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announcements

Undergraduate Edition, June 1972

 at Edwardsville

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Announcement

announcements

Southern Illinois University at Edwardsville

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This Issue

of the *Southern Illinois University Announcements* covers in detail questions concerning the undergraduate program and applies to Southern Illinois University at Edwardsville. It supersedes Volume 1, Number 3 of the *Southern Illinois University Announcements*.

THE FOLLOWING ISSUES of the *Southern Illinois University Announcements* may be obtained free from University Graphics and Publications, Southern Illinois University, Edwardsville, Illinois 62025.

Graduate School Catalog.

Guidelines for Prospective Students.

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

Undergraduate Catalog. The catalog is available for examination in high school guidance offices and libraries throughout Illinois and in some other states. Copies will be furnished free to educational institutions upon request and to new students upon matriculation. A copy of the catalog may be purchased at the University Bookstore for \$1; mail orders should be sent to University Graphics and Publications and must include remittance payable to Southern Illinois University.

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University Calendar

<i>SUMMER, 1972</i>	Quarter Begins	Monday, June 19*
	Independence Day Holiday	
		Monday-Tuesday, July 3-4
	Final Examinations	Monday-Friday, August 28-September 1
	Commencement	Saturday, September 2
<i>FALL, 1972</i>	Quarter Begins	Monday, September 18*
	Thanksgiving Vacation	
		Tuesday, 10 P.M.-Monday, 8 A.M., November 21-27
	Final Examinations	
		Saturday-Friday, December 9-15
<i>WINTER, 1973</i>	Quarter Begins	Tuesday, January 2*
	Washington's Birthday Holiday	
		Monday, February 19
	Final Examinations	
		Saturday-Friday, March 10-16
<i>SPRING, 1973</i>	Quarter Begins	Monday, March 26*
	Memorial Day Holiday	Monday, May 28
	Final Examinations	Saturday-Friday, June 2-8
	Commencement	Saturday, June 9
<i>SUMMER, 1973</i>	Quarter Begins	Monday, June 18*
	Independence Day Holiday	Wednesday, July 4
	Final Examinations	Monday-Friday, August 27-31
	Commencement	Saturday, September 1

*Classes begin with the evening classes after 4:30 P.M.

Board of Trustees and Officers of Administration

BOARD OF TRUSTEES

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1 / The University

SOUTHERN ILLINOIS UNIVERSITY is a multi-purpose and diversified public university that was established in 1869. It has sought to meet contemporary educational needs for those it serves. It is fully accredited by the North Central Association of Colleges and Secondary Schools.

Southern Illinois University at Edwardsville has been involved in educational and service programs for the Metro-East area of the greater metropolitan St. Louis area since 1949, when the Belleville Residence Center was established. In 1957, residence centers were established in Alton at the former Shurtleff College campus and in East St. Louis at a former high school. Specialized programs continue to function at both locations today, specialized urban-oriented programs in East St. Louis and the initiation of a dental program in Alton at the former Shurtleff Campus.

Educational programs are wide ranging, covering baccalaureate degrees in nearly fifty different concentrations, approximately forty different master's degrees and three areas of the specialist's certificate.

In the fall of 1965, major academic operations of the University were centralized on the new Edwardsville Campus. Six buildings presently comprise the main academic core. The campus is located in an area comprised of 2600 acres of rolling land and wooded area dotted with several lakes along the bluffs flanking the Mississippi River southwest of Edwardsville. Lovejoy Memorial Library, named for Elijah P. Lovejoy, an abolitionist newspaper editor who was America's first martyr to the freedom of the press, houses nearly a half million volumes, over 100,000 government documents, a collection of over 7,000 sound recordings, a map collection exceeding 45,000 maps, and thousands of films and other visual materials. Students are exposed to several art collections including Rodin's *Walking Man*.

The John Mason Peck Building is a general classroom building which houses over fifty classrooms in addition to numerous faculty offices. The Science Laboratory Building contains ten general classrooms, twenty-three special laboratories and offices for science and nursing faculty. The Communications Building has general classrooms and special purpose rooms for music, fine arts, speech and theater students. Student theatrical productions are presented in the theater. Broadcasting studios and facilities are housed in the Communications Building. Programs for radio station WSIE-FM originate in that building and facilities for a proposed educational television station are in the building, also.

The University Center, which has received international awards for its total design, has 220,000 square feet of diversified space. It provides food service for students, faculty, and guests. The Center provides recreational facilities including a sixteen-lane bowling alley, table tennis facilities, billiard room, and a card and game lounge. Other facilities are a bookstore, barber shop, television room, music listening room, conference rooms, and an art gallery. Dances, various entertainment programs, and other formal functions are held in the grand ballroom. Movies can also be shown in the ballroom area.

The General Office Building has approximately 60,000 square feet of office space which provides for the various administrative, student service, and academic functions.

Near the academic core is the new geodesic dome interdenominational religious center which was constructed through private donations.

Several other academic buildings are in various stages of planning for present and future instructional needs. Supportive buildings such as the Supporting Services Building, Heating and Refrigeration Plant, and some temporary structures are located at various points away from the center of the campus area.

There are approximately 700 full time Edwardsville faculty members, sixty-seven percent of whom possess the doctorate degree. Although many faculty are distinguished nationally and internationally through special talents, publications, and research, teaching is of primary concern. Awards are made annually for outstanding teaching. Faculty are committed to quality instruction, maximum communication and involvement with students. Student representation on major policy making bodies such as the University Senate is considered to be an advantage to the University and to facilitate students' learning and understanding.

Enrollment at Edwardsville the past two years has been approximately 13,000 students, with ninety-one Illinois counties, thirty states and twenty foreign nations represented. Madison, St. Clair, and Macoupin Counties provide seventy-six percent of the total enrollment. Missouri residents accounted for eight percent of the total student population. Southern Illinois University at Edwardsville is primarily a commuter campus with students living in the many communities within a sixty-mile radius of the campus. Approximately 800 people live in the 248 student apartments at the Tower Lake complex on campus, within walking distance of the central academic core.

Numerous cultural, entertainment, educational, and athletic activities abound in this metropolitan area. Southern Illinois University at Edwardsville is twenty minutes driving time from downtown St. Louis. Interstate Highways 70 and 270 facilitate access to the campus from all parts of the southwestern Illinois region.

The University has received national recognition for its Mississippi River Music Festival which is in its fourth season. The St. Louis Symphony is featured, as are many popular musical groups during the several week summer season.

The University sponsors an extensive intramural program and a varsity athletic program including soccer, basketball, baseball, track,

cross country, wrestling, and golf. The Cougars, as the athletic teams are called, received national and international recognition in several sports, the most noteworthy being soccer.

The long-range development of the campus anticipates a student enrollment approximating 20,000, with a comprehensive educational program geared to the needs of an urban society.

Lovejoy Library

The Elijah P. Lovejoy Library contains about one million items, including about 500,000 books and bound periodicals; 225,000 United States, Illinois and international organization government documents; 80,000 maps; 10,000 phonograph records; 100,000 music items; about 70,000 microtext items, and a number of specialized research collections. About 50,000 volumes are added annually and 5,500 periodicals are subscribed to. In addition, libraries at East St. Louis and Alton contain collections appropriate to their programs. Also, the resources of the Morris Library at Carbondale, about a million and a half volumes, are available to faculty and graduate students. A printed catalog and other aids are available for the identification of materials which may be borrowed. Similarly accessible are the 2,000,000 volumes of the Center for Research Libraries, Chicago. Special memberships also permit faculty and graduate students to use the St. Louis Mercantile Library and the Missouri Historical Society Library. Programs of instruction in the use of the library are offered in most academic areas.

Other areas of particular strength include:

1. A considerable collection of curriculum guides, children's books, current school texts, and other specialized materials in education.
2. Files of Negro newspapers on microfilm and 3,000 anti-slavery pamphlets on microcards, which is part of the Library's larger collection devoted to abolitionist literature and to both historical and contemporary civil rights literature.
3. A collection of documents on more than one hundred reels of microfilm on the history of the Mormons in Illinois.
4. A Slavic and East European collection of about 5,000 volumes which includes a large number of rare Slavic-American imprints.

The Lovejoy Library is also an important source of materials on the history of the region which it serves.

Lists of current periodicals and other serials are available.

2 / General Information

IN ORDER TO attend classes at Southern Illinois University, one must gain official admission to the University and must complete the registration process, which includes specialized testing, advisement, sectioning, and payment of fees.

Admission

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.

Admission of Freshmen

To be considered for admission to the University, a person must be a graduate of an accredited high school or must have passed the General Educational Development Test; a person seeking admission through the latter procedure may not be considered until his high school class would have graduated. A graduate of a non-accredited high school may be admitted by the Director of Admissions through examination.

The in-state high school graduate who ranks in the upper half of his graduating class or who achieves a specified high score on the American College Test (A.C.T.) will be considered for admission to any quarter of the academic year. One who ranks in the lower half of his graduating class will be permitted to enter conditionally for the summer quarter only. (Please see page 13 for further information). A student having high class standing or high A.C.T. scores will be given admission preference.

The out-of-state student who ranks in the upper forty percent of his graduating class or who achieves a specified high score on the A.C.T. will be considered for admission to any quarter of the academic year. Students from the remaining ten percent of the upper half of their graduating class will be permitted to enter conditionally during the summer quarter only. No out-of-state student, ranking in the lower half of his class and with less than the specified A.C.T. score, can be considered for admission.

The student whose low class ranking permits him to enter only during the summer quarter, can qualify for fall quarter attendance by carrying a minimum academic load of two courses of at least 3 hours credit each, and by completing them with no less than a C average.

Students will be considered for admission after completing the sixth semester of high school. A prospective freshman must submit high school records and furnish A.C.T. scores prior to being admitted to the University. Admission granted a student while in high school is subject to the completion of high school work and maintenance of the rank upon which he was admitted.

All students entering the University as freshmen seeking a bachelor's degree are enrolled in the General Studies Division.

Admission of Transfer Students

A student applying as an undergraduate transfer student from a four-year institution is admissible to any quarter provided he has a 3.00 (C) grade-point average at the institution of last attendance. The student who does not have a 3.00 grade-point average at the institution of last attendance but is eligible to continue will be considered for admission on probation for summer, winter, and spring quarters. One who is not eligible to continue at his last institution may be considered for admission on probation for summer and spring provided there has been an interruption of schooling of at least two quarters duration and there is tangible evidence that additional education can be successfully completed by the student.

In the event a student has attended more than one institution, the institution of last attendance is considered to be the one last attended on a full-time basis for at least one quarter or semester.

The student applying for admission from a two-year institution is admissible to any quarter provided he has a 3.00 (C) grade-point average at the institution of last attendance. A student who did not have a 3.00 grade-point average at the institution of last attendance but is eligible to continue may be considered for admission on probation for summer, winter, and spring quarters. One who is not eligible to continue at his last institution may be considered for admission on probation for spring and summer quarters provided there has been an interruption of schooling of at least two quarters duration and there is tangible evidence that additional education can be successfully completed by the student. However, a student who did not meet the University's admission requirements to enter as a freshman from high school during the regular year and who elected to enter a two-year institution will not be considered for admission as a transfer student until he has completed one year of attendance at the two-year institution.

Students graduating with an associate degree, in a baccalaureate-oriented program, from an accredited two-year institution may enter the University with junior class standing and be considered to have met the lower division General Studies requirements. These students may enter any quarter provided they have not taken additional work at another institution since completion of the associate degree. If a student has taken additional work, his admission will be considered from the same standpoint as that of a student transferring from a four-year institution.

Admission preference will be given to the transfer student with high grade average.

Admission of Foreign Students

In addition to the standard admissions procedures outlined above, each foreign applicant must submit a "Questionnaire for Foreign Students" which lists *all* previous schooling. Individual marks sheets (transcripts) from the applicant's secondary or middle schools are also required. In the case of a transfer applicant from a foreign university, the candidate must provide, in addition to transcripts *per se*, a detailed description (syllabus) of the content of the individual courses for which he seeks transfer credit before any evaluation of credits will be performed. *All documentation must be in English, and it is the applicant's responsibility to provide any translations required.* All translations must be accompanied by the signed certification of the translator, attesting that the translation is a veritable representation of the contents of the original.

The applicant is required to provide scores on the Test of English as a Foreign Language (TOEFL), unless English is the traditionally recognized native language of his homeland. No other language examination is considered an acceptable alternate, nor will successful completion of an intensive training course in English as a second language remove the requirement. The student must make provision for his own financial need, and is required to certify his financial stability before his application is considered. The University assumes no financial obligation to the student because of the fact of admission.

Basically, the same admissions limitations prevail as are imposed upon other out-of-state students for the fall quarter, except that all documentation must be on file no later than two months prior to the beginning of the quarter into which the candidate seeks admission.

Admission of Former Students

A former student of Southern Illinois University not in attendance on a campus at the close of the quarter preceding application for admission must apply to the Admissions Office for re-entrance prior to registration.

A former student who is not in good standing must clear his status before the Admissions Office will prepare his registration permit. It is advisable for such a student to initiate re-entrance clearance early so that all inquiries may be answered and so that the applicant can find time to complete any requirements that may be imposed upon him. (See Scholastic Probation and Suspension on page 13.)

Applying for Admission

A student may start his admission process at any time. High school students who rank sufficiently high to be eligible for admission to any quarter are urged to initiate action during their seventh semester in high school. Others may apply at that time but decision will be delayed until after the end of the seventh semester. 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 the start

of the quarter which they wish to enter, while they will be admitted if eligible, may be confronted with having to accept less desirable class schedules than would otherwise be the case.

The admission process is started by writing the Admissions Office, Southern Illinois University, Edwardsville, Illinois 62025, 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.

Documents Required for Admission

Among the items required by the University before admission is completed are the following:

1. The completed application form from the student.
2. Transcripts of previous educational experience. For the high school student the request is for two copies of the high school transcript. For the transfer student 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 36 quarter hours (24 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 36 quarter hours (24 semester hours) must have their official A.C.T. scores sent to the University from the American College Testing Program, Box 451, Iowa City, Iowa 52240.

Advisement

After a student has been admitted to Southern Illinois University, he should talk with an adviser about his educational plans and complete his registration for the quarter he expects to enter the University.

To insure that an undergraduate student is properly advised concerning the choice of a course which will fulfill the requirements of the University and prepare him for his chosen career, academic advisement has been made the special responsibility of a group selected from the teaching faculty. During his first two years the student will receive prime advice from an adviser responsible to the Dean of General Studies. If he chooses to declare a special field of interest then, his General Studies adviser will refer him to someone representing his special field of interest for secondary advice; but formal admission to a specific field will be deferred until the student completes 64 hours of General Studies credit. All students in General Studies must initiate transfer into their chosen unit before enrolling again, after completion of 96 hours of credit.

After admission to some special field, the student will receive prime advice from a representative of that field. For example, students enrolling in the Experiment in Higher Education or the Performing Arts Training Center will be advised at appropriate sites in East St. Louis.

Physical Examination

Each new student desiring to enroll at Southern Illinois University is required to have a physical examination completed prior to his initial registration for classes. A special medical form is provided which is to be completed by the student and his personal physician and returned to the University Health Service.

Registration

A five-day early registration period is normally conducted approximately one month prior to the beginning of each quarter. Early registration is on an appointment basis, and appointments are issued at announced times by the Enrollment Office and the General Studies Advisement Office. Information regarding appointment registration may be obtained by calling the Enrollment Office: (618) 692-3866.

A one-day central registration is held before classes begin each quarter. At this time, appointments are not necessary and registration is conducted on a first-come basis. There is no registration after classes have begun. Those students who delay their registration until the central day run a high risk of having to alter their schedules due to closed classes.

Registration for any session of the University is contingent upon being eligible for registration. Thus, a registration including the payment of tuition and fees may be considered invalid if the student is declared to be ineligible to register due to scholastic reasons. The same situation may exist due to financial or disciplinary reasons if certified to the Registrar by the Bursar or the Dean of Students.

Detailed information about the dates and procedures for advisement and registration appears in the Schedule of Classes, available from University Graphics and Publications.

Tuition and Other Fees

The fees charged students are established by the Board of Trustees and are subject to change whenever conditions make changes necessary. At present, fees per quarter for undergraduate students are as follows:

	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
Athletic Fee	3.00	6.50	10.00
Book Rental Fee	3.00	6.00	8.00
Student Activity Fee	3.50	7.00	10.50
University Center Fee	5.00	5.00	5.00
<i>Total</i> —Illinois Resident	\$ 67.50	\$129.50	\$191.50
<i>Total</i> —Out of State Resident	(162.50)	(320.50)	(477.50)

Students holding valid state scholarships are exempt from the above fees to the extent provided by the terms of the specific scholarship held. An Illinois State Teacher Education Scholarship, an Illinois Military Scholarship, or an Illinois General Assembly Scholarship exempts the student from the paying of tuition, the student activity fee, and the graduation fee.

The student activity fee includes the fees for limited hospitalization, entertainment, athletics, student publications, and such other privileges as may be provided.

Faculty members and university civil service employees taking courses are not charged tuition and activity fees. However, they pay all other appropriate fees.

Extension course fees are \$10.00 per quarter hour. The University textbook rental policy applies only to resident students. Extension students must purchase textbooks.

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

A student registering for work on an audit basis is assessed fees on the same basis as when registering on a credit basis.

Transcripts

A student is entitled to a free transcript of his university record each time he has added academically to his record through work taken at this University, provided he has fulfilled all his financial obligations to the University. There is a charge of \$1.00 for each additional transcript.

