3-4
Elementary Education 314, 337, 310, 351, and 423, 424 or 441	32
Guidance and Educational Psychology 412	4
Psychology 301	4
Electives	2-12
One of the following areas of Specialization	44-56
Education of the Behaviorally Disordered	(56)
Elementary Education 351, Section 8	16
Guidance 422a	4
Psychology 305, 307, 495	12
Sociology 473	4
Special Education 400, 410a, 411, 413a, 420a	20
Education of the Mentally Retarded	(44)
Special Education 400, 410b, 411, 413b, 420b	20
Speech Pathology and Audiology 428	4
Elementary Education 351, Section 3	16
Guidance 422a	4
Education of the Learning Disabled	(52)
Special Education 400, 410e, 411, 413a or b, 420e	20
Speech Pathology and Audiology 428	4
Elementary Education 351, Section 9	16
Physical Education for Women 403	4
Psychology 421 or Guidance 422a	4
Rehabilitation 486 or Psychology 312	4
<i>Electives</i>	0-5
<i>Total</i>	186-206

Students in secondary education who wish to qualify for this certification must have the above courses and may need to take additional courses which are required in the elementary education programs but which are not required in the secondary program.

Courses

200-2 Orientation to the Education of Exceptional Children. A survey of exceptional children. Program modification by regular classroom teachers is stressed.

302A-3 Music in Special Education. (See Music 302a.)

400-4 The Exceptional Child. Physical, mental, emotional, and social traits of all types of exceptional children. Effects of handicaps in learning situations. Methods of differentiation and techniques for rehabilitation. Case studies, observations and field trips may be required. Prerequisites: Psychology 301 or 303, or consent of instructor and department chairman.

410a-4 Problems and Characteristics of the Behaviorally Disordered. Diagnosis, screening, classroom management, placement considerations, goals, and the effective use of ancillary services for school children who are emotionally disturbed and/or socially maladjusted. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior. Prerequisite: 400 or consent of instructor and department chairman.

410b-4 Problems and Characteristics of the Mentally Retarded Child. Emphasizes a developmental approach to understanding and dealing with children with low mental abilities. Considers historical, theoretical, and practical factors pertinent to mental retardation. This course is prerequisite to special education student teaching. Prerequisite: 400 or consent of instructor and department chairman.

410c-4 Problems and Characteristics of the Gifted Child. Designed to help teachers in the identification of and programming for gifted and talented children. Prerequisite: Psychology 301 or 303, or consent of instructor.

410e-4 Problems and Characteristics of Children with Specific Learning Disabilities. Behavioral, emotional, physical, and learning characteristics of children with learning disabilities. Emphasis on receptive and expressive modalities for learning; theories dealing with etiology and treatment. Prerequisite: 400 and consent of instructor and department chairman.

411-4 Assessment and Remediation of Learning Disabilities. (Same as Guidance 411.) Theories of special tests and remedial programs designed for children with specific learning disabilities of a perceptual, or coordination nature and who may demonstrate related adjustment problems. Prerequisite: 400 and consent of instructor and department chairman.

413a-4 Directed Observation of Behaviorally Disordered. Student observation and participation in group and individual work with behaviorally disordered children. Prerequisite: consent of instructor and department chairman.

413b-4 Directed Observation of Mentally Retarded Children. Student observation and participation in group and individual work with mentally retarded children. Prerequisite: 410b and a major in special education.

420a-4 Methods and Materials for Teaching Behaviorally Disordered Children. Offered in conjunction with practice teaching, dealing with methods and materials needed in teaching behaviorally disordered children. Prerequisite: 410a and consent of instructor and department chairman.

420b-4 Methods and Materials for Teaching Mentally Retarded Children. Primary emphasis on methods of teaching. Practical problems of grouping, behavior management, individualization, and the applicability of materials to dysfunctions are included. Minimum of one video-taping session and individualized tutoring is required of all participants. Prerequisite: taken quarter prior to student teaching and consent of instructor.

420e-4 Methods and Materials for Teaching Children with Learning Disabilities. Techniques for implementing educational therapy and remediation of children with learning disabilities. Emphasis on visual, auditory, tactile, and fine and gross motor problems. Prerequisite: 410e and consent of instructor and department chairman.

428-4 Speech Correction for the Classroom Teacher. (Same as Speech Pathology and Audiology 428.)

496-2 to 8 Readings and Independent Study in Special Education. Study of a highly specific problem area in the education of exceptional children. Open

only to selected seniors and graduate students. Prerequisite: 400 and consent of staff and department chairman.

501-8 (4,4) Special Research Problem.

513-4 Organization, Administration, and Supervision of Special Classes.

515-4 Itinerant Teaching of Exceptional Children.

517-4 The Atypical Child and Social Agencies.

518a-4 Workshop in Education of Children with Learning and Behavioral Disorders.

518b-4 Workshop in the Education of Mentally Retarded Children.

518c-4 Workshop in the Education of Gifted Children.

518s-4 Workshop in the Administration of Special Education.

577-4 to 12 Practicum in Special Education.

580a-4 Seminar: Education of Behaviorally Disordered Children.

580b-4 Seminar: Education of Mentally Retarded Children.

590-4 Seminar: Education of Children with Mental Deviations.

591-4 Seminar: Education of Physically Handicapped Children.

592-4 Seminar: Education of Children with Learning and Behavioral Disorders.

596-4 to 8 Independent Investigation.

599-2 to 9 Thesis.

600-1 to 48 Dissertation.

Speech

Department, Major, Courses

Bachelor of Science Degree, COLLEGE OF COMMUNICATIONS AND
FINE ARTS

60 HOUR CONCENTRATION

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Speech</i>	60
GSC 200, GSD 152 or 153	(7)
Speech 102, 202, 203	11
Electives in speech	49
<i>Electives</i>	58
<i>Total</i>	186

48 HOUR CONCENTRATION

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Speech</i>	48
GSC 200, GSD 152 or 153	(7)
Speech 102, 202, 203	11
Speech electives	37
<i>Minor</i>	24
<i>Electives</i>	46
<i>Total</i>	186

Interpretation Specialization

A. For students obtaining a 60-hour speech major with specialization in interpretation.

<i>General Studies Requirements</i>	68
(Including GSC 200, GSD 152 or 153 and GSB 202 strongly recommended.)	
<i>Requirements for Major in Speech</i>	41
Speech 102 or 202, 203, 209, 301 or 311, 309, 323, 401, 422 or	

423 or 424, 434A, 430-4	33-34
Electives in Speech	7-8
English Literature Requirements	20
(To be determined upon consultation with advisor)	
Theater Requirements	16
Theater 203, 207, 240 or 217 or 213, 402a	
Electives	42
(Suggested elective studies in Speech, Music, Film, Sociology, Psychology, English, Theater)	
<i>Total</i>	186

B. For students obtaining a teaching certificate with emphasis in Interpretation.

Students pursuing a teaching degree should follow the teaching curriculum in Speech Education listed below with the following adjustments:

1. Electives allowed in the Speech Education curriculum should be taken in interpretation.
2. The minor should be the regular English minor.

Bachelor of Science Degree, COLLEGE OF EDUCATION OR
Bachelor of Science Degree, COLLEGE OF COMMUNICATIONS AND
FINE ARTS

<i>General Studies Requirements</i>	68
(Including GSB 202, 212 or 300A, GSC 200, 203, GSD 152 or 153, GSE 201)	
<i>Requirements for a Major in Speech</i>	58-62
Speech 102, 202, 203, 205, 222, 323, 427	25
Radio-Television (to be selected from following) 300m, 453, 467, Journalism 346, 395	6-9
Theater (to be selected from the following) 203, 207, 217, 305, 400, 402, 409, 410, 412, 414, 432, 438, GSC 354	12
Special Electives in Speech (to be selected from the following) 209 or 309 (1 hour), 301, 311, 401, 408, 425, 428, 429, 430, 445a, 449	15-16
<i>Professional Education Requirements</i>	36
Guidance 305, Secondary Education 310	8
Selection of two from the following: Guidance 422a, Educational Administration and Foundations 355, Instructional Materials 417, Secondary Education 407, 340	
Speech 406	4
Secondary Education 352	16
<i>Minor Options</i>	18-24

Option A

A minor will not be required if the student so elects. Additional hours to complete the degree will be selected from electives.

Option B

If the student desires a minor teaching area, he will complete the hours necessary to meet the teaching requirements in the area of his choice. English, social studies, or psychology are recommended.

<i>Electives</i>	0-6
<i>Total</i>	186-190

Public Relations

The public relations specialization consists of an integrated program designed by an interdisciplinary committee. The curriculum has been reviewed and approved by the Public Relations Society of America and is supervised by the coordinator of public relations in the Department of Speech.

Building upon the liberal arts and sciences, the curriculum is designed to provide fundamental knowledge in communication and social science, and the organization and functions of business and government. The broad coverage of these areas in twelve academic departments provides a sound preparation for both a career in public relations and for graduate work in the field of communication.

Students who have areas of special interest may work out minimal deviations from this curriculum with the concurrence of the coordinator.

Membership in the Raymond D. Wiley chapter of the Public Relations Student Society of America provides opportunities for field trips, internships, placement, involvement in student and university public relations activities, and association with prominent practitioners.

<i>General Studies Requirements</i>	68
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<i>Requirements for Major in Speech with Specialization in Public Relations</i>	111-115
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GSB 211, 212, 203, 202	(16)
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GSD 153	(3)
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Speech 203, 301, 303, 331, 309	17
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Journalism 346, 300, 301, 302, 370, 397	18
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Radio-Television 300m, 300s	10
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Psychology 307, 323	8
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Sociology 302 or 332 or 335 or 338 or 375 or 406	8
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Social Welfare 383	4
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Administrative Sciences 341 and 301 or 340	8
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Marketing 301, 363	8
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Government 360	4
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Research Methods: Sociology 312 or Marketing 390 or	
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Administrative Sciences 361 or Journalism 389	3-4
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Design 335	4
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Accounting 250	4
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Secretarial 201a (if needed to reach typing proficiency of 30 WPM)	0-3
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Special electives selected from the following	15
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Journalism 369, 391, 395, 383a

Administrative Sciences 350, 474

Speech 311, 435, 484, 309

Government 232

Sociology (any sociology course listed above in required course selection)

Psychology 320, 305

Economics 215

English 290, 392, 390

<i>Electives</i>	4-8
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<i>Total</i>	186
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Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i>	68
(Including GSC 200, GSD 152 or 153)	
<i>Supplementary Two-Year College Requirement in Foreign Language/Mathematics</i>	21-25
One Year Mathematics	(5) + 3-5
GSC Foreign Language	(9)*
2nd Year Mathematics or Foreign Language	9-11
<i>Requirements for Major in Speech</i>	48
Speech 102, 203, 202, 311	15
Electives in Speech	33
<i>Minor</i>	24
<i>Electives</i>	47
<i>Total</i>	186

* GSC foreign language does not satisfy GSC requirements in the College of Liberal Arts.

Minor

A 24-hour minor in speech should be planned in consultation with the chairman of the department or the chairman of undergraduate studies. Students electing speech as a minor in a teacher education program must include Speech 406.

Courses

- 102-4 Public Speaking.** The components of effective speech with actual preparation and presentation of several types of speeches. Prerequisite: GSD 103.
- 104-4 Training the Speaking Voice.** Designed for those students who desire to improve their voice and articulation. Prerequisite: GSD 103.
- 200-4 Phonetics.** Instruction on the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds.
- 201-2 Parliamentary Law.** How to conduct a meeting. Study and practice of the rules of parliamentary procedure.
- 202-3 Principles of Discussion.** Principles and methods of group discussion. Current problems used as materials for discussion.
- 203-4 Introduction to Interpersonal Communication.** Interpersonal communication as a psycho-social-political process. Emphasis on examination of transactional behavior as a facet of interpersonal and intergroup relations. Prerequisite: GSD 103 or equivalent.
- 205-4 Argumentation and Debate.** Critical factors involved in the process of oral and written advocacy. Emphasis on analysis, evidence, reasoning, case study method, and decision-making.
- 209-1 Forensic Activities.** Limited to 2 hours of credit each year for participating in forensic activities. Note: A maximum of 5 hours of 209 and 309 may be applied on a concentration in speech. A maximum of 8 hours of 209 and 309 may be applied toward graduation. Prerequisite: consent of instructor.
- 222-2 Introduction to Speech Education.** Areas of speech education, their relevance and importance in the high school curriculum, and potential for prospective teachers. Practical information on content focus in these areas. Restricted to students having 12 or fewer hours in speech. Prerequisite: GSD 152 or 153, GSC 200.
- 300-4 Phonemics of American English.** Study of the phonemics of American English with particular emphasis in the major American dialects. Course designed especially for concentrations in speech, theater, and radio-TV. Prerequisite: 200 or consent of instructor and chairman.
- 301-4 Persuasion.** Psychological principles involved in influencing individuals and groups.
- 303-4 Business and Professional Speaking.** Survey of organizational communication. Classical rhetorical theory, modern communication theory, gen-

eral semantics fundamentals, and human relations. Composition and delivery of major speech. Briefing, interview and conference techniques. Audio-visual aids. Class attends a civic group luncheon.

304-3 Great Speeches in American and British History. Speakers as they deal with historic issues in America and Britain.

309-1 Forensic Activities. Limited to 2 hours of credit each year, for participation in forensic activities. Note: A maximum of 5 hours of 209 and 309 may be applied on a concentration in Speech. A maximum of 8 hours of 209 and 309 may be applied toward graduation. Prerequisite: junior standing and consent of instructor.

311-4 Communication and Social Process. Communication theory and its relation to social process. Prerequisite: 203.

313-4 Speech Composition. Rhetorical techniques of public address. Two major speeches prepared, with every possible refinement. Prerequisite: 102.

323-4 Oral Interpretation II. Intermediate course furthering the development of techniques for the oral experience of literature based upon literary analysis. Prerequisite: GSC 200, consent of instructor.

331-4 Public Relations Policies and Practice. Philosophy, principles, policies, and practice of public relations. Historical review of industrial, institutional, governmental, and service agency PR; managerial and communicative functions; internal and external publics. Lecture, audio-visual media, and guest public relations practitioners. Prerequisite: junior standing.

401-4 Creative Dramatics. (Same as Theater 401.) Materials, techniques, and procedures for conducting sessions in informal drama with emphasis on its contribution to the total growth and development of the child. Lectures, observations, and student participation. Prerequisite: junior standing.

406-4 Teaching Speech in Secondary Schools. Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: 16 hours of speech.

407-8 (4,4) American Public Address. Critical studies of American speakers; selected speakers and speeches which reflect the dominant social and political ideas in American history. A lecture, reading, and discussion course. Parts may be taken independently.

408-4 Psychology of Speech. Nature and development of speech, its basic psychology, and the part speech plays in personality development.

417-4 Contemporary Public Address. A critical study of speakers and speeches selected to present the characteristic ideas of leading social and political developments in national and international affairs since 1918. A lecture, reading, and discussion course.

418-4 British Public Address. Critical study of British speakers. Selection of material will be governed both by men and the issues that moved men throughout British history.

422-4 Oral Interpretation of Prose. The study of the prose form through analysis and performance. Prerequisite: 323, GSC 200 or consent of instructor.

423-4 Oral Interpretation of Poetry. The study of poetic form through analysis and performance. Prerequisite: 323, GSC 200 or consent of instructor.

424-4 Oral Interpretation of Dramatic Literature. The study of dramatic form through analysis and performance. Prerequisite: 323, GSC 200 or consent of instructor.

425-3 Techniques of Discussion Leadership. Studies in the field of group discussion designed to clarify the functions and concepts of the leader in democratic society.

427-4 Secondary School Forensic Program. Coaching and organizational methods for extracurricular and curricular forensic programs in the secondary schools.

428-4 Communication Theories and Models. Survey, analysis, and criticism of contemporary theories and models of human communication.

429-4 Experimental Studies in Oral Communication. Principles of research design accompanied by a critical examination of research in oral communication. Prerequisite: 428.

430-2 to 4 Independent Study. Creative project to be completed in one quarter. Nature of assignment determined by student and instructor and approved by department chairman. Prerequisite: 12 hours speech courses and consent of instructor.

431-2 to 12 Internship or Practicum in Public Relations. Students compete for a professional quarter under the supervision of the director of PR instruction and the PR group of a corporation, institution, agency, or counseling firm.

Credit depends upon the demands and complexity of the work which the student performs. Evaluation is a joint function of the group professionals and the director. Prerequisite: senior standing; ADSC 340; Marketing 301, 363; Journalism 370, one or more Journalism courses in newswriting; and one or more courses in research methods.

434-8 (4,4) Group Performance. (a) Group performance. Media of oral interpretation. Theory and practical application; the compiled script. (b) Group performance. Medium of oral interpretation, theory and practical application: Chamber Theater. Need not be taken in sequence. Prerequisite: 323.

435-4 Studies in Organizational Communication. Communication systems and behavior within formal organizations. Focused on theory and research of informational and directive communication as related to channels, structures, status, involvement, morale, and leadership.

441-4 Teaching Speech in Elementary Schools. Study of oral language development in children, analysis of their speech needs, and methods of teaching speech in elementary schools with emphasis on speech improvement and development of basic speech skills.

445-12 (4,4,4) Language Behavior. Psycholinguistic approach to language learning and the use of language. Relation of language to other developing behaviors. Applicability of psychological and linguistic theories to social psychological aspects of language communication.

449-4 General Semantics. Means of changing implications so that language, in spoken or written form, describes the life facts.

450-12 (4,4,4) Laboratory in Interpersonal Communication. Communication viewed as a process of relating and evaluating. Applications of general semantics and related philosophy, methodology, and research to the functioning of the class itself through various speech activities. The course encompasses the common core of communication behaviors relevant to the chief communication specialties.

484-4 Political Communication. This course will place contemporary techniques of political campaign communication in historical perspective, discuss some of the major controversies which have recently arisen, and review critically empirical research dealing with the influence of communication variables on political values, attitudes, and behavior. Prerequisite: junior standing or consent of the instructor.

500-4 Survey of Classical Rhetoric.

501-4 Teaching Oral Language at the Preschool and Early Elementary Level.

504-4 Medieval and Renaissance Rhetoric.

505-4 Modern Rhetorical Theory.

507-6 (3,3) Studies in Public Address.

508-4 Seminar: Studies in Discussion.

510-4 Seminar: Persuasion and Social Control.

511-4 (2,2) Teaching the College Speech Course.

520-3 Philosophical Foundations of Speech.

522-4 to 12 Studies in Interpretation.

523-3 Seminar: Problems in Interpretation.

524-6 (3,3) Seminar: Rhetoric and Public Address.

525-4 Seminar: Speech Education.

526-4 Language Behavior Seminar.

530-1 to 4 Research Problems.

532-4 (2,2) Areas and Techniques of Research in Speech.

540-4 Seminar: Experimental Communications Research.

542-4 Seminar in non-Quantitative Research Methods.

599-2 to 9 Thesis.

600-1 to 48 Dissertation.

Speech Pathology and Audiology

Department, Major, Courses

Speech pathology and audiology is an area which has as its objective the training of qualified personnel to work with people impaired in either speech or hearing. Positions in this field are available in the public schools, colleges and universities, and in highly specialized public or private clinics.

Clinical experience is obtained through work at the University's Speech and Hearing Clinic, which is one of the participating agencies in the Co-operative Clinical Services. Additional practicum experience is available through the public schools in practice teaching; special summer programs; cooperative programs with the Division of Services for Crippled Children; the Easter Seal Society; the Marion V. A. Hospital; A. L. Bowen Children's Center; the Anna State Hospital; and the Attucks Multi-Purpose Service Center.

Students are encouraged to plan programs of study to meet academic and practicum requirements for the Certificate of Clinical Competence of the American Speech and Hearing Association and Specialist certification programs of the state of Illinois. Planning at the bachelor's level will facilitate completion of ASHA and state of Illinois certification requirements in conjunction with the master's degree program.

Students majoring in this area may also point toward a variety of interdisciplinary programs such as engineering biophysics.

Bachelor of Science Degree, COLLEGE OF COMMUNICATIONS AND FINE ARTS

Non-Public School Plan Specialization

<i>General Studies Requirements</i>	68
GSA—3 different departments represented	16
(Must include 115a, 115b, 209)	
GSB—3 different departments represented	16
Must include 202, 203, 306, and 300a or 212	
GSC—3 different departments represented	16
GSD 101, 102, 107 and 152 or 153	14
GSE 201 and physical education	6
<i>Requirements for a Major in Speech Pathology and Audiology</i>	105
Psychology 211a, 211b, 301, 305	16
Linguistics 401a	4
Rehabilitation 486	4
Social Welfare 383	4
Special Education 400	4
Guidance 305	4
Educational Administration and Foundations 355	4
Elementary Education 314, 337	8
Speech Pathology and Audiology 200, 203, 205, 206, 302, 303, 314, 316, 318, 319, 361, 401, 406, 419, 430, 431, and 432 or 436	57
<i>Electives</i>	13
<i>Total</i>	186

Public School Plan Specialization

A student in the College of Communications and Fine Arts who plans to be a public school speech and language clinician in Illinois, thereby needing to prepare to meet the requirements for a standard special certificate—certificate in speech and language impaired, should follow the plan listed below.

This Bachelor of Science degree program of study does NOT result in certification by either the state of Illinois or the American Speech and Hearing Association (ASHA). This undergraduate public school program of study does lead to the academic and standard special certificate—cer-

tificate in speech and language impaired and also the ASHA Certificate of Clinical Competence, both of which require a master's degree and completion of a course of study in communicative disorders and related disciplines, designed to develop academic and clinical competence in specified areas. The requirements are partially satisfied by Elementary Education 351b and Speech Pathology and Audiology 430, 431, 432, 436, and 523, 535 on the graduate level.

At the beginning of the junior level, individuals desiring to complete the speech pathology and audiology course of study should be aware of the overall grade point average required for admission to the Graduate School and, if pursuing the state of Illinois certification, should be aware of the requirements for the teacher education program and for student teaching.

<i>General Studies Requirements</i>	68
(Same required courses as listed under the non-public school plan)	
<i>Requirements for a Major in Speech Pathology and Audiology</i>	121
General Studies (see above requirements)	(68)
Psychology 211a, 211b, 301, 305	16
Linguistics 401a	4
Rehabilitation 486	4
Social Welfare 383	4
Special Education 400	4
Guidance 305	4
Educational Administration and Foundations 355	4
Elementary Education 314, 337	8
Elementary Education 351b	16
Speech Pathology and Audiology 200, 203, 205, 206, 302, 303, 314, 316, 318, 319, 361, 401, 406, 419, 430, 431, and 432 or 436	57
<i>Total</i>	189

Bachelor of Science Degree, COLLEGE OF EDUCATION

A student in the College of Education who wishes to become a speech clinician in the public schools should follow the plan listed above, in addition to any special requirements for a major in the College of Education.

Courses

100-0 to 2 Speech Clinic. For students with speech and hearing deviations who need individual help. Course may be repeated up to 4 hours. Prerequisite: consent of instructor.

104-4 Training the Speaking Voice. For those students who desire to improve their voice and articulation.

200-4 Phonetics. Instruction in the Use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds.

203-4 Introduction to Speech Science. An introduction to the science of general speech including the history of research in the field and significant experimental trends in the future. Open to all students.

205-4 Introduction to Speech Pathology. A general survey course devoted to a discussion of the various problems considered to be speech and hearing disorders with special emphasis being placed in the basic etiological classification schemes and their incidence in the current population.

206-1 Directed Observation. A companion course devoted to the observation of diagnostic and therapeutic procedures used with clients exhibiting the disorders discussed in 205. Prerequisite: concurrent enrollment in 205.

302-4 Articulatory Development and Disorders. Introduction to the phonological development in children on a normative basis. The classical studies in

articulatory development, with a general exposure to the implications of classical phonetic theory, coarticulatory theory and distinctive feature theory as a framework for therapy and research. Prerequisite: 200 or concurrent enrollment.

303-4 Language Development and Disorders. Presentation of the progressive stages of language therapeutics with children from ages three to twelve. Theoretical considerations and terminology related to traditional, structural, and transformation grammars are introduced as tools for interpreting the acquisitions processes. Prerequisite: 200 or concurrent enrollment.

314-4 Anatomy and Physiology of Speech and Hearing Mechanisms. (Same as Physiology 414.) The anatomy and physiology of the vocal apparatus, primarily for majors in speech pathology, 2 hours lecture, 3 hours laboratory.

316-4 Introduction to Audiology. Basic orientation to the professional field of audiology, its history, and its goals. Basic acoustics, the phylogeny, anatomy, and physiology of the human ear, and significant pathologies of the ear are presented. Prerequisite: junior standing.

318-4 Parameters of Voice. Physio-acoustic parameters of voice quality variables evidenced in verbal communication. Lectures and demonstrations emphasize basic information necessary for the study and treatment of voice disorders. Prerequisite: 205, 206.

319-4 Stuttering. Deals with diagnostic and therapeutic techniques for the understanding and treatment of stuttering. Prerequisite: 302, 303, or consent of instructor.

361-2 Public School Procedures. Procedural and administrative responsibilities of clinicians working in an educational setting.

400-1 to 4 Independent Study in Speech Pathology and Audiology. Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with the instructor with consent of chairman, and may be repeated for up to 6 hours.

401-4 Diagnostic Procedures in Speech Pathology. Role of the speech and hearing clinician as a differential diagnostician. Techniques and importance of the oral-peripheral examination, articulation and language evaluation, audiometric and case history information in constructing an initial evaluation report.

406-4 Techniques and Interpretation of Hearing Tests. Principles and techniques of testing the hearing and interpreting those tests in terms of the individual's needs. Prerequisite: 316 or consent of instructor.

419-4 Communication Problems of the Deaf and Hard of Hearing. Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 406 or consent of instructor.

428-4 Speech Correction for the Classroom Teacher. (Same as Special Education 428.) Etiology and therapy of common speech defects. Open to in-service teachers, seniors, and graduate students in education.

430-2 to 4 Clinical Practice: Articulation. Supervised clinical practicum in articulation. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 302.

431-2 to 4 Clinical Practice: Language. Supervised clinical practicum in language. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 303.

432-2 to 4 Clinical Practice: Hearing Rehabilitation. Supervised clinical practicum in hearing rehabilitation. Emphasis will be upon therapy procedures, diagnostic techniques and preparation of reports. Prerequisite: 316, 406, 419.

435-2 to 4 Clinical Practice: Speech and Language Diagnostics. Supervised clinical practicum in language diagnostics. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 302, 303, 401.

436-2 to 4 Clinical Practice: Hearing Diagnostics. Supervised clinical practicum in hearing diagnostics. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 316, 406.

509-4 Research Design in Hearing and Speech Pathology.

510-4 Stuttering: Behavior Assessment.

511-4 Stuttering: Behavior Therapy.

512-4 Seminar: Phonology.

513-4 Phonological Acquisition in Children.

514-4 Seminar: Phonetic Theory.

515-1 to 4 Readings in Speech Pathology and Audiology.

516-4 Seminar in Psychoacoustics.

518-4 Seminar: Physiological Acoustics of the Ear.

- 519-4 Seminar: Psychoacoustics.
 520-4 Seminar: Physio-Acoustics of Speech.
 521-1 to 4 Seminar in Articulation and Delayed Speech.
 522-4 Seminar: Voice Disorders.
 523-2 to 4 Clinical Practice: Voice Disorders.
 524-4 Seminar: Language Disorders.
 525-4 Advanced Audiology I.
 528-4 Seminar: Experimental Audiology.
 530-1 to 4 Research Problems in Speech Pathology & Audiology.
 531-4 Seminar: Experimental Phonetics.
 532-2 to 4 Clinical Practice: Fluency Disorders.
 533-4 Seminar: Speech Science.
 534-4 Seminar: Instrumentation.
 535-2 to 4 Clinical Practice: Cerebral Palsy and Aphasia.
 536-4 Seminar in Administration: Speech and Hearing Programs.
 540-4 Neuroanatomy and Neurophysiology of Communicative Disorders.
 541-4 Neuromuscular Disorders of Speech.
 542-4 Neuropsychological Disorders of Communication.
 545-4 Modern Techniques for the Syntactically Impaired.
 548-4 Stuttering: Behavior Theory.
 549-4 Stuttering: Behavior Research.
 550-4 Psycholinguistic Correlates of Verbal Impairment.
 599-2 to 9 Thesis.
 600-1 to 48 Dissertation.

Student Teaching

(See *Professional Education Experiences*)

Technical and Industrial Education (See *Occupational Education*)

Technology

Department

Two degree programs are available in technology. One program leads to the Bachelor of Science degree with a major in engineering technology with options in one of three areas: civil engineering technology, electrical engineering technology, or mechanical engineering technology. The other program leads to the Bachelor of Science degree with a major in industrial technology.

Engineering technology courses contain topics related to the design and development of products. Industrial technology courses contain topics related to the manufacture and distribution of products.

The present technological society has increased the demand for new types of personnel known as technologists. A technologist utilizes established methods to achieve improvements in existing designs and systems. Technologists should be knowledgeable in the state of the art of a particular technology, capable of utilizing handbooks and other forms of codified information with skill and discrimination, and sufficiently versed in mathematics and the sciences to recognize sound procedures.

The technology programs are flexible enough to provide the means whereby a graduate of a two-year occupational program can obtain a bachelor of science degree in a minimum length of time. The industrial technology program provides credit to individuals for related work-experience outside the institution.

The programs are designed to provide the necessary training for entry

into employment upon the completion of the baccalaureate degree. Opportunities for advanced study are available in business-related fields or in education.

Engineering Technology

Major, Courses

Engineering technology is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational spectrum between the craftsman and the engineer at the end of the spectrum closest to the engineer. The objective of the engineering technology program is to prepare graduates capable of applying established scientific and engineering methods and knowledge for the purpose of achieving practical results.

The civil specialization is primarily suited for those students interested in pursuing careers with highway departments or in other construction industries. However, the broad range of studies insures a solid technical background in many areas of civil engineering technology. Graduates of the program are employed by railroads, coal companies, consulting engineering firms, state and local agencies, and various construction firms.

The objective of the electrical specialty is to prepare technologists who are capable of technical design and who can contribute to the development and production of electrical circuits and devices. In addition, graduates should be capable of participation in the planning and installation of power distribution systems and operating and maintaining complex electrical systems. Graduates of the program are employed in communications, power, electronics, sales, manufacturing, and other fields.

The objective of the mechanical specialization is to prepare graduates for a career in the power industry; and in addition, to give them a background in general mechanical technology. Graduates are employed in industries which have a need for technologists trained in the generation, transmission, and utilization of mechanical energy.

Bachelor of Science Degree, SCHOOL OF ENGINEERING AND TECHNOLOGY

<i>General Studies Requirement</i>	68
<i>Requirements for Major in Engineering Technology</i>	122
GSA 106	(4)
Engineering 222 and 361	6
Engineering Technology 100-0, 102a,b-6, 260a,b-7, 304a-4, 311a-4, 313a-4, 318a-4	29
Mathematics 111a,b, 150a,b, 252a	(5) + 19
Physics 206, 207	(8) + 4
Requirements for Options	64
Civil: Geology 220-3, Engineering Technology 310a,b-6, 311b-3, 314a-3, 315-4, 318c-3, 363a and b or c, 364a,b-7, 426a-3, approved technical electives-24.	
Electrical: Engineering Technology 304b,c-6, 332a,b,c-9, 403a,b-8, 437a,b,c-9, 438a,b-8, approved technical elec- tives-24	
Mechanical: Engineering Technology 102c-3, 245b-3, 301a, b-6, 308a-3, 313b-4, 318b-3, 320a,b-6, 323-3, 424a,b,c-9, approved technical electives-24	
<i>Total</i>	190

Courses

A suitable slide-rule is strongly recommended for most of the following courses, cost: approximately \$10-\$25.

100-0 Orientation. (Same as Industrial Technology 100.) Introduction to engineering and technology. Develops an understanding of the role of engineering and technology in industry and guides thinking in relation to occupational goals.

102-9 (3,3,3) Graphic Communication. (a) Basic principles of graphic communication including orthographic (multiview) projection; sections and conventions; charts and graphs; pictorial drawing. (b) Principles of graphic communication. The graphical solution of problems involving the spatial relationships of points, lines, and planes. (c) Principles and practice of graphic communication including auxiliary views; dimensioning and tolerancing; applications in technology. Five hours lecture-laboratory per week for each section. Must be taken in a,b,c sequence. Drawing supplies required, costing approximately \$11.50. Problems workbook required for each course, costing about \$5.00 per workbook. Elective Pass/Fail.

236-3 Electrical Instrumentation. Theory and use of D.C. and A.C. instruments; measurement and error, units, standards, meters, bridges, oscilloscopes, electronic instruments, instruments for generation and analysis of waveforms, counters, and transducers. Laboratory. Prerequisite: Mathematics 111.

245-9 (3,3,3) Electrical Systems for Industry. (a) Fundamentals of electrical power distribution: electrical concepts and units, codes, wire sizes, grounds, lighting and industrial wiring. Prerequisite: Mathematics 111b. (b) Fundamentals of electrical motors: motor types, synchronous motors, fractional horsepower motors, applications, bearings, lubrication, and rebuilding. Prerequisite: 245a or equivalent. (c) Introduction to electronics: laboratory practices, oscilloscopes, meters, components, power supplies, amplifiers, and characteristics of semiconductor devices. Prerequisite: 245a or equivalent.

260-7 (3,4) Statics and Dynamics. (a) Principles of forces, moments, and static equilibrium. (b) Moments of inertia, kinematics of particles and rigid bodies, dynamics, work, energy, impulse and momentum. Must be taken in a,b sequence. Prerequisite: Mathematics 150b or concurrent enrollment.

301-6 (3,3) Refrigeration and Air Conditioning. (a) Discussion of refrigerating cycles. Refrigeration at more than one level. Operation and ratings of various types of compressors, evaporators, condensers, and automatic controls used in commercial refrigerating systems. Heat flow problems in condensers, evaporators, and cooling towers. (b) Control of temperature and humidity in buildings, or other large areas. Air handling equipment, duct systems, and air distribution within the space. Fundamental principles and techniques for cooling and dehumidification for comfort. Equipment and control systems. Must be taken in a,b sequence. Prerequisite: 313b or concurrent.

304-10 (4,3,3) Electrical Circuits. (a) Foundations of electrical theory, solutions to D.C. steady state networks by the branch method, equivalent circuits, loop currents, and node voltages. Study of network theorems and dependent sources. Prerequisite: Mathematics 150a. (b) A. C. circuit theory by phasor transform method, complex power, three phase sources, mutual coupling, transformers. Prerequisite: 304a and Mathematics 150b. (c) Complex frequency, frequency response from pole-zero plots, Bode plots, transient analysis, introduction to Laplace transform methods. Laboratory. Prerequisite: Mathematics 150b or concurrent enrollment.

308-9 (3,3,3) Machine Design. (a) Applications of the principles of mechanics to problems of design and development, mechanisms for specific functions, dynamic effects and friction in mechanisms. (b) Strength and safety considerations in design of machine parts. Fatigue and stress concentrations; power transmissions, bearings, brakes, clutches, and springs. (c) Combined stresses; helical, bevel, and worm gearing; curved beams, thick cylinder and flat plates; high-speed cams. The student puts previous studies into practice by design of a complete machine. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 260-7.

310-9 (3,3,3) Construction Mechanics. (a) A study of construction methods, the forces involved in the management of machinery and manpower. (b,c) The dynamics of estimating, scheduling and controlling procedures. Must be taken in a,b,c sequence. Civil engineer's scale required costing approximately

\$3.00. Prerequisite: 260b.

311-7 (4,3) Strength of Materials. (a) Stress and strain in elastic and plastic states. Laboratory. (b) Failure theories; elastic torsion; beams and columns. Prerequisite: 260b.

313-8 (4,4) Elementary Heat Power. (a) The fundamental laws of heat power, properties of systems, liquids, vapors, and liquid-vapor mixtures. (b) Engine cycles and applications. Prerequisite: Mathematics 150a.

314-9 (3,3,3) Soil Mechanics. (a) Soil identification. Laboratory and field testing procedures. Two laboratory, one lecture per week. Prerequisite: 311a or concurrent enrollment. (b) Mechanics of soil masses; ground water, shearing resistance, consolidation. Soils as an engineering material. Prerequisite: 311b or concurrent enrollment. (c) Slope stability, embankments, loads on underground conduits. Must be taken in a,b,c sequence. Laboratory notebook required costing approximately \$4.00.

315-4 Elementary Structural Analysis. Application of the principles of mechanics to the determination of forces and deflections in statically determinate structures. Laboratory. Prerequisite: 311b.

318-10 (4,3,3) Hydraulics and Pneumatics. (a) Fundamentals of fluid statics, basic fluid flow concepts for idealized fluids with applications, and introduction to viscous fluids. Laboratory. (b) Viscous fluid flow in open and closed conduits including multi-reservoir and conduit systems. Experimental techniques including hydraulic modeling. Basic hydraulic machinery and fluid power systems. (c) Hydrology. Flood routing and flood control. Fundamental principles of sediment transport and the collection and analysis of field data. Field trip. Must be taken in a,b or a,c sequence. Prerequisite: 260b.

320-9 (3,3,3) Mechanical Laboratory. (a) A study of various types of measuring instruments. (b) Fuels and lubricants testing and exhaust gas analysis. (c) A study of the characteristics of internal combustion engines, steam turbines, compressors, pumps, fans, and refrigeration systems. Report writing. Laboratory. Must be taken in a,b,c sequence. Safety glasses required costing approximately \$5.00. Prerequisite: 313a.

322-6 (3,3) Power Plants. (a) The design and principles of operation of internal combustion engines. The Otto, Diesel, and Brayton cycles and the fundamental thermodynamic laws involved. (b) Modern power plant cycles, pumps, fans, fuels, steam generator auxiliaries, and steam turbines. Must be taken in a,b sequence. Prerequisite: 313a.

323-3 Operation of Public Utilities. (Same as Economics 323) Public utility regulation; electric utility load factors, rates, fixed and operating costs, power plant economics, and power distribution policy. Prerequisite: Engineering 361.

332-9 (3,3,3) Electromechanical Principles and Devices. Magnetic circuits and transformers; the formulation of the essential principles of voltage generation and torque production as applicable to conventional machines; the analysis of conventional machines and control devices; the dynamics of d-c machines; direct energy conversion methods; industrial applications. Laboratory. Must be taken in a,b,c sequence. Safety glasses required costing approximately \$5.00. Prerequisite: 304 or concurrent enrollment.

340-4 Mechanisms. Design and analysis of machine elements. Analysis of the motion of rigid bodies in space and design of linkages, gears, and cams. Includes analytical and graphical techniques. General methods and parametric studies. Laboratory. Prerequisite: 260b and Engineering 222.

342-3 Technology Design. An elective project on any engineering subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Laboratory. Prerequisite: senior standing.

347-3 Foundations. Subsurface investigation, theory of consolidation and settlement, strength theory and conditions of failure due to stresses imposed by engineering structures on foundation materials. Laboratory. Prerequisite: 314b.

363-12 (4,4,4) Surveying. (a) Use and care of surveying instruments; principles of surveying; computations; concepts and applications of advanced surveying. (b) Route surveying; field astronomy; land surveying; state coordinate systems; construction surveying; geodesy. (c) Precise surveying; topographic surveying; least squares adjustment methods; other surveying applications and geodetic principles. May be taken in a,b, or a,c, or a,b,c sequence. Civil engineer's scale required costing approximately \$3.00. Field notebook for each course costs approximately \$1.00. Prerequisite: 102a and Mathematics 111b.

364-7 (3,4) Highway Engineering. (a) Highway administration, planning, economics and finance. Highway surveys, plans and computation. Traffic engineering. (b) Highway design, drainage, roadside development and subgrade

structure. Instruction in all types of base courses, surfaces and paving. Highway construction and maintenance. Preferred in sequence but not required. Prerequisite: 314a, 363a.

403-12 (4,4,4) Electronics Technology. The characteristics and applications of semiconductor devices: (a) Fundamental theory and operation of semiconductor diodes and bipolar transistors, incremental models for transistors, biasing, stability and feedback of single and multistage amplifiers. (b) Parameters and applications of field effect transistors, optoelectronic devices, thyristors, uni-junction transistors and amorphous semiconductors. (c) Parameters and applications of operational amplifiers, linear integrated circuits, monolithic voltage regulators and digital integrated circuits. Laboratory. Prerequisite: 304.

415-3 Basics of Concrete Structural Design. Analysis and design of basic reinforced concrete structural elements using ACI design handbooks. Consideration of both working stress and ultimate strength design. Not for graduate credit. Prerequisite: 311b, 315.

416-3 Basics of Structural Steel Design. Analysis and design of simple structural elements and connections for steel buildings and bridges. Use of AISC code. Not for graduate credit. Laboratory. Prerequisite: 311b, 315.

424-9 (3,3,3) Power Systems Technology. (a) Energy sources; fuels and combustion; pollution control in power plants; and the various types of power plants. (b) Steam and gas turbine power cycles; performance and construction details of turbines. Heat balances on power plants. (c) Power plant auxiliaries including condensers, feedwater heaters, blowers; construction details of auxiliary equipment. Not for graduate credit. Prerequisite: 313b or concurrent enrollment.

426-9 (3,3,3) Photogrammetry. (a) Cameras and photography; flight planning; mathematical principles of vertical and tilted aerial photographs; ground control methods; extension of control; stereoscopy and parallax; basic instruments, stereo plotters, and latest developments. (b) Rectification of tilted photographs; stereoscopic plotting instruments; principles and use of oblique photography; analytic photogrammetry and new concepts. (c) Analysis of aerial photographs to determine soil and rock formations and their properties; interpretations for engineering and regional planning purposes. Laboratory. May be taken in a,b, or a,c, or a,b,c sequence. Photos and maps required for each course, costing approximately \$3.00. Prerequisite: 363a or consent of instructor.

430-1 to 8 Special Problems in Industry and Technology. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected technical problems. Prerequisite: consent of coordinator.

437-9 (3,3,3) Communications Systems Technology. (a) Two-port networks and transmission lines. Simulated LF and UHF transmission lines demonstrate traveling wave phenomena. (b) Microwave devices and transmission through waveguides. Microwave laboratory. (c) Design of communication subsystems, signal analysis, bandwidth, and Fourier Series covered. Laboratory includes design and construction of circuits used in communication systems. Prerequisite: 304.

438-11 (4,4,3) Design of Control and Digital Systems. (a) Fundamentals of control systems: equations of electrical, mechanical, hydraulic, and thermal systems; applications of Laplace transforms, transfer functions, block diagrams and flowgraphs. Analog computation laboratory. Prerequisite: 304c. (b) Basic graphical and design methods: root locus, frequency response, Nyquist diagrams, and compensator design. Control systems laboratory. Prerequisite: 438a. (c) Design of digital systems: Logic operations, number systems, and applications. Prerequisite: 304a or concurrent enrollment.

Industrial Technology

Major, Courses

The industrial technology program has as its objectives the training of qualified personnel who can develop and direct the manufacture and distribution of products.

The program is a balanced curriculum of studies drawn from a variety of disciplines relating to industry. Included in the curriculum is the study of materials and manufacturing processes, principles of distribution, and concepts of industrial management and human relations. Communication skills, humanities, and social sciences are studied to develop managerial

abilities. Knowledge of physical sciences, mathematics, design, and technical skills gained from the program allow the graduate to cope with technical and production problems.

The industrial technology curriculum is flexible enough to provide the means whereby graduates of two-year occupational programs may obtain a bachelor of science degree within two years. A graduate of a two-year industrially oriented occupational program, such as aviation, architecture, automotive, construction, drafting, data processing, electrical, machine tool, mechanical, mid-management, supervision, and welding may have an excellent preparation to pursue a bachelor of science degree with a major in industrial technology.

Students with related work experience may receive credit toward the degree via Industrial Technology 259.

Additional flexibility in earning credit toward the degree is provided through extension courses and cooperative work experience. Cooperative work experience is available to students who qualify with the provision that meaningful employment is available in the participating industries.

*Bachelor of Science Degree, SCHOOL OF ENGINEERING AND
TECHNOLOGY*

<i>General Studies Requirements</i>	68
<i>Requirements for Major in Industrial Technology</i>	118
GSA 106	(4)
Physics 206, 207	(8)
Mathematics 111a,b	(5) + 5
Engineering 222	3
Engineering Technology 102a-3	3
Industrial Technology 307-5, 358-5, 365-4, 375-4, 382-4, 440-4, 465a-4	30
Elective Program Requirements	77
Program flexibility is maintained through one of the following alternatives. The student's previous background will determine the group of courses best suited for his needs.	
Contemporary Alternative (for students who begin their work at Southern Illinois University at Carbondale or transfer from a baccalaureate-oriented program)	
Physics 206c, 207c	4
Engineering 361	3
Engineering Technology 102b,c, 245a,b	12
Industrial Technology 100, 300a, 317, 318, 325	17
Psychology 320a, Administrative Sciences 301 or 385	4
Technical Electives	37
Suggested groups of electives are as follows:	
Industrial Design: Industrial Technology 342, 359, 362, 369, 379	
Manufacturing: Industrial Technology 300b, 335, 340, 341, 342, 351, 425, 450	
Supervision and Personnel: Industrial Technology 340, Administrative Sciences 385, Psychology 305, 322, 323	
Technical Sales: Marketing 301, 363, 439	
Occupational Alternative (for students from two-year industry-related occupational programs in a community	

college or technical institute. Also, students with related work experience will receive credit and qualify for this alternative.)

Industrial Technology 220a,b 6

Specialization 34

Specialized courses are to be selected from those available which permit the student to build upon his present technical knowledge. Course selections are to be made with the approval of the student's academic adviser.

Technical Electives 37

Total 186

Extension courses for students in the Industrial Technology program are offered in geographical locations with a high population density whenever (1) it is apparent that there is a need and potential enrollment to justify scheduling a class, (2) it is possible to obtain a faculty member to host the class, and (3) adequate laboratory and library facilities are available.

Courses

A suitable slide rule required for some of the following courses, cost: approximately \$3. Safety glasses are required for most of the following courses, cost: approximately \$5.

100-0 **Orientation.** (See Engineering Technology 100.)

220-6 (3,3) **Survey of Industrial Processes.** (a) Acquaints the student with some of the various processes, equipment, and materials used in American industry. (b) Explains relative costs and effectiveness of alternative methods.

259-3 to 80 **Occupational Credit.** For occupational credit earned at junior colleges and technical institutes or for occupational proficiency. Credit is established by departmental evaluation.

300-8 (4,4) **Plastic Processes.** (a) Polymeric synthesis systems of manufacturing plastic materials and of the properties of plastics. Includes design and analysis of commercial plastic products. (b) Study of thermosetting plastics as to composition, properties, and methods of manufacture. Includes commercial applications for tooling and consumer products and design with all kinds of plastics. Lecture, laboratory. Prerequisite: GSA 106.

307-5 **Analytical Problems in Technology.** Methods of formulation and solution of special problems encountered in industry and technology using advanced techniques. Paperback textbook required costing approximately \$5.00. Prerequisites: Mathematics 111a,b or equivalent.

317-5 **Casting and Metal Forming Process.** Analysis of metal casting processes, testing instruments, and production equipment. Analysis of metal forming techniques and the newer techniques of explosive, electro-discharge, and ultrasonic forming. Powder metallurgy. Lecture, laboratory. Prerequisite: Mathematics 111a.

318-3 **Materials Joining.** Welding processes including design, strength, and production equipment, and other metal joining techniques such as metal fasteners, adhesive bonding, brazing, and soldering. Lecture, laboratory.

319-3 to 48 **Industrial Internship.** Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences and examinations. Prerequisite: consent of instructor.

325-5 **Metal Removal Processes.** Metal removal theory, cutting economics, and properties of cutting materials. Conventional production equipment and newer techniques; chemical, electro-discharge, and ultrasonic. Lecture, laboratory. Prerequisite: Mathematics 111a.

335-3 **Metallurgy and Heat Treatment.** Analysis of metal structures and principles of heat treatment. Lecture, laboratory. Prerequisite: Mathematics 111a.

340-3 **Numerical Control.** Principles of numerical control process and

introduction to numerical control programming. Lecture, laboratory. Numerical control notebook required, costing approximately \$1.00. Prerequisite: 325a and Engineering Technology 102a.

341-3 Maintenance. Preventive maintenance procedures, maintenance shop organization, and equipment maintenance problems.

342-3 Industrial Finishes. Analysis of methods and equipment of industrial finishing processes including electrostatics, enameling, anodizing, and other protective and decorative coatings.

351-3 Industrial Metrology. Principles of industrial metrology including error analysis, comparative gauge and direct measurement instrumentation. Prerequisite: 365.

358-5 Materials Handling and Plant Layout. Methods and equipment. Plant layout methods and techniques. Prerequisite: 325 and 317.

359-4 Design Illustration. Theory and practical applications of axonometric and perspective projection techniques including the theory and application of rendering techniques; lecture, laboratory. Prerequisite: Engineering Technology 102b.

362-3 Industrial Packaging. Analysis of packing principles, equipment, and processes.

365-4 Quality Control. Analysis of control charts, military sampling procedures, and inspection systems. Prerequisite: senior standing.

369-4 Industrial Design. Introduction to the basic design concepts including design process developments, design phases, and communications. Concentration on factors influencing design, design analysis and creative thinking. Prerequisite: 317, 325.

375-4 Production and Inventory Control. Production and inventory control systems with emphasis on cost analysis. Prerequisite: Engineering 222.

379-4 Machine and Tool Design. Introduction to design and construction of tools, dies, and machines required in the production process. Emphasis on metal processing equipment design. Prerequisites: 317, 325.

382-4 Motion and Time Study. Principles and practices of motion and time study including process charts, operation charts, motion summary, and time standards. Prerequisite: senior standing.

425-3 Advanced Process Design and Control. Extension of other process courses offered. Meets the need of those students who enter the field of manufacturing by giving more emphasis on planning, estimating, and control of industrial processes. Not for graduate credit. Prerequisite: 317, 318, 325.

440-4 Manufacturing Policy. Review of all areas covered by the industrial technology program. Includes problems for solution which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Prerequisite: 358, 365, 375, 382, or consent.

450-4 Industrial Systems Analysis. Teaches the systems required for successful industrial operations. The role of the computer in system design and application emphasized. Not for graduate credit. Prerequisite: 365, 375, Engineering 222.

465-8 (4,4) Industrial Safety. (a) Principles of industrial accident prevention; accident statistics and costs; appraising safety performances; industrial hazards and safeguards; fire control. (b) Effective industrial safety organizations, management and supervision; safety psychology and training programs; health safeguards; occupational diseases and other industrial hazards. Prerequisite: senior standing.

Theater

Department, Major, Courses

Instruction and training in all phases of dramatic production for the stage and in basic techniques for dramatic production in television, radio, and motion pictures are provided.

Education for dramatic production entails (1) training and practice in acting, directing, and technical production (stage management, crew work, the planning and execution of costumes, lighting, and scenery); (2) understanding of the essential nature of theater art through study of theater esthetics, history, and criticism; (3) a survey of theater manage-

ment practices; (4) a study of the principles and techniques of playwriting and; (5) a knowledge of dramatic literature.

The courses are designed to achieve the following objectives: (1) to teach the theory and practice of play production; (2) to provide a foundation for graduate study, in dramatic production, theory, and history; (3) to provide basic professional training in all phases of dramatic production for stage, screen, radio, and television; (4) to provide the general college student with opportunities to participate on an extracurricular basis in a cooperative artistic enterprise, and with courses which will contribute to a broad liberal arts education; (5) to provide the student of general speech with training and experience in an important type of speech activity; (6) to provide campus, city, and area with live theater performances of the best plays, including children's plays and operas, of past and present; and (7) to permit students some degree of specialization in any one of four areas of theater production: acting and directing; scenic/costume design and technical direction; playwriting and dramatic literature; and dance; and (8) to provide a foundation in theater history and theory.

The Southern Players, under the supervision of the Theater faculty, produce each year four full-length plays, three plays for children, five faculty and student-directed full-length plays, and three programs of original one-acts. Each fall the Touring Theater, a troupe composed of students registered in 322 tours Southern Illinois for several weeks, performing daily a full-length play for adults and a play for children. Each summer a resident stock company produces three plays and three musicals in the air-conditioned University Theater.

*Bachelor of Science Degree, COLLEGE OF COMMUNICATIONS AND
FINE ARTS*

The following requirements are established for four areas of specialization: Acting-Directing, Design-Technical, Playwriting-Dramatic Literature, and Dance. Each area of specialization has a core curriculum (common in the first three areas), a specialized curriculum, and a limited number of electives. Since the core curriculum for Dance is somewhat different from that of the other three areas, it is listed separately.

<i>General Studies Requirements</i>	68
<i>Core Curriculum in Theater for the following three areas</i>	58-59
GSC 201 or 203	(3)
GSC 365 or English 471a or 471b	3-4
GSD 152	(3)
GSE 6 hours from 103, 104, 113, 114	(6)
English 460d or 464 or 468	4
Theater 111a,b,c, 207, 311, 308 (10 hours; minimum of 6 in a,c, and d), 322, 354a,b and 402a	51
<i>One of the following Three Specializations</i>	34-44

Acting-Directing Specialization

Theater 213, 217, 305, 317, 420b,c, 417, Speech Pathology and Audiology 104	30
Theater electives	4-5
Recommended electives:	
Art 225a,b, or c	3
Speech 422, 423, or 424	4

English 460a,b, or c, or 464 or 471a or b or 468 . . .	4	
Cinema and Photography 350 or 351	4	
Radio-Television 490	4-8	
Philosophy 360 or 460	4	
<i>Total with Core and General Studies Courses</i>		160-161

Design-Technical Specialization

Theater 412a, 414, 432, 438	16	
Electives from: Theater 318, 407, 412b,c, 415, or from other departments with approval of adviser	12	
Electives from: Interior Design 380, 381 or Architectural Technology 110a,b or Clothing and Textiles 333, 433, or 360 or 364	8	
<i>Total with Core and General Studies Courses</i>		162-163

Playwriting-Dramatic Literature Specialization

Two courses from English 460a,b,c,d or 464 or 471a,b or 468	8	
GSB 202	4	
Psychology 305	4	
Theater 411a, 411b, 438, 402b	16	
Theater electives	9	
<i>Total with Core and General Studies Courses</i>		167-168

Dance Specialization

<i>Core Curriculum for Dance Specialization</i>		39
GSD 152	(3)	
GSE 6 hours from 103, 104, 113, 115	(6)	
Theater 354a,b	6	
Theater 111a,b,c, 217, 322, 402a, 379	33	
Theater 230, 240, 273, 313, 312, 416	42	
Theater Electives	5	
<i>Total with Core and General Studies Courses</i>		154
<i>Electives</i>		15-32
<i>Total</i>		186

Bachelor of Arts Degree, COLLEGE OF LIBERAL ARTS

<i>General Studies Requirements</i>		68
<i>Supplementary Two-Year College Requirement in FL/Math</i>		21-25
1 year Mathematics	(5) +	3-5
GSC Foreign Language *		9
2nd year Mathematics or Foreign Language 201a,b,c		9-11
<i>Requirements for Theater Major</i>		78
GSC 201, 203,		6
English 460a,b,c,d, 464, 468, 471a,b (any three courses)		12
Theater 111a,b,c, 217, 311, 402a, 403, 438, 354a,b		39
Theater Electives		21
<i>Electives</i>		15-19
<i>Total</i>		186

* GSC Foreign Language does not satisfy GSC requirements in Liberal Arts.

Minor

Required courses are Theater 111a, 217, 207, 311, 402a, 354a,b, (Total: 25) for students in the College of Communications and Fine Arts; GSC 203, Theater 111a, 217, 354a,b, 402a, 438 (Total: 24) for students in the College of Liberal Arts; GSC 203, Theater 230, 240, 313, 312, 416 (Total: 36) for students with a minor in Theater-Dance.

Courses

111-9 (3,3,3) Staging Techniques. All phases of dramatic production in connection with departmental public presentations. Lectures and laboratory.

203-4 Voice and Diction. Principles and practice in personal vocal and articulatory development and control. General group drills in phonation, resonance and vocal variety; drills for clarity and ease in articulation. For specific vocal needs; individual exercises, coaching and critical comment; leading to increased effectiveness in formal reading and speaking situations. Elective Pass/Fail.

207-4 Fundamentals of Theatrical Design. Graphic media and workshop exercises acquaint students with the problems encountered by the director, scene designer, costumer, and lighting director in providing a suitable environment, by visual means, for the actor. Elective Pass/Fail.

208-1 to 3 Dramatic Activities. Credit to be earned by participation in public performances.

213-3 Stage Movement.

217-4 Acting. Basic techniques of acting in all dramatic media. Emphasis on expression through bodily action and movements. Develops the actor's fundamental tools: motivation, sensory perception, voice, bodily action, movement, and a working vocabulary. Exercises. Mandatory Pass/Fail.

230A-2 Beginning Techniques of Classical Ballet. (Same as Physical Education for Women 230A.) Basic ballet and introduction to centre work.

230B-2 to 22 Intermediate and Advanced Ballet. (Same as Physical Education for Women 230B.) Intermediate and advanced ballet including barre and centre combinations. Prerequisite: 230A or consent of instructor.

240-2 to 24 Theory and Technique of Contemporary Dance. (See Physical Education—Women 240.)

273-1 to 6 Dance Workshop.

305-2 Stage Make-up. Theory and technique of various types of make-ups.

308-14 (2,2,2,2,2,2) Dramatic Activities. Credit to be earned by participation in departmental productions. (a) Stagecraft. (b) Lighting. (c) Costuming. (d) Acting. (e) Make-up. (f) Business. (g) Directing. Prerequisites: 111a,b,c for 308a,b,c; 217 for 308d; 305 for 308e; 404 for 308f; 402a for 308g.

309-6 (3,3) Methods of Teaching Dance. (See Physical Education—Women 309).

311-4 Play Analysis and Introduction to Playwriting Practice. An analysis of the structure of such major dramatic forms as the one-act play, the full-length play, the children's play, the television play, the radio play, etc., as it pertains to the dramatic writer and theater practitioner. Included is a practical introduction to playwriting practice by means of preparing a short play from germinal idea to scenario. Prerequisite: one course in dramatic literature.

312-4 History and Philosophy of Dance.

313-4 Dance Production.

317-4 Intermediate Acting. Practical application, through various scenes and exercises, of the elements of concentration, emotional recall, rhythm, observation, characterization, and rehearsal methods. Prerequisite: 217. Mandatory Pass/Fail.

318-4 Advanced Stagecraft. An advanced course in the principles and procedures of technical production. Emphasis is placed on complex construction problems, scene shop organization, use of metals and plastics and construction of properties. Prerequisite: 111a.

322-2 to 14 Practicum in Theater. Practical experience in acting, directing, and associated theater work in area tours and summer stock. Credit may be earned for the course both on tour and in stock.

354-6 (3,3) History of the Theater. (a) Primitive, Greek, medieval, and Italian Renaissance theater. (b) The theater since the Italian Renaissance.

374-1 Advanced Folk Dance.

379-3 Preclassic Dance Forms. (Same as Physical Education—Women 379.) Lectures and readings in dance of the 16th, 17th, and early 18th centuries. Study and execution of representative preclassic dances. Prerequisite: 230.

401-4 Creative Dramatics. (See Speech 401.)

402-12 (4,4,4) Play Directing. (a) The director as the controlling force in theatrical production, with emphasis on his use of the visual language of the stage. (b) The director as the interpreter of the play, with emphasis on his work with the actors in rehearsal. Prerequisite: 402a or consent of instructor. (c) Study of theories and practice in techniques of directing presentational forms of theater and non-proscenium productions. Prerequisites: 402a and b or consent of instructor. Elective Pass/Fail.

404-4 Theater Management. Theater operational procedure, including both fundamental structuring and house management. The former aspect includes administration, purchasing, and accounting practices, ticket sales, publicity, promotion, and public relations. The latter aspect covers the management of box-office and ushering.

407-2 Sound in the Theater. Consideration of sound system design and application of sound in dramatic production. Lecture and laboratory 2 hours. Prerequisite: 111B or consent of instructor.

409-4 High School Theater and Its Production Problems. Consideration of stage machinery, equipment, light controls and instruments, production, and techniques. Analysis of basic needs of the high school theater.

410-3 Children's Theater. Creative dramatics; dramatization of children's literature; play production for elementary schools. Recommended for education concentrations.

411A-4 Playwriting: The One-Act Play. Principles of dramatic construction and practice in the writing of a one-act play. Individual conferences supplement the class discussion and analysis of student writing. Deserving plays have opportunity to be produced in the University Theater's Quarter-Night program for new plays. Prerequisite: 311 for theater and speech majors.

411B-4 Playwriting: The Full-Length Play. Principles of dramatic construction and practice in the writing of a full-length play, (encompassing such varied types as the children's play, the historical pageant-drama, the musical, etc.). In special cases, student may elect to write two short plays. Individual conferences supplement the class discussion and analysis of student writing. Prerequisite: 411A or consent of instructor; none except 311 for theater and speech majors.

412-12 (4,4,4) Stage Design. The design of settings for the stage and other dramatic media. Prerequisite: 207. Elective Pass/Fail.

414-4 Costume Design. History of western costume from Greek to Renaissance and its adaptation to stage use. Theory and principles of theatrical costuming. Application of principles of design and colour. Designs for single scenes.

415-4 Costume Design. History of costume, Renaissance through 19th Century. Style, fantasy, and the comic in costume design. Principles of dramatic theory and criticism as applied to costume design. Evaluation of research tools. Methods and procedures in designing costumes for a complete show. Prerequisite: 414.

416-4 Current Theories and Practices in the Teaching of Dance. (See Physical Education 416.)

417-4 Advanced Acting. Lectures, readings, and practical application dealing with advanced studies of characterizations and acting styles on an individual basis. Prerequisite: 217, 317. Mandatory Pass/Fail.

432-4 Stage Lighting. Instruments and control equipment; principals and techniques of lighting dramatic productions.

438-4 Contemporary Developments in the Theater. Critical study of theory and practice in acting, directing, production, and architecture in the modern theater. The rise and development of the film, radio, and television as dramatic media.

444-2 to 8 Contemporary Dance Workshop.

490-4 to 8 Television-Theater Workshop. Prerequisite: senior standing and consent of department. (See Radio-Television 490.)

500-2 Introduction to Research Methods.

502-4 to 12 Advanced Directing.

503-12 (4,4,4) Advanced Technical Problems.

504-4 The Comic Theater.

- 505-4 The Tragic Theater.
 511-4 Playwriting Workshop.
 517-4 to 12 Graduate Practicum in Acting.
 519-1 to 12 Theater Practicum.
 526-3 to 12 Seminar in Theater Arts.
 530-1 to 4 Research Problems in Theater.
 599-1 to 9 Thesis.

Tool and Manufacturing Technology (Numerical Control)

Program, Major, Courses

Engineering technicians with broad technical knowledge and manual skills are in demand throughout industry.

The student in this program will have the advantage of courses in data processing that will give him the ability to work with computer-assisted programming for numerical controlled machines.

He will learn to design and test industrial, electrical, hydraulic, and pneumatic power circuits; to read blueprints, design basic jigs and fixtures, make shop sketches, and alter existing machines for structural changes; and to build basic progressive dies, draw dies, die casting dies, and plastic injection mold dies.

The student should plan to spend approximately \$80 for a drawing kit, safety glasses, supplies, and materials.

The graduate will have the technical background to work with engineers in research, development, and testing, plus skills in metal cutting that will give him the abilities of a tool maker.

Representatives of industry serve on an advisory committee which helps to keep the program responsive to needs in the field. Current members are: David A. Bartz, Ferguson Machine Co., St. Louis; G. H. Esch, General Metals Products Co., St. Louis; Ivan S. Meyer, president, Illinois Specialty Manufacturing Co., Inc., O'Fallon; J. D. Nicol, Union Carbide Corp., Nuclear Division, Paducah, and Herbert Wright, training manager, Cincinnati Inc., Cincinnati.

A minimum of 99 hours credit is required for this major.

Associate In Applied Science Degree, SCHOOL OF TECHNICAL CAREERS

Requirements for Major in Tool and Manufacturing (Numerical Control)

GSA 101 and 106 or VTC 120	8
GSB 202 and 211 or 212	8
GSD 101 and 153 or VTC 102	6
Data Processing 208a,b	6
Mathematics 111a	5
Vocational and Technical Careers 105	3
Tool and Manufacturing Technology 101a,b,c, 125a,b,c, 128, 185a,b, 210, 211, 212, 220, 221, 222, 275b,c	60
<i>Electives</i>	3
<i>Total</i>	99

101-15 (5,5,5) **Tool and Manufacturing Laboratory.** (a) Drill press, bench work and engine lathe. The student will perform the basic operations covering the operation of the drill press and engine lathe. He will perform basic bench work operations involving layout and handtools. Laboratory 15 hours. Must be taken concurrently with 125a or consent of instructor. (b) Advanced engine lathe, shaper, vertical mill. The student will demonstrate his ability to operate the

engine lathe, shaper and vertical mill commensurate with a level that is necessary for industrial application and production based on machinability of metals. Laboratory 15 hours. Must be taken concurrently with 125b or consent of instructor. (c) Milling machines and grinder. The student will set up and operate the various milling machines and grinding machines common to the tool room and manufacturing. Laboratory 15 hours. Must be taken concurrently with 125c or consent of instructor. Must be taken in a,b,c sequence or by consent of instructor.

125-9 (3,3,3) Tool and Manufacturing Theory. (a) Introduction to machine tools. The student will demonstrate his knowledge of the basic machine tool operations also bench and hand tool techniques. Lecture 3 hours. (b) Machinability of metals. The student will demonstrate his ability to select correct cutting speeds, feeds, and tool geometry for various alloy steels and to understand the relationship of the factors involved. Lecture 3 hours. (c) Milling techniques and abrasive machining. The student will demonstrate his knowledge of the various tool room and production milling machines and grinders, their construction, set-up and operation. Lecture 3 hours. Must be taken in a,b,c sequence or by consent of instructor.

128-3 Hydraulics and Pneumatic Controls. The student will demonstrate his ability to understand industrial fluid power and its application in industry. The student designs, tests and implements hydraulic and pneumatic circuits that are applicable to industry. Lecture 3 hours.

176-6 (3,3) Manufacturing Processes. (a) The student will demonstrate his ability to understand the metal cutting machines common to the accepted production applications. (b) The student will demonstrate his ability to understand casting, forging, forming, extrusion, powder-metallurgy and other chipless process techniques as applied to manufacturing processes. Lecture 3 hours.

180-9 (3,3,3) Oxy-Acetylene and Electric Arc Welding. Provides the machinist and other tradesmen with enough welding experience to make simple repairs. (a) Oxy-acetylene and electric arc. (b) Metallic arc and T.I.G. welding. (c) T.I.G., M.I.G., and special metallic arc applications. Lecture 1 hour. Laboratory 4 hours. Must be taken in a,b, or a,b,c, or b,c sequence or consent of instructor.

185-10 (3,3,4) Technical Drawing. (a) Principles of orthographic projections, conventional representations and symbols, dimensioning and sketching. Lecture 2 hours. Laboratory 2 hours. (b) The use of instruments for working drawings including sectional and auxiliary dimensioning. Lecture 1 hour. Laboratory 4 hours. (c) The drawings of jigs, fixtures, and special tools. Lecture 3 hours. Laboratory 2 hours. Must be taken in a,b,c sequence.

210-4 Beginning Numerical Control and Production Machining. The student will demonstrate his ability to set up and operate the NC controlled milling machine according to industrial applications and procedures. Laboratory 10 hours. Prerequisite: 125.

211-4 Tool and Die and Electrical Discharge Machinery. The student will demonstrate his ability to set up and operate the electrical discharge machine on die and mold making applications. He will also demonstrate his ability to build progressive and plastic mold dies. Laboratory 10 hours. Prerequisite: 210.

212-4 Advanced Numerical Control and Production Machinery. The student will demonstrate his ability to set up and operate advanced production jobs on the turret lathe, tracer lathe and numerical control milling machine. Laboratory 10 hours. Prerequisite: 211.

220-3 Quality Control and Inspection Practice Theory. The student will demonstrate his ability to apply the principles of quality control, gaging, measuring and inspection practices. Lecture 3 hours. Prerequisite: 125.

221-3 Electrical Discharge Machinery and Tool and Die Theory. The student will be required to understand the E.D.M. process. To select proper machine settings for a given application. The E.D.M. process will be incorporated into basic die and mold making. Lecture 3 hours. Prerequisite: 220.

222-3 Process Planning and Cost Estimating. The student will demonstrate his ability to process plan and run cost estimates on typical production parts. Lecture 3 hours. Prerequisite: 221.

275-9 (3,3,3) Metallurgy. (a) Welding Metallurgy. The student will demonstrate his ability to recognize heat affected zones and grain structures. Further, he will study phase diagrams and metal characteristics as it applies to welding procedures. Lecture 3 hours. (b) Ferrous Metallurgy. The student will demonstrate his understanding in the theory of alloys, phase diagrams, metal characteristics and simple heat treating processes. Lecture 3 hours. (c) Tool Steel

Metallurgy. The student will demonstrate his ability to be able to apply the basic heat treating procedures on the tool steels common to industrial uses. He will also demonstrate his ability to select the proper steels in relationship to design criteria. Lecture 3 hours. Laboratory 2 hours. Must be taken in the a,b or a,b,c or b,c sequence or by consent of instructor.

University

Courses

240-4 Private Pilot. Prepares the beginning flight student for the FAA Private Pilot certificate. Includes 36 classroom hours of ground instruction, 35 hours of individual ground instruction, 1 hour of flight simulator training and a minimum of 35 hours of flight training. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

241-3 Basic Flight. Begins preparation for the FAA Commercial Pilot certificate. Includes 24 classroom hours of ground instruction, 10 hours of individual ground discussion, 1 hour of flight simulator training, and 40 hours of flight training. This course carries substantial additional charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

242-3 Intermediate Flight. Continues preparation for the FAA Commercial Pilot certificate. Includes 24 classroom hours of ground instruction, 10 hours of individual ground discussion, 1 hour of flight simulator training, and 40 hours of flight training. This course carries substantial additional charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

243-3 Advanced Flight. Completes requirements for the FAA Commercial Pilot certificate. Includes 24 classroom hours of ground instruction, 10 hours of individual ground discussion, 1 hour of flight simulator training, and 40 hours of flight training. This course carries substantial additional charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

244-4 Instrument Flight. Prepares the student for an instrument rating on his pilots certificate. Includes 36 classroom hours of ground instruction, 30 hours of individual ground discussion, 10 hours of flight simulator training, and 20 hours of dual flight instruction. This course carries substantial additional charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

245-3 Flight Instructor—Airplanes. Prepares the commercial pilot for an FAA Flight Instructor certificate. Includes 25 hours of dual flight training and 40 hours of individual ground instruction. This course carries substantial additional charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

246-1 Flight Instructor—Instruments. Prepares the student for an instrument rating on his flight instructor certificate. Includes 10 hours of dual flight training, 15 hours of individual ground discussion, and 1 hour of flight simulator training. This course carries substantial additional charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

247-1 Multi-Engine Airplane Pilot. Prepares the student for the FAA multi-engine airplane rating. Includes 10 hours of flight training in multi-engine aircraft; 10 hours of individual ground discussion. This course carries substantial additional charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

248-1 Airline Transport Pilot. Prepares the commercial pilot for the FAA Airline Transport Pilot certificate. Includes 40 hours of ground instruction and 20 hours of flight training in single-engine or multi-engine aircraft. This course carries substantial additional charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

300-9 (3,3,3) Independent Studies in Student Governance. For holders of major campus student offices. Discussion sessions arranged with the assistant to the chancellor for student relations. Mandatory Pass/Fail.

388-1 to 24 International Studies. Course work undertaken as part of an approved University residential study program abroad. May be taken for a

maximum of 12 quarter hours per quarter and may be repeated for a maximum of 24 quarter hours. Prerequisite: major department or program approval.

Vocational and Technical Careers Courses

Courses

101-3 Business Correspondence. A brief review of fundamentals and a complete study of letter forms and letter mechanics. Various types of business letters and report writing with adequate practice in writing application, sales, adjustment, inquiry, and credit letters. Lecture 3 hours. Prerequisite: GSD 101.

102-3 Technical Writing. Development of an understanding of basic writing techniques, such as definition, description of mechanisms and processes, and classification. Also a study of technical style, audience analysis, and graphic aids. Preparation and presentation of abstracts, book reviews, and a term research technical report, done in correct form, with precise diction, and in a clear and effective style. Lecture 3 hours. Prerequisite: GSD 101.

103-3 Fundamentals of Mathematics. A first-level course in mathematics designed for those students who need a review of fundamental concepts and operations in arithmetic, algebra, and geometry. It includes operations with common fractions, decimals, and per cents; units of measure (metric and English standard); ratio, proportion, and variation; solution of first-degree equations and use of formulas to solve problems; and solution of basic geometric figures including use of Pythagorean theorem. Lecture 3 hours.

104-3 Business Mathematics. The use of mathematics in modern business. Involves calculations such as: interest rates, amortization schedules, discounts, mark up, payroll computations. Lecture 3 hours.

105-3 Technical Mathematics. A study of mathematics with the specific emphasis on the technical needs of the student. Slide rule (multiplication, division, location of decimal, proportion, squares and square root), application in geometry, algebra review, line equations, functions and graphs, exponents and logarithms. Lecture 3 hours. Prerequisite: satisfactory ACT or GSD 106.

107-4 General Systems Physics. The student will demonstrate his knowledge in the basic principles and theories of electricity, hydraulics and pneumatics. Lecture 2 hours. Laboratory 4 hours.

108-3 Automotive Chemistry Laboratory. The student will demonstrate his ability to analyze fuels and lubricants and detect impurities and contaminants. Lecture 2 hours. Laboratory 3 hours.

115-8 (4,4) Introduction to Chemistry. (a) A study of the structure of matter including a survey of the common elements and compounds and the changes during the chemical reactions. Also a study of inorganic acids bases, salts, solutions, the periodic tables, equation balancing, and the metric system. (b) A study of the chemistry of organic compounds, carbohydrates, proteins, and lipids relating them specifically to body functions. Also the chemistry of digestion, metabolism, respiration, blood enzymes, hormones, and vitamins. Lecture 3 hours. Lab 3 hours. Must be taken in a,b sequence. Prerequisite: consent of adviser.

118-4 Applied Calculus. A study of calculus specifically oriented towards the needs of the technicians. Includes a study of the functions, graphical methods of the calculus, the derivative and its applications, and the integral and its applications. Lecture 4 hours. Prerequisite: Mathematics 111a.

120-4 Basic Applied Physics. A study of those phases of physics dealing with heat, magnetism, and electricity. Lecture 4 hours. Prerequisites: 105 and GSA 101.

141-5 Introduction to Physiology. A survey of the functions of the human body for students desiring basic but comprehensive knowledge of human physiology. Lecture 5 hours.

201-2 Job Orientation. Special instructional sessions offered on personality, clothing, job application and professional ethics. Preparation of a portfolio consisting of a personal data sheet, an analysis of prospective employing firms, sample letters of application, and an acceptance or refusal. Practice in being interviewed by representatives of business and industry. Lecture 2 hours.