PAYMENT AND REFUNDING OF FEES

All fees are payable at the time of registration and are subject to changes whenever conditions necessitate changes.

Refunding of fees is possible only if a student has withdrawn from school, officially, within the first ten days of a quarter and only if the application for a refund is received in the Registrar's Office within ten school days following the last regular registration day. (See Registration Calendar in the Schedule of Classes for specific dates.)

A student who originally pays full fees and then finds that he must reduce his program to fewer hours may receive a refund of the tuition and book rental fee equivalent to the number of hours remaining as indicated in the fee schedule, provided the reduction is officially made during the first ten days of the quarter.

Academic Load

The normal academic load for a student is 16 hours. The maximum is 18 hours.

A student with a 4.25 grade-point average or above for the preceding quarter may be allowed by the head of his academic unit to take as many as 21 hours.

A student on scholastic probation may not take more than 14 hours without approval of the dean of his division. A student employed full-time should not register for more than 8 hours.

Ordinarily, a student must carry 12 or more hours per quarter to be considered a full-time student. However, a number of programs may carry different requirements and a student attending the University under a scholarship, loan, or other type of program requiring full-time enrollment, should check to make certain that he is meeting the requirements of his specific program. A student concerned with Selective Service on the undergraduate level needs to carry 12 hours to be considered full-time. However, for Selective Service purposes, a student must also be making satisfactory progress. Therefore, he needs to accumulate 48 passing hours each year. Because of this, he must consider 12 hours as only a minimum load for full-time purposes with 16 hours per quarter as the average load he must maintain throughout the year. Further information on Selective Service is available in the enrollment section of the Registrar's Office.

Unit of Credit

Southern Illinois University 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

An undergraduate student is classified as a freshman, sophomore, junior, or senior, depending upon the number of hours he has successfully completed toward the degree. 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.

Course Numbering System

Generally, those courses which are numbered at the 100- and 200-level are for freshmen and sophomores. The 300-level courses are for juniors and seniors. Only students who have graduate standing or more than 96 hours of undergraduate credit may register in a 400-level course. Courses numbered 500 or higher are open to graduate students only.

Grading System

The following grading symbols are used for undergraduate work:

	GRADE POINTS PER HOUR
A-Excellent	5
B-Good	4
C-Satisfactory (This is the grade for average performance.)	3
D-Poor	2
E-Failure	1

- W—Authorized withdrawal with no basis for evaluation established. Work may not be completed.
- WP—Authorized withdrawal with passing grade. Work may not be completed.
- WE—Authorized withdrawal with failing grade. Work may not be completed.
- INC—Incomplete. Has permission of instructor to be completed.
- DEF—Deferred. Used only for graduate courses of an individual, continuing nature such as thesis or research.
- ABS—Unauthorized withdrawal. Same as *E* for academic retention purposes.
- S—Satisfactory. Used for non-credit courses and thesis.
- U—Unsatisfactory. Used for non-credit courses and thesis.
- AU—Audit. No grade or credit hours earned.
- PASS—Credit toward graduation. No grade.
- FAIL—No credit toward graduation. No grade.
- PR—Work in progress.

All complete grades and the grades *WE* and *ABS* are included in determining student grade-point averages for academic retention purposes.

Authorized course withdrawals made through the program change process do not receive grades when made during the first four weeks of a quarter. Thereafter, authorized withdrawals receive *WP* for withdrawal with a passing grade, *WE* for withdrawal with a failing grade, or *W* when no basis for evaluation has been established.

Unauthorized course withdrawals which are made through failure of the students to continue in attendance receive a grade of *ABS*. An *ABS* grade for a student may be changed to a *W* in unusual circumstances upon the recommendation of the head of the student's 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; otherwise it remains as an *INC* grade and is not included in a grade-point computation.

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.

A student registering for a course on an *audit* basis receives no letter grade and no credit hours. An auditor's registration card must be marked accordingly and he pays the same fees as though he were registering for credit. He is expected to attend regularly and is to determine from the instructor the amount of work expected of him. If an auditing student does not attend regularly, the instructor may determine that the student should not have the audited course placed on his record card maintained in the Registrar's Office. A student 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.

The official record of a student's academic work is maintained in the Registrar's Office.

Scholastic Standards

1. When a student's cumulative grade-point average falls below 3.00, he is given a *Scholastic Warning*. He will be returned to *Good Standing* at such time as his cumulative average is raised to 3.00 or higher.
2. If, while on *Scholastic Warning*, a student's average is below 3.00, he will be placed on *Scholastic Probation* and subject to the restrictions imposed on probationary students.
3. The student on *Scholastic Probation* will remain in this category until:
 - a. He completes three successive quarters of *C* average or better work, at which time he will be returned to *Scholastic Warning*;
or
 - b. He raises his cumulative average to the 3.00 level, at which time he will be returned to *Good Standing*.
4. In the event a student on *Scholastic Probation* fails to attain a 3.00 average for his next quarter of attendance, he will be placed on *Scholastic Suspension*.
5. A student placed on *Scholastic Suspension* for the first time may be permitted by the Dean of his unit to resume his studies at any time.
6. A student placed on *Scholastic Suspension* for the second time may be permitted by the Dean of his unit to resume his studies at any time after a mandatory suspension period of one calendar year.
7. A student placed on *Scholastic Suspension* for the third time may be permitted by the Dean of his unit to resume his studies at any time after a mandatory suspension period of five calendar years.

Honors Day

In recognition of high scholarship, an Honors Day convocation is held each spring. A candidate for a bachelor's degree in June or August who has maintained a grade-point average of 4.25 or more for all of his work through the winter quarter of his senior year receives special honor. Each junior having a 4.25 grade-point average and each sophomore and freshman having a 4.50 grade-point average is also honored at the convocation. Except in the case of a graduating senior, a student must be attending full time to be eligible. A transfer student must have earned the average indicated for work at Southern Illinois University only, as well as for the total record. Graduating seniors are also recognized at Commencement on the graduation program, and their diplomas designate honors granted on the basis of Highest Honors (4.90 or higher); High Honors (4.75-4.89); and Honors (4.50-4.74.)

Special Programs for Credit

Credit for Military Experience

Students who have completed military basic training may receive 3 hours of credit for physical education and 3 hours of credit in health education. Such credit satisfies the General Studies requirements in Area E. Applications for credit for military service may be made through the Registrar's Office.

Extension and Correspondence

A maximum of one-half of the number of hours required for the bachelor's degree, or 96 hours, may be taken by extension and correspondence courses combined. Of this total, not more than 48 hours may be taken in correspondence courses.

While Southern Illinois University does not maintain a correspondence division, courses taken by correspondence from institutions which are accredited by their appropriate regional accreditation association are regularly accepted if the grade earned is C or above.

The Deans College

The Deans College has been created to help outstanding students find an academic program that is more relevant to their needs and perhaps may carry them further along the road to professional competence than the usual undergraduate programs.

In general, a 4.5 grade-point average is required for admission to the Deans College, but students with outstanding high school records, and others highly recommended by reason of talent by a teacher, may be admitted directly from high school. Students selected for the Deans College must complete the usual 192 hours for the bachelor's degree.

Each Deans College student is assigned a senior faculty adviser who is a member of the Deans College, and whose field of interest reflects that of the student. The student works out with his adviser a program of studies based upon the student's needs and capabilities. This program, assigned on the authority of the adviser and the Deans College Coordinator, substitutes for all other University and divisional requirements. With the adviser's cooperation, a student may take up to 4 hours of honors work each quarter of full-time enrollment.

Interested students seeking additional information concerning the Deans College should write or call the Deans College Coordinator.

Veterans' Information

Veterans at Southern Illinois University at Edwardsville have the opportunity to help other veterans as well as to be assisted themselves. Through the efforts and research of the Veterans World Project, a federally funded project in which veterans sought to define and propose solutions to their own problems, various services and programs are available which seek to cover every facet of the veterans' return to school. Veterans' counseling is available in which student veterans counsel one another. A veterans' organization, the Association of Collegiate Veterans, was initiated to enlist student veterans to provide services to other student veterans in the areas of academic, employment, and personal problems. Veterans are also employed in a capacity to inform recently discharged veterans of their GI Bill rights and to discuss with them the possibility of enrolling in school at the University.

The basis of these programs is to facilitate and encourage veterans in their academic pursuits, in taking full advantage of all the benefits to which they are entitled, and in adjusting to the university environment.

3 / General Studies

STUDENTS WHO EXPECT to receive the baccalaureate degree from this University with the exception of those in the Deans College must complete the General Studies Program.

A General Studies Committee, composed of faculty representatives, student representatives, and administrators, 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 division for which the courses were approved.

In order to graduate from the University with a bachelor's degree, a student must satisfy the General Studies requirements which are explained in this chapter. He must also satisfy the requirements for an area of concentration (major), and in many cases, a secondary concentration (minor). If the student plans to teach in an elementary or a secondary school, he should meet the requirements for teacher certification. There are also specific requirements for graduation for each degree. For graduation requirements other than General Studies, the student should examine the related sections of this catalog.

Aims and Purposes of the General Studies Program

The education of an enlightened people through the transmission of the culture of our times is a basic objective of higher education. Specialists themselves realize that rigid concentration within any field of study may deprive them of broader understandings so important for participation in life as citizens and parents. Our educational efforts, therefore, must produce individuals with an ability to use knowledge in a way which also advances social and cultural life. Our kind of free and democratic society cannot endure without such citizens.

General Studies are only part, not the whole, of man's education. While General Studies can conceivably help a student in his choice of occupation and can contribute to his success in a given occupation, their principal objective is not to develop vocational skills. They comprise that portion of the total curriculum which is concerned with the common needs of man and which assist the student to be more at home in a world that increasingly demands more of all men in terms of the intellectual, spiritual, and social. It is necessary to prepare each student to assume his proper responsibilities in a world of rapidly expanding knowledge, rapidly expanding population, technological advance, and consequent changes.

There is a basic unity of knowledge which the General Studies Program attempts to exhibit. The General Studies Program tries to lay a foundation upon which the student will build a superstructure of understanding and achievement. Such a background should complement the specialized studies which the student undertakes in pursuing his concentration.

An opportunity is provided for the student to gain experience in several subjects and, hopefully, to make an unhurried selection of a professional goal and an area of concentration for his total educational program. If a student has made a tentative choice of his educational goal, he may carry courses in his area of special interest concurrently with the basic courses of the General Studies curriculum.

The General Studies curriculum at Southern Illinois University at Edwardsville 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.

The Five General Studies Areas

The General Studies Program utilizes a classification of knowledge into five comprehensive areas, each of which has a special contribution to make toward the development of the individual. Anyone, to be truly educated, should have some familiarity with each of these areas. Each area is designated by a particular letter.

Area A—Man's Physical Environment and Biological Inheritance—includes the subjects generally called "science." The General Studies science courses aim to provide the student with an understanding of the structure of the sciences, the conceptual schemes they employ, the forms of reasoning used to reach their conclusions, and the procedures used to verify their validity. Improved understanding should lead to interest in the sciences and appreciation of the role of the sciences in human experience. The student who approaches the study of science with an appropriate attitude should find that discovery is a delightful intellectual experience.

Area B—Man's Social Inheritance and Social Responsibilities—is concerned with those subjects generally referred to as the "social" sciences. It is the aim of the courses in this area to help the students develop an awareness of man's role in society, an ability to think intelligently about their environment, and an alertness to the complexities of the modern world. The courses in Area B should assist the students in understanding the way men are shaped by the social processes. Study in the area should make students aware that their attempt to define these processes may increase their ability to determine their own destinies. It is easy to see the importance of the great technological advances of the industrial revolution. But, it should not be overlooked that all scientific and mechanical innovations must attain their significance in a setting of human interrelationships and responsibilities.

Area C—Man's Insights and Appreciations—includes the subjects usually referred to as “humanities” and “fine arts.” Amid all the changes in history, man in many basic ways is the same as he has always been. Human beings today experience the same basic desires and hopes, the same fears and failures, that they did in ancient times. And it is with these human constants that Man's Insights and Appreciations is most concerned. Of course, it is also concerned with the changing ways that these unchanging elements have been dealt with, with the unique ways man has expressed himself about them, but underneath is the permanency of the human experience itself. The title Man's Insights and Appreciations aptly describes the concepts to be studied in this area. The student has an opportunity to enrich his own insights and appreciations. It is further hoped that he will be able to develop his own sense of values. For example, in philosophy and design, one can discover fundamental connections among various areas of human experience. In literature and philosophy one confronts various problems of good and evil and may be stimulated to clarify his own values. In the study of the various arts one ought to be able to come to a better appreciation of the creativity of others and even share directly in this experience. All told, it is hoped that this kind of study contributes to what in an earlier time of history was spoken of as “wisdom.”

Area D—Organization and Communication of Ideas—deals with the general area of communication in a broad sense. Subjects like English, speech, foreign languages, and mathematics are included. Effective communication of ideas is basic to organized society. Transmission of information from one human being to another enables the second person to benefit from the experiences and insights of the first. Mutual exchange of ideas can be quite helpful. The experience of centuries can be communicated to those who live in the present. Language, whether oral, written, or symbolic, is the fundamental means of communication.

Area E—Health and Physical Development—includes the subjects of physical education and hygiene. Because life does put such a demand on self-discipline, compulsion of performance, and in many cases rigid standardization of programs, many students need and seek an outlet for a healthy expression in some recreational activity. Health is the foundation for all of one's activities. Health does not mean merely that the individual is free from illness. Rather, it implies a positive state of complete physical, mental, and social well-being.

General Studies Requirements

The specific requirements in General Studies are listed and explained in this section. These general statements must be qualified in many cases by the variations and exceptions explained in the section following this one. Since each student has a third-level waiver, he should check that section.

The General Studies courses are classified into the five previously-listed areas. Within each area, there may be as many as three levels—100, 200, and 300.

In the following, a listing such as GSA 101-8 (5,3) (physics-chemistry) refers to the course sequence numbered 101; 8 refers to the total of the two parts, in this case *a* and *c*, in General Studies Area A which carries 5 hours and 3 hours credit with the general subject matter listed. The listing GSC 252-4 Logic refers to the course numbered 252 in Area C and indicates that it carries 4 hours of credit and consists of only one part. See Chapter 8 in which the courses are described in detail.

Area A—Each student must meet a requirement of 22 hours. He must complete an 8-hour sequence on the first level. The two sequences currently offered are GSA 101-8 (5,3) (physics-chemistry) and GSA 110-8 (4,4) (earth science).

On the second level he must complete 8 hours, including GSA 204-4 Man's Biological Inheritance.

On the third level, 6 hours are required (unless the student is entitled to a waiver in this area). This requirement is met by taking any two of the third-level courses in Area A (not necessarily a sequence), with the exception that GSA 330 and GSA 331 may not both be counted toward the requirement.

Area B—The requirement in Area B is 22 hours. Each student must complete an 8-hour sequence at the first level. At present the three sequences available are GSB 101-8 (4,4) (history), GSB 103-8 (4,4) (sociology-economics), and GSB 105-8 (4,4) (black experience).

At the second level a sequence of 8 hours is required. Available are GSB 201-8 (4,4) (anthropology, psychology) and GSB 203-8 (4,4) (government, geography). The student may elect to take GSB 215-4 (technology and society) with any other second-level Area B course to meet this requirement.

At the third level, the student may select any two GSB courses numbered 300-399 for 6 hours of credit. (Note the exception if this is the area of the student's waiver.) It should be noted that GSB 203a-4 or GSB 300a-3 will meet the constitution requirement.

Area C—The Area C requirement is 19 hours. At the first level, the student must complete 5 hours. Courses currently available are GSC 155-5 (art), GSC 156-5 (music), GSC 157-5 (dramatic media), and 158-5 (fine arts).

At the second level the student takes GSC 252-4 (logic) and one of the courses GSC 253-4 (literary masterpieces) or GSC 254-4 (philosophical masterpieces).

Third-level requirements are completed by any two GSC courses numbered 300-399 for 6 hours of credit. (See note about waiver.)

Area D—This area requires 21 hours. Twelve of these are satisfied by GSD 101-8 (4,4) (English composition) and GSD 103-4 (speech). The remaining 9 hours are met by completing either a sequence of three General Studies courses in one foreign language or a sequence of 9 hours in General Studies courses in mathematics. Foreign language courses now being offered are: GSD 123-9 (3,3,3) (French); GSD 126-9 (3,3,3) (German); GSD 127-5 (German); GSD 136-9 (3,3,3) (Russian); GSD 140-9 (3,3,3) (Spanish); GSD 144-9 (3,3,3) (Italian).

Mathematics sequences which may be selected are GSD 112-9 (4,5)

(Introduction to Mathematics) or GSD 114-9 (5,4) (algebra, trigonometry) or GSD 114-9 (5,4) (algebra, statistics). In making the choice between foreign language or mathematics, the student should note that some concentrations and degrees have specific requirements in these subjects. The student should check those requirements before he makes his selection. Students having had high school foreign language or mathematics should see a General Studies adviser for possible exemption or advanced standing.

Area E—The requirement for Area *E* is 6 hours. On the first level of Area *E*, each student is required to take GSE 116a-1 (swimming), and GSE 102-1 (physical fitness—men) or GSE 112-1 (basic body movement—women) plus 1 additional hour of General Studies physical education courses, thus making a total of 3 hours. A student who passes a swim test or for whom no swimming facilities are provided must take 102 or 112 and 2 hours from 117 or 118. Until adequate facilities are available, each student, for General Studies purposes, is excused from 1 hour of the physical education requirement for each quarter of attendance in which more than one-half of his credit hours are taken at Edwardsville.

On the second level, each student is required to take GSE 201-3 (health education).

In summary, the student must satisfy a total of 84 hours of credit in General Studies. In the Areas *A*, *B*, or *C* he presents, respectively, 22, 22, and 19 hours except for the area of his waiver (see the following section on the third-level waiver) in which case he presents 6 hours fewer. Area *D* requires 21 hours and Area *E* requires 6 hours.

Effect of Concentration Requirements

The student should be careful to note that certain areas of concentration (as described elsewhere in this catalog) have specific requirements which have the effect of reducing the choices the student normally has in General Studies. For example, the area of concentration may require a specific General Studies course or sequence whereas the General Studies requirements provide an option or a waiver. It should be clear to the student that these are requirements of the concentration, not of General Studies.

General Studies Requirements for the Transfer Student

A transfer student in good standing who has completed an associate degree based upon baccalaureate-oriented sequences to be transferred from a junior community college in Illinois is considered to have attained junior standing and to have met the first- and second-level requirements of the General Studies Program.

Other students who transfer to Southern Illinois University from an accredited university, college, or junior college have their work evaluated for purposes of meeting the general degree requirements, including the General Studies requirements. The number of *D* hours accepted from each institution is equal to one-third the *A*, *B*, and *C* hours. All grades earned at other institutions are used in determining the student's grade-point average. In general, equivalent work in appropriate areas is applied to meet the requirements. Other courses

may be accepted for general credit and may apply toward concentration or other requirements. Students now attending another college who intend to transfer to Southern Illinois University should plan their courses to complete specific sequences if possible.

Semester hours transferred are computed on the basis of 3 quarter hours credit for each 2 semester hours accepted. A student transferring a course carrying 3 semester hours credit, for example, will receive 4.5 quarter hours credit.

If, at the time of original entry into the University, the transfer student is given no credit for course work in one of the General Studies Areas A, B, or C, he must complete the requirements of that area, sequence by sequence, in the same manner as regular students.

If the transfer student is given credit for previous work in an area of General Studies, he must complete the requirements of the area by taking General Studies courses so that his total university and college experience meets the following standards.

For Area A, he must complete 22 hours in science (physics, chemistry, biology, earth science, etc.). A minimum of three specific fields which includes work in both the physical and the biological sciences must be included. A maximum of 6 hours credit at the third level may be applied toward the area requirement.

For Area B, he must complete 22 hours in the social sciences (geography, history, economics, government, sociology, psychology, anthropology, etc.). At least three specific fields must be included. A maximum of 6 hours at the third level may be applied toward the area requirement.

For Area C, he must complete 19 hours in the humanities and fine arts (art, music, literature, philosophy, logic, etc.). At least three distinct fields must be included. A maximum of 6 hours at the third level may be applied toward the area requirement.

In the area of the student's third-level waiver (A, B, or C), the requirements are reduced by 6 hours (see bottom of page).

For Areas D and E, he must complete courses essentially equivalent to those required of the regular student.

Flexibility, Variations, and Exceptions

The total requirements of General Studies may be partially satisfied, reduced, or modified by several considerations which are discussed in this section.

The Third-Level Waiver

Each student is entitled to waive the third-level courses in the area (A, B, or C only) most closely related to the area in which he will concentrate his work. The following third-level waivers have been approved:

Area A—Biology, chemistry, engineering, general science and mathematics, mathematics, nursing, physical education, physical science, physics, and sanitation technology.

Area B—American studies (B or C), anthropology, business administration, business education, economics, geography, government, his-

tory, human services, psychology, sociology, and speech pathology and audiology (*B* or *C*).

Area *C*—American studies (*B* or *C*), art, elementary education, English, foreign language, mass communications, music, philosophy, professional writing, special education, speech, speech pathology and audiology (*B* or *C*), and theater.

Advanced Standing

It is possible for a student to gain advanced standing (that is, to bypass certain requirements without credit in the corresponding courses) in some areas. Eligibility for advanced standing is determined upon the basis of high school preparation in the area, scores on the A.C.T. test, and/or scores on special advanced standing examinations. The student should consult his General Studies adviser about specific possibilities for advanced standing. Following are the current criteria or qualifications for advanced standing for certain General Studies courses in each area. (The A.C.T. percentiles used are college-bound percentiles.)

AREA A

- 101a-5 Introduction to Physical Science (physics).
One year of high school physics, 25th percentile on A.C.T. mathematics test, and 85th percentile on A.C.T. natural science test; or by examination.
- 101c-3 Introduction to Physical Science (chemistry).
One semester of high school chemistry, 25th percentile on A.C.T. mathematics test, and 85th percentile on A.C.T. natural science test; or by examination.
- 110a-4 The Earth and Its Environment (earth science).
One course of earth science in high school, 85th percentile on A.C.T. natural science test; or by examination.
- 110a,b-8 The Earth and Its Environment (earth science).
One year of earth science in high school, 85th percentile on A.C.T. natural science test; or by examination.
- 204-4 Man's Biological Inheritance (biology).
One year of high school biology; 85th percentile on A.C.T. natural science test.
- 205-4 Man and His Diseases.
or
206-4 Life: Ecology and Diversity.
Two years of high school biology with a minimum grade of *B*, 85th percentile on A.C.T. natural science test.

AREA B

- 101b,c-8 Survey of Western Tradition (history).
One year of world, western, or European history in high school, 90th percentile on A.C.T. social science test; or by examination.
- 103a-4 Sociology-Economics (sociology).
A course in sociology in high school, 90th percentile on A.C.T. social science test; or by examination.

- 103b-4 Sociology-Economics (economics).
A course in economics in high school, 90th percentile on A.C.T. social science test.
- 201c-4 The Individual and His Cultural Environment (psychology).
A course in psychology in high school, minimum grade of *B*, 85th percentile on both the natural science and social science sections of A.C.T.
- 203a-4 American Politics in the World Environment (government).
A course in American government in high school, 90th percentile on A.C.T. social science test. (Advanced standing will *not* meet the Constitution requirement.)
- 203b-4 American Politics in the World Environment (geography).
A course in geography in high school, 90th percentile on both the social science and the natural science sections of the A.C.T.; or by examination.
- 300a,b,c-9 History of the United States.
One year of U.S. history in high school with a grade of *B*, 90th percentile on A.C.T. social science test.

AREA C

- 253-4 Literary Masterpieces of Antiquity.
By examination only.
- 254-4 Philosophical Masterpieces.
By examination only.

AREA D

- 101a-4 English Composition.
Minimum ranking of 70th percentile on English section of A.C.T. (The same score qualifies a student to take the E.T.S. Reading Comprehension Test. If the score on the E.T.S. is 85th percentile or better, the student receives proficiency credit for the course.)
- 101b-4 English Composition (composition and literature).
By examination only.
- 103-4 Oral Communication of Ideas (speech).
A course in speech in high school, 85th percentile on A.C.T. English test; or by examination.
- 123-144 Foreign Languages.
Student is exempted from the 9-hour sequence if he has had two years of foreign language in high school; or by examination.
- 114a-5 College Algebra.
Six semesters of college preparatory mathematics (equivalent to two years of algebra, one year of plane geometry) with a *C* average and no failing grade, 75th percentile on A.C.T. mathematics test; or by examination.
- 114c-4 Trigonometry.
Seven semesters of college preparatory mathematics (equiv-

alent to two years of algebra, one year of plane geometry, and one-half year of trigonometry) with a better than *C* average and no grade below *C*, 85th percentile on A.C.T. mathematics test; or by examination.

Proficiency Examinations

Students with superior backgrounds in certain subjects may qualify to receive credit in related courses by demonstrating their achievement through proficiency examinations. These examinations are available in all General Studies courses as well as certain courses in other subjects.

The Proficiency Examination Program (including non-General Studies courses as well as General Studies courses) is administered by the Dean of the General Studies Division.

A student who desires to take a proficiency examination should initiate the procedure with a General Studies adviser. The adviser has the student fill out the form for requesting the examination, and furnishes related information if requested to do so. In most cases, course guides and reading lists are available for persons interested in taking the proficiency examination.

Any student may take any available proficiency examination subject to the following limitations: (a) A maximum of 48 hours, including credit earned through the College Entrance Examination Board's Advanced Placement Program, may be gained through proficiency examinations. (b) A student may not take a proficiency examination for a specific course more than once, nor may he take a proficiency examination in a course in which he has previously received a grade, nor in a course which is a prerequisite for a more advanced course which the student has already completed. (c) No credit granted by proficiency examination may be recorded until the student has earned at least 16 hours credit of *C* grade or above in residence at this University.

After a student has completed a proficiency examination, he shall be granted credits and grade-points according to the grade achieved on the test, as follows: (a) If a student receives a grade of *A* or *B* on a proficiency examination, his record shows the name of the course, hours of credit granted, the grade earned, and a notation "credit granted by proficiency examination" and the grade earned counts in the grade-point average. (b) If a student receives a grade of *C* on a proficiency examination, his record shows the name of the course, the hours of credit granted, and a notation, "credit granted by proficiency examination," and the grade earned does not count in the student's grade-point average. (c) If a student receives a grade of *D* or *E* on a proficiency examination, he does not receive credit and his record shows nothing regarding the proficiency examination. However, the proficiency examination grade report form is filed in the student's folder for reference purposes, and to prevent re-examination.

Substitution

In a limited number of cases, a student may be permitted to substitute courses in other disciplines for the regularly prescribed General

Studies courses. The following substitutions have been approved for students whose concentration is in the Science and Technology Division or in the Division of Nursing: Physics 206a,b-10 for GSA 101a-5; Physics 206a,c-10 for GSA 101a-5; Physics 211a,b-8 for GSA 101a-5; Chemistry 110-4 for GSA 101c-3; Chemistry 105-5 for GSA 101c-3; Chemistry 125a-5 for GSA 101c-3; Biology 200-4 for GSA 204-4; Biology 301a, 302a, 303a for either GSA 205-4 or 206-4; Mathematics 410-8 for GSD 114d-4.

Students concentrating in art and design may substitute Art 225a,b,c-9 for one of the General Studies courses: GSC 155, 156, 157, or 158.

Students who complete a concentration in nursing are exempted from the requirement GSE 201-3 Healthful Living.

Students may upon the approval of the Dean of General Studies apply up to 8 hours of Student Colloquium credit toward meeting the requirements of the General Studies Program. See page 45.

Advanced Placement Program (CEEB)

A high school student who is qualified through registration in an advanced placement course in his 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.

Advanced classes which qualify for this purpose are offered in many high schools in specific subjects, such as English composition, a foreign language, history, biology, chemistry, mathematics, or physics. A national examination is given in each subject, administered through the Educational Testing Service, which is intended to measure the achievement of the student, and determine at what point the student should begin college study of that subject. Each examination is prepared by a national committee of high school and college teachers. Grades are assigned as follows: 5, high honors; 4, honors; 3, creditable; 2, pass; and 1, fail. The marked papers are sent to the university which the student has indicated that he will attend. To receive credit, a person must normally earn a grade of 5, 4, or 3 on the examination provided by the College Entrance Examination Board at the completion of the high school course.

Ordinarily, the maximum credit granted through the CEEB examinations is 16 hours. It is non-resident credit, does not carry a grade, and is not used in computing the student's grade-point average. Credit granted at another accredited college or university under this plan is transferable to this University up to a maximum of 16 hours. A student may appeal to his academic dean to be granted more than 16 hours.

The following courses are those in which a student may currently earn credit through the Advanced Placement Examination of the College Entrance Examination Board.

- (1) Physics: 206a-5, 206b-5, 206c-5.
- (2) Chemistry: Chemistry 105-5, 125a-5, 125b-5, GSA 101c-3.
- (3) Biology: Biology 200, GSA 204-4, 205-4, 206-4.

(4) History: European: GSB 101b-4, GSB 101c-4; American: GSB 300a-3, GSB 300b-3, GSB 300c-3.

(5) English: GSD 101a-4, GSD 101b-4.

(6) Foreign Languages: French: GSD 123-9, French 123-3, French 201-3; German: GSD 126-9, German 126-3, German 201-3; Spanish: GSD 140-9, Spanish 140-3, Spanish 201-3.

(7) Mathematics: 150a-4, 150b-4.

As previously indicated, students who achieve a grade of 5, 4, or 3 on the CEEB Advanced Placement Examinations receive credit for the appropriate courses, except in chemistry where a score of 3 does not provide credit.

College Level Examination Program

Southern Illinois University will grant credit to both currently enrolled and prospective students for successful completion of the College Level Examination Program (CLEP) Tests under the following conditions:

1. A maximum of 48 units (hours) can be earned through CLEP. This credit is applicable toward the Bachelor of Science or Bachelor of Arts degree or to undergraduate certificates offered by the University.

2. The score on each test must equal or exceed the 50th percentile on the national college sophomore norm which is a scaled score of approximately 500. Separate scores are reported for each of the tests comprising the General Examinations. Credit, therefore, will be allowed for the tests individually.

3. Credit will be awarded in Subject Examinations when approved by the Department offering comparable courses. General Studies advisers will be able to furnish information regarding Subject Examinations which have been approved for credit.

4. Test credit will not be allowed when a student previously has received credit in comparable courses. For example, credit via the Mathematics Test of the General Examinations will not be allowed when credit in College Algebra has been established previously. In addition, test credit will not be granted when a student is currently enrolled in a comparable course.

5. Students will be permitted to take examinations for which comparable credit has not been established previously, regardless of the total amount of credit earned to date.

6. An individual may take the tests prior to enrollment in this University and still receive credit. Final recording of credit upon the Permanent Record Card, however, is contingent upon satisfactory completion of at least 9 quarter hours of degree credit work in Southern Illinois University. The test credit is then entered on the student's Permanent Record Card.

The tests are administered locally at the official CLEP Testing Center at the Forest Park Community College in St. Louis. The tests will be given on the third Saturday of each month. For further information contact: Dean of Student Personnel Services, 5600 Oakland Avenue, St. Louis, Missouri 63110; or telephone: 644-3300, Station 333.

Individuals who take the tests and who wish to apply for credit through Southern Illinois University should have the results sent to:

Admissions Office, Southern Illinois University, Edwardsville, Illinois 62025.

GENERAL EXAMINATIONS

The following amount of credit is offered for the corresponding General Examination: English Composition—8 quarter hours; Humanities—4 quarter hours; Mathematics—4 quarter hours; Science—8 quarter hours; Social Science-History—4 quarter hours.

SUBJECT EXAMINATIONS

When approved by the Department offering the courses for which Subject Examinations have been taken, credit will be awarded on the basis of the number of credit hours in the pertinent courses.

Pass-Fail Grade Option

The objectives and structure of the General Studies Program are such that a student must sometimes take courses in subjects for which he does not feel especially well prepared. The student may feel that he is at a disadvantage with respect to grades in such a class. The pressure to make good grades may also keep a student from attempting a course in which he has some moderate interest but for which he feels that he may be at a disadvantage in competing with other students.

In an attempt to encourage students to take such courses, a Pass-Fail grade option was initiated in the fall of 1971 for General Studies classes on a one-year provisional basis.

Under this system, the student has the option of choosing to receive a regular grade or to receive a grade of *Pass* or *Fail* in a General Studies class, for courses totaling not more than 24 hours of *Pass* credit.

A student declares, in writing, his option at the time of registration.

The last day that the student is allowed to change his grading system option is the same as the last day that the student is allowed to drop a course without receiving a grade (as determined by the Office of the Registrar).

The instructor keeps and records grades in the usual way and the Registrar will translate the grades to a Pass-Fail basis in those cases in which the student has requested that option.

The General Studies Advisement Office

The General Studies Division maintains a General Studies Advisement Office for the assistance of students.

Each student in the Division is required to be advised by a General Studies adviser for each term of attendance. Appointments for such advisement should normally be made early in the preceding quarter, well in advance of the registration period for the quarter in which the student plans to attend. New students are sometimes advised as part of a group orientation procedure and should not make individual appointments for advisement if the group orientation and advisement is being provided.

If a student has made a tentative selection of his educational goal, the adviser assists the student in selecting courses in his area of special interest if it is appropriate to do so. The adviser can refer a student to other sources of assistance, including concentration advisers, if more detailed information about specific programs is needed. Questions related to the specific applications of the General Studies requirements should be clarified with a General Studies adviser while the student is in the General Studies Division.

The General Studies Advisement Office does the initial processing for declarations of concentration, change of concentration, requests for proficiency examinations, advanced standing, etc.

Study Skills

A course in Study Skills is offered which is designed to assist the student in developing more effective study habits. Specific attention is given to motivation for study, budgeting of time, effective listening, taking concise but adequate notes, active reading, critical thinking, and preparation for examinations.

Educational and Vocational Information Center

The General Studies Advisement Office cooperates with the Counseling and Testing Center, the Placement Services Office, and the Lovejoy Library in maintaining and staffing the Educational and Vocational Information Center (EVIC).

The Center, temporarily housed in the Counseling and Testing Center, provides a central place for students to get information on all types of careers, job qualifications, and vocational choices. Information is available in various forms: filmstrips, cassette recordings, books, and pamphlets. If needed or desired, individualized vocational counseling is available in either the General Studies Advisement Office or the Counseling and Testing Center.

Probationary Students

The General Studies Advisement Office advises those students who are on probation and have not yet officially declared a concentration. Advisement for probationary students with officially declared concentrations is the responsibility of the students' own academic units.