232-4 Labor Management Relations Problems. Personnel policies, selection and employment, employee benefits, labor organizations and governmental activities, employee-employer relations, grievance procedure, wage and salary standards, and use of practical industrial psychology. Lecture 4 hours.

350-1 to 50 Technical Career Subjects. In-depth skill development and exploration of innovative techniques and procedures used by business and industry offered through various workshops, special short courses, or transfer credit. Hours and credits to be arranged by department. Prerequisite: consent of instructor.

Zoology

Department, Major, Courses

A major in zoology is an appropriate beginning for those wishing to specialize in teaching, research, or to seek other employment in the zoological sciences and allied fields (e.g., conservation, fisheries management, wildlife management, dentistry, medicine, and veterinary medicine).

Students planning to major in zoology should consult with the director of undergraduate studies in zoology for current information about the department and its programs.

Students majoring in zoology are encouraged to develop an individualized curriculum by consulting with the director of undergraduate studies in zoology and an appropriate faculty member of the department. The curriculum must include: Biology 305, 306, 307, 308; Zoology 317a,b, Zoology 382 (3 quarters), and electives to total at least 48 quarter hours. No courses offered in the General Studies program will be accepted as electives within the 48 hours.

Bachelor of Arts or Bachelor of Science Degree, COLLEGE OF SCIENCE

<i>General Studies Requirements</i>	68
<i>Supplementary Two-Year College Requirement in FL/Mathematics</i> 21-25	
1 year Mathematics	(5) + 3 to 5
GSC Foreign Language (French, German or Russian recommended)	9 *
2nd year mathematics or FL 201-9	9 to 11
<i>Requirements for Major in Zoology</i>	48
GSA 115a,b	(8)
Biology 305, 306, 307, 308	16
Zoology 317a,b, 382	13
Zoology courses as required by individualized curriculum ..	19
<i>Electives</i>	45-49
Recommended: botany; Chemistry 122a,b,c, 123a,b,c; organic and biological chemistry; Mathematics 150a,b; microbiology; Physics 111 or 206; and physiology.	
<i>Total</i>	186

* GSC FL does not satisfy GSC requirements in the College of Science

Bachelor of Science Degree, COLLEGE OF EDUCATION

Degrees taken in the College of Education must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for the major in zoology are the same in both colleges. College of Education professional education requirements may be found in the section of this bulletin titled secondary education.

Minor

A minor in zoology consists of 24 hours, including Zoology 317a,b. Electives from the following areas may be used to complete the 24-hour

minimum requirement: Biology 305, 306, 307, 308; GSA 312, 313, 314; and zoology (any courses except 322). College of Liberal Arts or College of Science students should take GSC FL-9 to satisfy the college language requirement.

Courses

Students enrolled in Zoology courses may incur expenses of \$5 to \$25 for field trips or supplies.

300-5 Vertebrate Embryology. Development of the individual with the frog, chick, and pig as types. Three lectures and four laboratory hours per week. Prerequisite: consent of instructor.

309-5 Elementary Cytology. Introduction to structure and function of the cell on an elementary level. Three lecture and four laboratory hours per week. Prerequisite: consent of instructor.

GSA 312-3 Conservation of Natural Resources.

GSA 313-3 Evolution.

GSA 314-3 Man's Genetic Heritage.

315-3 History of Biology. The inter-relationships between the development of biological knowledge and the history of mankind.

316-4 Insect Pests and Their Control. Principal injurious insects and their allies; chemical and biological methods of control. (Credit may not be used toward a concentration in zoology.) Two lecture and 4 laboratory hours per week. Prerequisite: GSA 115a and b.

317-10 (5,5) Diversity of Animals. Diversity and its taxonomic treatment in invertebrate and vertebrate animals, emphasizing structure, function, life cycles, and evolution. Must be taken in a,b sequence. Prerequisite: GSA 115a,b.

318-8 (4,4) Vertebrate Anatomy. The structure of vertebrate organ systems. (a) Three lectures and 2 laboratory hours per week. (b) One lecture and 6 laboratory hours per week. To be taken in a,b sequence. Prerequisite: 317b or consent of instructor.

321-5 Histological Techniques in Zoology. Methods of preparing material for microscopic study. Two lecture and 6 laboratory hours per week. Prerequisite: one year of biological sciences or consent of instructor.

322-2 to 5 Problems in Zoology. Research on zoological problems. Prerequisite: 4.25 grade point average, senior standing, and approval of the department or faculty. (Credit may not be used toward a minor in zoology.)

340-3 Teleology and Optimality in Biological Systems. The design and purpose of biological structures from the molecular to the population level. Reference to evolutionary origins, engineering principles, and systemic integrations. Prerequisite: consent of instructor.

351-5 Ecological Methods. Basic ecological field techniques for analysis of community structure and functional relationships. Cost of field trips may be \$5 to \$25 per student. One conference and eight laboratory hours per week. Prerequisite: 317 and Biology 307.

382-3 (1,1,1) Zoology Seminar for Seniors. Three quarters required of seniors majoring in zoology. Prerequisite: senior standing. Mandatory Pass/Fail.

402-4 Natural History of Invertebrates. Introduction to environmental relationships, intraspecies communication, and interspecies relationships of invertebrate animals. Prerequisite: one year of zoology including 317a.

403-4 Natural History of Vertebrates. Observation, identification, and life histories. Designed for teachers. Not for students specializing in vertebrate zoology. Prerequisite: 317b.

404-2 to 12 Zoology Field Studies. A trip of four to eight weeks to acquaint students with animals in various environments and/or with methods of field study, collection, and preservation. Arrangements made in advance of term. Cost per individual will be approximately \$25 per week. (Only 4 hours may be used for credit.) Prerequisite: consent of department.

406-4 Protozoology. Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods of culturing and studying. Prerequisite: 317a.

407-5 Parasitology. Principles, collection, identification, morphology, life histories, and control measures. Prerequisite: 317a.

408-4 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. Prerequisite: 317b.

- 409-5 Histology.** Microscopic structure of organs and tissues with emphasis on mammalian forms. Prerequisite: 15 hours biological sciences.
- 410-5 Vertebrate Paleontology.** History of vertebrate animals in terms of their morphological change, geological succession, and ecological relationships.
- 413-10 (5,5) The Lower and Higher Invertebrates.** (a) Structure, phylogeny, and natural history of the lower invertebrates, through lophophorates. (b) Structure, phylogeny, and natural history of the higher invertebrates, protostomes, deuterostomes except arthropods. Need not be taken in sequence. Prerequisite: 317a.
- 414-5 Freshwater Invertebrates.** Taxonomic groups, identification and natural history of the North American fauna. Prerequisite: one year of zoology including 317a.
- 415-4 Limnology.** Lakes and other inland waters, the organisms living in them, and factors affecting these organisms. Prerequisite: 317a.
- 425-4 (2,2) Genetic Methods.** Experimental methods in applying basic principles of genetics. (a) Monogenic and digenic inheritance, sex-linkage, gene interaction, linkage, and chromosome mapping. (b) Mutation, artificial and natural selection, gene frequencies, and genetic drift. Four hours laboratory per week. Must be taken in a,b sequence. Prerequisite: Biology 305.
- 426-4 Comparative Endocrinology.** (Same as Physiology 426.) Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues. Includes ablation and histology of glands, and chemical and bioassays with vertebrates and invertebrates. Prerequisite: Biology 308 and consent of instructor.
- 430-8 (4,4) Biological Statistics.** (a) Examination of distributions, the parametric statistics and simple regression theory. (b) Examination of experimental design, the analysis of variance, and the analysis of covariance. Prerequisite: consent of instructor.
- 441-4 Emergence of Order in Biological Systems.** From molecular to the gross morphological level: cybernetic, systemic, thermodynamic, and evolutionary aspects. Prerequisite: consent of instructor.
- 459-4 Game Birds.** Identification, life history, ecology, and management. Cost of field trips up to \$15 per student. Prerequisite: 317a,b or consent of instructor.
- 461-4 Mammalogy.** Taxonomic groups, identification, and natural history of mammals. Prerequisite: 317b.
- 463-4 Wildlife Management.** The principles and varied techniques of managing wildlife resources. Cost of field trips up to \$15 per student. Prerequisite: 15 hours of biological science or consent of instructor.
- 465-4 Ichthyology.** Taxonomic groups, identification, and natural history of fishes. Prerequisite: 317b.
- 466-4 Fish Management.** Sampling, dynamics, and manipulation of fish populations, age and growth of fishes, and habitat improvement. Prerequisites: 15 hours of biological science, consent of instructor.
- 467-4 Ornithology.** Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. Cost of field trips may be \$5 to \$10 per student. Two lecture and 4 laboratory hours per week. Prerequisite: 317b.
- 471-4 Entomology.** Principles of the structure, classification, and life histories of insects. Two lectures and 4 laboratory hours per week. Prerequisite: 317a.
- 479-4 Animal Behavior.** (Same as Animal Industries 479 and Psychology 479.) The biological basis for the actions and responses of animals. Prerequisite: GSA 209 or equivalent.
- 508-4 Helminthology.**
- 509-3 Histochemistry.**
- 512-3 Animal Geography.**
- 514-4 Advanced Entomology.**
- 520-5 Advanced Invertebrates.**
- 521-4 Advanced Limnology.**
- 525-5 Cytology.**
- 540-3 Factors in Animal Reproduction.**
- 542-3 Osteology.**
- 561-4 Game Mammals.**
- 566-4 Fish Culture.**
- 573-4 Physiological Ecology.**
- 577-3 Population Ecology.**
- 578-4 Population Genetics.**

580-4 Advanced Systematics.

581-3 The Zoological Literature.

582-6 (1,1,1,1,1) Graduate Zoology Seminar.

583-3 (1,1,1) Teaching of Zoology in College.

585-1 to 33 Seminars.

596-1 to 12 Special Research.

599-1 to 12 Research and Thesis for Master's Degree.

600-1 to 48 Research and Dissertation for Doctor of Philosophy Degree.

5 / Faculty

Accountancy—School of Business

Professors

- CLIFFORD BURGER, 1958
B.S. in Ed., Indiana State Teachers College, 1946
M.S., Indiana State Teachers College, 1947
C.P.A., 1950
- E. J. SCHMIDLEIN, JR., 1959
B.S., Fordham University, 1937
M.B.A., New York University, 1939
Ph.D., New York University, 1953
C.P.A., 1961
- RALPH D. SWICK, Chairman, 1955
B.S., Indiana University, 1936
M.S., Indiana University, 1938
D.B.A., Indiana University, 1954
C.P.A., 1951
- CHARLES W. WOELFEL, 1969
Ph.B., University of Notre Dame, 1947
M.S., Butler University, 1950
Ph.D., University of Texas, 1957
C.P.A., 1954
- ROLAND M. WRIGHT, 1966
B.S., Northern Iowa University, 1951
M.A., State University of Iowa, 1954
Ph.D., State University of Iowa, 1962
C.P.A., 1961

Associate Professors

- MARY N. BARRON, 1948
B.S., University of Kentucky, 1937
M.B.A., University of Michigan, 1946
- DOUGLAS ERIKSEN, 1969
B.S., Kansas State University, 1956
M.A., Kansas State University, 1961
Ph.D., University of Missouri, 1968
C.P.A., 1972
- SUSIE E. OGDEN, Emerita, 1931
B.Ed., Southern Illinois University, 1929
A.M., University of Illinois, 1931
- SHIRISH B. SETH, 1968
B.Com., University of Bombay, India, 1957
M.Com., University of Bombay, India, 1960
M.B.A., Texas Christian University, 1964
Ph.D., Michigan State University, 1969
- MARVIN W. TUCKER, 1966
B.S., West Kentucky University, 1960
M.B.A., Indiana University, 1961
Ph.D., University of Alabama, 1966
- ROBERT L. GALLEGLY, 1946
B.Ed., Southern Illinois University, 1939
A.M., University of Illinois, 1947

Assistant Professors

- JON A. BOOKER, 1971
B.B.A., Texas A & M University, 1965
M.B.A., Texas A & M University, 1967
Ph.D., North Texas University, 1971
C.P.A., 1972

Instructors

- JAMES CAMPBELL, 1972
B.S., Southern Illinois University, 1969

- M.S., Southern Illinois University, 1972
C.P.A., 1971
- RONALD L. KOZOMAN, 1969
B.S., Northern Illinois University, 1963
M.S. in Ed., Northern Illinois University, 1965
C.P.A., 1967
- EUGENE ROZANSKI, 1972
B.S., University of Missouri, 1959
M.S., St. Louis University, 1968
- GARY VANMETER, 1971
B.S., Southern Illinois University, 1969
M.B.A., Southern Illinois University, 1971

Administrative Sciences—School of Business

Professors

- JOHN M. FOHR, 1962
B.S., Marquette University, 1939
M.A., Michigan State University, 1952
Ed.D., Michigan State University, 1959
- JAMES G. HUNT, 1966
B.S., Michigan Technological University, 1954
A.M., University of Illinois, 1958
Ph.D., University of Illinois, 1966
- DANILO ORESCANIN, 1972
B.S., West Virginia University, 1953
M.B.A., Indiana University, 1954
D.B.A., Indiana University, 1960
- HENRY J. REHN, Emeritus, 1945
B.S., Oregon State University, 1924
M.B.A., University of Oregon, 1925
Ph.D., University of Chicago, 1930
- JOHN W. SCOTT, Emeritus, 1947
B.A., Fairmount College, 1914
M.A., University of Texas, 1915
Ph.D., University of Chicago, 1930
- WILLIAM C. WESTBERG, 1952
B.A., Pennsylvania State University, 1937
M.Ed., Pennsylvania State University, 1939
Ph.D., Pennsylvania State University, 1948

Associate Professors

- R. RALPH BEDWELL, 1954
B.A., Evansville University, 1941
M.S., Syracuse University, 1942
Ph.D., Southern Illinois University, 1969
- RONALD C. BISHOP, Chairman, 1967
B.S., Bradley University, 1955
M.A., Bradley University, 1956
Ph.D., Southern Illinois University, 1969
- THEODORE H. MATTHEISS, 1973
B.S., Wayne State University, 1960
M.B.A., Wayne State University, 1961
D.B.A., University of Maryland, 1970

Assistant Professors

- DAVID N. BATEMAN, 1965
B.S., Parsons College, 1961
M.S., Southern Illinois University, 1963
M.S., Southern Illinois University, 1967
Ph.D., Southern Illinois University, 1970

- LARS L. LARSON, 1971
 B.S., University of Illinois, 1962
 M.B.A., University of Illinois, 1964
 Ph.D., University of Illinois, 1971
- RICHARD N. OSBORN, 1971
 B.S., Indiana University, 1964
 M.B.A., Washington State University, 1968
 D.B.A., Kent State University, 1971
- RONALD L. SANDERS, 1969
 B.S.E.E., University of Kentucky, 1961
 M.B.A., University of Kentucky, 1963
 M.A., University of Kentucky, 1969
 Ph.D., University of Kentucky, 1971
- A. KIMBROUGH SHERMAN, 1969
 A.B., Brown University, 1963
 M.B.A., University of Maryland, 1965
 Ph.D., University of Maryland, 1972
- WILLIAM M. VICARS, 1968
 B.A., Southern Illinois University, 1961
 M.A., Southern Illinois University, 1966
 Ph.D., Southern Illinois University, 1969
- HAROLD K. WILSON, 1972
 B.S., University of Illinois, 1952
 M.S., University of Idaho, 1962
 D.B.A., University of Colorado, 1972

Instructors

- ROBERT S. BUSSOM, 1969
 B.S., Ohio State University, 1966
 M.B.A., Ohio State University, 1968
- JOHN A. DEHOFF, 1968
 B.S., University of Kansas, 1956
 M.B.A., University of Kansas, 1960
- DAVID A. LIPP, 1969
 B.S., Ohio State University, 1965
 M.B.A., Ohio State University, 1967

Aerospace Studies

Adjunct Professor

- COLONEL JAMES R. FENN, 1972
 B.S., University of Southern California, 1956
 M.S., University of North Dakota, 1967

Adjunct Assistant Professors

- CAPTAIN THOMAS J. GRESCH, 1972
 B.S., Bradley University, 1967
 M.B.A., Golden Gate University, 1972
- CAPTAIN RALPH F. SCHROEDER, 1973
 B.A., University of Omaha, 1963
 M.S., Midwestern University, 1967
- MAJOR NORBERT K. TORLINE, 1970
 B.A., University of Texas, 1960
 B.S., University of Texas, 1962
 M.S., Texas A&M, 1967

Agricultural Industries—School of Agriculture

Professors

- RALPH A. BENTON, 1956
 B.S., University of Nebraska, 1930
 M.A., University of Nebraska, 1940
 Ph.D., University of Illinois, 1955
- WILLIAM McD. HERR, 1957
 B.S., Cornell University, 1951
 M.S., University of Illinois, 1952
 Ph.D., Cornell University, 1954
- WENDELL E. KEEPPER, 1950
 B.S., University of Illinois, 1934
 M.S., Cornell University, 1936
 Ph.D., Cornell University, 1938
- WALTER J. WILLS, 1956
 B.S., University of Illinois, 1936
 M.S., University of Illinois, 1937
 Ph.D., University of Illinois, 1952

- EUGENE S. WOOD, Chairman, 1949
 B.S., University of Illinois, 1947
 M.S., University of Illinois, 1949
 Ph.D., University of Missouri, 1958

Associate Professors

- GORDON L. LANGFORD, 1969
 B.S., Brigham Young University, 1962
 M.S., Brigham Young University, 1964
 Ph.D., Montana State University, 1969
- JOHN J. PATERSON, 1957
 B.S., University of Saskatchewan, 1942
 M.S., University of Saskatchewan, 1943
- LYLE SOLVERSON, 1966
 B.S., Wisconsin State College, 1959
 Ph.D., University of Wisconsin, 1966
- THOMAS R. STITT, 1967
 B.S., Oklahoma State University, 1959
 M.S., Oklahoma State University, 1964
 Ed.D., The Ohio State University, 1967

Assistant Professors

- WILLIAM A. DOERR, 1965
 B.S., Southern Illinois University, 1951
 M.S., University of Illinois, 1955
 Ph.D., Southern Illinois University at Carbondale, 1973
- RONALD J. HANSON, 1972
 B.S.A.Ec., Western Illinois University, 1968
 M.S., University of Illinois, 1970
 Ph.D., University of Illinois, 1972
- HARRY J. HOERNER, 1972
 B.S., Iowa State University, 1959
 M.S., Iowa State University, 1966
 Ed.D., Oklahoma State University, 1969
- DONALD W. LYBECKER, 1970
 B.S., Washington State University, 1961
 M.A., Washington State University, 1963
 Ph.D., Iowa State University, 1970
- LESLIE E. SMALL, 1972
 B.S., Cornell University, 1962
 Ph.D., Cornell University, 1972
- RICHARD F. WELTON, 1971
 B.S., Colorado State University, 1959
 M.Ed., Colorado State University, 1966
 Ph.D., The Ohio State University, 1971
- ROBERT L. WOLFF, 1972
 B.S., Texas A & I University, 1966
 M.Ed., Texas A & M University, 1968
 Ph.D., Louisiana State University, 1971

Animal Industries—School of Agriculture

Professors

- BILLY L. GOODMAN, 1958
 B.S., Oklahoma State University, 1951
 M.S., Oklahoma State University, 1953
 Ph.D., Ohio State University, 1959
- SCOTT W. HINNERS, 1951
 B.S., University of Illinois, 1934
 M.S., Purdue University, 1942
 Ph.D., University of Illinois, 1958
- GILBERT H. KROENING, 1969
 B.S., Southern Illinois University, 1959
 M.S., Southern Illinois University, 1960
 Ph.D., Cornell University, 1965
- G. B. MARION, Chairman, 1969
 B.S., Cornell University, 1948
 M.S., University of Wisconsin, 1949
 Ph.D., University of Wisconsin, 1951
- HOWARD H. OLSON, 1954
 B.S., University of Wisconsin, 1948
 M.S., University of Minnesota, 1950
 Ph.D., University of Minnesota, 1952

ALEX REED, Emeritus, 1946
 B.S., University of Illinois, 1928
 M.S., University of Illinois, 1940
 Ph.D., University of Illinois, 1953

Associate Professors

WARREN S. BIVIN, 1971
 B.S., Kansas State University, 1962
 D.V.M., Kansas State University, 1964
 Ph.D., University of Missouri, 1971

HAROLD H. HODSON, JR., 1971
 B.S., Iowa State University, 1961
 Ph.D., Iowa State University, 1965

W. G. KAMMLADE, JR., 1954
 B.S., University of Illinois, 1948
 M.S., University of Illinois, 1949
 Ph.D., University of Illinois, 1951

D. DIXON LEE, JR., 1970
 B.S., Clemson University, 1957
 M.S., Clemson University, 1964
 Ph.D., North Carolina State University, 1970

LOUIS E. STRACK, 1968
 B.S., University of Illinois, 1959
 D.V.M., University of Illinois, 1961
 M.S., Southern Illinois University, 1968

GEORGE H. WARING, 1966
 B.S., Colorado State University, 1962
 M.S., University of Colorado, 1964
 Ph.D., Colorado State University, 1966

Assistant Professors

CARL L. HAUSLER, 1970
 B.S.A., University of Vermont, 1963
 M.S., University of Vermont, 1965
 Ph.D., Purdue University, 1970

Assistant Instructors

RONALD D. CARR, 1963
 B.S., Southern Illinois University, 1959

ROBERT L. FRANCIS, 1965
 B.S., Southern Illinois University, 1959

RUSSELL A. SNYDER, 1966
 B.S., Oklahoma State University, 1962

Assistants in Animal Industries

JOHN T. GHOLSON, 1956
 B.S., Southern Illinois University, 1968

GENE C. MCCOY, 1971
 B.S., Western Illinois University, 1963
 M.S., Southern Illinois University, 1965

Anthropology—College of Liberal Arts

Professors

PHILIP J. C. DARK, 1960
 Diploma in Fine Art, University of London, 1948
 M.A., Yale University, 1950
 Ph.D., Yale University, 1954

J. CHARLES KELLY, 1950
 B.A., University of New Mexico, 1937
 Ph.D., Harvard University, 1948

ROBERT L. RANDS, 1966
 B.A., University of New Mexico, 1949
 M.A., University of California at Los Angeles, 1949
 Ph.D., Columbia University, 1952

CARROLL L. RILEY, 1955
 A.B., University of New Mexico, 1948
 M.A., University of California at Los Angeles, 1950
 Ph.D., University of New Mexico, 1952

WALTER W. TAYLOR, 1958
 A.B., Yale University, 1935
 Ph.D., Harvard University, 1943

Associate Professors

MILTON ALTSCHULER, 1966
 A.B., University of California at Los Angeles, 1953
 M.A., University of California at Los Angeles, 1956
 Ph.D., University of Minnesota, 1964

EDWIN A. COOK, Chairman, 1971
 A.B., University of Arizona, 1959
 Ph.D., Yale University, 1967

J. LARRY GRIMES, 1969
 B.A., Wheaton College, 1964
 M.A., University of Texas, 1967
 Ph.D., University of Texas at Austin, 1969

JEROME S. HANDLER, 1962
 B.A., University of California at Los Angeles, 1956
 M.A., University of California at Los Angeles, 1959
 Ph.D., Brandeis University, 1965

BRUCE B. MACLACHLAN, 1964
 A.B., University of Chicago, 1954
 A.M., University of Chicago, 1955
 Ph.D., University of Chicago, 1962

JOEL M. MARING, 1963
 B.A., Wartburg College, 1956
 Ph.D., Indiana University, 1967

JOHN D. MULLER, 1966
 A.B., University of Kansas, 1963
 Ph.D., Harvard University, 1967

Assistant Professors

M. LIONEL BENDER, 1971
 B.A., Dartmouth College, 1956
 M.A., Dartmouth College, 1958
 Ph.D., University of Texas at Austin, 1968

ESTER G. MARING, 1964
 B.S., Silliman University, 1954
 M.A., Silliman University, 1956
 Ph.D., Indiana University, 1969

MALCOLM T. WALKER, 1968
 A.B., University of Sydney, 1956
 M.A., Teachers College, Columbia University, 1966
 Ph.D., Columbia University, 1970

Instructors

MARIE M. DOENGES, 1966
 A.B., Washington University, 1941
 M.A., Washington University, 1947
 M.A., Teachers College, Columbia University, 1951

FRANK RACKERBY, 1965
 B.A., San Francisco State College, 1963
 M.A., Northwestern University, 1967

ROBERT N. TYZZER, 1970
 B.A., San Diego State College, 1968
 M.A., University of Colorado, 1970

Adjunct Professor

ADRIANUS A. GERBRANDS, 1965
 B.A., National University, Netherlands, 1938
 M.A., National University, Netherlands, 1941
 Ph.D., National University, Netherlands, 1956

Adjunct Assistant Professor

JIM RICHARD SPECHT, 1970
 B.A., Downing College, England, 1962
 M.A., Downing College, England, 1966
 Ph.D., Australian National University, 1970

Architectural Technology—School of Technical Careers

Assistant Professors

- JOSEPH R. LETE, 1961
B.S., University of Illinois, 1951
- HAROLD E. LITTLE, 1964
B.S., Pennsylvania State University, 1951
- CLIFTON D. RUTLEDGE, 1965
B.Arch., Kansas State University, 1961
M.Arch., Kansas State University, 1968
- GENE TROTTER, 1962
B.S., North Dakota Agricultural College, 1939

Instructors

- JOEL BROOKS LADNER, 1971
B.S., University of Houston, 1965
B.Arch., University of Houston, 1966
- ROBERT H. SWENSON, 1971
B.S., Southern Illinois University, 1965
M.Arch., Yale University, 1969

Art—Communications and Fine Arts

Professors

- HERBERT L. FINK, Chairman, 1961
B.F.A., Rhode Island School of Design, 1948
M.F.A., Yale University, 1958
- L. BRENT KINGTON, 1961
B.F.A., University of Kansas, 1957
M.F.A., Cranbrook Academy of Art, 1961
- MILTON F. SULLIVAN, 1952
B.S. in Ed., Massachusetts School of Art, 1950
M.A., Columbia University, 1951
- NICHOLAS VERGETTE, 1959
National Diploma, Chelsea School of Art, 1950
Art Teachers Diploma, London University, 1951

Associate Professors

- ROY E. ABRAHAMSON, 1965
B.S., University of Minnesota, 1949
M.A., San Francisco State College, 1951
Ed.D., Columbia University, 1965
- LAWRENCE A. BERNSTEIN, 1962
B.F.A., Yale University, 1952
M.F.A., Cranbrook Academy of Art, 1953
- PATRICK C. BETAUDIER, 1969
National Diploma of Design, St. Martins College of Art, 1957
- JAMES E. SULLIVAN, 1969
B.A., University of California at Los Angeles, 1963
M.A., University of California at Los Angeles, 1965
- THOMAS J. WALSH, 1967
B.S., University of Michigan, 1960
M.F.A., University of Michigan, 1962

Assistant Professors

- ALDON M. ADDINGTON, 1967
B.F.A., Kansas City Art Institute, 1959
M.F.A., Cranbrook Academy of Art, 1967
- BILL H. BOYSEN, 1966
B.A., University of Washington, 1964
M.F.A., University of Wisconsin, 1966
- SYLVIA R. GREENFIELD, 1968
B.F.A., University of Colorado, 1965
M.F.A., University of Colorado, 1967
- JOHN L. LINK, 1968
B.A., University of Oklahoma, 1965
M.F.A., University of Oklahoma, 1968

- F. LEE LITTLEFIELD, 1968
B.S., Florida State University, 1962
M.A., University of New Mexico, 1968
- GEORGE MAVIGLIANO, 1970
B.A., Western Illinois University, 1964
M.A., Northern Illinois University, 1967
- ROBERT L. PAULSON, 1967
B.A., Wisconsin State University, 1965
M.F.A., University of Wisconsin, 1967

Instructors

- ELNORA LAWSON, 1964
B.Ed., Southern Illinois University, 1936
- MICHAEL O. ONKEN, 1968
B.S. in Ed., Eastern Illinois University, 1964
M.A., Northern Illinois University, 1966
- ROBERT A. WALSH, 1970
B.F.A., University of Nebraska, 1966
M.A., University of Iowa, 1969
- DAN D. WOOD, 1968
B.A., University of Iowa, 1965
M.A., University of Iowa, 1968

Lecturers

- ERNEST GRAUBNER, 1971
B.F.A., University of Notre Dame, 1962
M.F.A., George Washington University, 1964
- EVERT A. JOHNSON, 1966
B.A., Morningside College, 1953
M.A., University of Iowa, 1954

Automotive Technology—School of Technical Careers

Associate Professor

- LUCIAN D. WILLEY, 1953
B.Ed., Western Illinois University, 1936

Assistant Professors

- JOSEPH CASH, 1972
B.S., Southern Illinois University, 1969
M.S. in Ed., Southern Illinois University, 1970
- JOSEPH G. KAZDA, 1967
B.S., University of Illinois, 1963
M.S. in Ed., Southern Illinois University, 1965
- LEWIS RUNKLE, 1962
B.E., Colorado State University, 1959
M.Ed., Colorado State University, 1962

Instructors

- PAUL JONES, 1961
- CHARLES ROMACK, 1968
B.S., Southern Illinois University, 1965
- JAMES EDWIN WHITE, 1961
B.S., Southern Illinois University, 1961

Assistant in Automotive Technology

- EVERETT E. SHELTON, 1965

Aviation Technology and Avionics Technology—School of Technical Careers

Professor

- EDMUND A. DAROSA, 1964
B.S., College of Saint Joseph, Portugal, 1936

Assistant Professor

- JOSEPH A. SCHAFER, 1965
B.S., Lewis College, 1960

Instructors

- RICHARD CANNON, 1966
 ROBERT OTTO KOLKMEYER, 1971
 B.S., Southern Illinois University at
 Carbondale, 1970
 M.S. in Ed., Southern Illinois University at
 Carbondale, 1971
 LENNART R. OHMAN, 1967
 B.S., University of Illinois, 1964

*Assistants in Aviation Technology
and Avionics Technology*

- WILLIAM BEYER, 1971
 B.S., Southern Illinois University at
 Carbondale, 1972
 PAUL D. BURKEY, 1968
 DAVID ALAN ELLINGSWORTH, 1971
 DONALD B. LEE, 1969
 DAVID L. RICH, 1968
 GERRY L. WHITACRE, 1972

**Black American Studies—College
of Human Resources***Program Director*

- WALTER G. ROBINSON, 1968
 B.S., Lincoln University, 1955
 B.A., Lincoln University, 1955
 M.S., University of Missouri, 1966

Assistant to Program Director

- THURMAN LEE BROOKS, 1969

Staff Assistant

- RUBY PATTERSON, 1971
 B.A., Indiana University, 1970

Botany—College of Science*Professors*

- WILLIAM C. ASHBY, 1960
 S.B., University of Chicago, 1947
 Ph.D., University of Chicago, 1950
 MARGARET KAEISER, 1947
 B.S., University of Oklahoma, 1934
 M.S., University of Oklahoma, 1936
 Ph.D., University of Illinois, 1940
 ROBERT H. MOHLENBROCK, 1957
 B.S., Southern Illinois University, 1953
 M.S., Southern Illinois University, 1954
 Ph.D., Washington University, 1957
 LADISLAV V. OLAH, Emeritus, 1959
 Ag.E., College of Agriculture, Debrecen,
 Hungary, 1925
 Ph.D., Stephen Tisza University, Hungary,
 1934
 ARISTOTEL J. PAPPELIS, 1960
 B.S., University of Wisconsin, 1951
 Ph.D., Iowa State University, 1957
 WALTER E. SCHMID, 1962
 A.B., University of Pennsylvania, 1955
 M.S., University of Wisconsin, 1958
 Ph.D., University of Wisconsin, 1961
 JACOB VERDUIN, 1964
 B.S., Iowa State University, 1939
 M.S., Iowa State University, 1941
 Ph.D., Iowa State University, 1947
 JOHN W. VOIGT, 1950
 B.Ed., Eastern Illinois University, 1942
 M.A., University of Nebraska, 1948
 Ph.D., University of Nebraska, 1950
 WALTER B. WELCH, Emeritus, 1939
 A.B., Wabash College, 1926
 S.M., University of Chicago, 1930
 Ph.D., University of Chicago, 1937

Associate Professors

- LAWRENCE C. MATTEN, 1965
 A.B., Rutgers University, 1959
 Ph.D., Cornell University, 1965
 OVAL MYERS, JR., 1968
 B.A., Wabash College, 1959
 M.A., Dartmouth College, 1960
 Ph.D., Cornell University, 1963
 DONALD R. TINDALL, 1966
 B.S., Georgetown College, 1959
 M.S., University of Louisville, 1962
 Ph.D., University of Louisville, 1966
 DONALD UGENT, 1968
 B.S., University of Wisconsin, 1956
 M.S., University of Wisconsin, 1961
 Ph.D., University of Wisconsin, 1966

Assistant Professors

- WILLIAM M. MARBERRY, 1939
 B.Ed., Southern Illinois University, 1935
 A.M., University of Illinois, 1936
 PHILIP A. ROBERTSON, 1970
 B.S., Colorado State University, 1962
 M.S., Colorado State University, 1964
 Ph.D., Colorado State University, 1968
 BARBARA C. STOTLER, 1970
 B.A., Keuka College, 1964
 Ph.D., University of Cincinnati, 1968
 RAYMOND E. STOTLER, 1969
 B.S. in Ed., Western Illinois University, 1962
 M.A., Southern Illinois University, 1964
 Ph.D., University of Cincinnati, 1968
 WALTER J. SUNDBERG, 1972
 B.A., California State University, 1962
 M.A., California State University, 1967
 Ph.D., University of California, 1971
 JOHN H. YOPP, 1970
 B.S., Georgetown University, 1962
 Ph.D., University of Louisville, 1969

Instructors

- JOHN RICHARDSON, 1969
 B.S., Southern Illinois University, 1967
 M.F.A., Ohio University, 1969
 STEVEN L. WUNDERLE, 1969
 B.S. in Ed., Eastern Illinois University, 1963
 M.S. in Ed., Southern Illinois University,
 1966

**Center for the Study of Crime,
Delinquency, and Corrections—
College of Human Resources***Professors*

- MYRL E. ALEXANDER, Emeritus, 1961
 B.A., Manchester College, 1930
 THOMAS G. EYNON, 1968
 B.Sc. in Ed., Ohio State University, 1953
 M.A., Ohio State University, 1955
 Ph.D., Ohio State University, 1959
 ELMER H. JOHNSON, 1966
 B.A., University of Wisconsin, 1946
 M.A., University of Wisconsin, 1948
 Ph.D., University of Wisconsin, 1950

Associate Professors

- ROBERT H. DREHER, 1967
 B.A., University of Texas, 1936
 LL.B., University of Illinois, 1940
 CHARLES V. MATTHEWS, Director, 1962
 B.B.A., Tulane University, 1947
 M.A., University of Kansas City, 1951
 VERNON E. RICH, 1972
 B.S., Michigan State University, 1962
 M.S., Michigan State University, 1967
 Ph.D., Michigan State University, 1971

Assistant Professors

- DENNIS B. ANDERSON, 1970
 B.M.Ed., Wayne State College, 1964
 M.Ed., University of Nebraska, 1967
 Ed.D., University of Nebraska, 1970
- JONATHAN LINDBERG, 1972
 A.B., Drury College, 1967
 J.D., Washington University School of Law, 1970
- NANCI WILSON, 1972
 B.A., University of Kansas, 1966
 M.S., University of Kansas, 1967
 Ph.D., University of Tennessee, 1972
- JESSE L. WOODARD, 1971
 B.A., Virginia State College, 1963
 J.D., Howard University, 1971

**Chemistry and Biochemistry—
College of Science***Professors*

- T. W. ABBOTT, Emeritus, 1928
 A.B., Indiana University, 1918
 A.M., Harvard University, 1922
 Ph.D., University of Illinois, 1928
- RICHARD T. ARNOLD, Chairman, 1969
 B.Ed., Southern Illinois University, 1934
 M.S., University of Illinois, 1935
 Ph.D., University of Illinois, 1937
- JAMES N. BEMILLER, 1961
 B.S., Purdue University, 1954
 M.S., Purdue University, 1956
 Ph.D., Purdue University, 1959
- ROGER E. BEYLER, 1959
 A.B., North Central College, 1944
 A.M., University of Illinois, 1947
 Ph.D., University of Illinois, 1949
- GEORGE E. BROWN, 1962
 A.B., Central Methodist College, 1931
 Ph.D., Iowa State University, 1941
- ELBERT H. HADLEY, 1947
 B.S., University of Michigan, 1936
 Ph.D., Duke University, 1940
- J. HERBERT HALL, 1962
 B.S., University of Kansas, 1953
 M.S., University of Michigan, 1958
 Ph.D., University of Michigan, 1959
- CAL Y. MEYERS, 1964
 A.B., Cornell University, 1948
 M.S., University of Illinois, 1949
 Ph.D., University of Illinois, 1951
- BORIS MUSULIN, 1956
 Ph.B., Northwestern University, 1949
 Ph.D., Northwestern University, 1954
- J. W. NECKERS, Emeritus, 1927
 A.B., Hope College, 1923
 M.S., University of Illinois, 1925
 Ph.D., University of Illinois, 1927
- C. DAVID SCHMULBACH, 1965
 B.S., University of Illinois, 1951
 Ph.D., University of Illinois, 1958
- R. A. SCOTT, Emeritus, 1923
 B.S., University of Illinois, 1922
 M.S., University of Illinois, 1923
 Ph.D., University of Illinois, 1933
- DONALD W. SLOCUM, 1965
 B.S., University of Rochester, 1956
 A.B., University of Rochester, 1956
 Ph.D., New York University, 1963
- GERARD V. SMITH, 1966
 B.A., College of the Pacific, 1953
 M.S., College of the Pacific, 1956
 Ph.D., University of Arkansas, 1959