A student on probation may not take more than 14 hours without special permission. If a probationary student is employed full-time, 7 hours is the normal maximum.

It is especially important that students on probation understand the rules relating to scholastic standing as summarized on page 13.

Transition from the General Studies Division to Another Division

A student ordinarily is classified into the General Studies Division until he officially declares an area of concentration. In order to do this, he must have completed 64 quarter hours of credit. He is required to make this declaration before he enrolls for his 97th hour. The student initiates his declaration of concentration in the General Studies Advisement Office. After a student has officially declared a

concentration, he is classified into the academic division which grants the degree sought by the student. If a student is going into an associate degree curriculum, however, he may declare his concentration and be classified into the appropriate division without having completed any hours. In fact, it is desirable for such a student to make his declaration as early as possible.

A student who wishes to change his area of concentration should return to the General Studies Advisement Office to initiate a new declaration of concentration.

A transfer student entering with 96 or more hours must make an official declaration of concentration with the General Studies Advisement Office before he registers for classes.

4 / Instructional Units

General Studies Division

S. D. LOVELL, *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; Health and Physical Development

The General Studies Division administers and coordinates the General Studies Program. It is also responsible for the academic advisement of freshmen and sophomores who are working toward a baccalaureate degree. (See preceding chapter which discusses in detail the General Studies Program.)

Business Division

JOHN W. LEONARD, *Dean*

Accounting; Administrative Services; Business Administration; Business Education; Economics; Finance; Management Science; Manpower and Industrial Relations; Marketing; Organizational Behavior and Development

The Business Division provides educational preparation for young men and women who plan careers in business and in the related professional fields of economics and business education. In addition to meeting the University requirements for graduation, students enrolled in the Business Division must meet two additional requirements of the Business Division: (1) all business courses taken for credit toward graduation must be taken in regularly scheduled classes (not by extension); (2) the senior year requirement of 48 hours credit must be taken in residence. It is also the general policy of the Business Division to limit to lower division credit the transfer of credit for business courses taken at the lower level at an institution other than Southern Illinois University at Edwardsville or an equivalent degree-granting institution. The following degree programs are offered:

Business Administration—The Bachelor of Science degree with a concentration in business administration is granted by the division. Students supplement the general program in business with a sequence of courses in one of the following specializations: accounting, general; accounting, professional; administrative services; business administration, general; economics; finance; management systems; manpower and industrial relations; marketing; organizational behavior and development.

Economics—Two somewhat different degree programs are granted by the division, the Bachelor of Science degree with a concentration

in economics and the Bachelor of Arts degree with a concentration in economics. In addition, the Education Division offers a degree program in which students may choose to specialize in economics.

Business Education—The Bachelor of Science degree with a concentration in secretarial and office administration is offered by the Business Division. In addition, the Bachelor of Science degree with a concentration in business-teacher education is granted by the Education Division. The first of these degree programs is intended for students who will enter business directly, and the second for those planning to enter the teaching profession.

A General Philosophy

The General Studies Program of the University reinforces each of the degrees offered by the Business Division and assures the student of a broad base in the cultural heritage of this society as well as in the scientific and technological foundations of this dynamic age. Beyond these considerations, the Business Division has the following general objectives:

1. To encourage recognition of the transitory nature of even the best of present theory and practice in each of its fields, and to this end to anticipate and facilitate scientific, technological, and cultural advancement rather than to disparage and resist it.

2. To identify and emphasize that which is fundamental to each of its disciplines, and to this end to stress conceptual and analytical capability rather than the power to recall facts or to repeat routines.

3. To encourage an inquiring mind, a constructive skepticism, and a creative outlook; and to this end to sharpen the ability both to perceive problems and to transform them into opportunities for positive action.

4. To emphasize the importance of communicating facts, concepts, analyses, and proposals clearly and succinctly, whether in oral or written form, and before large groups as well as small, and to strengthen skills pertaining thereto.

5. To advance the concept that an individual's education can be and should be a continuing process; to encourage both formal and informal programs of post-graduate development as technology advances and individual responsibilities grow.

6. Above all, to temper the carefully calculated response with consideration for one's fellowmen and to hold to a high standard of personal integrity and social responsibility both in professional and personal life.

These general objectives impinge both upon the Business Division's curriculum, or choice of subject matter, and its pedagogy, or choice of teaching method. In respect to the latter, the Business Division endeavors to use the methods of teaching which consider the students as active participants in an on-going learning process rather than as passive vessels into which a certain quantity of knowledge is to be poured at daily lectures and measured at quarterly intervals. It follows that the quality of the student's intellectual processes, as well as his knowledge of particular subject matter, are factors of vital concern to the Business Division.

Education Division

W. D. WILEY, *Dean*

Counselor Education; Early Childhood Education; Educational Administration; Elementary Education; Foundations of Education; Health Education; Instructional Technology; Physical Education; Psychology; Secondary Education; Special Education

The general objective of the Education Division is to contribute to the State of Illinois's general effort to improve all levels of educational opportunity available to residents of the State. The Division, therefore, steadily addresses itself to the changing educational dimension of the overall development problems of the immediate service area and the State. The region's educational needs thus shape the Division's programs of instruction, research activities, and field services.

Education Division Programs

In order to pursue a program offered by the Education Division, a student will need to fulfill both the general requirement of the University and those of the Education Division. Formal request for admission to one of the Division's programs is filed in the Education Division Office of Teacher Education where an education adviser assists in planning a student's program. It is necessary to hold an approved program in order to register for Education Division courses leading to either a degree or to teacher certification.

All students are encouraged to secure general information concerning the teaching profession before completing 64 hours of studies. Most students will find it useful to know about the levels and fields where there are teaching opportunities, aptitudes recommended for teachers, the general characteristics of teaching careers, and the teacher certification requirements of the State of Illinois. The education advisers also provide the student with the requirements of public schools accredited by the North Central Association and can explain the importance of graduating from undergraduate programs of students approved by the National Council for Accreditation of Teacher Education.

Admission Procedure

1. Upon completion of 64 quarter hours of the General Studies Program a student fills out a Declaration of Concentration form obtained from and submitted to the General Studies Office. This form insures the transfer of the student's official records to the Education Division.

2. As soon after 64 quarter hours as is convenient and no later than 90, formal application for admission to the Education Division is made on appropriate forms filed with the Education Division Office of Teacher Education.

3. Upon completion of the admissions forms obtained in the Office of Teacher Education, the student is interviewed regarding his professional interests and goals. Following this interview, the student is

provided appropriate information outlining the steps for admission into a particular teacher education program. When the applicant has been approved by the appropriate department, the Office of Teacher Education will notify the student of admission.

4. These admission procedures are in effect for all students preparing to teach, including Bachelor of Arts degree and Bachelor of Science degree concentrations, transfer students, and graduate students seeking certification.

5. Students must be officially admitted to a teacher education program according to the above procedures in order to be graduated in teacher education or to qualify for a teaching certificate.

Professional Education Programs

The Education Division offers programs of study leading to the Bachelor of Science degree. The major areas for which there are distinct undergraduate programs are art education, business education, early childhood education, general elementary education, physical education, secondary education (teaching fields are listed on page 91), and special education. These concentrations are designed to prepare students for positions in the public schools at a variety of levels and in numerous teaching fields. Since one of the conditions for obtaining a permanent position in the public school is the holding of a state certificate, the programs have been planned so that students will obtain certification upon their completion.

All Bachelor of Science degree programs include GSB 203a or GSB 300a, thereby fulfilling the State of Illinois's requirement for a course in either American history or government.

The faculty of the Education Division urges students to view the Bachelor of Science degree as the first phase of their formal studies and to plan to pursue graduate work.

Accreditation

The programs of the Education Division have been fully accredited by the North Central Association of Colleges and Secondary Schools. In addition, the professional education programs have been accredited by the National Council for Accreditation of Teacher Education and approved for certification purposes by the State of Illinois Office of the Superintendent of Public Instruction.

Research and Instructional Facilities

The Education Division maintains the following facilities which offer research and instructional resources to both the campus and the University's service area.

Day Care Center. The Division operates an on-campus Day Care Center, primarily for children of students enrolled in the University. Children between the ages of three and five may be enrolled on a quarterly basis throughout the year. The program provides a variety of developmental activities in an informal setting. Elementary education students interested in early childhood education may take a practicum in this Center to meet part of the student teaching requirement.

Instructional Resources Development Center. This Center has facilities and professional staff which contribute to the development of instructional materials. Students in education and media specialists utilize the Center. Innovative instructional systems are encouraged, and facilities of the Center are available for the systematic evaluation of these innovations.

Interdisciplinary Teacher Education Program (ITEP). An interdisciplinary program is available to undergraduate students as an alternate to the regular teacher training program. Block course sequence and integration of materials and content are two of the characteristics of this program. A team of students and faculty work together through the junior and senior years. Emphasis is placed upon early and direct classroom experience. Interested students should contact the Education Division Teacher Education Office for information.

Practicum Facilities. The Division maintains facilities that are devoted to the practical experience of the student. Video-tape equipment located in areas with one-way viewing rooms allows students to practice skills in a natural setting. These experiences are then available for re-evaluation by the student and the instructor. Facilities with sophisticated instrumentation are available for individual testing, small group work, and larger gatherings.

Psychology Laboratories. Two psychology laboratories with modern equipment provide a setting for the development of experimental programs. These laboratories and the University computer facilities provide on-campus experience in the instructional and research program. Students are encouraged to become familiar with and use these facilities, which make a direct contribution to all of the programs in the Education Division.

The Reading Center. The Reading Center is a well-equipped laboratory of diagnostic and instructional materials and equipment used in diagnosing and correcting reading deficiencies. Students enrolled in the sequence of reading courses get practical experience in the Center working with pupils who are transported to campus from the surrounding elementary and secondary schools. The Reading Center also serves the public and parochial schools of the area by providing a facility where current materials can be studied and evaluated.

Special Education Center. The Special Education Center provides educational and diagnostic services for children with learning and/or behavior disorders. Programs are provided at the pre-school and primary levels. Students utilize this Center for observation and participation with instructors in such areas as classroom management, materials development, and special education teaching techniques.

Teaching Techniques Laboratory. The purpose of the Teaching Techniques Laboratory is to provide students opportunities to practice specific teaching skills prior to student teaching. The laboratory consists of video recording studios in which students present short lessons to small groups of pupils. Tapes of the lessons are analyzed and critiqued by the students and their university instructors. Laboratory assignments comprise part of the requirements in professional education courses. In addition to the training function, the laboratory en-

ables faculty and students to study the teaching process under controlled conditions.

The Special Education Department operates a microteaching program for both pre- and in-service special education teachers. This special program includes teaching simulation as well as direct work with exceptional children on and off campus.

Office of Teacher Education

The Office of Teacher Education provides Education Division students with academic assistance not otherwise available through courses. The staff either directly assist the student or make an appropriate referral. This office is also responsible for the coordination of the student teaching program, including the placing of student teachers in schools and supervising them.

If a question about certification requirements arises, whether for Illinois or another state, students can obtain an answer from the office. The office also makes arrangements for students who wish to make visits to the schools whether in connection with course work or not. Career counseling in the field of professional education can be obtained from the education staff. The staff also assists students in the formation of professionally oriented clubs or interest groups and serves as headquarters for the Education Division student organizations. For further information, see detailed instructions for Student Teaching, pages 95-97.

Fine Arts Division

HOLLIS L. WHITE, *Dean*

*Art and Design; Mass Communications; Music;
Speech and Theater*

The objectives of the Fine Arts Division are to broaden and intensify experiences in the fine arts and communicative arts and related sciences in the area served by the University; to impart to all University students an awareness of the cultural values of the arts; in visual and plastic art and design, music, speech, theater, speech pathology and audiology, radio, television, journalism, and film; to provide facilities for the creative and scholarly pursuit of the arts; and to offer specialized courses of study to serve the ends of liberal and professional education. The performing arts are emphasized through exhibitions, concerts, lectures, and theatrical productions.

Humanities Division

GERALD J. T. RUNKLE, *Dean*

*American Studies; Comparative Literature; English Language
and Literature; Foreign Languages and Literature;
Philosophy*

The Humanities Division provides instruction in the intellectual disciplines of English and other languages, of literature, and of ideas. The Division is concerned with instruction in the reading, writing, and speaking of English and other languages, the development of an

understanding and appreciation of literature, and the concomitant recognition of its civilizing values. The Division guides advanced students in methods of studying and arriving at comparative evaluations regarding the works, men, and movements that make up literary and intellectual history. All students are encouraged to think and to write rationally, imaginatively, and responsibly as they learn to identify persistent human problems and their classic and current solutions.

Division of Nursing

LUCILLE MCCLELLAND, *Dean*

The Division of Nursing shares and functions within the philosophy of the University which promotes the ideal of respect for man, acceptance of responsibility, the pursuit of knowledge, and the development of self direction.

The faculty subscribes to the belief that nursing is a dynamic, therapeutic process that recognizes the intrinsic value of man. Professional nursing is the comprehension of and the ability to apply scientific principles and techniques from the natural and behavioral sciences and the capacity to become therapeutically involved in a variety of human situations.

The program of the Division of Nursing is approved by the Illinois Department of Registration and Education and accredited by the North Central Accrediting Agency. Graduates of the program are eligible to take the licensing examination for registered nurses.

Applicants to the program may be either high school graduates or registered nurses. Applicants must meet all of the requirements for admission to the University. (See pages 82-83.) Opportunities exist for students who have completed approved nursing courses elsewhere to accelerate their education by taking specified proficiency examinations.

Throughout the nursing program there are additional expenses for uniforms and incidentals. Students may live at home, in residence halls, or in University-approved off-campus housing.

Various hospitals and community agencies are used for clinical laboratory experience. Students are responsible for providing their own transportation and appropriate automobile insurance. In addition students are required to have nursing malpractice insurance prior to the first clinical experience, and it must be maintained throughout the entire nursing program.

School of Dental Medicine

FRANK J. SOBKOWSKI, *Dean*

The School of Dental Medicine of Southern Illinois University at Edwardsville has been established to meet the needs and provide the resources in averting an impending crisis in the delivery of health care.

Acknowledgement of this pressing concern was initially reflected in the recommendation to establish a new dental school in "downstate" Illinois, which appeared in a 1968 survey report authorized by the Board of Higher Education of the State of Illinois. As a result, in

1968 the Illinois Board of Higher Education formally approved the development of a School of Dental Medicine at Southern Illinois University at Edwardsville. Subsequently, the Board of Trustees of Southern Illinois University ratified this request, created the School of Dental Medicine, and directed formulation of a plan of development permitting rapid implementation.

The cardinal objective of this arm of the University is consistent with the institution's philosophy—a balanced, innovative program of exceptional quality in the field of dental medicine education. The over-all plan is designed to provide for orderly development of the full complement of academic and professional activities embraced by the field of dental medicine. Consequently, curriculum development recognizes the medical aspect of oral health care.

Academic content has been structured to provide an educational experience which enables students to acquire the professional D.M.D. degree in a three calendar year period of four quarters annually, while simultaneously pursuing areas of related special interest.

Applicants for admission must successfully complete a minimum of two academic years of undergraduate course work at a recognized accredited institution of higher learning, must include certain specified subjects in the predental program, and must participate in the Dental Admission Testing program conducted under the auspices of the American Dental Association. Because of limited capacity, selective acceptance of applicants is a necessity and priority is given to Illinois residents.

The Board of Trustees has approved a tuition and fee schedule identical to that for an undergraduate full course of studies program. In addition to the specific fees, there is an annual \$100 instrument rental charge. Each student is responsible for the purchase of books, supplies, and other sundry and miscellaneous items.

The School of Dental Medicine enjoys "accreditation eligible" status granted by the Council on Dental Education of the American Dental Association.

The School of Dental Medicine occupies interim facilities in Alton, Illinois, where the teaching program is scheduled for inauguration in the fall of 1972. Alton is approximately eighteen miles from Edwardsville.

Detailed information may be obtained from the School's Admissions Office which is located at the Alton Center. All inquiries, however, should be addressed as follows: Admissions Office, School of Dental Medicine, Southern Illinois University, Edwardsville, Illinois 62025.

Science and Technology Division

LAURENCE R. MCANENY, *Dean*

*Biology; Chemistry; Engineering; Mathematics; Physics;
Science and Technology*

The Science and Technology Division offers courses of study in mathematics, the natural sciences, and engineering.

Candidates for the Bachelor of Arts or the Bachelor of Science

degree with concentrations in any of the disciplines in the Science and Technology Division must meet the following requirements:

1. At least 48 hours of credit in one area of concentration with a minimum grade-point average of 3.00.
2. A minimum grade-point average of 3.00 for all courses in the area of concentration numbered above 299.
3. At least 9 hours of credit in the area of concentration in courses numbered above 299 must be earned at Southern Illinois University within two years preceding the completion of requirements for the degree being sought.
4. Upon completion of 64 hours of credit, each student in the division must file a tentative curriculum outline with his division adviser.

Candidates for the Bachelor of Science degree in education who select an area of concentration within the Science and Technology Division must have at least 48 hours (or 36, if two 27-hour concentrations are completed in other areas of study) in that area with a minimum grade-point average of 3.00 overall and for all courses numbered above 299.

A secondary concentration within the Science and Technology Division must include at least 27 hours of credit with a minimum grade-point average of 3.00. Specific requirements, if any, are listed in this catalog under the heading Secondary Concentration for the particular discipline.

To qualify for honors in an area of Science and Technology, one must complete at least 48 hours of credit, or the equivalent, in that area including successful completion of 9 hours of the corresponding honors program.

Social Sciences Division

EARL S. BEARD, *Dean*

Anthropology; Geography; Government; History; Sociology

The Social Sciences Division offers courses designed to enable the student to achieve an understanding and appreciation of civilization viewed in historical perspective, and to gain, through the various social sciences, an awareness of the society of which he is a part and of his role in it. His studies give him insights and understandings which enable him to live more constructively with others in his family, community, and nation and which provides him with a better understanding of social organizations, technologies, and the nature and variety of human beliefs and attitudes.

Aerospace Studies

LT. COLONEL JAMES F. EBERWINE, *Commander*

The objective of the Air Force Reserve Officers Training Corps program is to qualify students for appointment as Second Lieutenants in the United States Air Force. The Air Force ROTC unit at Southern Illinois University at Edwardsville is a senior division unit established in September 1965. It is administered by commissioned officers of the USAF who have been assigned by the Department of the Air Force with approval of the University.

The Department of Aerospace Studies at Edwardsville offers a two-year and a four-year program. The latter is divided into the General Military Course (GMC), covering the freshman and sophomore years, and the Professional Officer Courses (POC), covering the junior and senior years. The courses of the POC are designed to provide the fundamental training, both personal and professional, which will best equip a cadet to become an effective junior Air Force officer possessing a high growth potential and also to develop and stimulate a growing desire on his part to enter the Air Force training program. The GMC is designed with two additional objectives in mind: first, to interest the cadet in the possibility of continuing in the advanced AF ROTC and ultimately making the Air Force his career; and second, to provide him with Space Age citizenship training of long-range value to the Air Force whether he returns to civilian life or becomes a member of the USAF. Emphasis is given, both in theory and practice, to outlining the leadership and managerial responsibilities of squadron-level officers, to improving oral and written expression, and to learning techniques of the problem-solving process. Field trips to Air Force bases supplement classroom instruction by familiarizing the cadet with Air Force operations and organization.

Qualified senior Air Force ROTC cadets interested in becoming Air Force pilots participate in the Flight Instruction Program. Each FIP student receives thirty-six and one half hours of free flight instruction at the Parks Aeronautical College flying school.

The academic hours of the General Military Course and the Professional Officer Course are allowable toward a bachelor's degree. Non-credit hours of Corps Training (one hour per week each quarter) are taken concurrently with the GMC and the POC. These courses provide leadership training experiences which will improve a cadet's ability to perform later as a USAF officer.

Air Force ROTC textbooks are loaned to all ROTC students without charge.

In addition to the Air Force ROTC programs offered for academic credit, Aerospace Studies endorses or directly sponsors extracurricular activities. The Arnold Air Society, a national honorary service organization, is open to selected AF ROTC cadets. Membership in the Angel Flight, an auxiliary of the Arnold Air Society is open to selected undergraduate women. Angel Flight assist the cadets of the Arnold Air Society in community/campus service-oriented projects.

Selection of students for application and/or enrollment into the POC, is made by the Professor of Aerospace Studies as provided in Public Law 88-647 from qualified applicants as follows:

1. Personal qualifications.

- a. The applicant must qualify competitively on the Air Force Officer Qualification Test.
- b. The physical standards prescribed for appointment to the United States Air Force Reserve in AFM 160-1 apply.
- c. The applicant must be accepted as a student in Southern Illinois University and be in good academic standing.
- d. A flying applicant must be scheduled for commissioning prior

to reaching age 26½; a non-flying applicant must be scheduled for commissioning prior to reaching age 30.

2. The Department of the Air Force agrees to pay the student a retention fee (subsistence allowance) at a monthly rate as announced (POC cadets only). The current rate is \$100 per month for a maximum period of twenty months.
3. In addition to the monetary emoluments listed above, the POC cadet receives:
 - a. An officer-type uniform. The uniform remains in the possession of the cadet during his two-year enrollment and becomes his property upon the successful completion of the Air Force ROTC program. (This includes all required uniform items for summer and winter.)
 - b. In excess of \$300 for the six-week training course and a travel allowance to and from that place of training.

Air Force ROTC Awards

Awards are presented to outstanding cadets during each academic year. Details concerning such awards are announced at appropriate times.

Air Force ROTC Scholarships

The Air Force presently offers four, three, and two year scholarships to qualified cadets. This scholarship pays all tuition, fees and books. All scholarship holders receive \$100 per month subsistence allowance.

University Extension Services

H. BRUCE BRUBAKER, *Assistant Dean*

After June 30, 1972, the University Extension Services office will not be an administrative unit of the University. The functions described herein will be assumed by the academic divisions.

The major function of University Extension Services is to impart knowledge to persons not in regular attendance at the University. This is done in two ways: (1) The Extension Class Program, and (2) The Educational Conference Program.

Extension classes, which offer college credit, are identical to classes offered on the campus and are scheduled at locations in the Edwardsville Campus service area. Classes are also scheduled in foreign countries when there are definite advantages to having them offered there. Courses may be offered by radio, by television, and by use of other media.

The Educational Conference Program is conducted by the Office of Conferences and Institutes both on campus and off campus in nearby cities and towns. Assistance is not only given for local conferences but for state and national conferences. Persons attend these conferences from Illinois, from all parts of the country, and in some instances from all over the world.

The Extension Services, in its programs, uses professional faculty members, distinguished visiting authorities, library facilities, various teaching aids, and many other resources of the University in carrying out its function.

Policies and Procedures of the Extension Class Program

CLASS MEETINGS

Three-hour Extension classes meet weekly, each meeting being three hours in length unless otherwise stated. Four-hour Extension classes meet weekly, each meeting being three hours in length, with four extra meetings being arranged by the instructor and the group, with the exception that four-hour 500 level classes meet weekly, each meeting being three hours in length (no extra meetings).

FIRST CLASS MEETING

The date and time of the first meeting of an Extension class is set by the Extension dean according to the request and the availability of the instructor. The instructor and the group, at the first meeting of the class, may change the time of subsequent meetings.

TUITION

Tuition is \$10.00 per quarter hour of credit.

REGISTRATION

Students are to register at the first meeting of the class. Late comers may register at the second meeting. Previous application for admission to the University is not required. All Extension students must have their Social Security numbers with them in order to register.

AUDITING

Persons not interested in receiving credit may audit courses, if facilities are available, by receiving permission from the instructor. Auditors pay the same fee as those who register for credit.

TEXTBOOKS

The University textbook rental policy applies only to resident students. Extension students must purchase textbooks from the instructor or secure them from some other source.

LIBRARY FACILITIES

All students are entitled to utilize Lovejoy Library. Library cards will be issued to students upon request. In addition, reference books are to be made available to Extension students either in their classroom or through a local library in the community where the class is held.

EXTENSION CREDIT APPLICABLE TO THE BACHELOR'S
AND MASTER'S DEGREES

Extension credit may be applied to meet graduation requirements or toward graduate degrees. University policy provides, however, that not more than one-half of the total credit required for graduation, or 96 hours, may be obtained in off-campus courses and correspondence courses combined. Sixteen hours of Extension credit and/or transfer credit may be applied toward a master's degree and nine hours toward a Sixth-Year Specialist's Certificate.

SCHEDULING EXTENSION CLASSES

Extension courses will be scheduled under the following three conditions: (1) where it is apparent that there is a need present and adequate enrollments to justify scheduling the class; (2) when it is possible to obtain a qualified faculty member to teach the class; and (3) when adequate laboratory and library facilities are available.

Educational Conference Program

THE OFFICE OF CONFERENCES AND INSTITUTES

The Office of Conferences and Institutes operates the Educational Conference Program which provides professional and comprehensive assistance in planning and conducting conferences, institutes, workshops, short courses and other special events held on the campus of Southern Illinois University at Edwardsville. Through these programs, the resources and facilities of the University can be utilized to meet the continuing educational needs of adults.

GROUPS USING THE PROGRAM

The three principal groups using the assistance of the Educational Conference Program are: (1) faculty members and units of the University who wish to schedule meetings in their particular fields of interest designed to involve persons and groups outside the University; (2) non-University groups and organizations who wish to utilize the personnel and facilities of the University to further their educational aims; (3) non-University groups and organizations who wish to utilize the facilities of the University to conduct their own meetings.

In addition, the staff of the Educational Conference Program are available to assist in planning and conducting meetings and conventions of regional and national professional and service organizations to which University faculty members belong.

FUNCTIONS OF THE PROGRAM

There are three main functions of the Educational Conference Program staff. First, the staff assist in pre-conference planning, which may include determining objectives, selecting speakers and personnel, selecting dates, and acquiring suitable facilities and equipment. Second, during the program they accept registrations, collect fees, provide information relative to the conference and assist in any other way possible. Third, when the program is concluded they help to analyze and evaluate the program, including a final financial report.

ASSISTANCE PROVIDED BY THE

OFFICE OF CONFERENCES AND INSTITUTES

In addition to helping determine and assemble a conference planning group, to advise this group of conference techniques which will probably be most successful for this particular conference, and to perform other details incidental to planning, many other activities are often carried on by the Office of Conferences and Institutes.

Some of these activities are as follows:

1. Assist in identification and recognition of the educational needs and objectives of the target audience.
2. Assist in planning content and format of the program and invite speakers and consultants, as desired by the sponsoring group.
3. Aid in the development of the program budget, assist in determining program costs, and estimate program fees.
4. Arrange for printing of brochures, announcements, registration materials, meal tickets, name badges, and related materials.
5. Mail advance information and programs to potential program participants.
6. Handle details of registration, including receiving advance registrations and fees.
7. Provide a fund for deposit of registration and other fees, and for payment of expenses.
8. Assist with publicity and public relations.
9. Reserve auditoria and other meeting rooms.
10. Make arrangements for coffee hours, receptions, luncheons, and dinners.
11. Make arrangements for meeting planes and buses when necessary.
12. Make arrangements for lodging for program participants.
13. Assist in securing instructional aids—projectors, recorders, films, etc.—and arrange for recording equipment and operators during program sessions.
14. Assist with publication of conference proceedings or other results.
15. Arrange for tours and entertainment for the program participants.

COSTS

A conference registration fee is often assessed to cover some of the conference costs. On some occasions other sources of funds are used to pay for bringing outstanding authorities to the conference and to cover other expenses.

TO ARRANGE A PROGRAM

To discuss the feasibility of arranging a program (conference, workshop, institute, short course, or a program of a related nature) and for further information contact Walter Bartholomew, administrative head of the Office of Conferences and Institutes, Southern Illinois University at Edwardsville; Telephone 618 692-2660; General Office Building, Room 2215.

Division of Technical and Adult Education

E. R. CASSTEVENS, *Assistant Dean*

After June 30, 1972, the Division of Technical and Adult Education will not be an administrative unit of the University. The functions described herein will be assumed by the academic divisions.

The Division of Technical and Adult Education supervises an associate degree program and noncredit courses offered by Southern Illinois University. The associate degree program serves adults and high school graduates interested in obtaining a college-level course of instruction of a shorter duration than the usual four-year college program qualifying them for employment at the semi-professional and technical level. The purpose of the noncredit courses is to serve the needs of the community for educational programs that will improve the economic and social standards and provide new interests for the people of the community.

The associate degree program in child care services is described in detail at the end of Chapter 5 in this catalog. Course descriptions are given at the end of Chapter 8 in this catalog.

Industrial Management Program

The Industrial Management Program is designed to give present and future foremen and supervisors some of the skills and information they need for improved job performance. This program leads to the two-year certificate in industrial management. Successful completion of eight courses is required for a certificate in industrial management. They are offered once each week for ten weeks.

Traffic Management Program

The Traffic Management Program is a course of study the purpose of which is to improve the knowledge of people who now hold jobs in transportation and to prepare them for advancement. It emphasizes a knowledge of Interstate Commerce Commission activities. This is a certificate program.

Development Program for Middle Management

The Development Program for Middle Management is a program, offered cooperatively with the Business Division, for department heads, superintendents, general foremen, and the heads of production-oriented small businesses. These men meet on Fridays and Saturdays for discussions with recognized authorities. The subjects are grouped into four broad categories and are tied together by a coordinator into an integrated program.

The purpose of the program is to assist companies in the development of middle managers in a changing environment. This program is designed to sharpen management skills, especially the decision-making skills; to provide opportunity for practicing newly-developed techniques for handling quantified data; and to review the fundamentals of management.

Policies and Procedures for the Associate Degree in Child Care Services

ADMISSION

A student must be officially admitted to the University before registering for courses in an associate degree program. The student, to be permitted to attend classes at Southern Illinois University, must have

completed registration, which includes admission, advisement, sectioning, and payment of fees.

ADVISEMENT

At the initial counseling interview the candidate for the associate degree must declare his intention and select his field of concentration and so indicate on the form provided (Student Declaration of Concentration). After the student has completed the Student Declaration of Concentration, advisement will be the responsibility of the Education Division.

PLACEMENT SERVICES

Upon the completion of 80 quarter hours, the associate degree student may register with University Placement Services. The student is encouraged to register early to take advantage of the opportunities for interviews with the representatives of various companies. There is no fee.

GRADUATION

No later than the beginning of a student's last quarter, he must apply for graduation. At this time his courses and grades are reviewed by the Registrar to determine whether the requirements of the University have been met and by the Education Division to determine whether requirements for the associate degree have been met.

Center for the Study of Crime, Delinquency, and Corrections

ROBERT S. GILLAND, *Director*

The Delinquency Study and Youth Development Center located on the Edwardsville Campus of Southern Illinois University has a seven-year history of dealing with human services problems. Although specific objectives have been focused on the alleviation of delinquency and issues of youth development, the Center's scope in terms of training, research, and program planning has included a multiplicity of problems related to social dislocation.

Hence, preschool education, new careers training, amelioration of poverty, the re-education of personnel associated with the administration of criminal justice are examples of past and current involvements. Presently the Center offers a Bachelor of Arts degree in human services, has training contracts with the Office of Education and the Department of Labor, and provides local, state, and national consultation to public and private agencies.

The staff of the Center consists of a seven-member interdisciplinary team of social scientists working with these problems. Psychology, sociology, education, counseling, theology, political science, and human development comprise the current expertise of Center professionals.

Demonstrative programming for youth, in-service training of professionals and para-professionals, regional and national conferences, and action research are current and typical activities. In addition to undergraduate students, the Center offers graduate assistantships for students working toward a degree in a related discipline.

Business Institute / Business Division

JOHN E. MEGLEY III, *Director*

The Business Institute, utilizing the resources of the Business Division, provides professional development programs for the public served by Southern Illinois University at Edwardsville. Programs, conferences, seminars, and research projects are designed and developed to facilitate the economic and professional growth of business, industrial, educational, and governmental organizations and institutions. The Institute serves as a catalyst in the interpretation and application of business and economic concepts as effective management tools for these organizational entities.

Student Colloquium

C. C. OURSLER, *Coordinator*

The Student Colloquium is a program in which a group of students may plan and carry out a unit of study and receive course credit. It is an opportunity to study subjects not in the regular curriculum or to experiment with new approaches to learning.

Each colloquium group plans its objectives, outlines a course of study, and carries out planned activities. At the conclusion, the group summarizes its accomplishments, evaluates its achievements, and assigns grades (on a pass-fail basis) to individual members.

A group leader is selected by the group and is responsible for meeting deadlines, submitting the proposal to the Colloquium Coordinator, and transmitting necessary reports. The proposal must be submitted before the beginning of the quarter and must include the title, the objectives, an outline of the course, a description of the planned activities, and the names of the participating students. The final report prepared by the group is due before the end of the quarter and should include the list of topics studied, the methods and approaches used, comments relating to problems encountered, and the names of the participants. The grade report must be turned in to the Registrar's Office before the deadline set for regular courses.

A minimum of five students must complete the course and participate in the determination of grades. Students must have sophomore or higher standing in order to participate for academic credit. A student may obtain up to 12 hours of credit in the program, but 4 hours is the maximum which may be taken for colloquium credit in any one quarter.

Credit earned through the colloquium program may be applied toward graduation as elective credit. Up to 8 of the colloquium hours may be applied to General Studies requirements subject to the approval of the Dean of General Studies. Up to 8 of the hours may be applied to departmental requirements subject to approval by the department chairman.

5 / Areas of Concentration

Fields of Study

Below are the fields of study in which Southern Illinois University offers course work leading to bachelor's degrees to Edwardsville Campus students. Also appearing in this chapter is information on dentistry, secondary education, and student teaching. A bachelor's degree normally requires four years of study.

American Studies	Human Services
Anthropology	Instructional Technology ¹
Art	Latin American Studies ¹
Biochemistry	Mass Communications
Biology	Mathematics
Business Administration	Music
Business Education	Nursing
Chemistry	Philosophy
Comparative Literature ¹	Physical Education
Early Childhood Education	Physical Science
Economics	Physics
Elementary Education	Psychology
Engineering	Sanitation Technology
English	Sociology
Foreign Languages	Special Education
Geography	Speech
Government	Speech Pathology and Audiology
Health Education ¹	Theater
History	

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 required in the course. For example, History 306-12 indicates a third-level course of 12 hours in the Social Sciences Division, and History of Rome 306a,b,c indicates that the course has at least three parts.

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 1, 2, or 3 following one of these abbreviations and separated by a dash

¹ Secondary concentration only.

indicate the level requirement in that area. For example, GSA-3 indicates the third-level requirement in General Studies Area A.