- RUSSELL F. TRIMBLE, 1954
 B.S., Massachusetts Institute of Technology, 1948
 Ph.D., Massachusetts Institute of Technology, 1951
- KENNETH A. VANLENTE, Emeritus, 1931
 A.B., Hope College, 1925
 M.S., University of Michigan, 1926
 Ph.D., University of Michigan, 1931
- JOHN H. WOTIZ, 1967
 B.S., Furman University, 1941
 M.S., University of Richmond, 1943
 Ph.D., Ohio State University, 1948

Associate Professors

- ALBERT L. CASKEY, 1964
 B.S., Southeast Missouri State College, 1952
 M.S., Iowa State University, 1955
 Ph.D., Iowa State University, 1961
- HERBERT I. HADLER, 1966
 B.A., Science University of Toronto, 1942
 Ph.D., University of Wisconsin, 1952
- CONRAD C. HINCKLEY, 1966
 B.S., North Texas State University, 1959
 M.S., North Texas State University, 1960
 Ph.D., University of Texas, 1964
- DAVID F. KOSTER, 1967
 B.A., University of St. Thomas, 1959
 M.S., Texas A & M University, 1963
 Ph.D., Texas A & M University, 1965
- JAMES TYRRELL, 1967
 B.Sc., University of Glasgow, 1960
 Ph.D., University of Glasgow, 1963

Assistant Professors

- D. WAYNE BOLEN, 1971
 B.S., Concord College, 1964
 Ph.D., Florida State University, 1969
- JAMES A. COX, 1969
 B. Chem., University of Minnesota, 1963
 M.S., University of Illinois, 1965
 Ph.D., University of Illinois, 1967
- MICHAEL R. EMPTAGE, 1968
 A.B., Middlebury College, 1960
 Ph.D., Harvard University, 1965
- WILLIAM E. GEIGER, JR., 1970
 B.S., Canisius College, 1965
 M.S., Cornell University, 1968
 Ph.D., Cornell University, 1970
- H. FRANK GIBBARD, JR., 1967
 B.S., University of Oklahoma, 1962
 S.M., Massachusetts Institute of Technology, 1964
 Ph.D., Massachusetts Institute of Technology, 1967
- MICHAEL T. SUNG, 1971
 B.A., Kansas State College, 1962
 M.Sc., University of Wisconsin, 1964
 Ph.D., University of Wisconsin, 1968

**Child and Family—School of
Home Economics, College of
Human Resources***Professor*

- MICHAEL ZUNICH, Chairman, 1965
 A.B., Ohio University, 1954
 M.A., University of Akron, 1956
 Ph.D., Florida State University, 1959

Assistant Professors

- BRENT A. BARLOW, 1971
 B.S., Brigham Young University, 1966
 M.A., Brigham Young University, 1968
 Ph.D., Florida State University, 1971

- EDNA JACQUELINE EDDLEMAN
B.S., Southern Illinois University, 1958
M.S., Southern Illinois University, 1961
Ph.D., Southern Illinois University, 1970
- TIMOTHY M. FLYNN, 1970
B.S. in Ed., Illinois State University, 1964
M.S., Illinois State University, 1965
Ph.D., Florida State University, 1970
- BARBARA B. HOSKIN, 1970
B.S. in Ed., Southern Illinois University, 1956
M.S. in Ed., Southern Illinois University, 1969
Ph.D., Southern Illinois University, 1972
- THELMA K. KRAFT, 1969
B.S. in Ed., University of Missouri, 1953
M.S., Southern Illinois University, 1968
- JOYCE E. PATTISON, 1971
B.S., Pennsylvania State University, 1961
M.S., Springfield College, 1965
Ph.D., Arizona State University, 1971
- MELVA F. PONTON, 1967
B.S., University of Illinois, 1949
M.S., University of Illinois, 1956
- SHIRLEY SHEFFER ROGERS, 1968
B.S. in Ed., Southern Illinois University, 1956
M.S. in Ed., Southern Illinois University, 1961

Cinema and Photography—College of Communications and Fine Arts

Professors

- ROBERT E. DAVIS, Chairman, 1969
B.A., University of Northern Iowa, 1953
M.A., University of Iowa, 1956
Ph.D., University of Iowa, 1965
- C. WILLIAM HORRELL, 1949
B.Ed., Southern Illinois University, 1942
M.S., University of Illinois, 1949
Ed.D., Indiana University, 1955
- JOHN MERCER, 1958
A.B., University of Nebraska, 1941
A.M., University of Nebraska, 1947
Ph.D., University of Nebraska, 1952

Associate Professor

- RICHARD M. BLUMENBERG, 1970
B.A., University of Iowa, 1959
M.F.A., University of Iowa, 1963
Ph.D., Ohio University, 1969
- CHARLES A. SWEDLUND, 1971
B.S., Illinois Institute of Technology, 1958
M.S., Illinois Institute of Technology, 1961

Assistant Professor

- DAVID A. GILMORE, 1969
A.B., Ohio University, 1963
M.F.A., Ohio University, 1969
- GARETH M. E. GOODGER-HILL, 1972
B.P.A., Brooks Institute of Photography, 1969
M.S., University of Oregon, 1972
- FRANK R. PAINE, 1960
B.S., Iowa State University, 1950

Instructor

- HOWARD COTTON, 1963
B.A., Southern Illinois University, 1960
M.S., Southern Illinois University, 1967
- W. CRAIG HINDE, 1967
B.S., Iowa State University, 1960

Assistant in Cinema and Photography

- ROXANNE P. RACKERBY, 1971
B.A., San Francisco State College, 1965

Clothing and Textiles—School of Home Economics, College of Human Resources

Professors

- THELMA HUFF BERRY, 1966
B.S., University of Rhode Island, 1934
M.S., Syracuse University, 1935
Ed.D., Columbia University, 1963
- ROSE PADGETT, 1962
B.S., University of Manchester, 1933
M.S., University of Tennessee, 1951
Ph.D., Purdue University, 1955
- LUCY K. WOODY, Emerita, 1911
B.S., Columbia University, 1921
M.A., Columbia University, 1930

Associate Professors

- SHIRLEY E. FRIEND, Chairman, 1972
B.S.H.E., University of Arkansas, 1962
M.S., University of Missouri, 1964
Ed.D., University of Arkansas, 1969
- RITTA WHITSEL, Emerita, 1955
B.S., Eastern Illinois University, 1937
M.S., Columbia University, 1941

Assistant Professor

- SAMANTHA SUE RIDLEY, 1964
B.S. in Ed., Southern Illinois University, 1951
M.S., Southern Illinois University, 1959

Instructor

- MINA JO BENNETT, 1971
B.S., Southern Illinois University, 1960
M.S., Southern Illinois University, 1961

Commercial Graphics—School of Technical Careers

Assistant Professor

- JOHN L. YACK, 1970
B.F.A., University of Oklahoma, 1958
M.F.A., University of Oklahoma, 1959

Instructors

- HORACE EDGAR CORNELL, 1964
B.S., Kansas State Teachers College, 1953
M.S., Kansas State Teachers College, 1955
- RICHARD A. HOFFMAN, 1960
B.F.A., Washington University, 1952

Assistants in Commercial Graphics

- SUE MITCHELL KNUTSEN, 1970
KENNETH D. MARTIN, 1969
FRANK MOORE, Jr., 1972
B.A., Southern Illinois University, 1966

Community Development—College of Human Resources

Professors

- RICHARD W. POSTON, 1953
B.A., Montana State University, 1940

- RICHARD M. THOMAS, 1966
 B.A., Whittier College, 1941
 M.Ed., University of California at Los Angeles, 1961
 Ed.D., University of California at Los Angeles, 1964
- RAYMOND E. WAKELEY, Emeritus, 1961
 B.S., Pennsylvania State University, 1917
 M.S., University of Wisconsin, 1924
 Ph.D., Cornell University, 1928

Associate Professors

- JNAN BHATTACHARYYA, 1968
 B.A., University of Calcutta, 1956
 M.A., Jadavpur University, India, 1959
 Ph.D., University of Delhi, 1969
- H. RICHARD DELANEY, 1969
 B.S. in Ed., Northeast Missouri State University, 1959
 M.A., Southern Illinois University, 1962
 Ph.D., University of Missouri, 1967
- ROBERT E. KNITTEL, 1956
 B.J., University of Missouri, 1948
 Ph.D., Southern Illinois University, 1967

Assistant Professors

- DONALD E. VOTH, 1969
 B.A., Goshen College, 1963
 M.S., Cornell University, 1966
 Ph.D., Cornell University, 1969

Computer Science—College of Liberal Arts

Professor

- ABRAHAM M. MARK, Chairman, 1950
 B.A., Brooklyn College, 1944
 M.S., Cornell University, 1945
 Ph.D., Cornell University, 1947

Assistant Professors

- KNUT A. BAHR, 1971
 Diploma, Technical University of Darmstadt, 1962
 D.Eng., Technical University of Darmstadt, 1964
- NORMAN F. CHAFFEE, 1971
 B.A., Rockhurst College, 1964
 M.A., University of Kansas, 1967
 Ph.D., Pennsylvania State University, 1970
- KENNETH J. DANHOF, 1969
 B.S., Calvin College, 1963
 M.S., Ohio State University, 1965
 Ph.D., Purdue University, 1969
- RATAN K. GUHA, 1970
 B.Sc., Calcutta University, 1961
 M.Sc., Calcutta University, 1964
 Ph.D., University of Texas, 1970
- WILLIAM E. WRIGHT, 1970
 B.A., Southern Illinois University, 1966
 M.A., University of Illinois, 1968
 D.Sc., Washington University, 1972

Construction Technology—School of Technical Careers

Assistant Professors

- FRANKLIN A. BASSETT, 1964
 B.S., University of Illinois, 1938
 B.S., University of Illinois, 1948
- HAROLD W. OSBORN, 1955
 B.S., Stout Institute, 1949
 M.S. in Ed., Southern Illinois University, 1960

Instructor

- GLENN LAMB STALEY, JR., 1969
 B.S., University of Missouri, 1944

Correctional Services and Law Enforcement—School of Technical Careers

Assistant Professor

- MELVIN WALLACE, 1970
 A.B., Los Angeles State College, 1957
 M.S.W., Adelphi University, 1968

Dental Hygiene—School of Technical Careers

Professor

- ELEANOR J. BUSHEE, 1963
 B.S., University of Illinois, 1944
 D.D.S., Northwestern University, 1948

Assistant Professor

- ALLAN B. AZEVEDO, 1971
 B.Sc., University of Bombay, 1961
 B.D.S., University of Bombay, 1965
 M.D.S., University of Bombay, 1968
 M.Sc., University of London, 1969

Assistants in Dental Hygiene

- MARILYN JUNE HOPPE, 1972
 B.S., Southern Illinois University at Carbondale, 1972
- CAROL LIPP, 1969
 B.S.D.H., University of Michigan, 1963
- JANICE A. NIEMAN, 1971
 B.S., Southern Illinois University, 1971
- JO ELLEN WOLAVER, 1972
 B.S., Southern Illinois University at Carbondale, 1972

Dental Laboratory Technology—School of Technical Careers

Associate Professor

- WILLIAM M. LEEBENS, 1966
 D.D.S., University of Minnesota, 1938

Instructors

- PETER DYKOWSKI, 1961
- DENNIS LAAKE, 1969
 B.A., Southern Illinois University, 1967

Assistant in Dental Laboratory Technology

- JOHN FALABELLA, 1972
 B.S., Southern Illinois University at Carbondale, 1972
- JOHN R. SAINT, 1972

Design—College of Human Resources

Professor

- JACK R. ELLNER, 1971
 B.A., Brooklyn College, 1942
 M.A., Hofstra University, 1965
 Ph.D., New York University, 1969

Associate Professor

- HENRY BENDER, 1973
 B.A., Hofstra University, 1959
 M.A., Hofstra University, 1965
 Ph.D., New York University, 1969

Assistant Professors

- E. ROBERT ASHWORTH, 1963
 B.S., Purdue University, 1950
 M.S., Purdue University, 1957
 Ph.D., Southern Illinois University at
 Carbondale, 1972
- JOHN F. H. LONERGAN, 1950
 B.A., University of Illinois, 1939
- CHARLES M. PULLEY, 1951
 B.S., University of Illinois, 1939

Instructors

- CARL BRETSCHER, 1957
 B.S., University of Illinois, 1935
- W. LARRY BUSCH, 1970
 B.A., Southern Illinois University, 1970
 M.A., Southern Illinois University, 1970
- THOMAS J. KACHEL, 1972
 B.A., Southern Illinois University, 1968
 M.S., Southern Illinois University at
 Carbondale, 1972
- GERALDINE M. NEWMAN, 1972
 B.A., Southern Illinois University, 1969
 M.S., Southern Illinois University at
 Carbondale, 1972

Lecturers

- HAROLD GROSOWSKY, 1960
- MICHAEL C. JEROME, 1971
 B.Arch., University of Cape Town, South
 Africa, 1952
- VERN H. JOHNSON, 1969
 B.A., Southern Illinois University, 1959
 M.S., Southern Illinois University, 1970
- HARRY F. W. PERK, 1964
 A.B., University of California at Los
 Angeles, 1951
- WILLIAM A. FETTER, 1970
 B.A., University of Illinois, 1952
- ANTHONY J. PUGH, 1970
 B.Arch., Bristol University, England, 1968
- HERBERT ROAN, 1957
 Certificate, Cooper Union, 1938

Assistants in Design

- RICHARD E. ARCHER, 1971
 B.A., Southern Illinois University, 1970
- JANE MERCHANT, 1971
 B.A., Southern Illinois University, 1968

Economics—School of Business*Professors*

- JOHN L. CORNWALL, 1970
 B.A., University of Iowa, 1950
 M.Sc., London School of Economics, 1952
 Ph.D., Harvard University, 1958
- MILTON T. EDELMAN, 1950
 B.S., University of Chicago, 1946
 M.B.A., University of Pennsylvania, 1947
 Ph.D., University of Illinois, 1951
- GEORGE H. HAND, Emeritus, 1952
 A.B., West Virginia University, 1928
 M.A., Princeton University, 1933
 Ph.D., Princeton University, 1939
- C. ADDISON HICKMAN, 1960
 B.A., State University of Iowa, 1937
 M.A., State University of Iowa, 1938
 Ph.D., State University of Iowa, 1942
- ROBERT G. LAYER, Chairman, 1955
 A.B., Ohio Wesleyan University, 1943
 M.A., Harvard University, 1948
 Ph.D., Harvard University, 1952

- THOMAS A. MARTINSEK, 1959
 A.B., Western Reserve University, 1948
 M.A., The Ohio State University, 1949
 Ph.D., The Ohio State University, 1956
- LEWIS A. MAVERICK, Emeritus, 1946
 B.S., Washington University, 1913
 Ed.D., Harvard University, 1925
 Ph.D., University of California, 1931
- EDWARD V. MILES, Emeritus, 1919
 B.Ed., Southern Illinois University, 1929
 A.M., St. Louis University, 1934
- VERNON G. MORRISON, Emeritus, 1947
 B.S., University of Nebraska, 1925
 M.A., University of Nebraska, 1926
 Ph.D., University of Nebraska, 1961
- MILTON R. RUSSELL, 1964
 B.A., Texas A & I College, 1955
 M.A., Oklahoma University, 1957
 Ph.D., Oklahoma University, 1963
- G. CARL WIEGAND, 1956
 B.A., University of New Mexico, 1944
 M.A., University of New Mexico, 1945
 Ph.D., Northwestern University, 1950

Associate Professors

- DONALD R. ADAMS, 1968
 B.A., University of Pittsburgh, 1962
 A.M., University of Pennsylvania, 1963
 Ph.D., University of Pennsylvania, 1967
- CHARLES BLACKORBY, 1972
 A.B., Harvard University, 1963
 Ph.D., Johns Hopkins University, 1967
- DOUGLAS R. BOHI, 1970
 B.S., Idaho State University, 1962
 Ph.D., Washington State University, 1967
- ROBERT J. ELLIS, JR., 1962
 B.A., Harpur College, 1959
 Ph.D., University of Virginia, 1966
- RICHARD F. FRYMAN, 1966
 B.S., Miami University, 1961
 A.M., Miami University, 1962
 Ph.D., University of Illinois, 1967
- ALLAN G. PULSIPHER, 1968
 B.A., University of Colorado, 1961
 Ph.D., Tulane University, 1971
- CHARLES G. STALON, 1963
 B.A., Butler University, 1959
 M.S., Purdue University, 1963
 Ph.D., Purdue University, 1966
- ROBERT C. VOGEL, 1972
 A.B., Amherst College, 1960
 M.A., Stanford University, 1963
 Ph.D., Stanford University, 1967

Assistant Professors

- BYRON BUNGER, 1968
 B.S., University of Colorado, 1958
 M.A., University of Colorado, 1965
 Ph.D., University of Colorado, 1969
- STEPHEN A. BUSER, 1972
 A.B., Princeton University, 1969
 Ph.D., Boston College, 1972
- DENNIS F. ELLIS, 1971
 B.S., Alma College, 1962
 M.A., University of Detroit, 1964
 M.A., Wayne State University, 1969
 Ph.D., Wayne State University, 1972
- TERRY G. FORAN, 1969
 B.A., Harpur College, 1962
 Ph.D., Pennsylvania State University, 1971
- ARTHUR M. FORD, 1970
 B.A., Baker University, 1959
 M.B.A., Indiana University, 1960
 Ph.D., New School for Social Research, 1973

PETER S. STOWE, 1968
A.B., Earlham College, 1963
M.S., Purdue University, 1969
Ph.D., Purdue University, 1970

Instructors

CATHERINE M. MARTINSEK, 1972
A.B., University of California at Los Angeles, 1949
M.A., University of California at Los Angeles, 1950

Educational Administration and Foundations—College of Education

Professors

FRED J. ARMISTEAD, 1961
B.Ed., Southern Illinois University, 1937
A.M., University of Illinois, 1938
Ph.D., University of California, 1960

JACOB O. BACH, 1951
B.S., LaCrosse State Teachers College, 1941
M.S., University of Wisconsin, 1948
Ph.D., University of Wisconsin, 1951

GEORGE BRACEWELL, Emeritus, 1931
B.Ed., Southern Illinois University
A.M., University of Michigan, 1931
Ed.D., Washington University, 1952

P. ROY BRAMMELL, Emeritus, 1960
A.B., McPherson College, 1923
M.A., University of Michigan, 1928
Ph.Ed., University of Washington, 1930

ROYE R. BRYANT, Emeritus, 1948
B.Ed., Southern Illinois University, 1930
M.A., University of Illinois, 1937
Ed.D., Washington University, 1952

JOHN L. CHILDS, Emeritus, 1961
B.A., University of Wisconsin, 1911
M.A., Columbia University, 1924
Ph.D., Teachers College Columbia University, 1931

RAYMOND H. DEY, 1946
B.S.E.E., University of Illinois, 1932
M.S. Ed., University of Illinois, 1939
Ed.D., Washington University, 1952

PARMER L. EWING, Emeritus, 1965
B.S.Ed., University of Illinois, 1930
M.S.Ed., University of Illinois, 1934
Ed.D., New York University, 1950

ROBERT JACOBS, 1962
B.Ed., Southern Illinois University, 1935
A.M., University of Illinois, 1938
D.Ed., Wayne State University, 1949

EUGENE S. LAWLER, 1961
B.A., Trinity University, 1914
M.A., Columbia University, 1922
Ph.D., Columbia University, 1932

ARTHUR E. LEAN, 1957
A.B. in Ed., University of Michigan, 1930
A.M., Columbia University, 1934
Ph.D., University of Michigan, 1948

WILLIAM R. MCKENZIE, 1964
A.B., University of Denver, 1948
M.A., University of Denver, 1950
Ed.D., University of Denver, 1953

BRUCE W. MERWIN, Emeritus, 1927
B.A., University of Kansas, 1911
B.S.Ed., University of Kansas, 1911
M.A., University of Kansas, 1924
Ph.D., University of Kansas, 1929

MALVIN E. MOORE, JR., 1968
B.S., Tuskegee Institute, 1939
M.A., New York University, 1950
Ed.D., Peabody College, 1959

DEAN L. STUCK, 1968
B.S., Northwest Missouri State University, 1954
M.A., Drake University, 1958
Ph.D., Iowa State University, 1968

F. G. WARREN, Emeritus, 1913
A.B., McKendree College, 1910
A.M., University of Chicago, 1928

Associate Professors

LAWRENCE J. DENNIS, 1968
A.R.C.M., Royal College of Music, 1952
M.M., Syracuse University, 1964
Ph.D., Southern Illinois University, 1968

WOODSON W. FISHBACK, Emeritus, 1948
B.S.Ed., University of Missouri, 1940
A.M., University of Missouri, 1940
Ph.D., University of Chicago, 1947

JAMES HERRICK HALL, Emeritus, 1952
A.B., Baylor University, 1947
A.M., George Washington University, 1948
Ed.D., George Washington University, 1950

DALE E. KAISER, 1966
B.S., University of Illinois, 1954
M.S., University of Illinois, 1960
Ph.D., University of Illinois, 1963

EDWARD B. SASSE, 1966
B.S., Carroll College, 1951
M.S., University of Wisconsin, 1958
Ph.D., University of Wisconsin, 1966

RONALD W. SEALEY, 1971
B.A., Wake Forest University, 1965
M.S., University of Tennessee, 1967
J.D., University of Tennessee, 1966
Ph.D., Syracuse University, 1971

WILLIAM E. SHELTON, 1951
B.S., Texas A & M University, 1948
M.A., University of Chicago, 1949
Ph.D., University of Chicago, 1950

HERBERT W. WOHLWEND, 1958
B.Ed., Southern Illinois University, 1940
M.S. in Ed., Southern Illinois University, 1954
Ph.D., Southern Illinois University, 1964

Assistant Professors

BARNEY K. BROWNING, 1965
B.S. in Ed., Southern Illinois University, 1954
M.S. in Ed., Southern Illinois University, 1958
Ph.D., Southern Illinois University at Carbondale, 1972

JAMES E. CHRISTENSEN, 1972
A.B., University of California, 1963
M.A., California State College, 1970
Ph.D., University of California, 1972

DONALD G. CRUCE, 1971
A.B., Chico State College, 1960
M.A., San Jose State College, 1963
Ed.D., Utah State University, 1971

WILLIAM E. EATON, 1971
B.S.Ed., Eastern Illinois University, 1965
M.S. in Ed., Southern Illinois University, 1968
Ph.D., Washington University, 1971

JAMES E. FISHER, 1970
B.S.Ed., Kansas State Teachers College, 1954
M.S., Kansas State Teachers College, 1959
D.Ed., Indiana University, 1971

JAMES C. PARKER, 1971
B.S., Memphis State University, 1959
M.A., Memphis State University, 1960
Ed.D., University of Tennessee, 1971

Electrical Sciences and Systems Engineering—School of Engineering and Technology

Professors

- LEON E. DUNNING, 1957
B.S.M.E., University of Rochester, 1946
M.S.M.E., University of Kentucky, 1950
Ph.D., University of Houston, 1967
- ALFRED LIT, 1961
B.S., Columbia University, 1938
A.M., Columbia University, 1943
Ph.D., Columbia University, 1948
- JAMES G. SMITH, Chairman, 1966
B.S.E.E., University of Missouri, 1957
M.S.E.E., University of Missouri, 1959
Ph.D., University of Missouri, 1967

Associate Professors

- CURTIS W. DODD, 1967
B.S.E.E., University of Missouri, 1963
M.S.E.E., University of Missouri, 1964
Ph.D., Arizona State University, 1967
- VERNOLD K. FEISTE, 1966
B.S.E.E., University of Missouri, 1960
M.S., University of Missouri, 1961
Ph.D., University of Missouri, 1966
- F. LEE GRISMORE, 1969
B.S.E.E., Ohio Northern University, 1958
M.S.E.E., University of Missouri, 1961
Ph.D., Georgia Institute of Technology, 1970
- THOMAS M. MCCALLA, 1969
B.S.E.E., University of Nebraska, 1956
M.S.E.E., New Mexico State University, 1965
Ph.D., Cast Western Reserve University, 1969
- SONNY W. PEARSON, 1969
B.S.M.E., University of Arkansas, 1963
M.S.E.M., University of Arkansas, 1966
Ph.D., University of Arkansas, 1968

Assistant Professor

- E. ROBERT ASHWORTH, 1963
B.S., Purdue University, 1950
M.S., Purdue University, 1957
Ph.D., Southern Illinois University at Carbondale, 1972

Lecturer

- CHARLES A. ROWLINGS, 1964
B.S.E.E., University of Illinois, 1959
M.S., Southern Illinois University, 1965

Electronic Data Processing— School of Technical Careers

Associate Professor

- JAMES A. ROBB, 1962
B.A., Baldwin-Wallace College, 1951
A.M., George Peabody College for Teachers, 1952

Assistant Professor

- ANDREW N. KREUTZER, 1972
B.S., Polytechnic Institute of Brooklyn, 1961
M.A., City College of New York, 1971

Instructors

- ROBERT O. DICK, 1965
B.S., Southern Illinois University, 1965

- BYRON JOHNSON, 1973
B.A., Knox College, 1961
B.D., McCormick Theological Seminary, 1968
S.Th., McCormick Theological Seminary, 1969

Electronics Technology—School of Technical Careers

Associate Professor

- PAUL NEWELL CALDWELL, 1960
B.S., Wheaton College, 1949
M.S. in Ed., Southern Illinois University, 1965

Assistant Professors

- CHARLES M. GREEN, 1957
B.S., Northern Illinois University, 1950
M.S., Illinois State University, 1951
- RAYMOND SCHULTZ, Emeritus, 1952

Instructor

- DALE F. ICENOGLE, 1971
B.S., University of Minnesota, 1970

Assistant in Electronics Technology

- PAUL A. HARRE, 1972
B.S., Southern Illinois University at Carbondale, 1972

Elementary Education—College of Education

Professors

- LUTHER E. BRADFIELD, Chairman, 1955
B.S., Memphis State College, 1942
A.M.Ed., George Peabody College for Teachers, 1946
M.Ed., George Peabody College for Teachers, 1948
Ed.D., Indiana University, 1953
- ERNEST E. BROD, 1951
A.B., Peru State Teachers College, 1940
A.M., University of Nebraska, 1941
D.Ed., Colorado State College of Education, 1953
- MIRIAM C. DUSENBERY, 1968
B.A., Washington University, 1947
M.A., University of Iowa, 1957
Ph.D., University of Iowa, 1964
- MARGARET K. HILL, 1965
B.S. in Ed., Concord College, 1946
Ed.M., Boston University, 1947
Ed.D., Boston University, 1948
- J. MURRAY LEE, 1958
A.B., Occidental College, 1926
M.A., Columbia University, 1928
Ph.D., Columbia University, 1934
- WILLIS E. MALONE, 1939
B.Ed., Southern Illinois University, 1940
M.A., Northwestern University, 1941
Ph.D., Ohio State University, 1950
- VICTOR RANDOLPH, Emeritus, 1933
B.Ed., Southern Illinois University, 1935
A.M., Columbia University, 1937
Ph.D., George Peabody College for Teachers, 1942
- FRED A. SLOAN, JR., 1968
B.S., Alabama Polytechnic Institute, 1947
M.S., Alabama Polytechnic Institute, 1948
Ed.D., George Peabody College for Teachers, 1959

JOHN RICHARD VERDUIN, 1967
 B.S., St. Joseph's College, 1956
 M.A., Michigan State University, 1959
 Ph.D., Michigan State University, 1962

Associate Professors

IAN D. BEATTIE, 1969
 Diploma in Physical Education, Jordanhill
 College of Education, Scotland, 1960
 Diploma in Primary Education, Jordanhill
 College of Education, Scotland, 1961
 M.S.Ed., Southern Illinois University, 1967
 Ph.D., Southern Illinois University, 1969

DANIEL T. FISHCO, 1966
 B.A., Jersey City State College, 1962
 M.A., Jersey City State College, 1964
 D.Ed., LeHigh University, 1966

HAROLD HUNGERFORD, 1965
 B.S., Illinois State University, 1949
 M.S., Illinois State University, 1953
 Ph.D., Southern Illinois University, 1970

WILLIAM MATTHIAS, 1967
 A.B., Eureka College, 1950
 M.Ed., University of Illinois, 1952
 Ed.D., University of Illinois, 1964

DONALD D. PAIGE, 1966
 B.A., Iowa State Teachers College, 1959
 M.A., Iowa State Teachers College, 1960
 Ed.D., Indiana University, 1966

KEVIN SWICK, 1970
 B.S., Bowling Green University, 1965
 M.Ed., Bowling Green University, 1966
 Ph.D., University of Connecticut, 1970

Assistant Professors

MORRIS LAMB, 1970
 B.S.Ed., Southwestern State College, 1961
 Ed.M., University of Oklahoma, 1965
 D.Ed., University of Oklahoma, 1970

DORMALEE LINDBERG, 1969
 B.S.Ed., Northeast Missouri State Teachers
 College, 1963
 M.A., Northeast Missouri State Teachers
 College, 1965
 Ed.D., University of Missouri, 1969

MARGARET MATTHIAS, 1972
 Diploma, Jordanhill College of Education,
 Scotland, 1960
 M.S. in Ed., Southern Illinois University,
 1964
 Ph.D., Southern Illinois University, 1972

NANCY QUISENBERRY, 1971
 B.S., Indiana State Teachers College, 1960
 M.S., Indiana State Teachers College, 1962
 Ed.D., Indiana University, 1971

TERRY R. SHEPHERD, 1971
 B.S. in Ed., Eastern Illinois University, 1961
 M.S. in Ed., Eastern Illinois University, 1962
 Ph.D., University of Illinois, 1971

AUDREY TOMERA, 1969
 B.S., Illinois State Normal University, 1963
 M.S., Central Michigan University, 1968
 Ph.D., Southern Illinois University at
 Carbondale, 1973

School of Engineering and Technology—General

Professors

JOSE L. AMOROS, 1964
 M.Sc., University of Barcelona, 1943
 Ph.D., University of Madrid, 1945

JULIAN H. LAUCHNER, 1962
 B.S., University of Illinois, 1950
 M.S., University of Illinois, 1954
 Ph.D., University of Illinois, 1956

Engineering Mechanics and Materials—School of Engineering and Technology

Professors

PHILIP DAVIS, Chairman, 1964
 B.S.M.E., University of Texas, 1958
 M.S.M.E., University of Texas, 1959
 M.S.E., University of Michigan, 1963
 Ph.D., University of Michigan, 1963

WILLIAM ORTHWEIN, 1965
 B.S., Massachusetts Institute of Technology,
 1948
 M.S., University of Michigan, 1950
 Ph.D., University of Michigan, 1959

SEDAT SAMI, 1966
 Dip. Ing., Technical University of Istanbul,
 1951
 M.S., University of Iowa, 1957
 Ph.D., University of Iowa, 1966

Associate Professors

NAJIM AL-RUBAYI, 1966
 B.S., Wolverhampton Polytechnic, England,
 1951
 M.S., University of Wisconsin, 1956
 Ph.D., University of Wisconsin, 1966

JAMES EVERS, 1969
 B.S.M.E., University of Alabama, 1959
 Ph.D., University of Alabama, 1969

C. RAYMOND NOWACKI, 1963
 B.S., University of Illinois, 1949
 M.S.C.E., University of Missouri, 1958
 Ph.D., University of Illinois, 1965

Instructors

DAVID EDDINGFIELD, 1971
 B.S., Southern Illinois University, 1964
 M.S., Southern Illinois University, 1966

KENNETH JORDAN, 1968
 B.S., Southern Illinois University, 1965
 M.S., Southern Illinois University, 1970

English—College of Liberal Arts

Research Professor

HARRY T. MOORE, 1963
 Ph.B., University of Chicago, 1934
 A.M., Northwestern University, 1942
 Ph.D., Boston University, 1951

Professors

JAMES G. BENZIGER, 1950
 A.B., Princeton University, 1936
 Ph.D., Princeton University, 1941

TED EUGENE BOYLE, 1963
 B.S. in Ed., University of Nebraska, 1955
 M.A., University of Nebraska, 1959
 Ph.D., University of Nebraska, 1962

ALAN MARTIN COHN, 1955
 A.B., Washington University, 1949
 A.M., Washington University, 1950

E. C. COLEMAN, Emeritus, 1946
 A.B., University of Illinois, 1924
 M.A., University of Wisconsin, 1927
 Ph.D., University of Illinois, 1936

EDMUND EPSTEIN, 1965
 A.B., Queens College, 1951
 A.M., Yale University, 1953
 Ph.D., Columbia University, 1967

WILLIAM H. EVANS, 1966
 B.A., University of Colorado, 1950
 M.A., Syracuse University, 1952
 D.Ed., Florida State University, 1961

- JOHN C. GARDNER, 1965
 A.B., Washington University, 1955
 M.A., University of Iowa, 1957
 Ph.D., University of Iowa, 1958
- J. W. HARRIS, Emeritus, 1939
 B.S., University of Illinois, 1927
 M.A., University of Illinois, 1928
 Ph.D., University of Illinois, 1935
- MARK HILLEGAS, 1965
 A.B., Columbia University, 1949
 A.M., Columbia University, 1950
 Ph.D., Columbia University, 1957
- PAUL HURLEY, 1965
 B.A., University of Pittsburgh, 1953
 M.A., University of Pittsburgh, 1954
 Ph.D., Duke University, 1962
- PAUL H. MORRILL, 1964
 B.A., Wooster College, 1935
 M.A., Columbia University, 1937
 Ph.D., Northwestern University, 1956
- SIDNEY P. MOSS, 1964
 B.S., University of Illinois, 1950
 A.M., University of Illinois, 1951
 Ph.D., University of Illinois, 1954
- ROBERT B. PARTLOW, JR., 1957
 A.B., Harvard University, 1941
 M.A.T., Harvard University, 1947
 A.M., Harvard University, 1948
 Ph.D., Harvard University, 1955
- HENRY DAN PIPER, 1962
 A.B., Princeton University, 1939
 Ph.D., University of Pennsylvania, 1950
- MANUEL SCHONHORN, 1968
 B.A., Brooklyn College, 1955
 M.A., University of Pennsylvania, 1959
 Ph.D., University of Pennsylvania, 1963
- HOWARD SCHULTZ, 1967
 B.A., University of Texas, 1933
 M.A., University of Texas, 1934
 M.A., Harvard University, 1940
 Ph.D., Harvard University, 1940
- WILLIAM E. SIMEONE, Chairman, 1950
 B.A., University of Wisconsin, 1943
 M.A., University of Wisconsin, 1947
 Ph.D., University of Pennsylvania, 1950
- E. EARLE STIBITZ, 1952
 B.A., Ursinus College, 1932
 M.A., University of Wisconsin, 1939
 Ph.D., University of Michigan, 1951
- DAVID M. VIETH, 1965
 B.A., Yale University, 1945
 M.A., Yale University, 1948
 Ph.D., Yale University, 1953
- HOWARD W. WEBB, JR., 1956
 B.A., Denison University, 1947
 M.A., University of Iowa, 1950
 Ph.D., University of Iowa, 1953
- HERBERT DONOW, 1936
 B.A., Cornell University, 1958
 Ph.D., University of Iowa, 1966
- GEORGE GOODIN, 1966
 B.S., Marquette University, 1952
 A.M., University of Illinois, 1956
 Ph.D., University of Illinois, 1962
- ROBERT P. GRIFFIN, 1965
 B.A., University of Connecticut, 1956
 M.A., University of Connecticut, 1957
 Ph.D., University of Connecticut, 1965
- THOMAS J. HATTON, 1965
 B.A., Buena Vista College, 1959
 M.A., University of Nebraska, 1961
 Ph.D., University of Nebraska, 1966
- JOHN M. HOWELL, 1963
 B.A., Millsaps College, 1954
 M.A., University of Southern California, 1960
 Ph.D., Tulane University, 1963
- EDITH KRAPPE, Emerita, 1929
 A.B., State University of Iowa, 1919
 M.A., State University of Iowa, 1925
 Ph.D., University of Pennsylvania, 1953
- RICHARD A. LAWSON, 1963
 B.A., Albion College, 1957
 M.S., Bowling Green University, 1958
 M.A., Bowling Green University, 1959
 Ph.D., Tulane University, 1966
- JOHN J. LEONARD, 1957
 A.B., Western State College of Colorado, 1939
 M.A., University of Iowa, 1941
- RAYMOND RAINBOW, 1949
 A.B., Westminster College, 1942
 A.M., University of Chicago, 1947
 Ph.D., University of Chicago, 1959
- M. BYRON RAIZIS, 1966
 B.A., University of Athens, Greece, 1956
 M.S., Purdue University, 1961
 Ph.D., New York University, 1966
- HANS RUDNICK, 1966
 Ph.D., University of Freiburg, Germany, 1967
- LARRY E. TAYLOR, 1968
 B.A., Oklahoma Baptist University, 1961
 M.A., University of Oklahoma, 1964
 Ph.D., University of Oklahoma, 1969