Numerals in parentheses in columns of figures pertain to course 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 Economics, GSB 311 satisfies part of the General Studies requirements and contributes 3 hours toward the 84 hours required. It also satisfies one of the requirements for the concentration in economics but does not contribute to the printed total of 68 hours.

American Studies

American Studies is an interdisciplinary approach to a study of American culture, past and present. Its roots are in American history, literature, and philosophy, but it branches into the fine arts, the American character, folklore, political science, economics, popular culture, and many other areas of study.

Bachelor of Arts Degree, HUMANITIES DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3 or GSC-3.)	84
<i>Requirements for Concentration in American Studies</i>	74
GSB 314-3 or GSC 314-3	3
GSB 300-9	9
American Studies 490	4
English 309-8	8
Foreign Language (two years on the college level or the equivalent)	10
Philosophy 385c,d, or e	4
Philosophy 386-4	4
Approved courses in history, social sciences, literature, philosophy, fine arts, and other areas. (At least two courses must be in speech or fine arts.)	32
<i>Electives</i>	34
<i>Total</i>	192

Anthropology

The concentration in anthropology is designed to familiarize students with the major divisions—archaeology, ethnology, social anthropology, linguistics, and physical anthropology. A student is expected to select at least one course in each division.

Bachelor of Arts Degree, SOCIAL SCIENCES DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.)	84
<i>Requirements for Concentration in Anthropology</i>	42
One course in each division in the field	15-20
Electives to complete 42 hours in anthropology chosen in consultation with the faculty	27-22

Secondary Concentration	27
Electives	39
Total	192

Anthropology courses adapted to the General Studies Program may be used as electives. English 400 may be used to meet concentration requirements for linguistics. Anthropology majors are encouraged to select courses in other fields after they have completed their 42 hours.

Secondary Concentration

A secondary concentration in anthropology consists of 27 hours. GSA 365-3, GSB 201a-4, GSB 351b-3 and English 400 may be counted as part of the concentration. The remaining hours may be selected in consultation with the undergraduate anthropology adviser.

Art

The Art and Design Department offers two undergraduate degrees in the various areas of art: a Bachelor of Arts degree in studio and in art history and the Bachelor of Science degree in art. The Education Division offers a Bachelor of Science degree in art education.

Undergraduate offerings in art provide introductory and specialized studio work, and introduction to our historical heritage, and professional preparation for the future teacher. Limited offerings are available for those with an avocational interest.

The Art and Design Department asserts the right to select and withhold examples of the work of each student in each class. Such works may become part of a permanent collection and be used for exhibitions as determined by the faculty.

During the last quarter of the junior year or first quarter of the senior year, any student may petition the art faculty to grant him the privilege of an exhibition of his work. Such an exhibit may be comprised of the work of an individual or may be composed of the works of several seniors. Participation in an exhibition is not required for graduation from Southern Illinois University; permission to participate is extended in recognition of industry and ability.

Bachelor of Arts Degree, FINE ARTS DIVISION

Studio

General Studies Requirements (See Chapter 3. Waive GSC-3.) ..	84
Requirements for Concentration in Art	81
GSD FL	(9)
Art 100-15, 202-15 (a,b,c,d required; elect e,f, or g), 225-9	39
18 hours from at least five of the following: 305-3, 310-3, 312-3, 358-3, 384-3, 386-3, 393-3	18
Art history	6
12 additional hours from one of the following: ceramics, painting, prints, sculpture	12
Art electives	6
Electives or Secondary Concentration	27
Total	192

Art History

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.)	84
<i>Requirements for Concentration in Art History</i>	57
GSD FL	(9)
Art 225-9	9
48 hours from the following: GSC 340-3, 341-3, 342-3, 370-9, Art 347-9, 349-9, 369-3, 424-3, 448-9, 483-12.	48
<i>Electives and/or Secondary Concentration</i> (Primary concentrations are urged to elect Philosophy 360-4 and Anthropology 305-9 plus courses in nonvisual arts and history. Studio work is encouraged and additional language study advised.)	51
<i>Total</i>	192

Bachelor of Science Degree, FINE ARTS DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.)	84
<i>Requirements for Concentration in Art</i>	82
GSB 331	(3)
Art 100-15, 202-15 (a,b,c,d required; elect e,f, or g), 225-9	39
18 hours from six of the following: 305, 310, 312, 358, 384, 386, 393	18
Art history elective	3
Art education courses 289-3, 300d-3, 365-4	10
Art electives	12
<i>Secondary Concentration</i>	26
<i>Total</i>	192 2

*Bachelor of Science Degree, EDUCATION DIVISION**Art Education*

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.)	84
<i>Requirements for Concentration in Art Education</i>	70
GSB 331	(3)
Art 100-15, 202-15 (a,b,c,d required; elect e,f or g), 225-9	39
21 hours from 6 of the following: 305, 310, 312, 358, 384, 386, 393, art history	21
Art education courses 289-9, 300d-3, 365-4	10
Art 300a,b,c-9 (for K-14 certification)	(9)
<i>Professional Education Courses: Counselor Education 305-4, Foundations of Education 355-4, Secondary Education 352-8 to 16</i>	16-24
<i>Electives</i>	22-14
<i>Total</i>	192

Secondary Concentration

One desiring a secondary concentration in art should take the following: 100-15, 202-15, and 225-6 for a total of 36 hours.

Bacteriology

See Biology.

Biochemistry

Specialization in biochemistry normally comes at the post-graduate level of education. Adequate preparation requires extensive undergraduate course work in both biology and chemistry.

The program listed below includes those courses considered to be essential for advanced study in biochemistry. The student must complete a primary concentration in either biology or chemistry and will select appropriate additional courses. A secondary concentration is not required.

Interested students should confer with the undergraduate advisers in biology and chemistry.

Bachelor of Arts Degree, SCIENCE AND TECHNOLOGY DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3. Also waive GSA 101-8, GSA 204-4, third-level waiver-6.) . . .	66
<i>Requirements for Concentration in Biochemistry</i>	104
GSD FL-9	(9)
Biochemistry: Chemistry 451-6, 455-2, 459-2	10
Biology: 200-4, 301a,b-8, 302a-5 or 302c-5, 303a,d-4, 304a-5 (see 48-hour completion of concentration below)	26
Chemistry: 125-10, 135-5, 341-9, 345-4, 461-9, 465-3 (see 48-hour completion of concentration below)	40
Mathematics: 150-8, 250-4	12
Physics: 211-12, 300a-4	16
<i>Completion of Concentration</i> (in biology and/or chemistry to meet 48-hour requirement)	8-22
<i>Electives</i>	14-0
<i>Total</i>	192

Biology

Biology is an appropriate concentration for individuals interested in biochemistry, botany, microbiology, pre-health professional, physiology, or zoology programs. Students planning to concentrate in biology should consult with the biology faculty representatives at their earliest opportunity.

Bachelor of Arts Degree, SCIENCE AND TECHNOLOGY DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) . . .	84
<i>Requirements for Concentration in Biology</i>	76-78
GSD FL	(9)
Foreign Language (Conversation) 100-level	3
GSD 114d-4	4
One year of physics including laboratory-15 or	

GSA 101a-5 and Mathematics 150-8	(5) + 8-10
Chemistry 125a,b-10, a complete organic chemistry course to include some laboratory-10	(3) + 17
Biology 200-4, 301a-4, 302a,c-10, 303a-3.	(8) + 13
Electives in biology to complete 48 hours of 300- and 400-level work for the concentration. At least one course must be taken from three of the four course areas (see course descriptions)	31
<i>Electives</i>	32-30
<i>Total</i>	192

Bachelor of Science Degree, EDUCATION DIVISION

For this degree, the requirements for a concentration in biology are as listed above, under Bachelor of Arts degree, except that no foreign language is required. See secondary education requirements.

Bachelor of Science Degree, SCIENCE AND TECHNOLOGY DIVISION

Students planning to enter dental, medical, or veterinary schools or to become medical technologists should consult with the appropriate biology faculty representative to work out their individual courses of study.

Medical Sciences

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ..	84
<i>Requirements for Concentration in Biology (Medical Sciences)</i> ..	95
Biology 200, 301a, 302a, 303a, electives from 301, 302, 303, 304, or 400 level	(8) + 18
Chemistry 125a,b-10, 135-5, a complete organic course including laboratory-10	(3) + 22
Mathematics-9	(9)
One year of physics-15	(5) + 10
Transfer (one year from an approved dental, medical, or veterinary school)	45
<i>Electives</i>	13
<i>Total</i>	192

Upon successful completion of one year of study in a program leading to a dental, medical, or veterinary degree at an approved school, the student is credited with 45 hours toward the Bachelor of Science degree, of which 16 count toward the 64 hours of senior college credit needed for graduation from Southern Illinois University.

Medical Technology

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ..	84
<i>Requirements for Concentration in Biology (Medical Technology)</i> ..	108
GSA 101a-5	(5)
GSD 114-9	(9)
Biology 200-4, 301a-4, 302a-5, 303a-3, 304a-5, electives from 300- and 400-level	(8) + 33

Chemistry 105-5, 125-10, 135-5, 305-6, 345-4	(3) + 27
Medical Technology (one year at an approved medical technology school)	48
<i>Total</i>	192

Upon successful completion of one year of study and laboratory work at a school of medical technology approved by the Council on Medical Education and Hospitals of the American Medical Association, the student will usually be credited with 48 hours towards the Bachelor of Science degree (of which 16 will count towards the 64 hours of senior college credit needed for graduation from Southern Illinois University). Coordinated programs have been worked out with Jewish Hospital, St. Louis, and St. Elizabeth's Hospital, Belleville, Illinois.

Schools of medical technology approved by the Council on Medical Education and Hospitals of the American Medical Association require for entrance the completion of the university degree requirements for a medical technology program from an accredited college or university, with credit for 24 hours in biological science and 24 hours in chemistry. Students successfully completing the year of study and laboratory training at an approved school of medical technology are eligible to take the national registry examination conducted by the Board of Registry of Medical Technology for certification as a registered technologist MT (ASCP).

Secondary Concentration

A secondary concentration in biology consists of 27 hours and includes at least one quarter of 302. Four hours from GSA 204, 205, 206, or Biology 200 may be counted toward the 27 hours, as may GSA 300-level courses which are taught by the Department of Biological Sciences (314, 320, 328, 341). Individual study courses such as 491 and 493 are not allowed for a secondary concentration.

Botany

(See Biology.) A specific botany program is not offered. The biology program includes botany courses adequate for career specialization and subsequent graduate study.

Business Administration

The academic program in business administration is designed to anticipate the needs of students who will graduate in the early 1970's and whose business careers may extend well beyond the year 2000. We assume that, as business practices and technology change, and as individual business responsibilities grow or alter, our former students will need to adapt continuously to the demands and opportunities of the dynamic fourth quarter of the 20th century. This process of continuing adjustment will be accomplished in many ways: on-the-job training, non-degree courses offered within business and by external

agencies, formal academic programs such as those leading to the Master of Business Administration degree, and do-it-yourself programs of professional development. As Southern Illinois University's graduates advance in their careers, all of the foregoing modes of continuing education will be increasingly needed and used.

Bachelor of Science Degree, BUSINESS DIVISION

Careful planning will be needed if the student is to meet all of the degree requirements in General Studies, the business division core, and an area of specialization. The Business Division maintains a special advisory staff to assist students in planning their programs.

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.) . . .	84
<i>Business Division Core Requirements</i>	80
Accounting 332, 333, 334	12
Economics 200, 201, 300	12
Finance 320	4
General Business Administration 140, 340, 341, 390, 440, 441	24
Management Science 311, 313, 315, 380, 381	20
Marketing 370, 371	8
<i>Specialization Requirements</i>	16 or 28
PROFESSIONAL ACCOUNTING	(28)
Accounting 335, (341 in lieu of 334), 351-8, 432 or 453, 456	24
General Business Administration 342	4
GENERAL ACCOUNTING	(16)
Accounting (341 in lieu of 334), 351-8, 432 or 453, 442	16
ADMINISTRATIVE SERVICES	(16)
Administrative Services 301, 426, 427, 428	16
ECONOMICS	(16)
Economics 340, 441, and electives in economics	16
GENERAL BUSINESS ADMINISTRATION	(16)
(To be worked out on an individual basis)	
MARKETING	(16)
Marketing 470, 473, and two of 452, 471, 472	16
MANAGEMENT SYSTEMS	(16)
Management Science 382, 480	8
Production 460, 462	8
MANPOWER AND INDUSTRIAL RELATIONS	(16)
Economics 410, 411, General Business Adminis- tration 430, 434	16
ORGANIZATIONAL BEHAVIOR AND DEVELOPMENT	(16)
General Business Administration 430, 431, 432, 433	16
<i>Electives</i>	12 or 0
<i>Total</i>	192

General Studies. As part of the program of General Studies, business students are asked to take certain foundation subjects of great significance to their later work in the business program. Par-

ticularly relevant are the courses in economics and sociology, in psychology and anthropology, in college algebra and statistics, and in oral and written communication. Concurrent with their lower division (freshman and sophomore) General Studies work, business students will also take carefully selected basic courses in business offered by the division.

Core Curriculum. The mission of the core curriculum in business is threefold. First, it aims at providing students with a comprehensive understanding of industrial dynamics, structure of industry, business organization, and managerial technique. Second, it seeks specifically to develop the student's managerial capabilities in the three critical areas—analysis, communication, and human relations. Third, it aims at re-enforcing both the motivation and the capacity for life-long professional growth and development.

The Business Division works toward these objectives through the following alternative plans:

Plan "A"—The majority of students enroll under Plan "A". The core courses are offered each quarter in a manner to accommodate the needs of students whose personal preference and/or work and study programs require flexible time sequences as in standard scheduling. Students should obtain program advice from the Business Division adviser for proper course sequencing.

Plan "B"—This plan is a problem laboratory approach to education which utilizes an information search model and group processes. Each quarter four core courses are scheduled in one block of time, either morning or afternoon. Four laboratory hours are included in the twenty hours each week during which students work in small groups engaging in the formulation of hypotheses and asking questions as a basis for problem solution. Answers supplied by the Program Information Library, course content, and self-initiated information search form the basis upon which the student formulates, explains, and defends his suggested solutions. Distinctive features include integration of course subject matter and evaluation based on both content learning and problem-solving methodology. Further details of this program can be provided by the Business Division adviser.

Specialization and Electives. The student's choice of a specialization and his use of electives will reflect his preference as to a point of entry into business. We say *point of entry* rather than *career* because well over half of our students are expected to shift fields of specialization within a few years after graduation. That is to say, students whose point of entry is field *x* may soon find themselves working in field *y*. Nevertheless, if a student aspires to a specialization such as professional accounting, he will be advised to devote both his specialization and his elective course work to subjects relevant to that objective.

Similarly, a student interested in management systems may take the four-course sequence in that area and may, if he chooses, use his elective courses to bolster his strength either in business subjects or in a related field, such as mathematics or the computer sciences. Alternatively, electives may be used to expand cultural or other non-

professional interests. Students choosing other areas of specialization such as marketing or personnel and industrial relations may use their electives in like fashion.

Still another use of the time allocated to "specialization" and "electives" is afforded by the general business administration option. A student choosing this avenue may substitute (for a specialization in business) 16 or more hours in an approved sequence in a non-business area, such as economics or sociology or mathematics. Thus a student who desires to acquire depth and breadth in some specific non-business area of study may do so by applying his choices in "General Studies," in "Specialization," and in "Electives" to that end. One purpose of this option is to allow a student who anticipates graduate study in business to receive a "liberal" undergraduate education and yet to qualify for a Master of Business Administration degree (MBA) in one additional year of study instead of the two-year program often required of non-business baccalaureates. A second objective is to provide additional discretion to students who, while desiring to prepare for careers in business, are uncertain as to an exact point of entry. A third group who may choose this option are pre-law students who anticipate engaging in business-related law practice. Finally, there is an increasing demand in business for graduates who have combined a sound program in business with depth in some related area such as those cited.

In summary. The program in business is designed to facilitate both entry into business and long-term professional growth. During his business career we expect a former student to find that, because of changing business practices and growing responsibilities, less and less of his course work in specific business subjects is directly relevant to his needs. As this occurs, he will draw more and more upon the generalized portion of his program at Southern Illinois University, supplemented and extended by his work experience, by his continuing program of self-instruction, and by post-graduate professional-development programs of the types previously indicated.

ACCOUNTING

The operation of a business and its financial condition are of interest to its owners, to its employees, to its creditors, to various governmental bodies, and to the public. Accounting is the means by which the transactions of a business are analyzed, recorded, presented, and interpreted to and/or for the various interested groups. In many instances such data are attested by a particular type of professional accountant, the licensed certified public accountant (C.P.A.).

The skills of the accountant are not easily acquired; serious and thorough study is necessary. The breadth and depth of this study depend somewhat upon the post-graduate objectives of an individual student. Differences in student objectives are recognized by two specializations in accounting, either of which will satisfy degree requirements for graduation.

The professional accounting program is recommended for students who wish to meet the educational requirements for taking the C.P.A.

examination in Missouri, Illinois, and other states; for students who desire governmental career positions in accounting; and for students who want to meet the expectations of many public accounting and private business firms. Those who aspire to become a C.P.A. should familiarize themselves with the laws and regulations covering the certification of public accountants in the state of their choice. The regulations for the State of Illinois are published by the Committee of Accountancy, University of Illinois, Urbana, Illinois.

The general accounting program is recommended for those students who intend to continue the study of accounting in graduate school, or for those students who desire a more thorough coverage of some other area or areas as an undergraduate.