Assistant Professors

- JULIA MINNETTE BARBER, Emerita, 1936
 A.B., University of Illinois, 1913
 A.M., University of Illinois, 1915
- RODERIC C. BOTTS, 1970
 B.A., Carleton College, 1957
 M.A., Northwestern University, 1964
 Ph.D., Northwestern University, 1970
- WINIFRED BURNS, Emerita, 1939
 A.B., University of Illinois, 1925
 M.A., University of Illinois, 1933
- GEORGE CAMP, Emeritus, 1947
 A.B., Ohio Wesleyan University, 1925
 M.A., Ohio State University, 1930
 Ph.D., University of Illinois, 1951
- DIANA L. DODD, 1955
 B.Ed., Southern Illinois University, 1942
 M.A., Southern Illinois University, 1954
- JEWELL FRIEND, 1967
 A.B., University of Miami, 1959
 M.A., Tulane University, 1960
 Ph.D., Southern Illinois University, 1970
- ROBERT B. HARRELL, 1964
 B.A., North Texas State Teachers College, 1952
 M.A., North Texas State Teachers College, 1956
 Ph.D., University of Texas, 1966

Associate Professors

- BRUCE C. APPLEBY, 1967
 B.A., University of Iowa, 1958
 M.A., University of Iowa, 1964
 Ph.D., University of Iowa, 1967
- FRANCES BARBOUR, Emerita, 1925
 A.B., Washington University, 1919
 M.A., Washington University, 1920
- WILLIAM J. BROWN, 1966
 B.A., University of North Carolina, 1951
 M.A., University of North Carolina, 1959
 Ph.D., Duke University, 1966
- THOMAS E. CASSIDY, 1958
 A.B., University of Notre Dame, 1937
 A.M., University of Notre Dame, 1938

- DAVID M. KVERNES, 1968
 B.A., Augustana College, 1953
 M.A., University of Minnesota, 1960
 Ph.D., University of Minnesota, 1967
- FRED LINGLE, Emeritus, 1948
 B.Ed., Southern Illinois University, 1928
 A.M., University of Illinois, 1935
- JUDY R. LITTLE, 1969
 B.A., Sarah Lawrence College, 1963
 M.A., University of Nebraska, 1965
 Ph.D., University of Nebraska, 1969
- GEORGE S. METES, 1970
 B.A., Dartmouth College, 1959
 Ph.D., University of Wisconsin, 1972
- BETTY LOU MITCHELL, 1949
 B.S. in Ed., Southern Illinois University, 1949
 M.A., Southern Illinois University, 1951
- RICHARD F. PETERSON, 1969
 B.S. in Ed., Edinboro State College, 1965
 M.A., Kent State University, 1967
 Ph.D., Kent State University, 1969
- MICHAEL SHRIBER, 1970
 B.A., Yale University, 1959
 M.A., University of California, Berkeley, 1962
 Ph.D., University of California, Berkeley, 1971
- ROY K. WESHINSKEY, 1961
 B.S. in Ed., Southern Illinois University, 1949
 M.S., Southern Illinois University, 1950
- FREDERICK A. WHITEHEAD, 1970
 B.A., University of Kansas, 1965
 M.A., Columbia University, 1967
 Ph.D., Columbia University, 1972

University Professor

- CHARLES D. TENNEY, 1931
 A.B., Gooding College, 1931
 M.A., University of Oregon, 1929
 Ph.D., University of Oregon, 1931

Instructors

- ROSE BLACK, Emerita, 1962
 A.B., Marietta College, 1925
 M.A., Ohio State University, 1926
- MARTHA CLARK, Emerita, 1949
 A.N., University of Illinois, 1918
 A.M., Southern Illinois University, 1953
- LEWIS J. HILLIARD, 1959
 B.S. in Ed., Southern Illinois University, 1951
 M.S. in Ed., Southern Illinois University, 1952
- EDWARD L. MCNICHOLS, 1962
 A.B., St. Benedict's College, 1955
 M.A., University of Detroit, 1958
- JOAN FOLEY MARTIN, 1959
 B.S. in Ed., Southern Illinois University, 1957
 M.A., Southern Illinois University, 1961
- LOIS ANNE RICHMAN, 1963
 A.B., University of Illinois, 1958
 A.M., University of Illinois, 1962
- MARY C. SIMON, 1959
 B.Ed., Southern Illinois University, 1936
 A.M., University of Illinois, 1940
- EDNA TRAVIS, Emerita, 1948
 B.S. in Ed., Southern Illinois University, 1944
 M.S. in Ed., Southern Illinois University, 1948

Family Economics and Management—School of Home Economics, College of Human Resources

Professor

- THOMAS M. BROOKS, 1971
 B.S., Ohio State University, 1956
 M.S., Pennsylvania State University, 1958
 Ph.D., Pennsylvania State University, 1961

Associate Professor

- KAREN E. CRAIG, Chairman, 1967
 B.S., Northeast Missouri State University, 1960
 M.S., Purdue University, 1964
 Ph.D., Purdue University, 1969

Assistant Professor

- ARLENE J. HEISLER, 1960
 B.S., Iowa State University, 1944
 M.S., Southern Illinois University, 1959

Instructors

- CAROLYN S. CRYNES, 1972
 B.S., Indiana State University, 1966
 M.S., Indiana State University, 1972
- MARY ELLEN EDMONDSON, 1971
 B.S., Ouachita Baptist University, 1954
 M.S., Indiana State University, 1971

Finance—School of Business

Professors

- DONALD EARL VAUGHN, 1970
 B.B.A., North Texas State University, 1953
 M.B.A., North Texas State University, 1955
 Ph.D., University of Texas, 1961
- EDWARD L. WINN, JR., Chairman, 1966
 B.S.B.A., University of Florida, 1948
 A.M., Vanderbilt University, 1958
 D.B.A., Indiana University, 1965

Associate Professors

- HUSSEIN H. ELSAID, 1967
 B.Com., Cairo University, Egypt, 1959
 M.B.A., Northwestern University, 1963
 Ph.D., University of Illinois, 1968
- C. RONALD SPRECHER, 1970
 B.S., University of Illinois, 1962
 M.S., University of Illinois, 1967
 Ph.D., University of Illinois, 1969
- R. STANLEY TYLER, 1970
 B.S., Indiana State University, 1950
 J.D., University of Illinois, 1952
- GOLA E. WATERS, 1965
 B.A., St. Ambrose College, 1951
 J.D., University of Iowa, 1957
 M.S., Southern Illinois University, 1965
 Ph.D., Southern Illinois University, 1970

Assistant Professor

- FREDERICK JOHN NAFFZIGER, 1970
 A.B., University of Illinois, 1967
 J.D., University of Illinois, 1970

Instructor

- RICHARD B. CORBETT, 1971
 A.B., Georgia State University, 1967
 B.B.A., Georgia State University, 1968
 M.B.A., Georgia State University, 1970

Adjunct Professors

JOHN W. D. WRIGHT, 1969
B.S., University of Illinois, 1925
C.P.A., Illinois, 1930

Food and Nutrition—School of Home Economics, College of Human Resources**Professors**

JENNIE M. HARPER, 1958
B.S., University of New Brunswick, Canada, 1936
M.S., University of Maine, 1938
Ph.D., Cornell University, 1941
FRANK KONISHI, Chairman, 1961
B.S., Colorado State University, 1950
M.S., Colorado State University, 1952
Ph.D., Cornell University, 1958
IRENE R. PAYNE, 1965
B.S., Colorado State University, 1948
M.S., Colorado State University, 1951
Ph.D., Cornell University, 1960
EILEEN QUIGLEY, Emerita, 1948
B.S., Northwest Missouri State Teachers College, 1937
M.A., Columbia University, 1941
Ed.D., University of Missouri, 1947

Associate Professors

MARY LOUISE BARNES, Emerita, 1929
A.B., University of Illinois, 1926
M.S., Iowa State College, 1931
POHLE H. WOLFE, 1972
B.A., University of Florida, 1950
A.M., University of Northern Colorado, 1964

Lecturer

HENRIETTA BECKER, 1962
B.S.Ed., University of Kansas, 1937
M.S., Southern Illinois University, 1964

Foreign Languages and Literatures—College of Liberal Arts**Professors**

JENARO J. ARTILES, Emeritus, 1963
M.A., Canary Pontifical University, Las Palmas, 1917
M.A., Central University, Madrid, 1923
Ph.D., Canary Pontifical University, Las Palmas, 1918
Ph.D., Central University, Madrid, 1932
Ph.D., University of Havana, Cuba, 1946
ALBERT W. BORK, 1958
B.A., University of Arizona, 1935
M.A., University of Arizona, 1938
Doctor en Letras, Universidad Nacional Autonoma de Mexico, 1944
J. CARY DAVIS, Emeritus, 1930
B.Ed., Southern Illinois University, 1929
A.M., University of Chicago, 1930
Ph.D., University of Chicago, 1936
DAVID L. GOBERT, 1965
B.A., Millikin University, 1954
M.A., State University of Iowa, 1956
Ph.D., State University of Iowa, 1960
HELLMUT A. HARTWIG, 1948
A.B., University of Illinois, 1936
M.A., Louisiana State University, 1937
Ph.D., University of Illinois, 1943

NGUYEN DINH HOA, 1969
B.A., Union College, 1950
M.A., New York University, 1952
Ph.D., New York University, 1956
JOSEPH R. KUPCEK, 1962
M.A., University of Bratislava, Czechoslovakia, 1942
Ph.D., University of Bratislava, Czechoslovakia, 1943
WARREN L. MEINHARDT, 1969
B.A., Pomona College, 1953
A.M., Stanford University, 1955
Ph.D., University of California at Berkeley, 1960
VERA L. PEACOCK, Emerita, 1930
A.B., Cornell University, 1924
M.A., Cornell University, 1925
Ph.D., Cornell University, 1930
EUGENE F. TIMPE, Chairman, 1972
B.S., Occidental College, 1948
M.A., University of Southern California, 1952
Ph.D., University of Southern California, 1960
HENSLEY C. WOODBRIDGE, 1965
A.B., College of William and Mary, 1943
M.A., Harvard University, 1942
Ph.D., University of Illinois, 1950
M.S., University of Illinois, 1951

Associate Professors

VERNON L. ANDERSON, 1968
B.A., University of Utah, 1948
M.A., University of Utah, 1949
Ph.D., Stanford University, 1954
HOWARD P. FRENCH, 1962
A.B., Swarthmore College, 1934
A.M., Indiana University, 1949
Ph.D., Indiana University, 1952
JAMES A. KILKER, 1967
A.B., University of Missouri, 1949
M.F.S., University of Maryland, 1956
Ph.D., University of Missouri, 1961
HELMUT LIEDLOFF, 1959
M.A., Southern Illinois University, 1962
Ph.D., Philipps University, Germany, 1956
CHARLES A. MCBRIDE, 1972
B.A., University of Texas, 1949
A.M., New York University, 1960
Ph.D., University of Texas, 1968
MADELYN M. SMITH, Emerita, 1929
B.A., Northwestern University, 1928
M.A., Northwestern University, 1929
Ph.D., Yale University, 1952

Assistant Professors

KEITH O. ANDERSON, 1972
B.S., University of Minnesota, 1959
M.A., University of Colorado, 1964
Ph.D., University of Colorado, 1970
STEVEN LEE HARTMAN, 1971
B.A., University of Wisconsin, 1966
M.A., University of Wisconsin, 1968
Ph.D., University of Wisconsin, 1971
ANNA K. NEUFELD, Emerita, 1945
B.A., Bethel College, 1935
M.A., University of Kansas, 1937
JOAN V. O'BRIEN, 1969
B.A., Albertus Magnus College, 1946
M.A., Fordham University, 1955
Ph.D., Fordham University, 1961

- MAURICE A. O'MEARA, 1969
 B.A., Siena College, 1958
 M.A., University of Iowa, 1961
 Ph.D., University of Iowa, 1967
- OLGA ORECHWA, 1967
 M.A., Southern Illinois University, 1967
 Ph.D., Ukrainian Free University, Germany, 1970
- WALTER REWAR, 1972
 B.A., Syracuse University, 1964
 M.A., Syracuse University, 1968
 A.M., University of Michigan, 1971
 Ph.D., University of California, 1972
- MARIE-JOSE SOUTHWORTH, 1970
 A.M., University of Pennsylvania, 1965
 Ph.D., University of Pennsylvania, 1970
- CHARLES W. SPECK, 1970
 B.A., St. John's University, 1953
 Laurea in Diritto Canonico, Pontifical Lateran University, Italy, 1963
- JAMES H-Y TAI, 1970
 B.A., National Taiwan University, 1964
 A.M., Indiana University, 1967
 Ph.D., Indiana University, 1970
- ARNOLD R. ULNER, 1962
 A.B., Augustana College, 1953
 M.A., University of Nebraska, 1958
 Ph.D., University of Missouri, 1972
- MAXINE A. VOGELY, 1965
 A.B., University of Cincinnati, 1934
 B.Ed., University of Cincinnati, 1935
 A.M., Cornell University, 1947
 Ph.D., University of Illinois, 1969

Instructors

- JUDITH AYDT, 1969
 B.A., Southern Illinois University, 1964
 M.A., Southern Illinois University, 1966
- MARGUERITE N. BORK, 1969
 B.A., University of Arizona, 1935
 M.A., Southern Illinois University, 1964
- GWENDOLYN C. BRACKETT, 1967
 A.B., Fairmont College, 1938
 M.A., Southern Illinois University, 1967
- JERRILYN J. EMISON, 1965
 B.A., Southern Illinois University, 1962
 M.A., Southern Illinois University, 1965
- INGRID GADWAY, 1970
 M.A., Memphis State University, 1965
- FRANK GUNDERSON, 1969
 B.S. in Ed., Western Illinois University, 1965
 M.A., Illinois State University, 1969
- MARIA-ODILIA L. MCBRIDE, 1972
 B.A., Universidade Catolica, Rio Brasil, 1963
 M.A., University of Texas at Austin, 1969
- CATHERINE RAIZIS, 1968
 B.A., Barnard College, Columbia University, 1963
 M.A., Southern Illinois University, 1968
- ROSWITHA ROCHETTE, 1970
 B.S., Southern Connecticut State College, 1968
 M.A., Southern Illinois University at Carbondale, 1971
- ROBERT VANGORDER, 1971
 B.A., Southern Illinois University, 1969
 M.A., Southern Illinois University at Carbondale, 1971
- MILDRED WILKINSON, 1963
 B.S., Indiana University, 1945
 M.S.Ed., Southern Illinois University, 1959
 M.A., Southern Illinois University, 1965
- ELLEN C. WINSOR, 1971
 B.A., Southern Illinois University, 1970
 M.A., Southern Illinois University at Carbondale, 1971
- ANNIE WOODBRIDGE, 1968
 B.A., Murray State University, 1935
 M.A., George Peabody College for Teachers, 1936
- ROBERT A. WOSYLUS, 1964
 B.A., DePauw University, 1961
 M.A., Southern Illinois University, 1964

Forestry—School of Agriculture

Professors

- JOHN W. ANDRESEN, 1964
 B.S., State University of New York, 1953
 Ph.D., Rutgers University, 1959
- NEIL W. HOSLEY, Emeritus, 1958
 B.S., Syracuse University, 1924
 M.F., Harvard University, 1925
 Ph.D., University of Michigan, 1938
- MARGARET KAEISER, 1947
 B.S., University of Oklahoma, 1934
 M.S., University of Oklahoma, 1936
 Ph.D., University of Illinois, 1940
- DWIGHT R. MCCURDY, 1965
 B.S., Purdue University, 1960
 M.S., Purdue University, 1961
 Ph.D., Ohio State University, 1964
- ALI A. MOSLEMI, Acting Chairman, 1965
 B.S., University of Tehran, 1957
 M.S., Michigan State University, 1960
 Ph.D., Michigan State University, 1964
- PAUL A. YAMBERT, 1969
 B.S.F., University of Michigan, 1950
 M.S., University of Michigan, 1951
 A.M., University of Michigan, 1955
 Ph.D., University of Michigan, 1961

Associate Professors

- KENNETH C. CHILMAN, 1973
 B.S.F., Purdue University, 1956
 M.F., University of Michigan, 1959
 Ph.D., University of Michigan, 1972
- PAUL L. ROTH, 1967
 B.S., Purdue University, 1951
 M.S., Purdue University, 1955
 Ph.D., Kansas State University, 1968

Assistant Professors

- CARL A. BUDELSKY, 1967
 B.S., University of Illinois, 1959
 B.S., University of Illinois, 1961
 M.S., University of Illinois, 1962
 Ph.D., The University of Arizona, 1969
- RAYMOND S. FERELL, 1969
 B.S., University of Missouri, 1957
 M.S., Iowa State University, 1966
 Ph.D., Iowa State University, 1970
- JAMES S. FRALISH, 1969
 B.S., Michigan State University, 1961
 M.S., Michigan State University, 1963
 Ph.D., University of Wisconsin, 1970
- CHARLES R. HATCH, 1971
 B.S., Montana State University, 1964
 M.F., Oregon State University, 1966
 Ph.D., University of Minnesota, 1971
- FAN H. KUNG, 1970
 B.S., National Taiwan University, 1958
 M.F., Oregon State University, 1962
 Ph.D., Michigan State University, 1968
- GEORGE T. WEAVER, 1970
 B.A., Southern Illinois University, 1960
 M.S. in Ed., Southern Illinois University, 1963
 Ph.D., University of Tennessee, 1972

Adjunct Professors

- ARTHUR G. CHAPMAN, 1964
 B.S., Iowa State University, 1929
 M.S., Ohio State University, 1932
 Ph.D., Ohio State University, 1933
- EUGENE F. LANDT, 1968
 B.S., University of Montana, 1940

Adjunct Associate Professors

- CRAIG K. LOSCHE, 1967
 B.S., Rutgers University, 1955
 M.S., Cornell University, 1957
 Ph.D., North Carolina State University, 1967
- LOYAL A. MEHRHOFF, 1970
 B.S., University of Arizona, 1954
 M.S., University of Arizona, 1955
- ROBERT PHARES, 1968
 B.S.F., West Virginia University, 1955
 M.F., Pennsylvania State University, 1958
 Ph.D., Iowa State University, 1964

Adjunct Assistant Professors

- CALVIN F. BEY, 1969
 B.S., Michigan State University, 1958
 M.S., Michigan State University, 1959
 Ph.D., Iowa State University, 1970
- PETER Y. CHEN, 1968
 B.S., National Taiwan University, 1956
 M.S., University of Minnesota, 1964
 Ph.D., University of Minnesota, 1968
- GLENN A. COOPER, 1971
 B.S., Iowa State University, 1953
 M.S., Iowa State University, 1959
 Ph.D., University of Minnesota, 1970
- DAVID T. FUNK, 1967
 B.S., Purdue University, 1951
 M.S., Purdue University, 1956
 Ph.D., Michigan State University, 1971
- RONALD D. LINDMARK, 1969
 B.S., University of Minnesota, 1961
 M.S., University of Minnesota, 1963
 Ph.D., Ohio State University, 1971
- HOWARD N. ROSEN, 1970
 B.S., University of Maryland, 1964
 M.S., Northwestern University, 1966
 Ph.D., Northwestern University, 1969
- RICHARD D. SCHLESINGER, 1970
 B.A., Middlebury College, 1963
 M.F., Yale University, 1965
 Ph.D., State University of New York, 1970

Adjunct Instructor

- RICHARD J. JOHNSON, 1970
 B.S., Colorado State University, 1959

Geography—College of Liberal Arts*Professors*

- RONALD I. BEAZLEY, 1959
 B.S., University of New Brunswick, Canada, 1949
 M. Forestry, Yale University, 1950
 Ph.D., Purdue University, 1954
- DOUGLAS B. CARTER, Chairman, 1964
 B.A., Eastern Washington College, 1944
 M.A., University of Washington, 1948
 Ph.D., University of Washington, 1957
- DAVID E. CHRISTENSEN, 1961
 A.M., University of Chicago, 1948
 Ph.D., University of Chicago, 1956
- FLOYD F. CUNNINGHAM, Emeritus, 1947
 B.Ed., Illinois State University, 1926
 A.M., Clark University, 1928
 Ph.D., Clark University, 1930

- DAVID L. JONES, 1965
 B.A., Carleton University, 1941
 M.S., Pennsylvania State University, 1953
 Ph.D., Pennsylvania State University, 1960
- CAMPBELL W. PENNINGTON, 1964
 B.A., University of Texas, 1947
 M.A., University of Texas, 1949
 Ph.D., University of California, Berkeley, 1959
- THEODORE SCHMUDDE, 1959
 B.S., Central Missouri State College, 1952
 M.S., University of Wisconsin, 1956
 Ph.D., University of Wisconsin, 1960

Associate Professors

- DAVID G. AREY, 1971
 B.A., Denison University, 1959
 M.A., Clark University, 1965
 Ph.D., Clark University, 1969
- DUANE D. BAUMANN, 1967
 B.S. in Ed., Illinois State University, 1962
 M.S., Illinois State University, 1963
 Ph.D., Clark University, 1968
- DANIEL IRWIN, 1959
 B.A., University of California at Los Angeles, 1958
 M.A., Southern Illinois University, 1963
 Ph.D., Syracuse University, 1972
- ANNEMARIE KRAUSE, Emerita, 1930
 B.S., University of Minnesota, 1928
 M.S., University of Illinois, 1930
 Ph.D., University of Chicago, 1952
- DAVID M. SHARPE, 1966
 B.S., State University of New York at Syracuse, 1960
 M.S., State University of New York at Syracuse, 1963
 Ph.D., Southern Illinois University, 1968

Assistant Professor

- VERNON MEENTEMEYER, 1972
 B.A., Southern Illinois University, 1965
 M.A., Southern Illinois University, 1968
 Ph.D., Southern Illinois University, 1971

Instructors

- AVIJIT GUPTA, 1973
 B.A., University of Calcutta, 1962
 M.A., University of Calcutta, 1964
- A. DOYNE HORSLEY, 1968
 B.A., Southern Illinois University, 1963
 M.A., Southern Illinois University, 1965
- MICHAEL WELSH, 1971
 B.A., Sacramento State College, 1966
 M.A., University of Hawaii, 1970

Geology—College of Science
Professors

- RUSSELL R. DUTCHER, Chairman, 1970
 B.A., University of Connecticut, 1951
 M.S., University of Massachusetts, 1953
 Ph.D., The Pennsylvania State University, 1960
- JEN-HO FANG, 1964
 B.S., National Taiwan University, 1953
 M.S., University of Minnesota, 1957
 Ph.D., The Pennsylvania State University, 1961
- GEORGE H. FRAUNFELTER, 1965
 B.A., Lehigh University, 1948
 A.M., University of Missouri, 1951
 Ph.D., University of Missouri, 1964
- STANLEY E. HARRIS, JR., 1949
 A.B., Princeton University, 1940
 M.S., State University of Iowa, 1942
 Ph.D., State University of Iowa, 1947

DALE F. RITTER, 1972
 A.B., Franklin and Marshall College, 1955
 B.S., Franklin and Marshall College, 1959
 M.A., Princeton University, 1963
 Ph.D., Princeton University, 1964
 JOHN E. UTGAARD, 1965
 B.S., University of North Dakota, 1958
 A.M., Indiana University, 1961
 Ph.D., Indiana University, 1963

Associate Professor

WILLIAM C. HOOD, 1968
 A.B., University of Missouri, 1959
 Ph.D., University of Montana, 1964

Assistant Professors

ARTHUR D. COHEN, 1969
 B.S., University of Delaware, 1964
 Ph.D., The Pennsylvania State University, 1968
 RICHARD W. DAVIS, 1967
 B.S., University of Wyoming, 1957
 M.A., University of Wyoming, 1959
 Ph.D., University of Arizona, 1967
 FRANK G. ETHRIDGE, 1970
 B.S., Mississippi State University, 1960
 M.S., Louisiana State University, 1966
 Ph.D., Texas A & M University, 1970
 PAUL ROBINSON, 1967
 B.A., Southern Illinois University, 1961
 M.S., Southern Illinois University, 1963

Instructors

LOUIS BERTONI, 1966
 B.Ed., Southern Illinois University, 1935
 M.A., University of California at Los Angeles, 1947
 CHARLES O. FRANK, 1970
 B.S. in Ed., Drake University, 1961
 M.A., Drake University, 1964

Government—College of Liberal Arts

Professors

ORVILLE ALEXANDER, 1938
 B.Ed., Southern Illinois University, 1931
 M.A., University of Iowa, 1934
 Ph.D., University of Iowa, 1936
 IKUA CHOU, 1964
 LL.B., National Fuh Tan University, 1942
 M.A., Fletcher School of Law and Diplomacy, 1946
 M.A., Fletcher School of Law and Diplomacy, 1947
 Ph.D., Fletcher School of Law and Diplomacy, 1949
 DAVID RICHARD DERGE, 1972
 A.B., University of Missouri, 1950
 A.M., Northwestern University, 1951
 Ph.D., Northwestern University, 1955
 CHARLES T. GOODSELL, 1966
 A.B., Kalamazoo College, 1954
 M.P.A., Harvard University, 1958
 A.M., Harvard University, 1959
 Ph.D., Harvard University, 1961
 EARL THOMAS HANSON, 1960
 B.Ed., Southern Illinois University, 1932
 A.M., University of Illinois, 1937
 Ph.D., University of Illinois, 1948
 WILLIAM HARDENBERGH, 1960
 A.B., University of Illinois, 1950
 A.M., University of Illinois, 1951
 Ph.D., University of Illinois, 1954

JACK F. ISAKOFF, Emeritus, 1962
 A.B., Case Western Reserve University, 1931
 A.M., Ohio State University, 1932
 Ph.D., University of Illinois, 1937
 HORACE B. JACOBINI, 1957
 B.A., Fort Hays Kansas State College, 1943
 M.S., Fort Hays Kansas State College, 1947
 Ph.D., University of Kansas, 1951
 DAVID T. KENNEY, 1951
 B.S., Southern Illinois University, 1947
 M.S., Southern Illinois University, 1948
 Ph.D., University of Illinois, 1952
 FRANK L. KLINGBERG, 1946
 A.B., University of Kansas, 1928
 A.M., University of Kansas, 1936
 Ph.D., University of Chicago, 1938
 ROBERT A. MCGRATH, 1949
 A.B., Fort Hays Kansas State College, 1938
 M.A., University of Iowa, 1939
 Ph.D., University of Iowa, 1947
 WARD M. MORTON, 1949
 B.A., Southwest Texas State College, 1929
 M.A., University of Texas, 1934
 Ph.D., University of Texas, 1941
 RANDALL H. NELSON, Chairman, 1955
 A.B., University of Michigan, 1950
 A.M., University of Michigan, 1951
 Ph.D., University of Michigan, 1956
 MARIAN E. RIDGEWAY, 1952
 B.J., University of Missouri, 1935
 A.M., University of Missouri, 1946
 Ph.D., University of Illinois, 1952
 MAX M. SAPPENFIELD, 1954
 A.B., Indiana University, 1930
 A.M., Indiana University, 1932
 Ph.D., University of Illinois, 1935
 MAX WESLEY TURNER, 1947
 B.Ed., Eastern Illinois University, 1940
 M.A., University of Iowa, 1941
 Ph.D., University of Iowa, 1947

Associate Professors

JOHN H. BAKER, 1966
 A.B., Claremont Men's College, 1958
 Ph.D., Princeton University, 1961
 JNANABROTA BHATTACHARYYA, 1968
 Ph.D., University of Delhi, India, 1969
 RICHARD DALE, 1966
 A.B., Bowdoin College, 1954
 A.M., Ohio State University, 1957
 A.M., Princeton University, 1961
 Ph.D., Princeton University, 1962
 ROBERT H. DREHER, 1967
 LL.B., University of Illinois, 1940
 WILLIAM R. GARNER, 1966
 B.A., Baylor University, 1957
 M.A., Southern Methodist University, 1958
 Ph.D., Tulane University, 1963
 JOHN S. JACKSON, III, 1969
 B.A., Ouachita Baptist College, 1962
 M.A., Baylor University, 1963
 Ph.D., Vanderbilt University, 1971
 MANFRED LANDECKER, 1959
 B.A., Syracuse University, 1952
 M.A., Johns Hopkins University, 1953
 Ph.D., Johns Hopkins University, 1965
 GEORGE R. MACE, 1963
 B.A., Fresno State College, 1959
 Ph.D., Claremont Graduate School, 1963
 MILTON D. MORRIS, 1970
 B.A., Columbia Union College, 1964
 M.A., University of Maryland, 1966
 Ph.D., University of Maryland, 1970

- JOANN P. PAINE, 1966
 B.A., Whitman College, 1957
 M.S., University of Oregon, 1963
 Ph.D., University of Oregon, 1967
- LELAND GALE STAUBER, 1966
 A.B., University of Chicago, 1956
 A.M., Harvard University, 1959
 Ph.D., Harvard University, 1964
- JACK VAN DER SLIK, 1967
 A.B., Calvin College, 1958
 A.M., Western Michigan University, 1961
 M.A., Michigan State University, 1967
 Ph.D., Michigan State University, 1967
- STEPHEN WASBY, 1966
 B.A., Antioch College, 1959
 M.A., University of Oregon, 1961
 Ph.D., University of Oregon, 1962

Assistant Professors

- EGON K. KAMARASY, 1959
 Doctor of Politices, Budapest University,
 Hungary, 1942
- SAMUEL L. LONG, 1970
 B.A., Vanderbilt University, 1964
 Ph.D., Indiana University, 1968
- ROY E. MILLER, 1967
 B.S., Bradley University, 1961
 M.A., University of Pittsburgh, 1965
 Ph.D., University of Illinois, 1971
- WILLIAM L. SHADE, 1971
 B.A., Georgetown University, 1966
 M.A., University of Florida, 1971
 Ph.D., University of Florida, 1971
- WILLIAM S. TURLEY, 1971
 B.A., Whitman College, 1965
 M.A., University of Washington, 1967
 Ph.D., University of Washington, 1972

Instructors

- MARY ANN ARMOUR, 1971
 B.A., Catholic University of America, 1966
 M.A., University of Oklahoma, 1970
- RINO BIANCHI, 1960
 B.A., Southern Illinois University, 1959
 M.A., Southern Illinois University, 1961
- MARK LEVIN, 1969
 B.A., University of Pennsylvania, 1965

Lecturer

- H. EDWARD FLENTJE, 1972
 B.S.E., Kansas State Teachers College, 1964
 M.A., The George Washington University,
 1965
 Ph.D., University of Kansas, 1970

Guidance and Educational Psychology—College of Education Professors

- BRUCE R. AMBLE, 1965
 B.A., University of Iowa, 1959
 M.A.Ed., Iowa State Teachers College, 1961
 M.A., University of Iowa, 1963
 Ph.D., University of Iowa, 1963
- DONALD L. BEGGS, 1966
 B.S. in Ed., Southern Illinois University,
 1963
 M.S. in Ed., Southern Illinois University,
 1964
 Ph.D., University of Iowa, 1966
- JOHN J. CODY, Chairman, 1965
 B.S., Wisconsin State University, 1956
 M.A., University of Iowa, 1959
 Ph.D., University of Wisconsin, 1961

- HAROLD L. DEWEESE, 1959
 B.Ed., Illinois State University, 1941
 M.S., University of Illinois, 1950
 D.Ed., University of Illinois, 1959
- JACK W. GRAHAM, 1951
 B.A., DePauw University, 1946
 M.A., University of Wisconsin, 1949
 Ph.D., Purdue University, 1951
- JOHN E. GRENFELL, 1966
 B.S., U.S. Merchant Marine Academy, 1948
 M.Ed., University of Oregon, 1958
 Ed.D., Oregon State University, 1966
- FRANCIS J. KELLY, 1965
 B.A., San Jose State College, 1951
 M.A., San Jose State College, 1956
 Ph.D., University of Texas, 1963
- JEFFERSON F. LINDSEY, JR., 1967
 A.B., Carthage College, 1938
 M.A., Washington University, 1950
 Ed.D., University of Texas, 1962
- CLINTON MEEK, 1957
 B.S., West Texas State College, 1936
 M.A., West Texas State College, 1941
 Ph.D., George Peabody College for
 Teachers, 1954
- WILLIAM NEAL PHELPS, Emeritus, 1941
 B.Ed., Southern Illinois University, 1929
 A.M., University of Illinois, 1935
 Ed.D., Colorado State College of Education,
 1943
- WAYNE S. RAMP, 1957
 B.S., Bradley University, 1947
 M.S., Bradley University, 1951
 Ed.D., Bradley University, 1956
- GUY A. RENZAGLIA, 1955
 B.S., George Washington University, 1939
 M.Ed., University of Minnesota, 1941
 M.A., University of Minnesota, 1948
 Ph.D., University of Minnesota, 1952
- J. W. YATES, 1964
 A.B., University of Missouri, 1948
 B.S.Ed., University of Missouri, 1948
 M.Ed., University of Missouri, 1949
 Ed.D., University of Missouri, 1951

Associate Professors

- MICHAEL K. ALTEKRUSE, 1967
 B.S.Ed., Indiana University, 1962
 M.S.Ed., Indiana University, 1965
 Ed.D., Indiana University, 1967
- RICHARD W. BRADLEY, 1968
 B.S., Bowling Green State University, 1962
 M.S., Indiana University, 1966
 Ph.D., University of Wisconsin, 1968
- JOHN R. EVANS, 1970
 B.S., University of Illinois, 1959
 M.Ed., University of Illinois, 1965
 Ph.D., Southern Illinois University, 1968
- ROBERT W. GRAFF, 1968
 B.A., Thiel College, 1961
 M.Ed., Ohio University, 1965
 Ed.D., State University of New York at
 Buffalo, 1968
- KEITH A. MCNEIL, 1967
 B.A., Wabash College, 1964
 Ph.D., University of Texas, 1967
- DAVID T. MILES, 1962
 B.A., Southern Illinois University, 1959
 M.S., Southern Illinois University, 1964
 Ph.D., Southern Illinois University, 1967
- WILLIAM G. MILLER, 1971
 B.S., Iowa State University, 1957
 M.S., Iowa State University, 1961
 Ph.D., University of Iowa, 1967

JOHN T. MOUW, 1968
 B.A., Northwestern College, 1963
 A.M., University of South Dakota, 1966
 Ed.D., University of South Dakota, 1968
 ALICE P. RECTOR, 1946
 B.Ed., Southern Illinois University, 1935
 M.S. Ed., Southern Illinois University, 1946
 Ed.D., Washington University, 1953
 THOMAS A. TYLER, 1969
 B.A., North Central College, 1962
 Ph.D., University of Chicago, 1968

Assistant Professors

HAROLD R. BARDO, 1968
 B.S., Southern Illinois University, 1962
 M.S., Southern Illinois University, 1969
 Ph.D., Southern Illinois University at Carbondale, 1972
 JOHN DEICHMANN, 1969
 A.B., Washington University, 1961
 M.S., St. Louis University, 1968
 Ph.D., St. Louis University, 1969
 HARRY DENZEL, 1964
 B.S., University of Maryland, 1956
 M.S.Ed., Southern Illinois University, 1962
 Ph.D., Southern Illinois University at Carbondale, 1971
 PATRICIA B. ELMORE, 1967
 B.A., Southern Illinois University, 1965
 M.S.Ed., Southern Illinois University, 1967
 Ph.D., Southern Illinois University, 1970
 ALLAN L. LANGE, 1969
 B.S., University of Michigan, 1960
 M.A., Northwestern University, 1964
 Ph.D., Michigan State University, 1969
 ERNEST L. LEWIS, 1970
 B.S., Illinois State University, 1964
 M.S.Ed., Southern Illinois University, 1967
 Ph.D., Southern Illinois University at Carbondale, 1971
 BENSON B. POIRIER, 1958
 B.S., Bowling Green College of Commerce, 1946
 M.S., Indiana University, 1949
 Ed.D., University of Wyoming, 1951
 LOUIS VIECELI, 1958
 B.S.Ed., Southern Illinois University, 1948
 M.S.Ed., Southern Illinois University, 1959
 GORDON WHITE, 1971
 B.S.Ed., Central Missouri State College, 1964

M.A., University of Iowa, 1967
 Ph.D., University of Iowa, 1969
 REED G. WILLIAMS, 1969
 B.A., Hanover College, 1964
 M.S., Indiana University, 1968
 Ph.D., Indiana University, 1970

Instructor

THOMAS HALADYNA, 1971
 B.S. in Ed., Illinois State University, 1961
 M.A., San Jose State College, 1963

Health Education—College of Education Professors

JAMES AARON, 1957
 B.S., University of Illinois, 1950
 M.S., University of Illinois, 1951
 Ed.D., New York University, 1960
 DONALD BOYDSTON, Chairman, 1955
 B.S., Oklahoma State University, 1942
 M.S., Oklahoma State University, 1947
 M.A., Columbia University, 1948
 Ed.D., Columbia University, 1949

A. FRANK BRIDGES, Emeritus, 1943
 B.Ed., Southern Illinois University, 1929
 M.A., State University of Iowa, 1939
 D.H.S., Indiana University, 1952
 DEWARD GRISSOM, 1956
 B.S. ED., University of Tennessee, 1940
 M.S., University of Tennessee, 1945
 Ed.D., Columbia University, 1952
 JOHN LEFEVRE, 1955
 B.A., Oberlin College, 1942
 M.A., Teachers College, Columbia University, 1948
 Ed.D., Teachers College, Columbia University, 1950
 CHARLES E. RICHARDSON
 B.A., Southern Illinois University, 1950
 M.S. in Ed., Southern Illinois University, 1951
 Ed.D., University of California at Los Angeles, 1959
 ROBERT RUSSELL, 1965
 B.S., University of California at Los Angeles, 1948
 M.S., University of California at Los Angeles, 1952
 Ed.D., Stanford University, 1954
 ANDREW T. VAUGHAN
 B.S., Otterbein College, 1945
 M.A., Columbia University, 1957
 D.Ed., Columbia University, 1958

Associate Professors

LESLIE RALPH CASEY, 1957
 A.B., University of North Carolina, 1946
 M.A., University of North Carolina, 1949
 Ed.D., Columbia University, 1956
 FLORENCE E. DENNY, Emerita, 1929
 B.Ed., Southern Illinois University, 1930
 M.A., Columbia University, 1935
 FRANCES K. PHILLIPS, 1944
 B.Ed., Southern Illinois University, 1935
 M.A., Columbia University, 1940
 RAYMOND VINCENT, 1967
 B.S., Northwestern University, 1944
 M.S. in Ed., Southern Illinois University, 1966
 Ph.D., Southern Illinois University, 1968

Assistant Professors

JOHN AMADIO, 1970
 B.A., Arizona State University, 1965
 M.P.H., Tulane University, 1967
 Ph.D., University of Oklahoma, 1970
 EILEEN M. HARRIS, 1970
 B.S. in Ed., Southern Illinois University, 1960
 M.S. in Ed., Southern Illinois University, 1964
 Ph.D., Southern Illinois University, 1970
 LARRY LINDAUER, 1972
 B.S., Southern Illinois University, 1969
 M.S. in Ed., Southern Illinois University, 1969
 Ph.D., Southern Illinois University, 1972
 DALE RITZEL, 1966
 B.S. in Ed., Southern Illinois University, 1965
 M.S. in Ed., Southern Illinois University, 1966
 Ph.D., Southern Illinois University, 1970
 DONALD L. SMITH, 1972
 B.S., Eastern Michigan University, 1950
 M.A., Michigan State University, 1958
 Ph.D., Michigan State University, 1971

Instructors

- ISAAC BRIGHAM, 1970
B.S., Southern Illinois University, 1970
M.S. in Ed., Southern Illinois University, 1972
- WILLIAM DODD, 1970
B.S. Ed., University of Michigan, 1964
A.M., University of Michigan, 1965
- AUBREY DOOLEY, 1969
B.S., Oklahoma State University of Agriculture and Applied Science, 1961
M.S., Oklahoma State University of Agriculture and Applied Science, 1966
- RAYMOND ESSICK, 1966
B.S., University of Illinois, 1955
M.S., University of Illinois, 1958
- NORMAN FREEMAN, 1970
B.S., University of Illinois, 1958
M.P.H., University of Michigan, 1966
- ROBERT HAILEY, 1970
B.S. in Ed., University of Missouri, 1951
M.Ed., University of Missouri, 1959
- GEORGE IUBELT, 1959
B.S. in Ed., Southern Illinois University, 1949
M.S., Indiana University, 1954
- RICHARD JONES, 1968
B.S. in Ed., Southern Illinois University, 1961
M.S. in Ed., Southern Illinois University, 1966
- THOMAS O'BOYLE, 1968
B.S., Kansas State University, 1954
M.S., Kansas State University, 1959
- HERBERT VOGEL, 1963
B.S. in P.Ed., Indiana University, 1953
M.S. in P.Ed., Indiana University, 1954
- FRED WEHKING, 1970
B.S. Ed., Southwest Missouri State College, 1958
M.Ed., University of Missouri, 1959

Higher Education—College of Education*Professors*

- FRANK C. ADAMS
B.S., Monmouth College, 1941
M.S. in Ed., Southern Illinois University, 1951
Ph.D., Southern Illinois University, 1962
- OLIVER J. CALDWELL, 1966
A.B., Oberlin College, 1926
A.M., Oberlin College, 1927
- ELMER J. CLARK, 1964
A.B.Ed., University of Michigan, 1941
A.M., University of Michigan, 1943
Ph.D., University of Michigan, 1949
- I. CLARK DAVIS, 1949
B.Ed., Southern Illinois University, 1939
M.S. in Ed., Indiana University, 1947
Ed.D., Indiana University, 1956
- JACK W. GRAHAM, 1951
A.B., DePauw University, 1946
M.A., University of Wisconsin, 1949
Ph.D., Purdue University, 1951
- JOHN E. GRINNELL, Emeritus, 1955
A.B., University of North Dakota, 1921
A.M., University of Minnesota, 1925
Ph.D., Stanford University, 1934
- JOHN B. HAWLEY, 1965
A.B., Hamilton College, 1939
M.A., Columbia University, 1948
Ph.D., University of Michigan, 1957

- LOREN JUNG, 1965
B.S. in Ed., Southern Illinois University, 1949
M.S. in Ed., Southern Illinois University, 1951
Ph.D., Southern Illinois University, 1969
- JOHN E. KING, Chairman, 1967
B.A., North Texas State University, 1932
M.S., University of Arkansas, 1936
Ph.D., Cornell University, 1941
- ARDEN L. PRATT, 1971
B.S., Virginia Wesleyan College, 1945
M.S., Ohio State University, 1947
Ed.D., State University of New York at Buffalo, 1968
- RICHARD M. THOMAS, 1966
A.B., Whittier College, 1941
M.Ed., University of California, Los Angeles, 1961
Ed.D., University of California, Los Angeles, 1964
- DONALD J. TOLLE, 1967
B.A., Florida Southern College, 1940
M.A., University of Florida, 1947
Ed.D., Florida State University, 1957

Associate Professors

- ARTHUR L. CASEBEER, 1969
B.S., University of Wisconsin, 1952
M.S., University of Wisconsin, 1957
Ed.D., Oregon State University, 1963
- ROLAND KEENE, 1958
B.Ed., Southern Illinois University, 1934
M.A. in Ed., Washington University, 1940
Ed.D., Washington University, 1962
- BRUCE R. SWINBURNE, 1970
B.A., University of Northern Iowa, 1953
A.M., University of Northern Colorado, 1960
Ed.D., Indiana University, 1970

Assistant Professors

- EDWARD HAMMOND, 1970
B.S. in Ed., Kansas State Teachers College, 1966
M.S., Kansas State Teachers College, 1967
Ph.D., University of Missouri, 1971
- JEHIEL NOVICK, 1965
A.B., University of Illinois, 1943
M.A., Boston University, 1965
Ph.D., Southern Illinois University, 1970
- EMIL R. SPEES, 1969
B.A., Southern Illinois University, 1957
M.S., Southern Illinois University, 1959
Ph.D., Claremont Graduate School, 1969
- ELWYN ZIMMERMAN, 1966
B.S. in Ed., Ball State University, 1954
M.A., Michigan State University, 1957
Ph.D., Michigan State University, 1963

History—College of Liberal Arts*Research Professor*

- C. HARVEY GARDINER, 1957
A.B., Western Kentucky University, 1936
A.M., University of Kentucky, 1940
Ph.D., University of Michigan, 1945

Professors

- GEORGE W. ADAMS, Emeritus, 1958
A.B., Illinois College, 1927
M.A., Harvard University, 1928
Ph.D., Harvard University, 1946
- HOWARD W. ALLEN, 1962
B.A., University of Chicago, 1954
M.A., University of Chicago, 1955
Ph.D., University of Washington, 1959

- HARRY AMMON, 1950
 B.S.S., Georgetown University, 1939
 M.S., Georgetown University, 1940
 Ph.D., University of Virginia, 1948
- GEORGE L. CHERRY, Emeritus, 1947
 A.B., University of Illinois, 1931
 A.M., University of Illinois, 1936
 Ph.D., Northwestern University, 1938
- BETTY FLADELAND, 1962
 B.S., University of Minnesota, 1940
 M.A., University of Minnesota, 1944
 Ph.D., University of Michigan, 1952
- PING-CHIA KUO, Emeritus, 1959
 A.B., Kwang Hua University, Shanghai, 1929
 A.M., Harvard University, 1930
 Ph.D., Harvard University, 1933
- LON R. SHELBY, 1961
 B.A., Baylor University, 1957
 M.A., Vanderbilt University, 1959
 Ph.D., University of North Carolina, 1962
- JOHN Y. SIMON, 1964
 A.B., Swarthmore College, 1955
 A.M., Harvard University, 1956
 Ph.D., Harvard University, 1961

Associate Professors

- H. ARNOLD BARTON, 1970
 B.A., Pomona College, 1953
 Ph.D., Princeton University, 1962
- M. BROWNING CARROTT, Chairman, 1967
 A.B., Princeton University, 1954
 M.A., Northwestern University, 1962
 Ph.D., Northwestern University, 1966
- JOHN CLIFFORD, 1955
 B.Ed., Eastern Illinois University, 1938
 M.S. in Ed., Southern Illinois University, 1947
 Ph.D., University of Iowa, 1954
- DAVID E. CONRAD, 1967
 B.A., University of Oklahoma, 1952
 M.A., University of Oklahoma, 1957
 Ph.D., University of Oklahoma, 1962
- DONALD S. DETWILER, 1967
 A.B., George Washington University, 1954
 D.Phil., Göttingen University, Germany, 1961
- ROBERT L. GOLD, 1965
 B.S., Columbia University, 1957
 M.A., Bowling Green State University, 1958
 Ph.D., University of Iowa, 1964
- JAMES B. MURPHY, 1968
 A.B., Shorter College, 1958
 M.A., Emory University, 1961
 Ph.D., Louisiana State University, 1968
- WILLIAM A. PITKIN, Emeritus, 1945
 B.A., DePauw University, 1922
 M.A., University of Colorado, 1927
 Ph.D., University of Texas, 1940
- EUGENE P. TRANI, 1967
 B.A., University of Notre Dame, 1961
 A.M., Indiana University, 1963
 Ph.D., Indiana University, 1966
- HENRY S. VYVERBERG, 1968
 A.B., University of Rochester, 1942
 A.M., Harvard University, 1947
 Ph.D., Harvard University, 1950
- TIEN-WEI WU, 1972
 B.A., University of Nanking, 1945
 Ph.D., University of Maryland, 1965
- JOHN I. WRIGHT, Emeritus, 1931
 Ph.B., University of Chicago, 1932
 A.M., University of Chicago, 1934

Assistant Professors

- MICHAEL C. BATINSKI, 1968
 B.A., Oakland University, 1964
 M.A., Northwestern University, 1967
 Ph.D., Northwestern University, 1969

- DONALD L. BREHM, 1967
 B.S., St. Louis University, 1956
 M.S., St. Louis University, 1957
 Ph.D., St. Louis University, 1968
- EUNICE CHARLES, 1972
 A.B., Boston University, 1965
 M.A., Boston University, 1968
 Ph.D., Boston University, 1972
- JOHN E. DOTSON, 1970
 B.S., University of Oklahoma, 1961
 M.A., University of Nebraska, 1963
 Ph.D., Johns Hopkins University, 1969
- FELIX JAMES, 1972
 B.S., Fort Valley State College, 1962
 M.A., Howard University, 1967
 Ph.D., Ohio State University, 1972
- HAROLD A. MCFARLIN, 1969
 A.B., University of Wisconsin, 1960
 M.A., University of Iowa, 1964
 Ph.D., Indiana University, 1971
- DAVID P. WERLICH, 1968
 B.A., University of Minnesota, 1963
 M.A., University of Minnesota, 1967
 Ph.D., University of Minnesota, 1968
- STANLEY ZUCKER, 1967
 B.A., City College of New York, 1958
 M.A., University of Wisconsin, 1963
 Ph.D., University of Wisconsin, 1968

Instructor

- EDWARD J. O'DAY, 1962
 B.A., University of Massachusetts, 1954
 A.M., Indiana University, 1956

Lecturer

- CLARENCE HENDERSHOT, Emeritus, 1965
 B.A., Alma College, 1923
 A.M., University of Chicago, 1928
 Ph.D., University of Chicago, 1936

Home Economics Education— College of Education

Professors

- ANNA CAROL FULTS, Chairman, 1952
 B.S., University of Tennessee, 1934
 M.S. in Ed., Cornell University, 1941
 Ph.D., Ohio State University, 1946
- DOROTHY MAIE KEENAN, 1961
 B.S., University of Wisconsin, 1943
 M.S., University of Wisconsin, 1952
 Ed.D., University of Illinois, 1962

Assistant Professors

- PHYLLIS BUBNAS, 1960
 B.S., Southern Illinois University, 1957
 M.S., Southern Illinois University, 1960
- ROSE MARY CARTER, 1970
 B.S., Kirksville State Teachers College, 1963
 M.S., University of Missouri, 1967
 Ph.D., Purdue University, 1970

Instructional Materials—College of Education

Professors

- GORDON K. BUTTS, Chairman, 1950
 B.S.Ed., Indiana University, 1949
 M.S.Ed., Indiana University, 1950
 Ed.D., Indiana University, 1956
- RALPH E. MCCOY, 1955
 B.S., University of Illinois, 1939
 M.S., University of Illinois, 1950
 Ph.D., University of Illinois, 1956
- PAUL ROBERT WENDT, 1955
 B.A., Harvard University, 1931
 M.A., University of Minnesota, 1942
 Ph.D., University of Minnesota, 1948

Associate Professors

- RUTH E. BAUNER, 1956
B.S. in Ed., Western Illinois University, 1950
M.S., University of Illinois, 1956
- DORIS C. DALE, 1969
B.A., University of Wisconsin, 1950
M.A., University of Wisconsin, 1954
D.L.S., Columbia University, 1968
- KATHLEEN G. FLETCHER, 1955
B.A., Louisiana Polytechnic Institute, 1932
B.S., Louisiana State University, 1933
M.S., University of Illinois, 1947
- DONALD A. INGLI, 1947
B.S., Wisconsin State University, 1940
M.A., University of Minnesota, 1942
Ph.D., University of Wisconsin, 1961
- IRVING S. SPIGLE, 1970
B.S., Roosevelt College, 1949
M.S. in Ed., Indiana University, 1950
Ed.D., Indiana University, 1955
- DONALD L. WINSOR
B.A., Wagner Memorial Lutheran College, 1943
M.Ed., University of Florida, 1953
Ed.D., University of Florida, 1961

Assistant Professors

- DOUGLAS BEDIENT
B.A., University of Wyoming, 1965
Ph.D., Southern Illinois University, 1971
- FREDERICK H. JURGEMEYER, 1970
B.S., Kansas State University, 1965
M.S., Kansas State University, 1967
D.Ed., University of Oklahoma, 1970
- CHARLES B. KLASEK, 1971
B.Sc., University of Nebraska, 1954
M.A., University of Nebraska, 1956
Ph.D., University of Nebraska, 1971
- CARL M. PLANINC, 1961
B.S. in Ed., Southern Illinois University, 1950
M.S. in Ed., Southern Illinois University, 1951
Ed.D., Indiana University, 1967

Instructor

- DOROTHY COX, 1965
B.S., Southern Illinois University, 1944
M.S., Southern Illinois University, 1951
M.S., University of Illinois, 1961

Interior Design—School of Home Economics, College of Human Resources*Associate Professor*

- PAUL J. LOUGEAY, 1954
B.S. Architecture, University of Illinois, 1950
Registered Architect, 1950
M.S., Southern Illinois University, 1973

Assistant Professor

- LUCY STEWART, 1963
B.Ed., Southern Illinois University, 1940
M.S., Southern Illinois University, 1964

Instructors

- NANCY D. GREENE, 1968
B.S.H.E., University of North Carolina, 1967
M.S.H.E., University of North Carolina, 1971
- MELBA R. WIDMER, 1972
B.A., University of Iowa, 1967
M.A., University of Iowa, 1969

Journalism—College of Communications and Fine Arts Professors

- GEORGE C. BROWN, 1956
B.S. in Ed., Kansas State Teachers College, 1945
M.A., Kansas State Teachers College, 1948
Ph.D., Southern Illinois University, 1963
- GODWIN C. CHU, 1970
B.A., Taiwan University, 1951
M.A., Stanford University, 1960
Ph.D., Stanford University, 1964
- CHARLES C. CLAYTON, Emeritus, 1955
B.J., University of Missouri, 1925
- JAMES L. C. FORD, 1955
A.B., Lawrence College, 1928
M.A., University of Wisconsin, 1939
Ph.D., University of Minnesota, 1948
- JIM ALLEE HART, 1965
B.A., Texas Technological University, 1934
M.A., Texas Technological University, 1936
Ph.D., University of Missouri, 1959
- HOWARD R. LONG, 1953
B.A., University of Missouri, 1930
B.J., University of Missouri, 1930
M.A., University of Missouri, 1941
Ph.D., University of Missouri, 1948
- RALPH E. MCCOY, 1955
B.S., University of Illinois, 1939
M.S., University of Illinois, 1950
Ph.D., University of Illinois, 1956
- WILLIS MOORE, 1955
A.B., University of Missouri, 1930
A.M., University of Missouri, 1931
Ph.D., University of California, 1936
- BRYCE W. RUCKER, Director, 1963
B.A., University of Kentucky, 1947
M.S., University of Wisconsin, 1949
Ph.D., University of Missouri, 1959

Associate Professors

- L. ERWIN ATWOOD, 1967
B.S., South Dakota State College, 1954
M.A., University of Iowa, 1961
Ph.D., University of Iowa, 1965
- GERALD L. GROTTA, 1968
B.S., South Dakota State University, 1956
M.S., South Dakota State University, 1960
Ph.D., Southern Illinois University, 1970
- CLIFTON O. LAWHORNE, 1971
B.A., Hardin-Simons University, 1951
M.J., University of Texas, 1952
Ph.D., Southern Illinois University, 1968
- W. MANION RICE, 1959
B.J., University of Missouri, 1944
A.B., University of Missouri, 1949
A.M., University of Missouri, 1949
Ph.D., Southern Illinois University, 1967

Assistant Professors

- MARY K. FRAZER, Emerita, 1965
B.S.J., University of Illinois, 1932
M.S., Southern Illinois University, 1965
- C. RICHARD GRUNY, 1959
A.B., Illinois College, 1953
LL.B., University of Illinois, 1959
- DENNIS T. LOWRY, 1972
B.A., University of Minnesota, 1964
M.A., University of Minnesota, 1966
Ph.D., University of Iowa, 1972
- WILLIAM H. LYONS, 1951
B.A., Monmouth College, 1929
M.A., University of Colorado, 1935

- MARVIN H. RIMERMAN, 1967
 B.A., Augustana College, 1959
 M.A., Syracuse University, 1962
 M.S., Syracuse University, 1963
 Ph.D., Syracuse University, 1965
- HARRY W. STONECIPHER, 1969
 B.J., University of Missouri, 1953
 M.A., University of Missouri, 1955
 Ph.D., Southern Illinois University at Carbondale, 1971
- G. NORMAN VAN TUBERGEN, 1970
 B.A., University of New Mexico, 1963
 M.A., University of Iowa, 1965
 Ph.D., University of Iowa, 1968

Instructors

- JEAN L. BERRES, 1973
 Ph.B., Marquette University, 1945
 M.A., Marquette University, 1969
- WENDELL C. CROW, 1969
 B.S., Arkansas State College, 1964
 B.S.E., Arkansas State College, 1965
 M.S., Southern Illinois University at Carbondale, 1972
- DAVID L. FRUEND, 1969
 B.S., Southern Illinois University, 1965
 M.S., Southern Illinois University, 1970
- JOEL T. GAMBILL, 1971
 B.S., Arkansas State University, 1965
 M.A., University of Oklahoma, 1969
- WILLIAM M. HARMON, 1969
 B.A., Oklahoma State University, 1950
 M.S., Oklahoma State University, 1965
- R. GENE WIGGINS, 1970
 B.S., University of Southern Mississippi, 1965
 M.S., University of Southern Mississippi, 1970
- W. RUSSELL WRIGHT, 1971
 B.S., Southern Illinois University, 1962
 M.S., Southern Illinois University at Carbondale, 1971

Lecturers

- HARLAN H. MENDENHALL, 1967
 B.A., University of Oklahoma, 1937
- H. ADRIAN COMBS, 1972
 B.A., Texas Technological University, 1954

Assistant in Journalism

- JANE P. DELANEY, 1970
 B.J., University of Missouri, 1957

Linguistics—College of Liberal Arts*Professors*

- NGUYEN DINH-HOA, 1969
 B.A., Union College, 1950
 M.A., New York University, 1952
 Ph.D., New York University, 1956
- CHARLES PARISH, 1965
 B.A., Brooklyn College, 1952
 M.A., University of New Mexico, 1955
 Ph.D., University of New Mexico, 1959
- JAMES E. REDDEN, Chairman, 1967
 A.B., University of Louisville, 1950
 Ph.D., Indiana University, 1965

Associate Professors

- PATRICIA L. CARRELL, 1968
 B.A., Knox College, 1962
 M.A., University of Texas, 1964
 Ph.D., University of Texas, 1966
- GLENN G. GILBERT, 1970
 A.B., University of Chicago, 1957
 Ph.D., Harvard University, 1963

Assistant Professors

- ARISTOTLE KATRANIDES, 1967
 Certificate, Aristotelion University of Salonika, Greece, 1958
 M.A., Columbia University, 1959
 Ph.D., Indiana University, 1965
- BEVERLY HILL KONNEKER, 1969
 B.A., University of Texas, 1965
 Ph.D., University of Texas, 1972

Instructors

- ALICE O. MORRIS, 1967
 A.B., University of Kentucky, 1946
 M.A., University of Kentucky, 1949
- RAYMOND O. SILVERSTEIN, 1970
 B.A., University of Michigan, 1962
 M.A., University of Michigan, 1963

Marketing—School of Business*Professors*

- KENDALL ADAMS, 1965
 B.S., Oregon State University, 1951
 M.A., Michigan State University, 1952
 Ph.D., Michigan State University, 1962
- R. CLIFTON ANDERSEN, 1967
 B.S., Indiana University, 1955
 M.B.A., Indiana University, 1958
 D.B.A., Indiana University, 1960
- WILLIAM P. DOMMERMUTH, Chairman, 1968
 B.A., University of Iowa, 1948
 Ph.D., Northwestern University, 1964
- CHARLES H. HINDERSMAN, 1960
 B.S., University of Pennsylvania, 1947
 M.B.A., Miami University, 1954
 D.B.A., Indiana University, 1959

Associate Professors

- DON L. JAMES, 1970
 B.S., Oklahoma State University, 1957
 M.S., Oklahoma State University, 1960
 D.B.A., University of Colorado, 1970
- DONALD L. PERRY, 1964
 B.S., Southern Illinois University, 1959
 M.S., Southern Illinois University, 1960
 Ph.D., University of Illinois, 1966
- ANDREW F. POWELL, 1967
 A.B., College of William and Mary, 1958
 M.B.A., Michigan State University, 1961
 Ph.D., Michigan State University, 1968

Assistant Professors

- JAMES R. MOORE, 1969
 B.S., Southern Illinois University, 1959
 M.S., Southern Illinois University, 1962
 Ph.D., University of Illinois, 1972
- CHARLES E. ROSENBERGER, 1956
 B.S., Southern Illinois University, 1953
 M.B.A., Indiana University, 1954

Instructor

- ROBERT A. DREVS, 1973
 B.B.A., University of Notre Dame, 1966
 M.B.A., Northwestern University, 1967
 Ph.D., Ohio State University, 1973

Mathematics—College of Liberal Arts*Professors*

- NICOLAS ARTEMIADIS, 1966
 M.S., University of Thessaloniki, Greece, 1939
 D.Sc., University of Paris, Sorbonne, 1957

AMOS H. BLACK, Emeritus, 1948
 A.B., Marietta College, 1925
 M.A., West Virginia University, 1927
 Ph.D., Cornell University, 1932

THEODORE A. BURTON, 1966
 B.S., Washington State University, 1959
 M.A., Washington State University, 1962
 Ph.D., Washington State University, 1964

NEAL E. FOLAND, Chairman, 1965
 B.S. in Ed., Northeast Missouri State
 Teachers College, 1954
 M.A., University of Missouri, 1958
 Ph.D., University of Missouri, 1961

LAWRENCE KUIPERS, 1966
 M.S., Vrije Universiteit, Amsterdam, 1941
 D.Sc., Vrije Universiteit, Amsterdam, 1947

CARL E. LANGENHOP, 1961
 B.A., University of Louisville, 1943
 M.S., Iowa State University, 1945
 Ph.D., Iowa State University, 1948

ABRAHAM M. MARK, 1950
 B.A., Brooklyn College, 1944
 M.S., Cornell University, 1945
 Ph.D., Cornell University, 1947

CHARLES MAXWELL, 1963
 B.S., University of Chicago, 1949
 M.S., University of Chicago, 1951
 Ph.D., University of Illinois, 1955

WILBUR C. MCDANIEL, Emeritus, 1939
 B.S., Kansas State University, 1932
 M.Ph., University of Wisconsin, 1938
 Ph.D., University of Wisconsin, 1939

JOHN M. H. OLMSTED, 1960
 B.A., University of Minnesota, 1934
 M.A., University of Minnesota, 1936
 A.M., Princeton University, 1938
 Ph.D., Princeton University, 1940

MICHAEL SKALSKY, 1957
 Magister, Lviv University, Ukraine
 D. Nat.Sc., University of Göttingen, 1949

HERBERT H. SNYDER, 1966
 A.B., Marietta College, 1949
 M.A., Lehigh University, 1951
 Ph.D., Lehigh University, 1965
 Ph.D., University of South Africa, 1972

JOSEPH C. WILSON, 1957
 B.S., Louisiana State University, 1947
 M.S., Louisiana State University, 1950
 Ph.D., Louisiana State University, 1954

Associate Professors

HERMAN BIESTERFELDT, 1968
 B.S., Pennsylvania State University, 1957
 Ph.D., Pennsylvania State University, 1963

WARD BOUWSMA, 1967
 A.B., Calvin College, 1956
 A.M., University of Michigan, 1957
 Ph.D., University of Michigan, 1962

LESLIE DEAN GATES, JR., 1961
 B.S., Iowa State University, 1947
 M.S., Iowa State University, 1950
 Ph.D., Iowa State University, 1952

RONALD C. GRIMMER, 1967
 B.A., Carthage College, 1963
 M.S., University of Iowa, 1965
 Ph.D., University of Iowa, 1967

DILLA HALL, Emeritus, 1924
 B.Ed., Southern Illinois University, 1924
 M.S., University of Chicago, 1934
 Ph.D., St. Louis University, 1955

RONALD BRIAN KIRK, 1968
 B.A., University of Colorado, 1963
 Ph.D., California Institute of Technology,
 1968

ROBERT A. MOORE, 1965
 A.B., Hanover College, 1953
 Ph.D., Indiana University, 1962

HARALD NIEDERREITER, 1969
 Ph.D., University of Vienna, 1969

ROBERT C. SHOCK, 1969
 B.S., Bowling Green State University, 1962
 M.A., University of Arizona, 1963
 Ph.D., University of North Carolina at
 Chapel Hill, 1969

THOMAS H. STARKS, 1961
 B.A., Mankato State College, 1952
 M.S., Purdue University, 1954
 Ph.D., Virginia Polytechnic Institute, 1959

CARL TOWNSEND, 1965
 B.A., Rocky Mountain College, 1959
 M.A., Washington State University, 1961
 Ph.D., Washington State University, 1965

Assistant Professors

ALPHONSE H. BAARTMANS, 1967
 B.S., Upsala College, 1962
 M.S., Michigan State University, 1963
 Ph.D., Michigan State University, 1967

JAMES ALLEN CRENSHAW, 1967
 B.S., University of Arizona, 1960
 M.S., University of Arizona, 1962
 Ph.D., University of Illinois, 1967

KENNETH DANHOF, 1969
 B.S., Calvin College, 1963
 M.S., Ohio State University, 1965
 Ph.D., Purdue University, 1969

JOHN GREGORY, 1972
 B.A., University of California at Los Angeles,
 1959
 M.S., University of Southern California, 1961
 Ph.D., University of California at Los
 Angeles, 1969

JOHN W. HOOKER, 1967
 B.A., Yankton College, 1953
 M.A., University of Minnesota, 1959
 Ph.D., University of Oklahoma, 1967

WORTEN N. HUNSAKER, 1969
 B.S., Utah State University, 1961
 M.A., Washington State University, 1963
 Ph.D., Washington State University, 1966

DAVID KAMMLER, 1971
 B.A., Southern Illinois University, 1962
 B.S., Southern Illinois University, 1962
 M.A., Southern Illinois University, 1964
 M.S., Southern Methodist University, 1969
 Ph.D., University of Michigan, 1971

CHARLES F. KOCH, 1966
 B.S., Union College, 1953
 M.S., University of Illinois, 1957
 Ph.D., University of Illinois, 1961

RICHARD MILLMAN, 1971
 B.S., Massachusetts Institute of Technology,
 1966
 M.S., Cornell University, 1969
 Ph.D., Cornell University, 1971

MELVYN NATHANSON, 1971
 B.A., University of Pennsylvania, 1965
 M.A., University of Rochester, 1968
 Ph.D., University of Rochester, 1971

THOMAS B. PAINE, 1966
 B.A., Whitman College, 1957
 M.S., University of Oregon, 1962
 Ph.D., University of Oregon, 1966

S. PANCHAPAKESAN, 1970
 B.A., University of Madras, India, 1954
 M.A., Vivekananda College, 1955
 M.Stat., Indian Statistical Institute, 1962
 M.S., Purdue University, 1967
 Ph.D., Purdue University, 1969

GEORGE D. PARKER, 1972
 Sc.B., Brown University, 1967
 M.A., University of California at San Diego,
 1969
 Ph.D., University of California at San Diego,
 1971

- WILLIAM T. PATULA, 1972
 B.S., Carnegie-Mellon University, 1967
 M.S., Carnegie-Mellon University, 1969
 Ph.D., Carnegie-Mellon University, 1972
- FRANKLIN D. PEDERSEN, 1965
 B.S. in Ed., Peru State Teachers College, 1959
 M.S., Tulane University, 1962
 Ph.D., Tulane University, 1967
- KATHERINE PEDERSEN, 1965
 B.S., St. Louis University, 1959
 M.S., Tulane University, 1962
 Ph.D., Tulane University, 1969
- JONATHAN P. SELDIN, 1969
 A.B., Oberlin College, 1964
 M.A., Pennsylvania State University, 1966
 Ph.D., University of Amsterdam, 1968
- ALICE K. WRIGHT, Emerita, 1925
 A.B., Indiana University, 1922
 M.A., University of Illinois, 1925

Instructors

- IMOGENE C. BECKEMEYER, 1951
 B.S. in Ed., Southern Illinois University, 1951
 M.A., Southern Illinois University, 1952
- JOHN SAMUEL BROWN, 1957
 B.A., DePauw University, 1956
 M.S., University of Illinois, 1957
- GEORGE ELSTON, 1954
 B.S., Southern Illinois University, 1947
 M.S., University of Wisconsin, 1949
 B.S. in Ed., Southern Illinois University, 1950
- JAMES L. SLECHTICKY, 1958
 B.Ed., Southern Illinois University, 1936
 M.S., Washington University, 1940
- LARRY L. WIMP, 1954
 B.S.E., Southeast Missouri State College, 1937
 M.A., University of Missouri, 1940
 M.S., Southern Illinois University, 1959

Lecturers

- DANIEL A. HOGAN, 1972
 B.S., University of Southern Mississippi, 1967
 M.S., Louisiana Technical University, 1969
 Ph.D., Louisiana Technical University, 1972
- RICHARD MARCUSON, 1973
 B.A., Clark University, 1967
 A.M., Indiana University, 1969
 Ph.D., Indiana University, 1972
- BRIAN SCHMIDT, 1972
 B.S., University of Chicago, 1967
 M.A., Princeton University, 1969
 Ph.D., Princeton University, 1972
- PREM L. SHARMA, 1972
 B.A., Panjab University Chandigar, 1961
 M.A., Panjab University Chandigar, 1963
 Ph.D., Indian University of Technology, Kanpur, 1972

Media Technology (Library Assistant)—School of Technical Careers

Instructors

- GARRELL TARTER, 1972
 B.S. in Ed., Eastern Illinois University, 1969
 M.S. in Ed., Eastern Illinois University, 1970
- ROBERT LOUIS WHITE, 1965
 B.A., Southern Illinois University, 1961
 M.S. in Ed., Southern Illinois University, 1962

Microbiology—College of Science

Professors

- CARL C. LINDEGREN, Emeritus, 1948
 B.S., University of Wisconsin, 1922
 M.S., University of Wisconsin, 1923
 Ph.D., California Institute of Technology, 1931
- DAN O. MCCLARY, 1951
 B.S., Southeastern State College, 1940
 Ph.D., Washington University, 1951
- MAURICE OGUR, Chairman, 1953
 B.A., Brooklyn College, 1934
 A.M., Columbia University, 1937
 Ph.D., Columbia University, 1948
- HASSAN ROUHANDEH, 1967
 B.S., Kansas State University, 1955
 M.S., Kansas State University, 1957
 Ph.D., Kansas State University, 1959
- I. L. SCHECHMEISTER, 1957
 A.B., University of California, 1934
 M.A., University of California, 1935
 Ph.D., University of California, 1949

Assistant Professors

- JOHN H. CASTER, 1972
 B.S., University of Notre Dame, 1957
 Ph.D., St. Louis University, 1968
- R. A. GILMORE, 1968
 A.B., Hanover College, 1955
 Ph.D., University of California at Berkeley, 1966

Mortuary Science and Funeral Service—School of Technical Careers

Associate Professor

- DONALD G. HERTZ, 1965
 B.S.Ed., Illinois State University, 1950
 Ed.M., University of Oklahoma, 1953

Instructor

- JAY W. BOULANGER, 1969
 B.A., Southern Illinois University, 1967
 M.S. in Ed., Southern Illinois University at Carbondale, 1971

Music—College of Communications and Fine Arts

Professors

- STEVEN BARWICK, 1955
 B.M., Coe College, 1942
 B.A., Coe College, 1942
 M.Mus., Eastman School of Music, 1943
 M.A., Harvard University, 1944
 Ph.D., Harvard University, 1949
- WILL GAY BOTTJE, 1957
 B.S., Juilliard School of Music, 1947
 M.S., Juilliard School of Music, 1948
 A.Mus.D., Eastman School of Music, 1955
- FRED DENKER, Emeritus, 1957
 B.M., Bethany College, 1923
 M.M., Eastman School of Music, 1932
 Ph.D., Eastman School of Music, 1951
- RODERICK GORDON, 1963
 B.Mus., University of Wisconsin, 1939
 M.A., University of Iowa, 1948
 Ph.D., University of Wisconsin, 1953
- ROBERT HOUSE, Director, 1967
 B.F.A., Oklahoma State University, 1941
 M.Mus., Eastman School of Music, 1942
 Ed.D., University of Illinois, 1954

- LAWRENCE INTRAVAIA, 1963
 B.M.E., Wichita State University, 1948
 M.M.E., Wichita State University, 1949
 D.M.A., Boston University, 1962
- MARJORIE LAWRENCE, Emeritus, 1960
- CATHERINE MCHUGH, 1969
 B.M., Lawrence University, 1937
 M.M., Northwestern University, 1945
 Ed.D., Columbia University, 1959
- ROBERT MUELLER, 1948
 B.S., Wisconsin State College, 1942
 M.M., Northwestern University, 1948
 Ph.D., Indiana University, 1954
- PHILLIP OLSSON, 1949
 B.M., Chicago Conservatory, 1948
 M.Mus., Chicago Conservatory, 1949
- ROBERT RESNICK, 1949
 B.M., Roosevelt University, 1948
 M.Mus., Wichita University, 1949

Associate Professors

- MARIANNE WEBB BATEMAN, 1965
 B.M., Washburn University, 1958
 M.Mus., University of Michigan, 1959
- JOHN BOE, 1971
 B.M., University of Colorado, 1948
 Ph.D., Northwestern University, 1969
- SAMUEL FLOYD, 1968
 B.S., Florida A & M University, 1957
 M.M.E., Southern Illinois University, 1965
 Ph.D., Southern Illinois University, 1969
- GEORGE HUSSEY, 1963
 B.M.Ed., Baldwin-Wallace College, 1951
 M.A.Ed., Washington University, 1963
- ROBERT KINGSBURY, 1961
 B.M., University of Southern Mississippi, 1950
 M.Mus., Northwestern University, 1952
 B.M.E., Northwestern University, 1956
- DAVID MCINTOSH, Emeritus, 1927
 B.M.E., Northwestern University, 1925
 M.A., University of Iowa, 1935
- W. ALAN OLDFIELD, 1969
 A.B., San Diego State College, 1957
 M.A., University of California, 1962
 Ph.D., North Texas State University, 1969
- MELVIN SIENER, 1962
 B.S., Southern Illinois University, 1949
 M.A., University of Iowa, 1954
- CHARLES TAYLOR, 1957
 A.B., West Virginia Wesleyan College, 1940
 M.A., Teachers College, 1948
 Ed.D., Columbia University, 1950
- JERVIS UNDERWOOD, 1971
 B.M., North Texas State University, 1955
 M.M., University of Illinois, 1957
 Ph.D., North Texas State University, 1970
- MARY ELAINE WALLACE, 1969
 B.F.A., Nebraska State College, 1940
 M.Mus., University of Illinois, 1954
- KENT WERNER, 1963
 B.M., Southern Illinois University, 1950
 M.M., University of Illinois, 1951
 Ph.D., University of Iowa, 1966
- JOHN WHARTON, Emeritus, 1945
 B.M., Oberlin College, 1930
 M.M., American Conservatory, 1940

Assistant Professors

- JOHN EDDINS, 1969
 B.M.E., Florida State University, 1952
 M.M., Florida State University, 1959
 Ph.D., Florida State University, 1966
- MARY JANE GRIZZELL, 1959
 B.M., Eastman School of Music, 1941
 M.Mus., Eastman School of Music, 1943