ADMINISTRATIVE SERVICES

The specialization in administrative services is designed to prepare managers for automated offices and data processing systems. The specialization includes the study of data processing systems, COBOL programming, information storage and retrieval systems, and office systems and procedures.

FINANCE

Finance involves planning the needs for and uses of funds in business, government, and other institutions; developing the principles and policies governing security portfolio management for individuals and institutions and studying the characteristics and institutional structure of the money and capital markets. Decision rules involving operating funds and capital expenditures within business, government agencies, and other institutions are developed in courses of financial management. Investment courses are concerned with the determination of policies for managing portfolios of individuals and of groups such as pension funds. The flow of funds from saver to users is studied in courses on financial markets and institutions.

Opportunities for additional study of specific financial institutions such as commercial banks and the finance of international and multinational business are offered in seminars. Studies in related disciplines such as money and banking and accounting or management systems are also possible within the finance specialization.

An objective of the courses offered in the area of finance to provide the student with a comprehensive introduction (a) to the functions of corporate financial officers, (b) to the fields of investment policy and investment analysis, (c) to the special characteristics of the major types of financial intermediaries. In addition, they provide knowledge of principles of financial analysis and decision making and practice in the application of these principles to specific cases, thereby developing analytical ability and fuller comprehension of the nature of financial problems as encountered in business and industry.

GENERAL BUSINESS ADMINISTRATION

The general business administration courses help the student to understand the foundations of our market-oriented economy and the role of business enterprise therein; and provide a firm foundation in the

area of theory, the external environment of a business or an industry (the scientific and technological, economic and market, legal and political, goal-setting, and attitudinal environments within which business institutes operate), and the decision-making processes involved in the choice of particular business policies and practices. The overall goal is to enhance understanding the internal and external factors affecting the operation of business firms and skill in the management of essential entrepreneurial resources—human, financial, physical, and technical.

This area of specialization provides the student with an opportunity to obtain further depth of study in related subjects offered by the other divisions. Among the topical areas to which this option is applicable are applied science, economics, foreign languages, government, mathematics, psychology, and sociology. Other areas may be approved upon application to the chairman.

In each instance, the student will pursue a sequence of courses amounting to at least 16 quarter hours in the area of his choice. The particular sequence must be approved in advance by the chairman or other appropriate officer of the faculty.

MARKETING

Marketing, which includes all activities concerned with determining and satisfying desires and needs of individual and institutional consumers, is a major function in all forms of business enterprise. Marketing knowledge and concepts provide the tools for developing and distributing goods and services in today's dynamic economy and tomorrow's as well. Courses are offered in the areas of consumer behavior, advertising, marketing management, distribution, sales administration, and market research.

MANAGEMENT SYSTEMS—QUANTITATIVE METHODS—PRODUCTION

All three are concerned with (a) the design of information and decision-making systems for business, governmental, and other institutional requirements, (b) the application of appropriate techniques of quantitative analysis to administrative problems, (c) the utilization of EDP (electronic data processing or computer) capability in management information and decision-making systems. This includes the study of techniques often described under the heading of operations research. Three distinct areas of study are recognized within this broad field: management operating systems, quantitative methods, and production and operations management. This specialization is designated management systems.

Management Systems. The systems concept of organization within business and government is receiving many benefits from computer applications. New career opportunities arise from the rapid growth of computer usage. Students with an understanding of systems, computers, and quantitative techniques will be equipped to identify and solve certain types of problems in the management of business or government.

Manpower and Industrial Relations. The manpower and industrial relations concentration emphasizes studies of manpower and industrial relation problems and inculcates a knowledge of collective bargaining, arbitration, grievance handling, government and labor-management relations, and a broad spectrum of manpower resource development and use. For the business student planning to enter industry or government, or a service-oriented career, this concentration will be of great value.

Organizational Behavior and Development. The organizational behavior and development concentration affords the student of business a pursuit of specialized knowledge and discipline in a primary new field. By means of this specialized course work the student can relate better to the correlative fields of psychology, sociology, and other administrative study areas.

Production. The objective is to assist the student who is interested in a career in production or operations management to find a proper point of entry into his chosen field, and to perform competently thereafter. Because of the rapidly changing technological base of the production and operations functions, emphasis is upon tools and concepts of a fairly general character and lasting relevance.

PRODUCTION

The production function is responsible for creating the goods and services which are inputs to the marketing function of a firm. Viewed in this manner, a distinct production function is to be found in a variety of business activities. In a major airline, for example, the production function often includes aircraft scheduling, operation, and maintenance and is headed by a vice-president for operations. The head of an analogous function in a banking firm may be titled cashier or comptroller. In manufacturing firms the title of the senior production officer ranges from vice-president for manufacturing to plant manager. In each industry there are conventional lines of advancement running from points of entry into a firm to these positions. Whatever the type of business, the fundamental responsibility of the production function is the same: to insure that the desired goods or services are produced or made available on time, at budgeted cost, in the proper quantities, and within the desired span of quality characteristics.

Business Education

The Business Education Department offers a program which leads to the Bachelor of Science degree. The program includes two curricula options. One curriculum option is designed to prepare business teachers and is offered in cooperation with the Education Division. The other curriculum option is designed to prepare managers for data processing centers and automated offices and is offered through the Business Division.

Business Teacher Education

The business teacher education curriculum is designed to prepare teachers of business subjects for secondary schools, junior colleges, vocational-technical schools, and similar institutions. Each student in the program completes a core of business administration and education courses and specializes in one area of business administration. Students interested in business teacher education are individually advised by Dr. Carl Hall and their programs planned until graduation. Students must see Dr. Hall before enrolling.

Bachelor of Science Degree, EDUCATION DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.) . .	84
<i>Business Teacher Education Core</i>	81
Accounting 332, 333	8
Administrative Services 300	4
Business Education 350, 351, 405	12
Counselor Education 305	4
Economics 200, 201	8
Foundations of Education 355	4
General Business Administration 140, 340, 342, 390	16
Marketing 371	4
Secondary Education 315, 352	21
<i>Subject Matter Specialization: concentration of studies in one of the following six areas</i>	24
ACCOUNTING	
Accounting 351a,b	8
Administrative Services 428	4
Business Education 408	4
Electives in accounting, administrative services, and finance	8
DATA PROCESSING	
Administrative Services 301, 426, 428	12
Business Education 408	4
Electives in accounting, administrative services, management science, and quantitative methods	8
ECONOMICS	
General Business Administration 440	4
Economics 300, 310, 441	12
Electives in economics and finance	8
MARKETING AND DISTRIBUTIVE EDUCATION	
Business Education 414a,b	6
Marketing 370, 472	8
Electives in marketing	10
OFFICE SERVICES	
Administrative Services 426, 427	8
Business Education 304, 402	11
Electives in administrative services and business education	5
SECRETARIAL ADMINISTRATION	
Administrative Services 426	4
Business Education 304, 324a, 403, 404, 406	19
Electives in administrative services and business education	1

<i>Electives</i>	3
<i>Total</i>	192

In lieu of electives in his area of specialization above, a student may wish to secure additional certification in one or more of the following teaching areas by substituting the courses shown for the electives in his specialization: shorthand—Business Education 324a, 404; typewriting—Business Education 201c, 403; business law—General Business Administration 440; accounting—Business Education 408; office practice—Business Education 201c, 406; business arithmetic—Accounting 330, 341, or Management Systems 313; salesmanship—Marketing 472; cooperative education—Business Education 414a,b.

Administrative Services

Administrative Services includes office services, data processing, informational analysis, systems procedures analysis, and personnel management. The curriculum in Administrative Services is divided into two areas of specialization, data processing and personnel management—each of which leads to the Bachelor of Science degree. Students interested in Administrative Services are individually advised and their programs planned until graduation.

Bachelor of Science Degree, BUSINESS DIVISION

<i>General Studies Requirements</i> ¹ (See Chapter 3. Waive GSB-3.) ..	84
<i>Core Courses in Business</i>	68
Accounting 332, 333	8
Administrative Services 300, 426, 427	12
Economics 200, 201, 310	12
Finance 320	4
General Business Administration 140, 340, 341, 390, 440, 441 ..	24
Marketing 371	4
Psychology 320	4
<i>Specialization in One of the Following</i>	24
DATA PROCESSING	
Accounting 334, 341	8
Administrative Services 301, 428	8
General Business Administration 342	4
Management Science 311	4
PERSONNEL	
General Business Administration 430, 431, 461	12
Psychology 473, 474, 479	12
<i>Electives</i>	16
<i>Total</i>	192

Chemistry

A concentration in chemistry provides an excellent preparation for graduate study in chemistry or biochemistry, professional medical, dental or veterinary programs, teaching in high schools, and industrial positions.

¹ Must include GSB 103-8, 201-4, GSD 114-9.

Courses of study, leading to the Bachelor of Arts degree in the Science and Technology Division, are available in the following areas: (a) Certification by the American Chemical Society (ACS) as a professional chemist. (b) A "liberal arts" chemistry degree (non-ACS). (c) Preparation for the professional medical science programs. (d) State certification for teaching high school chemistry. Program requirements are given below.

All supporting courses in lieu of a secondary concentration must be approved by the Chemistry Department undergraduate adviser.

Four-year program outlines, lists of suggested supporting courses, and additional advice may be obtained through the office of the Chemistry Department. Incoming students who are considering a concentration in chemistry are urged to contact this office before registering for any courses.

The requirements listed here are in addition to the general requirements of the Science and Technology Division. (See Chapter 4.)

*Bachelor of Arts Degree, SCIENCE AND TECHNOLOGY DIVISION
(American Chemical Society Certification)*

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.)	84
<i>Requirements for Concentration in Chemistry</i>	83
GSD FL-9 (reading knowledge of a scientific language)	(9)
Chemistry 125-10, 135-5, 261-3, 341-9, 345-7, 361-9, 365-4, 411-4, 432a or b-4	(3) + 52
Mathematics 150-8, 250-4	12
Physics 211-12, 212-3	(5) + 10
Chemistry electives—at least three at 400 level (one may be mathematics or physics)	9
<i>Approved Supporting Courses</i>	5-21
<i>Electives</i>	20-4
<i>Total</i>	192

(Non-ACS Concentration)

<i>General Studies Requirements</i> . (See Chapter 3. Waive GSA-3.)	84
<i>Requirements for Concentration in Chemistry</i>	66-70
GSD FL-9	(9)
Chemistry 125-10, 135-5, 261-3, 341-9, 345-7, 361-9, 365-4	(3) + 44
Chemistry 311-3 or 411-4	3-4
Mathematics 150-8, 250-4	12
Physics 211-12 or 206-15	(5) + 7-10
<i>Approved Supporting Courses</i>	11-27
<i>Electives</i>	31-11
<i>Total</i>	192

Medical Science

*Bachelor of Arts Degree, SCIENCE AND TECHNOLOGY DIVISION
(Designed to meet requirements of professional medical and dental programs)*

<i>General Studies Requirements</i> . (See Chapter 3. Waive GSA-3.)	84
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<i>Requirements for Concentration in Chemistry</i>	75-76
GSD FL-9	(9)
Chemistry 125-10, 135-5, 261-3, 341-9, 345-7, 361-9, 365-4	(3) + 44
Chemistry 311-3 or 411-4	3-4
Mathematics 150-8, 250-4	12
Physics 211-12, 212-3, or 206-15	(5) + 10
Chemistry electives	6
<i>Supporting Courses</i>	13
Biology 200-4, 301a-4, 301b-3, 301d-2	(8) + 5
<i>Biology Electives</i>	20-19
<i>Total</i>	192

Pre-medical students who enter a medical school after the junior year may obtain approval to apply appropriate medical school courses to complete the requirements for a concentration in chemistry.

Secondary Education

Bachelor of Arts Degree, SCIENCE AND TECHNOLOGY DIVISION

(Meets State Certification Requirements for Secondary Education)

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.)	84
<i>Requirements for Concentration in Chemistry</i>	66-70
Chemistry 125-10, 135-5, 261-3, 341-9, 345-7, 361-9, 365-4	(3) + 44
Chemistry 311-3 or 411-4	3-4
Mathematics 150-8, 250-4	12
Physics 211-12 or 206-15	(5) + 7-10
<i>Professional Education Courses</i>	29
Counselor Education 305-4, Foundation of Edu- cation 355-4, Secondary Education 315-5, 352-12	25
Education elective	4
<i>Approved Supporting Courses</i> (in lieu of second teaching field)	10-9
<i>Electives</i>	3-0
<i>Total</i>	192

Sanitation Technology

Bachelor of Science Degree, SCIENCE AND TECHNOLOGY DIVISION

A degree program is offered in sanitation technology for training personnel toward solving present day water and waste water problems in future oriented ways. See Sanitation Technology, page 89.

Secondary Concentration

A secondary concentration in chemistry must include 125-10, 135-5, and at least 12 hours in chemistry courses beyond 135. (Chemistry 110, 201, 202, and 240 are not accepted.)

Comparative Literature

Secondary Concentration

The secondary concentration in comparative literature is 37 hours, including 410, 499; second year of foreign language on the college level; and Philosophy 360 or advanced foreign language study.

Computer Science

An option leading to the Bachelor of Science degree in mathematics with a specialization in computer science is offered by the Mathematics Department. The option prepares the student for a professional career in the computer field. With the proper choice of electives it satisfies also the need of students who plan to do graduate work in computer science. For detailed requirements, see Mathematics.

Secondary Concentration

The secondary concentration in mathematics with a specialization in computer science consists of 27 hours of courses approved by a computer science adviser and must include Mathematics 225-4 or 226-4 and 229-8.

Early Childhood Education

The Education Division offers a program in early childhood education for students planning careers as teachers or other professionals in preschool agencies, kindergartens, and the primary grades of the elementary school. Completion of the concentration in early childhood education fulfills University and Education Division requirements for the Bachelor of Science degree and qualifies the student for the Illinois Standard Elementary School Certificate. Since this is a four-year program, freshmen students should consult with advisers in the Education Division Office of Teacher Education prior to registration.

Bachelor of Science Degree, EDUCATION DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) . .	84
<i>Professional Requirements for Concentration in Early Childhood Education</i>	52
Freshman Year: Elementary Education 201a-2, 202a-2 . . .	4
Sophomore Year: Elementary Education 201b-2, 202b-2 . .	4
Junior Year: Counselor Education 305-4, Elementary Education 314-4 or 316-4, 317-4, 337-4, Foundations of Education 355-4	20
Senior Year: Elementary Education 350-8, 351-8, 412-4, Instructional Technology 417-4	24
<i>Nonprofessional Requirements</i>	40
Nonprofessional requirements for the concentration in early	

childhood education are similar to those for elementary education. Students should consult pages 66-77 in the catalog and Education Division advisers.

<i>Electives</i>	16
<i>Total</i>	192

Economics

Courses in economics help students to understand the principles concerning the production and distribution of goods and services. Important and often controversial issues, such as the level and composition of national income, unemployment, income distribution, inflation, labor unions, monopoly, tariffs, the level and composition of government spending and taxation, and various economic systems are studied and analyzed.

The study of economics prepares an individual for a position in private industry, government service, or teaching. Business and governmental agencies employ economists in management training program, research, and administrative positions. Economics also provides necessary background for the understanding of and evaluation of state and national policy in many fields, examples of which are taxation, monetary and fiscal policy, antitrust, pollution control, and other public interest activities, and welfare legislation. Students choosing economics as a field of concentration pursue a core program designed to provide the student with a thorough grounding in the principles of economic theory followed by more specialized study in such areas as money and banking, labor and industrial relations, international trade, urban and regional economics, mathematical economics, economic history, comparative economic systems, and public finance. The sequence of courses, including those in related areas, is planned in cooperation with an adviser from the faculty.

Four distinct programs permit concentration or specialization in economics. The Business Division offers the Bachelor of Science degree with a concentration in economics and the Bachelor of Science degree with a concentration in business administration and a specialization in economics. The Education Division offers a Bachelor of Science degree with a concentration in economics. The Social Sciences Division offers the Bachelor of Arts degree with a concentration in economics.

Bachelor of Science Degree, BUSINESS DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.) ..	84
<i>Requirements for Concentration in Economics</i>	68
GSB 311-3	(3)
GSD 114a-5, 114d-4	(9)
Accounting 332, 333, 334	12
Economics 200, 201, 300, 340, 441	20
Economics electives	16

Management Science ¹ 311, 313, 315 ²	12
Courses in finance, marketing, or management science	8
<i>Secondary Concentration</i>	27
Students are asked to choose a secondary concentration in any other business area, mathematics, any other social science, or any other area approved by the department chairman.	
<i>Electives</i>	13
<i>Total</i>	192

Bachelor of Arts Degree, SOCIAL SCIENCES DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.) ..	84
<i>Requirements for Concentration in Economics</i>	45
GSB 311-3	3
GSD 114a-5, 114d-4	(9)
Economics 200, 201	8
Economics 340, 441	8
Economics electives	26
<i>Secondary Concentration</i>	27
Students are asked to choose a secondary concentration in any other social science or mathematics area, or in any other area approved by the department chairman.	
<i>Electives</i>	36
<i>Total</i>	192

Bachelor of Science Degree, EDUCATION DIVISION

For this degree the following courses constitute a 48-hour concentration in economics: GSB 103b, 311, GSD 114d, Economics 200, 201, 300, 340, 441, plus 17 hours of electives in economics to meet the minimum of 48 hours. The electives will be chosen in consultation with an economics faculty adviser.