- MICHAEL HANES, 1965
 B.M.E., Millikin University, 1964
 M.M.E., Southern Illinois University, 1965
- ELISABETH HARTLINE, Emeritus, 1936
 B.E., Southern Illinois University, 1934
 M.Mus., Northwestern University, 1936
- BURT KAGEFF, 1969
 A.B., Wayne State University, 1952
 M.Ed., Wayne State University, 1958
 A.M., University of Missouri, 1962
- NICK KOENIGSTEIN, 1967
 B.S., Western Kentucky University, 1948
 M.Mus., West Virginia University, 1956
- GEORGE NADAF, 1965
 B.M.E., Indiana University, 1953
 M.Mus., Manhattan School of Music, 1956
- HELEN POULOS, 1969
 B.M., Philadelphia Musical Academy, 1957
 M.M., Philadelphia Musical Academy, 1960
 D.M.A., Indiana University, 1971
- DAN PRESSLEY, 1971
 B.M., University of Michigan, 1963
 M.Mus., University of Michigan, 1969
- HAROLD EUGENE STIMAN, 1965
 B.M.E., Southern Illinois University, 1952
 M.S., University of Illinois, 1957
- RICHARD STRAWN, 1969
 B.M., University of Redlands, 1959
 M.Mus., Indiana University, 1961
- JAMES STROUD, 1969
 B.M., Louisiana State University, 1957
 M.Mus., Hartt College, 1963

Instructors

- LONDON BRANCH, 1969
 B.M.E., Southern Illinois University, 1960
 M.M.E., Southern Illinois University, 1966
- ELZA DAUGHERTY, 1972
 B.A., Sioux Falls College, 1964
 M.A., University of North Dakota, 1968
- LAWRENCE FRANKLIN, 1966
 B.M.E., University of Illinois, 1965
 M.Mus., Southern Illinois University, 1966
- BERNARD MCWILLIAMS, 1972
 B.M., University of Southern California, 1964
 M.Mus., University of Maryland, 1970
- MARJORIE FRAZEE OLDFIELD, 1970
 B.A., Moorhead State College, 1967
 M.Mus., University of Texas, 1970
- KAY PACE, 1970
 B.A., Xavier University, 1968
 M.Mus., Southern Illinois University, 1970
- HELEN M. VOGLER, Emerita, 1920

Occupational Education—College of Education

Professors

- RAYMOND E. BITTLE, 1969
 B.S., Central State University, 1937
 M.A., University of Southern Mississippi, 1952
 M.Ed., University of Southern Mississippi, 1954
 Ed.D., University of Florida, 1956
- E. LEON DUNNING, 1957
 B.S., University of Rochester, 1946
 M.S.M.E., University of Kentucky, 1950
 Ph.D., University of Houston, 1967
- JOHN H. ERICKSON, 1955
 B.S.Ed., University of Missouri, 1942
 Ed.M., University of Missouri, 1947
 D.Ed., Pennsylvania State University, 1953

- RALPH O. GALLINGTON, Emeritus, 1955
 B.S., Indiana State Teachers College, 1931
 A.M., Columbia University, 1937
 Ed.D., George Washington University, 1947
- WAYNE S. RAMP, 1957
 B.S., Bradley University, 1947
 Vocational Certification, University of Illinois, 1948
 M.S., Bradley University, 1951
 Ed.D., Bradley University, 1956
- RONALD W. STADT, Chairman, 1967
 B.S. in Ed., Illinois State University, 1957
 M.Ed., University of Illinois, 1958
 Ed.D., University of Illinois, 1962
- WILLIAM C. WESTBURG, 1952
 B.S., Pennsylvania State University, 1937
 M.Ed., Pennsylvania State University, 1939
 Ph.D., Pennsylvania State University, 1948

Associate Professors

- LARRY J. BAILEY, 1969
 B.S. in Ed., Ball State University, 1963
 M.S. in Ed., Ball State University, 1964
 Ed.D., University of Illinois, 1968
- RICHARD F. BORTZ, 1967
 B.S., Stout State University, 1961
 M.S., University of Michigan, 1962
 Ph.D., University of Minnesota, 1967
- JAMES JENKINS, JR., 1956
 B.S. in Ed., State Teachers College, Pennsylvania, 1943
 M.Ed., Pennsylvania State College, 1948
 D.Ed., Pennsylvania State College, 1955
- DENNIS CARL NYSTROM, 1969
 B.S., California State College, 1966
 Ed.D., Texas A & M University, 1969
- MAXINE ROSENBERGER, 1963
 B.S., Southern Illinois University, 1957
 M.S. in N.Ed., Indiana University, 1959
 Ph.D., Southern Illinois University, 1970
- JAMES A. SULLIVAN, 1968
 B.S., Fairmont State College, 1959
 A.M., West Virginia University, 1964
 Ed.D., West Virginia University, 1967

Assistant Professors

- THEODORE BUILA, 1968
 B.S., Fresno State College, 1957
 M.Ed., University of California at Davis, 1959
 Ph.D., Cornell University, 1968
- JOHN F. HUCK, 1970
 B.S., University of Illinois, 1958
 M.Ed., University of Illinois, 1968
 Ed.D., University of Illinois, 1973
- LAWRENCE WEISMAN, 1971
 B.S., Temple University, 1954
 Ed.M., Temple University, 1961
 Ph.D., Florida State University, 1972

Instructor

- BILL J. SHIELDS, 1962
 B.S. in Ed., Southern Illinois University, 1960
 M.S.Ed., Southern Illinois University, 1963

Philosophy—College of Liberal Arts

Research Professor

- LEWIS E. HAHN, 1963
 A.B., University of Texas, 1929
 M.A., University of Texas, 1929
 Ph.D., University of California, 1939

Professors

- JAMES A. DIEFENBECK, 1950
 B.A., Williams College, 1939
 M.A., Harvard University, 1947
 Ph.D., Harvard University, 1950
- ELIZABETH R. EAMES, 1963
 A.B., University of Toronto, 1943
 M.A., University of Toronto, 1944
 Ph.D., Bryn Mawr College, 1951
- S. MORRIS EAMES, 1963
 A.B., Culver-Stockton College, 1939
 A.M., University of Missouri, 1941
 A.M., University of Missouri, 1952
 Ph.D., University of Chicago, 1958
- RISIERI FRONDIZI, 1970
 A.B., Colegio Nacional Mariano Moreno, Buenos Aires, 1928
 A.M., University of Michigan, 1943
 Ph.D., National University of Mexico, 1950
- JOHN HAYWARD, 1968
 A.B., Harvard University, 1940
 D.B., Meadville Theological Seminary, 1943
 Ph.D., University of Chicago, 1949
- GEORGE T. MCCLURE, 1958
 B.A., University of Tennessee, 1952
 M.A., University of Tennessee, 1953
 Ph.D., Ohio State University, 1958
- WILLIS MOORE, Chairman, 1955
 A.B., University of Missouri, 1930
 A.M., University of Missouri, 1931
 Ph.D., University of California, 1936
- GEORGE KIMBALL PLOCHMANN, 1949
 A.B., Columbia University, 1936
 Ph.D., University of Chicago, 1950
- CHARLES TENNEY, 1931
 B.A., Gooding College, 1927
 M.A., University of Oregon, 1929
 Ph.D., University of Oregon, 1931
- HENRY NELSON WIEMAN, Emeritus, 1956
 B.A., Park College, 1937
 Ph.D., Harvard University, 1917

Associate Professors

- DAVID S. CLARKE, JR., 1966
 B.A., Yale University, 1957
 Ph.D., Emory University, 1964
- GARTH J. GILLAN, 1969
 B.A., St. John's University, 1962
 M.A., Duquesne University, 1964
 Ph.D., Duquesne University, 1966
- JOHN HOWIE, 1966
 A.B., Vanderbilt University, 1951
 B.D., Emory University, 1954
 A.M., Emory University, 1955
 Ph.D., Boston University, 1965
- MATTHEW J. KELLY, 1966
 B.A., College of St. Thomas, 1956
 M.A., University of Minnesota, 1958
 Ph.D., University of Notre Dame, 1963
- SHU-HSIEN LIU, 1966
 B.A., National Taiwan University, 1956
 M.A., National Taiwan University, 1958
 Ph.D., Southern Illinois University, 1966

Assistant Professors

- MICHAEL N. AUDI, 1970
 B.S., Rensselaer Polytechnic Institute, 1958
 Ph.D., Johns Hopkins University, 1970
- STEVEN KUPETZ, 1972
 B.A., University of Minnesota, 1966
 Ph.D., University of Minnesota, 1972

BEN J. MIJUSKOVIC, 1972
 B.A., Roosevelt University, 1964
 M.A., Roosevelt University, 1967
 M.A., University of California, 1970
 Ph.D., University of California, 1972

Visiting Professors

GEORGE AXTELLE, Emeritus, 1959
 B.S., University of Washington, 1923
 M.A., University of Hawaii, 1927
 Ed.D., University of California, 1935
 PAUL A. SCHILPP, 1965
 B.A., Baldwin-Wallace College, 1916
 M.A., Northwestern University, 1922
 B.D., Garrett Theological Seminary, 1922
 Ph.D., Stanford University, 1936

Physical Education for Men— College of Education

Professor

RONALD G. KNOWLTON, 1961
 A.B., Oberlin College, 1954
 M.S., University of Illinois, 1957
 Ph.D., University of Illinois, 1961
 EDWARD J. SHEA, Chairman, 1954
 B.S., Springfield College, 1941
 M.S., Emory University, 1944
 Ph.D., New York University, 1955

Associate Professor

LARRY A. GOOD, 1967
 B.S. in P.Ed., Indiana University, 1956
 M.S. in P.Ed., Indiana University, 1958
 Ed.D., Temple University, 1968
 MORRIS GLENN MARTIN, Emeritus, 1938
 B.Ed., Southern Illinois University, 1932
 M.A., University of Iowa, 1938
 ROBERT R. SPACKMAN, JR., 1957
 B.S., Westchester State College, 1950
 M.S. in Ed., Southern Illinois University, 1960
 JOHN W. STOTLAR, 1948
 B.S. in Ed., Southern Illinois University, 1947
 M.S. in P.Ed., Indiana University, 1948
 PE.D., Indiana University, 1954
 JAMES J. WILKINSON, 1951
 B.S., Indiana University, 1947
 M.S., Indiana University, 1948
 PE.D., Indiana University, 1958

Assistant Professors

KENNETH J. ACKERMAN, 1969
 B.S., Michigan State University, 1958
 M.A., Michigan State University, 1959
 PETER J. CARROLL, 1969
 B.P.E., University of Alberta, Canada, 1965
 M.S., University of Alberta, Canada, 1966
 Ph.D., Pennsylvania State University, 1970
 CECIL C. FRANKLIN, 1948
 B.S., Indiana University, 1943
 M.S.Ed., Indiana University, 1946
 NORMAN C. GREENE, 1957
 B.S., Washington State University, 1951
 M.S. in Ed., Southern Illinois University, 1961
 LYNN C. HOLDER, 1946
 B.Ed., Southern Illinois University, 1935
 M.S. in Ed., Indiana University, 1940
 WILLIAM T. MEADE
 B.S., Pennsylvania State University, 1949
 M.A., University of North Carolina, 1950

TED Y. OKITA, 1965
 B.S., University of Illinois, 1952
 M.A., Northwestern University, 1964

Instructors

WALTER T. ELLIS, 1969
 B.S. Ed., Winston-Salem State College, 1968
 M.S. in Ed., Southern Illinois University, 1969
 LEWIS B. HARTZOG, 1960
 B.S., Southwest Missouri State University, 1949
 M.E., Colorado State University, 1954
 LINN L. LONG, 1967
 B.S., University of Colorado, 1956
 M.S., University of Colorado, 1967
 RICHARD E. TOWERS, 1966
 B.S., Kansas State University, 1953
 M.S., Kansas State University, 1960

Physical Education for Women— College of Education

Professors

DOROTHY DAVIES, 1939
 B.S., University of Cincinnati, 1928
 M.A., Teachers College, Columbia University, 1932
 Ed.D., University of Cincinnati, 1944
 JOANNE THORPE, Chairman, 1958
 B.S., Florida State University, 1953
 M.Ed., University of North Carolina, 1958
 Ph.D., Texas Women's University, 1964
 CHARLOTTE WEST, 1957
 B.S., Florida State University, 1954
 M.Ed., University of North Carolina, 1957
 Ph.D., University of Wisconsin, 1969
 HELEN ZIMMERMAN, 1952
 A.B., Harris Teachers College, 1930
 M.A., St. Louis University, 1942
 M.S., University of Wisconsin, 1948
 Ph.D., University of Wisconsin, 1951

Associate Professors

MARJORIE BOND POTTER, 1961
 B.S., University of California, Los Angeles, 1944
 M.S., Smith College, 1947
 Ph.D., University of Southern California, 1958
 JEAN STEHR, 1944
 B.S., Texas State College for Women, 1941
 M.A., Texas State College for Women, 1945

Assistant Professor

LONNY JOSEPH GORDON, 1972
 B.F.A., University of Texas, 1965
 M.F.A., University of Wisconsin, 1967

Instructors

CLAUDIA BLACKMAN, 1968
 B.S., Central Michigan University, 1967
 M.S. in Ed., Southern Illinois University, 1968
 KAY BRECHTELSBAUER, 1966
 B.S., Central Michigan University, 1965
 M.S. in Ed., Southern Illinois University, 1968
 SARAH DAVIDSON COTTEN, 1964
 B.S. in Ed., The Ohio State University, 1963
 M.Ed., Miami University, 1965
 MARCILE FRANKLIN, 1949
 B.S., Indiana University, 1942
 M.S. in Ed., Indiana University, 1944

- SUSAN HOLLISTER, 1972
 B.S., in West Chester State College, 1970
 M.S.P.E., Washington State University, 1973
- JULEE ILLNER
 B.S. in Ed., Miami University, 1963
 M.S. in Ed., Southern Illinois University,
 1968
- MOIRA LOGAN, 1972
 A.B., Vassar College, 1969
 M.F.A., Sarah Lawrence College, 1972
- MARY KAYE POTTER, 1972
 B.S., Brigham Young University, 1968
 M.A., Brigham Young University, 1972
- HERBERT VOGEL, 1962
 B.S. in P.Ed., Indiana University, 1953
 M.S. in P.Ed., Indiana University, 1954

Assistant in Physical Education

- MARGARET CLEMENS, 1954
 Diploma, Lindenwood College, 1926

**Physical Therapy Assistant—
School of Technical Careers***Assistant Professor*

- TED Y. OKITA, 1965
 B.S., University of Illinois, 1952
 M.A., Northwestern University, 1964

Assistant in Physical Therapy

- BARBARA V. GREENE, 1972
 A.B., Stanford University, 1952

**Physics and Astronomy—College
of Science***Professors*

- MARTIN J. ARVIN, Emeritus, 1949
 A.B., Indiana State Teachers College, 1926
 M.S., University of Illinois, 1930
 Ph.D., University of Illinois, 1934
- CHARLES J. BRASEFIELD, Emeritus, 1954
 B.S., Rutgers College, 1924
 Ph.D., Princeton University, 1927
- BRUNO J. GRUBER, 1972
 Ph.D., University of Vienna, Austria, 1962
- WALTER C. HENNEBERGER, 1963
 B.S., Purdue University, 1952
 M.S., Purdue University, 1956
 Ph.D., Göttingen University, Germany, 1959
- WILLIAM E. NICKELL, 1963
 B.A., Berea College, 1940
 M.S., University of Iowa, 1943
 Ph.D., University of Iowa, 1944
- RICHARD E. WATSON, 1958
 B.Ed., Southern Illinois University, 1932
 A.M., University of Illinois, 1935
 Ph.D., University of Illinois, 1938
- OTIS B. YOUNG, Emeritus, 1929
 A.B., Wabash College, 1921
 M.A., University of Illinois, 1923
 Ph.D., University of Illinois, 1928
- JOHN R. ZIMMERMAN, Chairman, 1966
 A.B., Kansas State Teachers College, 1942
 Ph.D., Ohio State University, 1949
- ROBERT N. ZITTER, 1967
 A.B., University of Chicago, 1950
 S.M., University of Chicago, 1952
 S.M., University of Chicago, 1958
 Ph.D., University of Chicago, 1962

Visiting Professor

- LAURISTON C. MARSHALL, 1967
 A.B., Park College, 1923
 Ph.D., University of California at Berkeley,
 1929

Associate Professors

- SUBIR K. BOSE, 1968
 B.S., Bihar University, India, 1957
 Ph.D., University of Allahabad, India, 1967
- MARIO E. FOGLIO, 1969
 Ph.D., University of Buenos Aires, Argentina,
 1958
 Ph.D., University of Bristol, England, 1962
- HARRY H. NICKLE, 1969
 B.S., University of California at Berkeley,
 1963
 A.M., Columbia University, 1956
 Ph.D., Columbia University, 1960
- MYKOLA SAPOROSCHENKO, 1965
 B.S., Ursinus College, 1952
 A.M., Washington University, 1954
 Ph.D., Washington University, 1958
- RICHARD G. SCHLECHT, 1969
 B.S., University of New Mexico, 1960
 Ph.D., University of California at Berkeley,
 1964

Assistant Professors

- BRIAN L. BEERS, 1970
 A.B., Harvard University, 1960
 Ph.D., University of Maryland, 1970
- WALTER L. BORST, 1971
 B.Sc., University of Tuebingen, Germany,
 1963
 M.Sc., University of Tuebingen, Germany,
 1964
 Ph.D., University of California at Berkeley,
 1968
- JOHN D. CUTNELL, 1968
 B.A., Lehigh University, 1962
 Ph.D., University of Wisconsin, 1967
- HUEY W. HUANG, 1971
 B.S., National Taiwan University, 1962
 Ph.D., Cornell University, 1967
- KENNETH W. JOHNSON, 1970
 B.S., Miami University, 1960
 M.S., Ohio State University, 1964
 Ph.D., Ohio State University, 1967
- FRANK C. SANDERS, 1969
 B.S., University of Texas, 1963
 Ph.D., University of Texas, 1968
- CHARLOTTE ZIMMERSCHIED, Emeritus,
 1927
 A.B., University of Minnesota, 1920
 A.M., University of Minnesota, 1923

Assistant in Physics

- RONALD E. WALKER, 1969
 B.S., Western Illinois University, 1965

Physiology—College of Science*Professors*

- RALPH W. STACY, Chairman, 1972
 B.S. in Ed., Miami University, 1946
 M.S., Ohio State University, 1947
 Ph.D., Ohio State University, 1948
- TOMMY T. DUNAGAN, 1962
 B.S., Texas A & M University, 1953
 M.S., Texas A & M University, 1955
 Ph.D., Purdue University, 1960
- FLORENCE M. FOOTE, 1963
 A.B., Mount Holyoke College, 1932
 A.M., Mount Holyoke College, 1934
 Ph.D., State University of Iowa, 1940
- GEORGE H. GASS, 1959
 B.S., Bucknell University, 1948
 M.S., University of New Mexico, 1952
 Ph.D., Ohio State University, 1955

- HAROLD M. KAPLAN, 1949
 A.B., Dartmouth College, 1930
 A.M., Harvard University, 1931
 Ph.D., Harvard University, 1933
- ALFRED W. RICHARDSON, 1966
 B.Ed., Southern Illinois University, 1940
 M.A., University of Iowa, 1947
 Ph.D., University of Iowa, 1949

Associate Professors

- DONALD M. MILLER, 1966
 A.B., University of Illinois, 1960
 M.S., University of Illinois, 1962
 Ph.D., University of Illinois, 1965
- R. ARNE SOLLBERGER, 1972
 M.B., Caroline Institute, Sweden, 1949
 M.D., Caroline Institute, Sweden, 1957
- LOUIS E. STRACK, 1968
 B.S., University of Illinois, 1959
 D.V.M., University of Illinois, 1961
 M.S., Southern Illinois University, 1968
- EDWARD H. TIMMONS, 1970
 D.V.M., The University of Georgia, 1963
 M.M.S., Tulane University, 1969
- J. HURLEY MYERS, 1971
 M.S., Memphis State University, 1963
 Ph.D., University of Tennessee, 1969
- ALEXANDER C. WARNER, 1970
 B.S.Ed., Central Missouri State College, 1961
 M.A., Central Missouri State College, 1964
 Ph.D., Kent State University, 1970

Adjunct Professors

- ELI L. BORKON, 1954
 B.S., The University of Chicago, 1931
 Ph.D., The University of Chicago, 1936
 M.D., The University of Chicago, 1937
- JOSEPH P. MIRANTI, 1961
 B.S., Loyola University of the South, 1944
 M.D., Loyola University, 1950

Plant Industries—School of Agriculture

Professors

- GERALD D. COORTS, Chairman, 1968
 B.S., University of Missouri, 1954
 M.S., University of Missouri, 1958
 Ph.D., University of Illinois, 1964
- IRVIN G. HILLYER, 1956
 B.S., North Dakota State University, 1951
 M.S., University of Idaho, 1953
 Ph.D., Michigan State University, 1956
- J. K. LEASURE, 1966
 B.S., University of Illinois, 1942
 M.S., Michigan State University, 1946
 Ph.D., University of Illinois, 1953
- JAMES B. MOWRY, 1951
 B.S., University of Illinois, 1948
 M.S., Purdue University, 1949
 Ph.D., Rutgers University, 1951
- HERBERT L. PORTZ, 1954
 B.S., University of Wisconsin, 1948
 M.S., University of Wisconsin, 1951
 Ph.D., University of Illinois, 1954
- JAMES A. TWEEDY, 1966
 B.S., Southern Illinois University, 1962
 M.S., Michigan State University, 1964
 Ph.D., Michigan State University, 1966

Associate Professors

- DONALD M. ELKINS, 1967
 B.S., Tennessee Polytechnic Institute, 1962
 M.S., Auburn University, 1964
 Ph.D., Auburn University, 1967

- JOE H. JONES, 1964
 B.S., Murray State University, 1949
 M.S., University of Kentucky, 1954
 Ph.D., Ohio State University, 1960
- OVAL MYERS, JR., 1968
 B.A., Wabash College, 1959
 M.A., Dartmouth College, 1960
 Ph.D., Cornell University, 1963
- FARREL J. OLSEN, 1971
 B.S., Utah State University, 1954
 M.S., Utah State University, 1958
 Ph.D., Rutgers University, 1961
- DONALD P. SATCHELL, 1969
 B.S., Michigan State University, 1946
 M.S., Michigan State University, 1947
 Ph.D., North Carolina State University, 1951
- LOWELL R. TUCKER, Emeritus, 1947
 B.S., University of Illinois, 1926
 M.S., University of New Hampshire, 1928
 Ph.D., Massachusetts State College, 1940

Assistant Professors

- DONALD J. STUCKY, 1970
 B.S., Washington State University, 1957
 M.S., Purdue University, 1961
 Ph.D., Purdue University, 1963
- EDWARD C. VARSA, 1970
 B.S., Southern Illinois University, 1961
 M.S., University of Illinois, 1965
 Ph.D., Michigan State University, 1970

Adjunct Professors

- ROLAND C. BLAKE, 1959
 M.S., University of Maine, 1949
 Ph.D., University of Minnesota, 1954
- J. W. HULL, 1963
 B.S., Oklahoma State University, 1950
 M.S., University of Maryland, 1955
 Ph.D., University of Maryland, 1958

President's Scholar Program

Assistant Professor

- ALLAN L. LANGE, Director, 1969
 B.A., University of Michigan, 1960
 M.A., Northwestern University, 1964
 Ph.D., Michigan State University, 1969

Professional Education

Experiences—College of Education Professors

- JOHN P. CASEY, 1964
 B.A., Bethany College, 1949
 M.Ed., University of Pittsburgh, 1950
 Ed.D., Indiana University, 1963
- ANNA CAROL FULTS, 1952
 B.S., University of Tennessee, 1934
 M.S.Ed., Cornell University, 1941
 Ph.D., Ohio State University, 1946
- HARVES RAHE, 1944–46; 1950
 B.S., Indiana State University, 1937
 M.A., Columbia University, 1941
 Ed.D., Indiana University, 1950

Associate Professors

- ARSENE O. BOYKIN, 1972
 B.E., Chicago Teachers College, 1942
 A.M., University of Chicago, 1950
 Ed.D., University of Illinois, 1964
- CLEO D. CARTER, Emeritus, 1959
 B.Ed., Southern Illinois University, 1946
 M.S., Southern Illinois University, 1949
 Ed.D., Indiana University, 1958

BILLY G. DIXON, 1961
 B.S. in Ed., Southern Illinois University, 1957
 M.S., Southern Illinois University, 1960
 Ph.D., Southern Illinois University, 1967
 WILLIAM MATTHIAS, 1967
 A.B., Eureka College, 1950
 M.Ed., University of Illinois, 1952
 Ed.D., University of Illinois, 1964
 BERNIECE SEIFERTH, 1955
 B.S. in Ed., University of Missouri, 1942
 M.A., University of Missouri at Kansas City, 1952
 Ed.D., University of Missouri, 1955
 JOHN W. STOTLAR, 1948
 B.S. in Ed., Southern Illinois University, 1947
 M.S., Indiana University, 1948
 D.P.Ed., Indiana University, 1954

Assistant Professors

E. L. BENCINI, 1955
 B.S., Monmouth College, 1930
 M.Ed., Missouri University, 1942
 JOSEPH H. KING, 1970
 B.S., Drake University, 1950
 M.S., Florida State University, 1951
 Ed.D., University of Illinois, 1971
 CEDRIC A. POPE
 B.S. in Ed., Northern Illinois University, 1949
 M.S., University of Illinois, 1951
 Ed.D., University of Northern Colorado, 1959
 JAMES D. QUISENBERRY, 1971
 A.B., Indiana State University, 1961
 M.A., Indiana State University, 1962
 Ph.D., Indiana University, 1972
 MADELYN TREECE, Emeritus, 1940
 B.S., Southern Illinois University, 1931
 M.A., University of Chicago, 1936

Instructors

JOYCE M. BRADFIELD, 1960
 B.S. in Ed., University of Missouri, 1944
 M.A., Peabody College, 1946
 BILL BROWN, 1957
 B.S. in Ed., Southern Illinois University, 1941
 M.Ed., University of Missouri, 1946
 MARGARET BUSER, 1967
 B.S., Indiana State University, 1951
 M.S. in Ed., Indiana University, 1966
 EDRA T. MEYER, 1955
 B.S. in Ed., Southern Illinois University, 1955
 M.S., Southern Illinois University, 1956
 ERYN E. MOORE, 1969
 B.S., Arkansas A.M.&N. University, 1954
 M.S., Tennessee State University, 1963
 H. VIVIAN SHELTON, 1965
 B.S., University of Wisconsin-Milwaukee, 1945
 M.S.Ed., Southern Illinois University, 1965
 MIKE SOLLIDAY, 1967
 B.S. in Ed., Southern Illinois University, 1961
 M.A., Southern Illinois University, 1967
 RUTH B. WOOD, 1958
 B.Ed., Southern Illinois University, 1941
 A.M., University of Illinois, 1948

Lecturers

WILLIAM LIPSEY, 1967
 B.S., Southern Illinois University, 1941
 M.A., Northwestern University, 1946
 Ed.D., Northwestern University, 1952

ELIZABETH C. MEEHAN, Emeritus, 1936
 B.S., Southern Illinois University, 1938
 M.A., University of Illinois, 1940

Psychology—College of Liberal Arts

Professors

NEIL A. CARRIER, 1957
 A.B., Wayne State University, 1949
 A.M., Wayne State University, 1950
 Ph.D., University of Michigan, 1956
 DAVID EHRENFREUND, Chairman, 1962
 B.A., State University of Iowa, 1943
 M.A., State University of Iowa, 1945
 Ph.D., State University of Iowa, 1947
 VINCENT A. HARRIN, 1968
 B.A., Conception Seminary, 1956
 M.S. in Ed., Southern Illinois University, 1960
 Ph.D., University of Texas, 1964
 CLAYTON E. LADD, 1966
 B.A., Miami University, 1953
 M.S., University of Iowa, 1959
 Ph.D., University of Iowa, 1960
 ALFRED LIT, 1961
 B.S., Columbia University, 1938
 A.M., Columbia University, 1943
 Ph.D., Columbia University, 1948
 JAMES H. McHOSE, 1961
 B.A., Carleton College, 1958
 M.A., State University of Iowa, 1960
 Ph.D., State University of Iowa, 1961
 GORDON F. FITZ, 1963
 B.A., Leeds University, 1958
 M.A., Dalhousie University, 1961
 Ph.D., Carnegie Institute of Technology, 1963
 GORDON E. RADER, 1968
 B.S., University of Washington, 1950
 M.S., Yale University, 1952
 Ph.D., Yale University, 1956
 JANET E. RAFFERTY, 1954
 B.A., Bowling Green State University, 1945
 M.A., Ohio State University, 1947
 Ph.D., Ohio State University, 1952
 THOMAS R. SCHILL, 1963
 B.S., Marquette University, 1957
 M.S., New Mexico Highlands University, 1958
 Ph.D., Oklahoma State University, 1963
 DONALD J. SHOEMAKER, 1960
 B.A., Ohio Wesleyan University, 1951
 M.A., Ohio State University, 1952
 Ph.D., Ohio State University, 1955
 WILLIAM C. WESTBERG, 1952
 B.A., Pennsylvania State University, 1937
 M.Ed., Pennsylvania State University, 1939
 Ph.D., Pennsylvania State University, 1948

Associate Professors

L. DEMOYNE BEKKER, 1969
 B.A., Brigham Young University, 1961
 M.A., Brigham Young University, 1962
 Ph.D., Ohio State University, 1968
 TERENCE D. BUCK, 1969
 B.S.Ed., University of Missouri, 1960
 M.Ed., University of Missouri, 1961
 Ph.D., University of Missouri, 1968
 H. RICHARD DELANEY, 1969
 B.S.Ed., Northeast Missouri State College, 1959
 M.A., Southern Illinois University, 1962
 Ph.D., University of Missouri, 1967
 ROBERT A. LEVITT, 1967
 B.S., University of Florida, 1961
 M.S., University of Florida, 1963
 Ph.D., University of Florida, 1965

DONALD MELTZER, 1966
 B.A., City College of New York, 1957
 M.S., University of Pittsburgh, 1961
 Ph.D., University of Pittsburgh, 1963

THOMAS O. MITCHELL, 1968
 B.A., Catholic University of America, 1956
 M.A., University of Colorado, 1967
 Ph.D., University of Colorado, 1968

JAMES P. O'DONNELL, 1965
 B.S., John Carroll University, 1957
 M.A., Kent State University, 1962
 Ph.D., University of Pittsburgh, 1965

THOMAS D. PURCELL, 1960
 B.A., Southern Illinois University, 1953
 M.A., Southern Illinois University, 1960
 Ph.D., Southern Illinois University, 1965

ROBERT C. RADTKE, 1966
 B.A., University of Wisconsin, Milwaukee, 1960
 M.A., State University of Iowa, 1963
 Ph.D., State University of Iowa, 1963

DAVID C. RIMM, 1971
 B.S., Florida State University, 1959
 Ph.D., Stanford University, 1965

EUGENE L. RINGUETTE, 1967
 A.B., Jamestown College, 1958
 M.S., Purdue University, 1961
 Ph.D., Purdue University, 1963

RONALD R. SCHMECK, 1969
 A.B., Albright College, 1965
 M.S., Ohio University, 1967
 Ph.D., Ohio University, 1969

JOHN F. SNYDER, 1968
 B.S., St. Mary's College, 1954
 Ph.D., Loyola University, 1965

JOHN W. SOMERVILL, 1969
 B.A., Southwestern, Memphis, 1960
 M.A., University of Mississippi, 1963
 Ph.D., University of Arkansas, 1970

LEROY H. SPALT, 1972
 B.S. in Ed., Southern Illinois University, 1962
 M.F.A., Southern Illinois University, 1963
 M.D., University of Kentucky, School of Medicine, 1968

Assistant Professors

RICHARD A. DEPUE, 1972
 B.A., Gettysburg College, 1967
 M.A., University of Richmond, 1969
 Ph.D., University of Oklahoma, 1971

EDWARD I. DONNERSTEIN, 1972
 B.A., University of Florida, 1967
 M.A., Northern Illinois University, 1970
 Ph.D., Florida State University, 1972

DONALD A. IRWIN, 1969
 B.S., State University of Iowa, 1963
 M.A., State University of Iowa, 1965
 Ph.D., State University of Iowa, 1968

STEVEN P. MCNEEL, 1970
 A.B., Westmont College, 1964
 Ph.D., University of California, Santa Barbara, 1969

DENNIS L. MOLFESE, 1972
 B.A., Oklahoma City University, 1969
 M.S., Pennsylvania State University, 1970
 Ph.D., Pennsylvania State University, 1972

NERELLA RAMANAIAH, 1971
 B.S., Andhra University, India, 1953
 M.S., Karnatak University, India, 1957
 M.S., University of Oregon, 1970
 Ph.D., University of Oregon, 1971

LOIS M. RASCHE, 1971
 B.S., University of Wisconsin, 1965
 M.A., University of Texas, 1966
 Ph.D., University of Texas, 1969

RICHARD W. RASCHE, 1971
 A.B., University of Illinois, 1965
 M.A., Southern Illinois University, 1970
 Ph.D., Southern Illinois University at Carbondale, 1972

RACHEL WENDT, 1964
 A.B., Radcliffe College, 1928
 A.M., Radcliffe College, 1929
 M.A., San Francisco State College, 1954
 Ph.D., Southern Illinois University, 1966

Instructors

MARCIA V. DONNERSTEIN, 1972
 B.A., Northern Illinois University, 1967
 M.A., Northern Illinois University, 1972

SHIRLEY S. DUNAGAN, 1968
 B.S., University of Tennessee, 1953
 M.S., University of Tennessee, 1954

VICTORIA J. MOLFESE, 1972
 B.A., San Francisco State College, 1968
 M.A., San Francisco State College, 1971

Adjunct Instructor

WILLIAM P. VOLLMER, 1971
 B.A., Illinois College, 1967
 M.S., Southern Illinois University, 1969

Radio-Television—College of Communications and Fine Arts

Professor

CHARLES W. SHIPLEY, Chairman, 1971
 B.F.A., University of Kansas, 1940
 M.A., Northwestern University, 1949
 Ph.D., Florida State University, 1971

Associate Professors

HOMER EUGENE DYBVG, 1961
 B.F.A., Ohio University, 1947
 M.F.A., Ohio University, 1951
 Ph.D., Southern Illinois University, 1970

CHARLES T. LYNCH, 1967
 B.A., Western Michigan College, 1963
 M.A., Western Michigan College, 1966
 Ph.D., Southern Illinois University at Carbondale, 1972

THOMAS O. OLSON, 1971
 A.B., Illinois College, 1955
 M.S., Syracuse University, 1956
 Ph.D., Wayne State University, 1966

BUREN C. ROBBINS, 1949
 B.E., Drake University, 1931
 M.A., University of Iowa, 1935

Assistant Professors

JOHN L. KURTZ, 1962
 B.S., Syracuse University, 1948
 M.S., Southern Illinois University, 1967

DONALD J. NORWOOD, 1971
 B.A., Louisiana State University and A & M College, 1960
 M.A., Louisiana State University and A & M College, 1962
 A.M., West Virginia University, 1966

FRANK W. OGLESBEE, 1971
 B.A., Northeastern State College, 1962
 M.A., University of Missouri, 1965
 Ph.D., University of Missouri, 1969

DAVID K. TERWISCHE, 1970
 B.A., Culver-Stockton College, 1965
 A.M., University of Missouri, 1967
 Ph.D., University of Missouri, 1971

Instructors

WILLIAM E. BROWN, 1967
 B.A., University of Oklahoma, 1945

- RICHARD HILDRETH, 1968
A.B., Syracuse University, 1949
M.S., Syracuse University, 1968
DAVID ROCHELLE, 1961
B.F.A., University of Houston, 1956
MYERS BONNER WALKER, JR., 1963
A.B., Duke University, 1958
M.F.A., Southern Illinois University at
Carbondale, 1971

Lecturer

- WILLIAM P. CRISWELL, 1971
B.S.J., West Virginia University, 1950

Assistant in Radio-Television

- JOSEPH C. WITWER, 1970
B.S., Southern Illinois University, 1970

Recreation—College of Education*Professors*

- WILLIAM H. FREEBERG, 1942
B.Ed., Southern Illinois University, 1942
M.S., University of Illinois, 1945
D. Rec., Indiana University, 1950
WILLIAM E. O'BRIEN, 1948
B.S.Ed., Southern Illinois University, 1947
M.S. in P.Ed., Indiana University, 1950
M.S., Indiana University, 1952
D. Rec., Indiana University, 1967
LOREN E. TAYLOR, 1957
B.Ed., Southern Illinois University, 1937
M.A., University of Illinois, 1946
Ed.D., Columbia University, 1957

Associate Professor

- PAUL F. NOWAK, 1969
B.S., Wayne State University, 1955
M.Ed., Wayne State University, 1960
Ph.D., University of Michigan, 1969

Instructors

- WILLIAM R. ABERNATHY, 1959
B.S.Ed., Southeast Missouri State College,
1951
M.S. in Ed., Southern Illinois University,
1963
STEPHEN SCHULTZ, 1972
B.A., Seton Hall University, 1970
M.S. in Ed., Southern Illinois University,
1973

**Rehabilitation Institute—College
of Human Resources***Professors*

- AZRIN, NATHAN H., 1965
A.B., Boston University, 1951
A.M., Boston University, 1952
Ph.D., Harvard University, 1956
GRENFELL, JOHN E., 1966
B.S., U.S. Merchant Marine Academy, 1948
M.Ed., University of Oregon, 1958
Ed.D., Oregon State University, 1966
MIRANTI, JOSEPH P., 1961
B.S., Loyola University of the South, 1944
M.D., Loyola University, 1950
RENZAGLIA, GUY A., 1955
B.S., George Washington University, 1939
M.Ed., University of Minnesota, 1941
M.A., University of Minnesota, 1948
Ph.D., University of Minnesota, 1952

- SANDERS, RICHARD M., 1966
B.A., Dartmouth College, 1959
M.A., Hollins College, 1960
Ph.D., University of North Carolina, 1966

Associate Professors

- ALLEN, HARRY A., JR., 1970
B.S., Wofford College, 1962
M.Ed., University of Arkansas, 1970
Ed.D., University of Arkansas, 1971
CAMPBELL, ROBERT L., 1966
A.B., Emory University, 1962
Ph.D., University of Alabama, 1967
GARDNER, MARGARET S., 1968
B.Mus., Northwestern University, 1944
M.Mus., Northwestern University, 1945
M.S.Ed., Southern Illinois University, 1951
Ph.D., Northwestern University, 1960
HAKE, DON F., 1966
B.A., DePauw University, 1958
M.A., Southern Illinois University, 1962
Ph.D., Southern Illinois University, 1963
LEE, ROBERT E., 1964
B.A., University of Minnesota, 1951
M.A., University of Minnesota, 1958
Ph.D., University of Minnesota, 1964
POPPEN, ROGER L., 1970
B.S., University of Maryland, 1962
Ph.D., Stanford University, 1968
RUBIN, HARRIS B., 1966
B.A., Southern Illinois University, 1959
Ph.D., University of Chicago, 1965
SCHUMACHER, BROCKMAN, 1967
B.A., University of Iowa, 1949
M.A.Ed., Washington University, 1952
Ph.D., Washington University, 1969

Assistant Professors

- BENDER, ELEANOR G., 1961
B.S., Northwestern University, 1939
M.A., University of Illinois, 1950
M.S., Southern Illinois University, 1962
BRADSHAW, HARLEY E., 1967
B.A., Southern Illinois University, 1959
M.S.Ed., Southern Illinois University, 1960
Ph.D., Southern Illinois University, 1972
BRYSON, SEYMOUR LEE
B.A., Southern Illinois University, 1959
M.S., Southern Illinois University, 1961
Ph.D., Southern Illinois University, 1972
DICKEY, THOMAS W., 1964
A.B., Amherst College, 1931
M.A., Columbia University, 1933
M.A., Southern Illinois University, 1964
ROBINSON, WALTER G., 1968
B.S. in B.A., Lincoln University, 1955
M.S., University of Missouri, Columbia, 1966
SINGH, SILAS P., 1972
B.A., University of Hawaii, 1966
M.S. in Ed., Southern Illinois University,
1969
Ph.D., Southern Illinois University,
Carbondale, 1972
VIECELLI, LOUIS, 1958
B.S.Ed., Southern Illinois University, 1948
M.S.Ed., Southern Illinois University, 1959

Coordinator

- COYLE, FRANK A., JR., 1968
A.B., Southwestern at Memphis, 1962

Instructor

- HAWLEY, IRENE B., 1972
A.M., University of Michigan, 1956

Religious Studies—College of Liberal Arts

Professor

- JOHN F. HAYWARD, Chairman, 1968
 A.B., Harvard University, 1940
 B.D., Meadville Theological School, 1943
 Ph.D., University of Chicago, 1949

Assistant Professors

- DALE R. BENGTSON, 1973
 B.A., University of California, Berkeley, 1959
 B.D., Lutheran School of Theology, 1966
 Ph.D., Hartford Seminary Foundation, 1971
- CHARLES C. LEMERT, 1971
 A.B., Miami University, 1959
 B.D., Andover Newton Theological School, 1963
 Ph.D., Harvard University, 1972
- L. EDWARD SMITH, 1967
 B.A., Mississippi College, 1941
 Th.M., New Orleans Baptist Theological Seminary, 1944
 Th.D., New Orleans Baptist Theological Seminary, 1946
 M.A., Southern Illinois University, 1971

Visiting Professor

- FREDERIC BARGEBUHR, Emeritus, 1970
 Ph.D., University of Munich, 1951

Secondary Education—College of Education

Professors

- MELVIN O. ALSTON, 1970
 B.S., Virginia State College, 1935
 M.A., Columbia University, 1943
 Ed.D., Columbia University, 1945
- ROBERT L. BUSER, Chairman, 1967
 B.S., Wabash College, 1950
 M.A., Indiana State College, 1955
 Ed.D., Indiana University, 1966
- MIRIAM C. DUSENBERY, 1968
 B.A., Washington University, 1947
 M.A., University of Iowa, 1957
 Ph.D., University of Iowa, 1964
- CLAUDE J. DYKHOUSE, Emeritus, 1947
 B.S., Michigan State College, 1926
 M.A., University of Michigan, 1929
 Ph.D., University of Michigan, 1947
- TROY W. EDWARDS, 1947
 B.Ed., Southern Illinois University, 1938
 M.S.Ed., Southern Illinois University, 1947
 Ed.D., Indiana University, 1954
- WILLIAM E. EVANS, 1966
 B.A., University of Colorado, 1950
 M.A., Syracuse University, 1952
 D.Ed., Florida State University, 1961
- ROSS JEAN FLIGOR, 1940
 B.Ed., Southern Illinois University, 1937
 M.A., Northwestern University, 1941
 Ph.D., Michigan State University, 1953
- DARYLE KEEFER, 1964
 B.S. Ed., Ball State University, 1929
 M.A., Ball State University, 1935
 Ph.D., Northwestern University, 1946
- DOROTHY M. KEENAN, 1961
 B.S., University of Wisconsin, 1943
 M.S., University of Wisconsin, 1952
 D.Ed., University of Illinois, 1962
- JOHN D. MEES, 1946
 B.Ed., Southern Illinois University, 1931
 M.S., University of Illinois, 1936
 Ed.D., Indiana University, 1950

- CHARLES D. NEAL, Emeritus, 1948
 B.P.S.M., Indiana University, 1937
 M.S., Indiana University, 1941
 A.M., University of Illinois, 1945
 Ed.D., Indiana University, 1948
- CLARENCE SAMFORD, Emeritus, 1951
 B.Ed., Southern Illinois University, 1926
 A.M., University of Michigan, 1930
 Ph.D., New York University, 1940
- CLARENCE W. STEPHENS, Emeritus, 1952
 B.Ed., Southern Illinois University, 1933
 A.M., University of Illinois, 1942
 Ed.D., Indiana University, 1955
- JOHN R. VERDUIN, 1967
 B.S., St. Joseph's College, 1956
 M.A., Michigan State University, 1959
 Ph.D., Michigan State University, 1962

Associate Professors

- ARTHUR AIKMAN, 1964
 B.S., Eastern Illinois University, 1944
 M.S., University of Illinois, 1953
 Ph.D., Southern Illinois University, 1965
- BRUCE C. APPLEBY, 1967
 B.A., University of Iowa, 1958
 M.A., University of Iowa, 1964
 Ph.D., University of Iowa, 1967
- RAYMOND P. DEJARNETT, 1960
 B.Ed., Southern Illinois University, 1936
 M.S.Ed., Southern Illinois University, 1951
 Ph.D., Southern Illinois University, 1964
- BILLY G. DIXON, 1961
 B.S.Ed., Southern Illinois University, 1957
 M.S., Southern Illinois University, 1960
 Ph.D., Southern Illinois University, 1967
- HELEN H. JAMES, 1970
 B.S., Oklahoma State University, 1955
 M.S., Oklahoma State University, 1966
 Ph.D., University of Colorado, 1970
- HARRY G. MILLER, 1970
 B.A., Carroll College, 1960
 M.Ed., University of Nebraska, 1967
 Ed.D., University of Nebraska, 1970

Assistant Professors

- JOHN BEASLEY, 1972
 B.A., DePauw University, 1966
 M.A., Ball State University, 1969
 Ph.D., Ball State University, 1972
- RODERIC C. BOTTS, 1970
 B.A., Carleton College, 1957
 M.A., Northwestern University, 1964
 Ph.D., Northwestern University, 1970
- MICHAEL R. JACKSON, 1971
 B.S., University of Tampa, 1961
 M.Ed., Towson State College, 1969
 Ed.D., University of Florida, 1971
- RUTH TAYLOR LONG, 1970
 B.A., Indiana University, 1965
 M.S.Ed., Indiana University, 1968
 Ed.D., Indiana University, 1972

Secretarial and Business Education—School of Business

Professors

- HARRY B. BAUERNFEIND, Emeritus, 1951
 B.A., North Central College, 1926
 M.A., Northwestern University, 1943
- HARVES C. RAHE, Chairman, 1944
 B.S. in Ed., Indiana State University, 1937
 M.A., Columbia University, 1941
 Ed.D., Indiana University, 1950

Assistant Professors

- VAN A. BUBOLTZ, 1937
B.S., University of Northern Iowa, 1932
M.A., Northwestern University, 1937
- O. JUNE BURGER, 1964
B.S. in Ed., Indiana University, 1949
M.S. in Ed., Southern Illinois University, 1961
- HARRY E. JACOBSON, 1967
B.S., Shurtleff College, 1951
M.S., Southern Illinois University, 1953
Ph.D., Southern Illinois University, 1969

Instructor

- MARCIA A. ANDERSON, 1970
B.A., Midland Lutheran College, 1964
M.Ed., University of Nebraska, 1969

**Secretarial and Office Specialties—
School of Technical Careers****Professor**

- MARVIN P. HILL, 1956
B.S., McPherson College, 1931
M.S., University of Colorado, 1939

Associate Professor

- CHESTER E. JOHNSTON, 1955
B.S.Ed., State College of Arkansas, 1951
A.M., George Peabody College for Teachers, 1953

Assistant Professors

- THERESA B. MIRIANI, 1960
B.Ed., Southern Illinois University, 1942
M.S., University of Denver, 1946
- FRANK EUGENE VAUGHN, 1952
B.S., Southern Illinois University, 1947
M.S. in Ed., Southern Illinois University, 1961

Instructors

- LILLIAN GREATHOUSE, 1969
B.A., Ouachita Baptist University, 1966
M.S., Southern Illinois University, 1970
- HELEN E. RICHEY, 1968
B.S. in Ed., Southern Illinois University, 1950
M.S. in Ed., Southern Illinois University, 1953
- JAMES E. TOOLEY, 1954
B.S.Ed., Southern Illinois University, 1949
M.S.Ed., Southern Illinois University, 1952

**Social Welfare—College of Human
Resources****Professor**

- ARNOLD J. AUERBACH, Director, 1972
B.S., New York University, 1933
M.S.W., Washington University, 1949
Ph.D., University of Pittsburgh, 1961

Assistant Professor

- MARTHA BROSE BRELJE, 1965
A.B., Taylor University, 1961
A.M., Indiana University, 1963

Instructors

- FOSTER S. BROWN, JR., 1969
B.A., Antioch College, 1963
M.S.W., New York University, 1966
- TERRENCE J. ROBERTS, 1972
B.A., California State University at Los Angeles, 1967
M.S.W., University of California at Los Angeles, 1970

- ANITA L. ROSEN, 1971
B.S., University of Illinois, 1964
M.Ed., University of Illinois, 1965
M.A., University of Chicago, 1969
- CAROL MCDERMOTT, 1966
A.B., MacMurray College, 1948
M.S. in S.S., Boston University, 1951

Sociology—College of Liberal Arts**Professors**

- THOMAS G. EYNON, 1968
B.S., Ohio State University, 1953
M.A., Ohio State University, 1955
Ph.D., Ohio State University, 1959
- ELMER H. JOHNSON, 1966
B.A., University of Wisconsin, 1946
M.A., University of Wisconsin, 1948
Ph.D., University of Wisconsin, 1950
- JOSEPH K. JOHNSON, Emeritus, 1947
B.A., University of Texas, 1929
M.A., University of Texas, 1930
Ph.D., Washington University, 1937
- HERMAN R. LANTZ, 1950
B.S. in Ed., Kent State University, 1942
M.A., Ohio State University, 1947
Ph.D., Ohio State University, 1950
- PETER A. MUNCH, 1957
A.B., University of Oslo, 1927
M.A., University of Oslo, 1932
Ph.D., University of Oslo, 1946
- CHARLES R. SNYDER, Chairman, 1960
B.A., Yale University, 1944
M.A., Yale University, 1949
Ph.D., Yale University, 1954

Associate Professors

- ERNEST K. ALIX, 1967
B.A., North Central College, 1962
M.A., Southern Illinois University, 1964
Ph.D., Southern Illinois University, 1966
- MELVIN BROOKS, 1956
B.A., State College of Washington, 1935
M.S., Iowa State University, 1937
Ph.D., University of Wisconsin, 1941
- JERRY C. GASTON, 1969
B.S., East Texas State University, 1962
M.A., East Texas State University, 1963
Ph.D., Yale University, 1969
- FRANK C. NALL II, 1964
B.A., Michigan State University, 1950
M.A., Michigan State University, 1955
Ph.D., Michigan State University, 1959
- LOUIS PETROFF, Emeritus, 1940
B.A., University of Wisconsin, 1926
M.A., University of Southern California, 1928
Ph.D., University of Southern California, 1934
- ROBERT D. ROSSEL, 1966
A.B., Kansas State College, 1961
Ph.D., Yale University, 1966

Assistant Professors

- PAULA DUBECK, 1970
B.A., Wittenberg University, 1966
M.A., Northwestern University, 1968
Ph.D., Northwestern University, 1973
- ROLAND K. HAWKES, 1970
B.A., Tufts University, 1958
M.A., Boston University, 1960
Ph.D., Johns Hopkins University, 1967
- CHARLES C. LEMERT, 1971
A.B., Miami University, 1959
B.D., Andover Newton, 1963
Ph.D., Harvard University, 1972

- THOMAS W. MARTIN, 1969
 B.A., University of Connecticut, 1961
 Ph.D., University of Oregon, 1966
- MICHAEL L. RAINEY, 1969
 B.S., Haverford College, 1965
 Ph.D., Yale University, 1971
- DONALD E. VOTH, 1969
 B.A., Goshen College, 1963
 M.S., Cornell University, 1966
 Ph.D., Cornell University, 1969

Instructors

- ROBERT DAY, 1972
 B.A., University of Montana, 1966
 M.A., Ohio State University, 1969
- LEWELLYN HENDRIX, 1971
 B.A., University of Arkansas, 1965
 M.A., Oklahoma State University, 1967
- KENNETH KULMAN, 1972
 B.A., Hunter College, 1963
- VALERIE MALHOTRA-HAMMOND, 1969
 B.A., Valparaiso University, 1963
 M.S., University of Wisconsin, 1967
- EDWARD J. MCGLYNN, 1971
 B.S., Rensselaer Polytechnic Institute, 1963
 M.A., Cornell University, 1970
- JAY R. MEDDIN, 1972
 A.B., University of Georgia, 1967
 M.A., University of Georgia, 1968
- EDGAR I. PATTERSON, 1965
 B.A., University of Missouri, 1958
 M.A., University of Kansas, 1961
- RUDY RAY SEWARD, 1966
 B.S., Northeast Missouri State College, 1966
 M.A., Southern Illinois University, 1969

Adjunct Professor

- GUNNAR BOALT
 B.A., University of Stockholm, 1934
 Ph.D., University of Stockholm, 1947

Special Education—College of Education*Professors*

- JOHN P. CASEY, 1964
 B.A., Bethany College, 1949
 M.Ed., University of Pittsburgh, 1950
 Ed.D., Indiana University, 1963
- JAMES CROWNER, Chairman, 1966
 Ph.B., University of Detroit, 1948
 M.A., Michigan State University, 1954
 Ph.D., Michigan State University, 1960
- LEE M. JOINER, 1968
 B.S., State University of New York at Fredonia, 1957
 M.S., City College of City University of New York, 1963
 Ph.D., Michigan State University, 1966
- KRISTEN D. JUUL, 1970
 B.S., Western Michigan University, 1948
 M.A., Wayne State University, 1948
 Ed.D., Wayne State University, 1953
- HOWARD MORGAN, 1969
 B.A., Central Michigan University, 1948
 M.A., University of Detroit, 1951
 Ed.D., Wayne State University, 1962
- WYATT E. STEPHENS, 1969
 B.A., University of Oklahoma, 1958
 M.A., University of Oklahoma, 1960
 Ph.D., University of Oklahoma, 1963

Associate Professor

- B. ELIZABETH MCKAY, Emerita, 1952
 A.B., Columbia University, 1927
 Ph.D., Syracuse University, 1952

Assistant Professor

- TOSHIAKI HISAMA, 1971
 B.A. in Law, Keio University, 1954
 B.A. in Ed., Tokyo University, 1956
 M.S., Western Reserve University, 1965
 Ph.D., University of Oregon, 1971

Visiting Professors

- GERHARD SCHUMACHER, 1972
 B.A., Teachers Training College, Bremen, W. Germany, 1963
 M.A., Teachers Training College, Bremen, W. Germany, 1963
 Ph.D., University of Hamburg, 1970
- MARIA TYSZKOWA, 1973
 B.A., Gymnazjum i liceum ian Kalisz, Poland, 1951
 M.S., Gymnazjum i liceum ian Kalisz, Poland, 1956
 Ph.D., Adam Mickiewicz University, Poland, 1962

Instructors

- EDWARD BREEN, 1971
 A.B., Queens College, 1958
 M.S., Mexico State University, 1966
- ANNE CAMPBELL, 1969
 B.S., State University Teachers College at Pottsdam, 1956
 M.S. in Ed., Southern Illinois University, 1965
- KATHRYN GERKEN, 1973
 B.S., Southern Illinois University, 1962
 M.A., Bradley University, 1967
- DAN RAINEY, 1958
 B.S. in Ed., Southern Illinois University, 1953
 M.S. in Ed., Southern Illinois University, 1956

Adjunct Professor

- KHATACHADOUR PALANDJIAN, 1968
 Certificate, University of Beirut, Lebanon, 1950
 M.D., University of Rome Holy Medical School, 1957
- JEAN PRESTON, 1969
 B.S., Southern Illinois University, 1960
 M.S., Southern Illinois University, 1963

Speech—College of Communications and Fine Arts Professors

- EARL E. BRADLEY, 1958
 A.B., Central State College, 1930
 Ed.M., University of Oklahoma, 1939
 Ph.D., Northwestern University, 1950
- RICHARD P. HIBBS, 1965
 A.B., Baker University, 1928
 A.M., University of Wisconsin, 1942
- DOROTHY C. HIGGINBOTHAM, 1964
 B.S., East Central State College, 1947
 M.A., Northwestern University, 1956
 Ph.D., Northwestern University, 1961
- MARION L. KLEINAU, 1959
 B.S., Central Missouri State College, 1952
 M.A., Louisiana State University, 1954
 Ph.D., University of Wisconsin, 1961
- RALPH A. MICKEN, Chairman, 1957
 B.A., Intermountain Union College, 1929
 M.A., Montana State University, 1936
 Ph.D., Northwestern University, 1948
- THOMAS J. PACE, 1965
 A.B., Southwestern University, 1949
 M.A., Southwestern University, 1953
 Ph.D., University of Denver, 1957

- DAVID POTTER, 1960
 B.S., Rutgers University, 1937
 M.A., Rutgers University, 1939
 Ph.D., Columbia University, 1943
- C. HORTON TALLEY, Emeritus, 1948
 B.A., Simpson College, 1927
 M.A., Northwestern University, 1931
 Ph.D., State University of Iowa, 1936

Associate Professors

- LESTER R. BRENNIMAN, 1954
 B.A., Parsons College, 1927
 M.A., Northwestern University, 1941
 Ph.D., Ohio State University, 1953
- RUSSELL W. JENNINGS, 1966
 B.S., Western Montana College, 1959
 M.A., University of Montana, 1966
 Ph.D., Southern Illinois University, 1968
- KEITH R. SANDERS, 1967
 B.S., Southern Illinois University, 1961
 M.S., Southern Illinois University, 1962
 Ph.D., University of Pittsburgh, 1968
- WILLIAM D. SMITH, 1961
 B.A., David Lipscomb College, 1956
 M.A., Southern Illinois University, 1960
 Ph.D., Southern Illinois University, 1964

Assistant Professors

- ROY CLARK, 1969
 B.S., University of Wisconsin, 1953
 M.S., Southern Illinois University, 1962
- ROBERT S. FISH, 1970
 B.A., State University of New York at Albany, 1963
 M.A., University of Oklahoma, 1965
 Ph.D., University of Oklahoma, 1970
- EUNICE BEVERLY GOODIEL, Emeritus, 1956
 B.A., Ottawa University, 1923
 M.A., Northwestern University, 1941
- LYLE M. HAMILTON, 1970
 B.A. in Ed., Central State University, 1962
 M.S., Southern Illinois University, 1965
 Ph.D., Southern Illinois University, 1970
- MARVIN D. KLEINAU, 1963
 B.S. Ed., Illinois State University, 1952
 M.S. Ed., Illinois State University, 1960
- RAYMOND D. WILEY, 1965
 B.A., Southern Illinois University, 1963
 M.S., Southern Illinois University, 1965

Instructors

- JERRY L. ALLEN, 1971
 B.S. in Ed., Southeast Missouri State College, 1959
 M.S. in Ed., Southern Illinois University, 1961
- ELIZABETH NORWOOD, 1972
 B.A., University of Southwestern Louisiana, 1956
 M.A., Louisiana State University, 1959

**Speech Pathology and Audiology—
College of Communications and
Fine Arts***Professors*

- JOHN O. ANDERSON, 1950
 B.A., Colorado College, 1944
 M.S., Utah State Agricultural College, 1948
 Ph.D., Ohio State University, 1950
- ISAAC P. BRACKETT, 1951
 B.S., Northwestern University, 1938
 M.A., Northwestern University, 1940
 Ph.D., Northwestern University, 1947

- GENE J. BRUTTEN, 1957
 A.B., Kent State University, 1951
 M.A., Brooklyn College, 1952
 Ph.D., University of Illinois, 1957
- MICHAEL S. HOSHIKO, 1957
 A.B., Heidelberg College, 1948
 M.A., Bowling Green State University, 1949
 Ph.D., Purdue University, 1957
- HERBERT KOEPP-BAKER, Emeritus, 1960
 B.A., University of Michigan, 1925
 M.S., Pennsylvania State University, 1934
 Ph.D., University of Iowa, 1938
- JOHN P. MONCUR, Chairman, 1972
 B.A., University of California at Los Angeles, 1946
 M.A., University of Washington, 1947
 Ph.D., Stanford University, 1950

Associate Professors

- ALFRED B. COPELAND, 1964
 B.A., University of Redlands, 1959
 M.A., University of Redlands, 1960
 Ph.D., University of Washington, 1964
- CAMERON GARBUTT, Emeritus, 1947
 B.S., Northwestern University, 1927
 M.A., University of Washington, 1942
 Ph.D., Louisiana State University, 1951
- SUE A. PACE, 1965
 B.A., Midwestern University, 1952
 M.A., University of Denver, 1956
 Ph.D., Northwestern University, 1966

Assistant Professors

- STEPHEN E. BLACHE, 1971
 B.A., University of Massachusetts, 1964
 M.A., University of Massachusetts, 1968
 Ph.D., Ohio University, 1970
- MICHAEL E. DYBKA, 1972
 A.B., San Diego State College, 1968
 M.A., San Diego State College, 1969
 Ph.D., University of Washington, 1972
- DONALD E. HALL, 1972
 M.S. in Ed., Indiana University of Pennsylvania, 1961
 M.Ed., Westminster College, 1967
 Ph.D., Ohio University, 1971

Adjunct Instructors

- KATHLEEN B. FRALISH, 1971
 B.A., University of Wisconsin, 1967
 M.S., University of Wisconsin, 1968
- FRED D. NOLEN, 1962
 B.S., University of Illinois, 1952
 D.D.S., University of Illinois, 1954

**Technology—School of
Engineering and Technology
Professors**

- E. LEON DUNNING, Chairman, 1957
 B.S.M.E., University of Rochester, 1946
 M.S.M.E., University of Kentucky, 1950
 Ph.D., University of Houston, 1967
- MARVIN E. JOHNSON, 1948
 B.S.Ed., Eastern Illinois University, 1947
 M.S., University of Illinois, 1948
 Ed.D., University of Missouri, 1959

Associate Professors

- MARK E. KLOPP, 1956
 B.S., Pennsylvania State University, 1953
 M.S.Ed., Pennsylvania State University, 1954
- C. MERRILL MOELLER, 1956
 B.S., University of Nebraska, 1936
 M.S., Kansas State College of Agriculture and Applied Science, 1951

Assistant Professors

- JOSEPH E. BARBAY, JR., 1970
B.S.E.E., University of Missouri, 1964
M.S., University of Missouri, 1968
Ph.D., University of Missouri, 1971
- DALE H. BESTERFIELD, 1962
B.S.I.E., Washington University, 1953
M.S., Illinois Institute of Technology, 1966
Ph.D., Southern Illinois University at Carbondale, 1971
- DAVID L. BUSKIRK, 1972
B.S.M.E., West Virginia University, 1960
M.S.N.E., West Virginia University, 1964
Ph.D., West Virginia University, 1967
- C. STUART FERRELL, 1970
B.S., University of Missouri, 1964
M.S., Rice University, 1966
Ph.D., University of Missouri, 1971
- CARLYLE G. OTT, 1966
B.S.Ed., Southern Illinois University, 1949
M.S.Ed., Southern Illinois University, 1951
- JAN R. SONNER, 1965
B.S., Rose Polytechnic Institute, 1959
M.S., University of Southern California, 1961
Ph.D., Southern Illinois University at Carbondale, 1972

Instructors

- HAN LIN CHEN, 1969
B.S.C., Taiwan College of Engineering, 1954
M.A., Southern Illinois University, 1958
- ROBERT R. FERKETICH, 1971
B.S., Southern Illinois University, 1957
M.S., Southern Illinois University, 1962
- WILLARD C. HART, 1950
B.S., University of Illinois, 1939
- JOHN R. NOVY, 1968
B.S., Southern Illinois University, 1966
M.S., Southern Illinois University, 1969

Lecturers

- PAUL E. ANDREWS, 1971
B.S.B.A., University of Tennessee, 1963
M.B.A., University of Chattanooga, 1967
M.S., Memphis State University, 1971
- C. LEE ROGERS, 1967
B.S., University of Illinois, 1956
M.S., Southern Illinois University, 1969

**Theater—College of
Communications and Fine Arts
Research Professor**

- MORDECAI GORELIK, Emeritus, 1960

Professors

- HERBERT MARSHALL, 1965
- ARCHIBALD MCLEOD, Chairman, 1947
A.B., Oberlin College, 1933
M.A., University of Iowa, 1934
Ph.D., Cornell University, 1943
- CHRISTIAN H. MOE, 1958
A.B., College of William and Mary, 1951
M.A., University of North Carolina, 1955
Ph.D., Cornell University, 1958

Associate Professors

- EELIN STEWART—HARRISON, 1961
B.A., Brooklyn College, 1945
M.A., Louisiana State University, 1946
Ph.D., Louisiana State University, 1968
- DARWIN PAYNE, 1957
B.S., Southern Illinois University, 1953
M.F.A., Southern Illinois University, 1955

Assistant Professors

- LONNY GORDON, 1972
B.A., University of Texas, 1965
M.F.A., University of Wisconsin, 1967
- JAY E. RAPHAEL, 1971
B.A., Brooklyn College, 1964
M.A., Northwestern University, 1965
Ph.D., Michigan State University, 1971
- ROBERT RICKNER, 1972
B.A., Yale, 1963
M.F.A., Boston University, 1963
Ph.D., University of Hawaii, 1972
- ROBERT SCHACKE, 1972
B.A., Illinois Teachers College, 1966
M.F.A., Ohio University, 1969

Instructor

- MOIRA J. LOGAN, 1972
A.B., Vassar College, 1969
M.F.A., Sarah Lawrence College, 1972

Assistant in Theater

- BOBBY E. HORN, 1972
B.F.A., University of Texas, 1968

**Thermal and Environmental
Engineering—School of
Engineering and Technology**

Professors

- JUH W. CHEN, Chairman, 1965
B.Sc., Taiwan College of Engineering, 1953
M.S., University of Illinois, 1957
Ph.D., University of Illinois, 1959
- THOMAS B. JEFFERSON, 1969
B.S.M.E., Kansas State University, 1949
M.S.M.E., University of Nebraska, 1950
Ph.D., Purdue University, 1955
- HERMAN J. STOEVER, Emeritus, 1960
B.S., Purdue University, 1928
M.S., University of Illinois, 1930
Ph.D., University of Illinois, 1934

Associate Professors

- ALBERT C. KENT, 1966
B.S., University of Missouri, 1956
M.S., University of Missouri, 1958
Ph.D., Kansas State University, 1968
- HOWARD E. HESKETH, 1968
B.S., Pennsylvania State University, 1953
M.S., Pennsylvania State University, 1953
Ph.D., Pennsylvania State University, 1968
- CHARLES B. MUCHMORE, 1966
B.S., Lehigh University, 1957
M.S., Bucknell University, 1961
Ph.D., Southern Illinois University, 1970
- SONNY W. PEARSON, 1969
B.S.M.E., University of Arkansas, 1963
M.S.E.M., University of Arkansas, 1966
Ph.D., University of Arkansas, 1968
- DOUGLAS S. PRENSNER, 1967
B.S., University of Texas, 1963
M.S., University of Illinois, 1965
Ph.D., University of Illinois, 1968

Assistant Professors

- ECHOL E. COOK, 1971
B.S., University of Missouri, 1961
M.S., University of Missouri, 1967
Ph.D., Oklahoma State University, 1970
- THOMAS W. PETRIE, 1972
B.M.E., Marquette University, 1964
M.S.M.E., University of Minnesota, 1967
Ph.D., University of Minnesota, 1969

Adjunct Assistant Professor

HOWARD N. ROSEN, 1970
 B.S., University of Maryland, 1964
 M.S., Northwestern University, 1966
 Ph.D., Northwestern University, 1969

**Tool and Manufacturing
 Technology (Numerical Control)
 —School of Technical Careers**

Professor

HARRY R. SODERSTROM, 1962
 B.S., Bradley University, 1950
 M.S., Bradley University, 1952

Associate Professors

MURNICE DALLMAN, 1954
 B.S., Stout State University, 1951
 M.S. in Ed., Southern Illinois University,
 1950

JOHN GRISWOLD, 1955
 B.S., University of Illinois, 1950
 M.Ed., University of Illinois, 1955
 GEORGE LELON TRAYLOR, 1957
 B.S., Western Kentucky University, 1945
 M.S. in Ed., Southern Illinois University,
 1965

Assistant Professors

D. L. LAMPMAN, 1954
 B.A., University of Northern Iowa, 1940
 M.S.Ed., Southern Illinois University, 1956
 FRANK W. MUHICH, 1952
 B.E., Colorado State College, 1953
 M.S. in Ed., Southern Illinois University,
 1957
 PHILIP W. TREGONING, 1965
 B.S., Southern Illinois University, 1969

**Vocational and Technical Careers
 Courses—School of Technical
 Careers**

Professors

ARDEN L. PRATT, 1971
 B.S., West Virginia Wesleyan College, 1945
 M.Sc., Ohio State University, 1947
 Ed.D., State University of New York at
 Buffalo, 1968
 ERNEST J. SIMON, Emeritus, 1950
 B.S., University of Illinois, 1933
 M.S., University of Illinois, 1936

Assistant Professors

DOROTHY R. BLEYER, 1959
 B.S.Ed., Southern Illinois University, 1948
 M.S.Ed., Southern Illinois University, 1961
 JASON COLLINS, Emeritus, 1956
 B.S., Southern Illinois University, 1947
 M.S., Southern Illinois University, 1950
 VIVIENNE HERTZ, 1968
 B.S. in Ed., Illinois State University, 1950
 M.A., Southern Illinois University, 1968
 JOHN M. MCDERMOTT, 1956
 B.S., Southern Illinois University, 1952
 M.S., Southern Illinois University, 1958
 DONALD RAY SMITH, 1967
 B.A., Southern Illinois University, 1965
 M.S. in Ed., Southern Illinois University,
 1967

ARTHUR EUGENE WORKUN, 1963
 B.S., Illinois State University, 1954
 M.S.Ed., Illinois State University, 1955

Instructors

TERENCE BROWN, 1972
 B.S., Lamar University, 1963
 M.A., Stephen F. Austin State University,
 1965
 JOSEPH HOWARD CRENSHAW, 1958
 B.Ed., Southern Illinois University, 1937
 M.S., University of Illinois, 1940
 CHARLES T. CROWE, 1958
 B.A., Southern Illinois University, 1952
 M.A., Southern Illinois University, 1958
 JAMES L. HARBISON, 1958
 B.Ed., Illinois University, 1937
 M.S., University of Illinois, 1940
 JAY DEE MARTIN, 1972
 B.A., University of Missouri, 1969
 WANGSHIK SHIN, 1967
 B.A., Brandeis University, 1960
 M.A., Southern Illinois University, 1963
 MARY VIRGINIA WRIGHT, 1962
 B.S.Ed., Southern Illinois University, 1960

Lecturer

EMILYN S. MORRIS, 1958
 B.S. in Ed., Southern Illinois University,
 1945
 M.S. in Ed., Southern Illinois University,
 1957

*Assistants in Vocational and
 Technical Careers Courses*

DORA ANITA WEAVER, 1972
 B.A., Southern Illinois University, 1970
 DORIS ANGELA WEAVER, 1972
 B.A., Southern Illinois University, 1970

Zoology—College of Science*Professors*

RICHARD E. BLACKWELDER, 1958
 A.B., Stanford University, 1931
 Ph.D., Stanford University, 1934
 HARVEY I. FISHER, 1955
 B.S., Kansas State University, 1937
 Ph.D., University of California, 1942
 EDWIN C. GALBREATH, 1957
 B.Ed., Eastern Illinois University, 1941
 Ph.D., University of Kansas, 1951
 WILLARD GERSBACHER, Emeritus, 1936
 B.Ed., Southern Illinois University, 1926
 M.A., University of Illinois, 1928
 Ph.D., University of Illinois, 1932
 HERMANN J. HAAS, 1963
 Doctor, University of Göttingen, Germany,
 1954
 W. D. KLIMSTRA, 1949
 B.A., Maryville College, 1941
 M.S., Iowa State University, 1948
 Ph.D., Iowa State University, 1949
 WILLIAM M. LEWIS, 1949
 B.S., North Carolina State University, 1943
 M.S., Iowa State University, 1947
 Ph.D., Iowa State University, 1949
 HOWARD J. STAINS, 1955
 B.S., North Carolina State University, 1949
 M.S., North Carolina State University, 1952
 Ph.D., University of Kansas, 1955

Associate Professors

- JOSEPH A. BEATTY, 1965
A.B., College of Wooster, 1959
M.S., University of Arizona, 1962
Ph.D., Harvard University, 1969
- RONALD A. BRANDON, 1963
B.S., Ohio University, 1956
M.S., Ohio University, 1958
Ph.D., University of Illinois, 1962
- WILLIAM G. DYER, 1969
A.B., Boston University, 1957
M.A., Boston University, 1958
Ph.D., Colorado University, 1965
- DUWAYNE C. ENGLERT, 1963
B.S.Ed., University of Kansas, 1954
M.S., Purdue University, 1961
Ph.D., Purdue University, 1964
- GEORGE GAROIAN, Chairman, 1956
B.A., Washington University, 1949
M.S., University of Illinois, 1951
Ph.D., University of Illinois, 1956
- WILLIAM GEORGE, 1964
B.A., University of Arizona, 1957
M.S., University of Arizona, 1958
Ph.D., University of Arizona, 1961
- EUGENE LEFEBVRE, 1966
B.S., University of Minnesota, 1952
M.S., University of Minnesota, 1958
Ph.D., University of Minnesota, 1962
- JAN MARTAN, 1964
S.B., University of Chicago, 1957
S.M., University of Chicago, 1960
Ph.D., University of Oregon, 1963
- BENJAMIN A. SHEPHERD, 1969
B.S., Tougaloo College, 1961
M.S., Atlanta University, 1963
Ph.D., Kansas State University, 1970

- JOHN B. STAHL, 1966
B.S., Iowa State University, 1951
A.M., Indiana University, 1953
Ph.D., Indiana University, 1958
- HILDA A. STEIN, Emeritus, 1925
B.Ed., Southern Illinois University, 1925
M.S., University of Illinois, 1929
- GEORGE H. WARING, 1966
B.S., Colorado State University, 1962
M.A., University of Colorado, 1964
Ph.D., Colorado State University, 1966

Assistant Professors

- TERENCE R. ANTHONY, 1971
M.D., University of Chicago, 1968
- ROY C. HEIDINGER, 1970
B.A., Southern Illinois University, 1966
M.A., Southern Illinois University, 1967
Ph.D., Southern Illinois University, 1970
- SAMUEL R. JEWELL, 1971
A.B., Harvard University, 1962
M.S., University of Massachusetts, 1966
Ph.D., Colorado State University, 1972
- JOHN E. MCPHERSON, 1969
B.S., San Diego State College, 1963
M.S., San Diego State College, 1964
Ph.D., Michigan State University, 1968
- ANTHONY A. PAPARO, 1973
B.S., City College of New York, 1961
M.A., Hunter College, 1963
Ph.D., Fordham University, 1969
- BRUCE W. PETERSEN, 1968
B.A., University of Omaha, 1958
B.S. in Educ., University of Omaha, 1962
M.S., University of Iowa, 1960
Ph.D., University of Colorado, 1968

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SOUTHERN ILLINOIS UNIVERSITY

TO EXALT BEAUTY

*In God,
in nature, and
in art;
Teaching how to love the best
but to keep the human touch;*

TO ADVANCE LEARNING

*In all lines of truth
wherever they may lead,
Showing how to think
rather than what to think,
Assisting the powers
of the mind
In their self-development;*

TO FORWARD IDEAS AND IDEALS

*In our democracy,
Inspiring respect for others
as for ourselves,
Ever promoting freedom
with responsibility;*

TO BECOME A CENTER OF ORDER AND LIGHT

*That knowledge may lead
to understanding
And understanding
to wisdom.*



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