The following courses constitute a 36-hour concentration in economics: GSB 103b, 311, GSD 114d, Economics 200, 201, 300, 340, 441, plus 5 hours of electives in economics to meet the minimum of 36 hours. See Secondary Education requirements, pages 89-91.

Secondary Concentration

A secondary concentration in economics requires 24 hours and must include 200, 201, 340, and 441. The remaining 8 hours shall consist of electives in economics chosen in consultation with an adviser from the economics faculty.

Elementary Education

Completion of the concentration in both general elementary education and early childhood education fulfills the University and the Education Division requirements for the Bachelor of Science degree and

¹ Requirements in management science may be met by Mathematics 150-8, 250-4, 321-4, 350-8, and 483a-3; in this case, these courses in mathematics will constitute a secondary concentration.

² Economics 467 may be substituted for Management Science 315.

qualifies the student for the Illinois Standard Elementary School Certificate.

Bachelor of Science Degree, EDUCATION DIVISION

<i>General Studies Requirements</i> ¹ (See Chapter 3. Waive GSC-3.) . .	84
<i>Professional Requirements for Concentration in Elementary Education</i>	44
The following are taken in the order presented:	
Counselor Education 305 (first course in professional sequence)	4
Foundations of Education 355	4
Elementary Education 314-4, 351-16, 337-4, 437-4	28
Instructional Technology 417	4
Professional elective: recommended—Counselor Education 422-4, Foundations of Education 431-4, Elementary Education 201-4, 202-4, 203-4, 365-4, 413-4, 415-4, 442-4, 443-4, Psychology 301-4	4
<i>Nonprofessional Requirements</i>	40
GSA-3	3
GSB-8 (include 103a-4 or 103b-4, 203b-4)	8
GSC-3	3
Art, music, and/or theater	6
English 391-4	4
Physical Education 350-4	4
Area of interest ²	12
<i>Electives</i>	24
<i>Total</i>	192

Engineering

Engineering is the professional art of applying mathematics and science to the optimum utilization of natural resources for the benefit of man. It is a creative activity in that it produces that which has never previously existed; it is a scientific activity in its approach and the knowledge utilized to manipulate nature for man's purposes.

The following curricula are designed to develop engineers capable of breaking new paths as well as improving old ones, to develop flexibility, to emphasize synthesis as well as analysis.

All students interested in engineering should seek advisement from the Department of Engineering immediately upon enrolling in the University.

Bachelor of Science Degree, SCIENCE AND TECHNOLOGY DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) . .	84
<i>Requirements for Concentration in Engineering</i>	110-111
<i>One of the following specializations:</i>	
ELECTRONIC ENGINEERING	111

¹ Include GSB 201c-4, 331-3; 300a-3 or 203a-4.

² A student shall select an area in which he obtains at least 12 hours in addition to the above requirements. These areas are fine arts; health, recreation, and physical education; instructional materials; language arts; mathematics; science; social science.

Engineering 110-1, 200-9, 201-2, 210-2, 260-8, 300-3, 301-3, 325-4, 326-4, 327-4, 330-8, 351-3, 352-3, 353-3, 370-4, 401-2, 443-4, 495-1	68
Chemistry 125-5	(3) + 2
Mathematics 150-8, 250-4, 305-4, 350-8, one elective-4	(9) + 19
Physics 211-12, 300a-4	(5) + 11
Electronic Engineering electives	12
URBAN AND ENVIRONMENTAL ENGINEERING	110
Engineering 101-6, 220-3, 221-1, 230-3, 260-8, 270-4, 300-3, 314-6, 320-3, 321-1, 370-4, 419-3, 421-1	46
Chemistry 125-10	(3) + 7
Mathematics 150-8, 225-4, 250-4, 305-4, 350a-4, 405a-4	(9) + 19
Physics 211-12, 212-3	(5) + 10
Electives from one of the following groups:...	20-21
Environmental: Engineering 380-12, 480-8	
Structures: Engineering 340-8, 440-8, 442-4	
Highway and Transportation: Engineering 315-3, 363-9, 475-3, 476-3, 477-3	
Additional electives	8-7
ENGINEERING SCIENCE	110
Engineering 200a-3 (or 220-3, 221-1), 200b-3, (or 320-3, 321-1), 260-8, 270-4, 300-3, 370-4, 419-3, 420-4, 421-1, 443-4..	37
Chemistry 125-10	(3) + 7
Mathematics 150-8, 225-4, 250-4, 305-4, 350-8, 405a-4, 483a-3	(9) + 26
Physics 211-12, 300a-4	(5) + 11
Electives from one of the following groups:	
Engineering 481-4, 482-4, 483-4 and/or electives from biology, chemistry, engineering, or physics approved by the Department of Engineering	29
Total	194-195

Secondary Concentration

A secondary concentration in engineering consists of 220-3, 221-1, 260-8, 270-4, 320-3, 321-1, and 7 technical elective hours approved by the Department of Engineering.

English

Bachelor of Arts Degree, HUMANITIES DIVISION

General Studies Requirements ¹ (See Chapter 3. Waive GSC-3.)	84
Requirements for Concentration in English ²	58-60

¹ These requirements must include the first year of a foreign language; third-level GSC courses may be waived.

² These requirements include courses only above sophomore level.

Foreign Language (second level of the same language taken as General Studies requirement) . . . (12) + 10	
English 300, 302a,b,c, 309a,b, either 471a or b	28
Five 400-level courses in English, excluding 485, 486, 487	20-22
For one of the 400-level courses the student may substitute two of the following GSC courses: 313, 315, 325, 333, 335, 336, 337, 339, 345b, 345c, 365; this option adds 2 hours to English total. Another option is substitution of 4 hours of Humanities Honors for one 400-level course.	
Secondary Concentration	24-27
Electives	26-23
Total	192-194

Secondary Concentration

A 24-hour secondary concentration in English consists of English 300 and 302a, followed by either 302b and c or by 309a and b, and two 400-level courses (485, 486, 487 do not count), at least one of which is in the British or American field not chosen above.

A 24-hour secondary concentration in writing consists of English 392a, 392b, and 490, which are required. In addition, students may select the remaining hours from the following electives: English 492a, 492b, and 498. Theater 411 and TV-Radio 359 may be substituted for English electives with permission of the English department adviser.

Bachelor of Science Degree, EDUCATION DIVISION

General Studies Requirements ¹ (See Chapter 3. Waive GSC-3.)	84
Requirements for Concentration in English	72-74
GSD FL ²	(12)
Two of the following: GSC 313-3, 314-3, 315-3, 325-3, 333-3, 335-3, 336-3, 337-3, 339-3, 345b-3, 345c-3, 365-3	6
English 300-4, 302-12, 309-8, 403-4, 471a or b-4, 485-4, 490-4	40
Two of the following: English 400-4, 405-4, Speech 202-4, 224-4, Journalism 391-3	6-8
Representative choices in both period and genre 400-level courses in literature	16
English 486-4 or 487-4	4
Professional Education Courses	33
Counselor Education 305-4, Foundations of Education 355-4, Secondary Education 315-5, 352-12	25
Two courses from the following: Psychology 303-4, Secondary Education 440-4, Counselor Education 422-4, Instructional Technology 417-4, Special Education 414-4	8

¹ If GSD 103 can be waived, student should take Speech 202-3 or 224-4.

² One college year (or equivalent) of a foreign language is required; two years are preferred.

<i>Elective</i>	3-1
<i>Total</i>	192

Foreign Languages

Bachelor of Arts Degree, HUMANITIES DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.)	84
<i>Requirements for Concentration in Foreign Languages</i>	49-50
Minimum of 42 hours beyond 250b (280-4, 351-6 re- quired)	42
English and history (one course in each area above 299 related to concentration)	7-8
<i>Secondary Concentration</i>	28
Minimum of 24 hours beyond 250b (280-4, 351-6 re- quired)	24
English course above 299	4
Recommended course: history above 299 related to minor	
<i>Electives</i>	31-30
<i>Total</i>	192

Bachelor of Science Degree, EDUCATION DIVISION

For this degree, the requirements for concentration in foreign languages are 42 hours (exclusive of General Studies courses and elementary education concentration courses) in a language, plus one English and one history course numbered above 299. See Secondary Education requirements, pages 89-91.

Secondary Concentration

A secondary concentration consists of 24 hours (exclusive of General Studies) in a language.

Geography

The Earth Sciences Department offers both the Bachelor of Science degree and the Bachelor of Arts degree.

1. Bachelor of Science—for preparation to teach geography and earth science in the elementary or secondary schools, or (with further preparation) in the junior college; or as a part of preparation to teach either social science or physical science in the elementary or secondary school.

2. Bachelor of Arts—for a thorough knowledge of geography, in preparation for civil service appointment as a geographer, or for demands of private organizations requiring the services of geographers, meteorologists, cartographers, or planners.

A broad background in other fields is of great importance to a geographer. Thus, it is recommended that geography students hold their hours of geography to the minimum number required and use their elective hours to take work in other areas. Students interested in physical geography should consider work in geology, botany, zoology,

chemistry, and physics. Students interested in economic geography or planning can profit from work in economics, government, sociology, marketing, and transportation. Students specializing in cultural geography will find courses in sociology, anthropology, history, and government particularly useful. Students interested in the geography of a particular area of the world are encouraged to take courses that are related to their area of interest.

Students with a concentration in geography or planning are strongly urged to take work in statistics. GSD 114d provides an introduction, while students interested in more complete preparation may take Geography 410.

Students working for a secondary concentration in geography or taking the social studies field concentration in education must take Geography 304, 306, and 308. (GSA 312 is recommended as an elective.)

Bachelor of Arts Degree, SOCIAL SCIENCES DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.) ..	84
<i>Requirements for Concentration in Geography</i>	45
GSD FL or GSD Mathematics	(9)
GSA 110a,b, 330, GSB 203b (recommended)	15
One of the following specializations:	30
Cultural geography, economic geography, regional: 304, 306, 308, 310, and electives.	
Planning: 304, 306, 308, 310a, 404a,b, 470a,b, 471a, and electives.	
Cartography: 304, 306, 308, 310, 416a,b, 417, and electives.	
Earth science: Geography 308, 310a, 400, 401, 444, and electives (recommended GSA 322, 330, 331).	
<i>Secondary Concentration</i>	27
Secondary concentration must be mathematics if the specialization is cartography.	
<i>Electives</i>	36
<i>Total</i>	192

The Bachelor of Arts degree students in such specialties as cartography, earth science, and planning are encouraged to do field work (internship) in their area of interest. Students interested in the urban studies field should take the planning core courses and do additional work in urban related courses in government, economics, or sociology. All majors must consult with the departmental adviser on the requirements for each primary concentration.

Bachelor of Science Degree, EDUCATION DIVISION

In addition to the General Studies requirements and the Education Division requirements, a geography specialization must include the following courses: Geography 302, 304, 306, 308, 310a, and additional courses to complete 45 or 36 hours in geography (depending on whether the student has one or two secondary concentrations). See Secondary Education requirements, pages 89-91.

Secondary Concentration

A secondary concentration in geography consists of 27 hours and must include 304, 306, and 308. Fifteen hours of General Studies courses toward both the primary and the secondary concentrations may be counted. (GSA 312 is recommended as an elective.)

Government

A concentration in government is recommended for persons planning to teach civics or government courses, and for those planning to qualify for the study of law or for public service.

Bachelor of Arts Degree, SOCIAL SCIENCES DIVISION

General Studies Requirements (See Chapter 3. Waive GSB-3.) . . . 84

Requirements for Concentration in Government 45

GSD FL (9)

A minimum of 45 hours, including 200 and GSB 203a, and at least 3 hours in four of the six areas of specialization:

American government and politics: 340 or 345 or equivalent.

Comparative politics: 350 or 355 or equivalent.

International relations: 370 or equivalent.

Political theory: 385 or equivalent.

Public administration: 320 or equivalent.

Public law: 340c or equivalent.

Secondary Concentration 27

Electives 36

Total 192

Bachelor of Science Degree, EDUCATION DIVISION

For this degree, the requirements for concentration in government total 45 or 36 hours in government, including 200 and GSB 203a, depending on whether the student has one secondary concentration or two. At least 3 hours (but no more than 20 hours) should be taken in four of the six areas of specialization listed above. See Secondary Education requirements, pages 89-91.

Secondary Concentration

A secondary concentration is 27 hours and must include 200 and GSB 203a and at least one course in three of the six areas of specialization.

Health Education

Secondary Concentration

A secondary concentration in health education is available for those who wish to receive teacher certification on either the elementary or secondary school level. It consists of 30 hours and includes GSE

201-3; Health Education 205-4, 300-3, 334s-4, 350-4 or 460-4, 355-4, 471-4; and one of the following 4-hour courses—Health Education 313s or Psychology 301, 303, 432.

History

Students who intend to study for either the Bachelor of Arts or the Bachelor of Science degree with a concentration in history should arrange for an interview with the undergraduate adviser in history at the time of declaration of concentration. The Bachelor of Arts degree permits the student a greater degree of flexibility in the four-year college program, and is recommended for students who plan to do graduate work.

Bachelor of Arts Degree, SOCIAL SCIENCES DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.)	84
<i>Requirements for Concentration in History</i>	64-77
Four courses (at least one in U.S. History) from GSB	
101b,c, GSB 300a,b,c, History 100, History 102.....	12-15
History 452	4
History electives at the junior-senior level (ten courses	
selected in the rank 301-499)	30-40
Two years of college level foreign language, or its equivalent	18
<i>Secondary Concentration</i>	27
<i>Electives</i>	17-4
<i>Total</i>	192

Bachelor of Science Degree, EDUCATION DIVISION

The concentration in history is the same for the Bachelor of Science degree as for the Bachelor of Arts degree except that students must have a minimum of 48 hours. The language requirement is optional. See Secondary Education requirements, pages 89-91.

Secondary Concentration

The secondary concentration requires that students select three courses from GSB 101b,c, GSB 300a,b,c, History 100, History 102. At least one of these courses should be in United States History. In addition, six courses in the rank 301-499 should be taken to complete the concentration. The minimum number of hours is 27.

Human Services

The concentration in human services is designed for those students planning to enter the helping professions—corrections, law enforcement, court services, community-based treatment programs, welfare, mental health, employment, and manpower programs.

Bachelor of Arts Degree, DELINQUENCY STUDY AND YOUTH DEVELOPMENT CENTER

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.) . .	84
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<i>Requirements for Concentration in Human Services</i>	48
Human Services 101-12, 201-12, 301-12, 401-12	48
Human Services elective hours may be substituted for core curriculum hours with consent of the faculty.	
<i>Secondary Concentration</i>	27
<i>Electives</i>	33
<i>Total</i>	192

Instructional Technology

Courses are offered in instructional technology in the utilization and administration of teaching materials. Programs may be designed to prepare either audio-visual coordinators or school librarians.

The Education Division offers a secondary concentration of 28 hours for secondary level specializations. This program provides minimum qualification for either a media specialist or a school librarian.

The required courses for librarians are Instructional Technology 401-4, 403-4, 405 or 406-4, and 407-4. The required courses for audio-visual people are Instructional Technology 417-4 and 445-4. Additional courses to fulfill the requirements of 28 hours are planned in conference with the adviser.

Latin American Studies

Secondary Concentration

The secondary concentration in Latin American Studies is 26-28 hours which must include History 352c-4, Government 355a-4, and Spanish 375-9; one course chosen from the following: any 400-level Latin American history course, History 352a-4, History 352b-4, or Anthropology 307-3; two courses chosen from among these: Economics 422-4, Geography 467a-4 or 467b-3.

Mass Communications

Mass communications involves the study of television-radio, journalism, and film. At present, a concentration in mass communications involves options in television-radio and journalism.

Broadcasting

Bachelor of Arts Degree, FINE ARTS DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) ..	84
<i>Requirements for Concentration in Mass Communications</i>	57
Speech 224-4	4
Television-Radio 100-4, 200-4, 201-4, 230-5, 252-4, 400-4, 402-4 or 403-4, 408-4	33
Television-Radio electives (five of the following 4-hour courses: 202, 301-5, 302, 303, 356, 359, 390, 401, 404, 405, 406, 407, 410, 450, 466)	20
<i>Secondary Concentration</i>	24

<i>Electives</i>	27
<i>Total</i>	192

Students seeking a Bachelor of Arts degree with an option in broadcasting must take the program outlined above. This degree requires a foreign language and is intended for those students who expect to enter the writing, production, or talent areas of broadcasting, or who expect to continue to graduate study in broadcasting.

Bachelor of Science Degree, FINE ARTS DIVISION

The Bachelor of Science degree with an option in broadcasting does not require a foreign language and is intended for those students who wish to enter the production, technical, or commercial aspects of broadcasting, and who expect to enter the industry upon graduation. Where possible, students may present an additional primary concentration by combining the secondary concentration and elective hours. Adviser consent is required.

Secondary Concentration

A secondary concentration in broadcasting is possible by taking the following courses: Television-Radio 100, 200, 201, 230, 252, 401 for a total of 25 hours.

Journalism

Bachelor of Arts Degree, FINE ARTS DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) ..	84
<i>Requirements for Concentration in Mass Communications</i>	54
Journalism 103-3, 201a,b-8, 210a-3, 245 or 345-4, 303-4,	
340-4, 410-4, 415-4	34
Television-Radio 100 or Journalism 101 or substitute ..	3-4
Journalism, selected television-radio, and electives from	
other divisions on campus as approved by the Depart-	
ment of Mass Communications	17-16
<i>Secondary Concentration Outside Mass Communications</i> (A	
double primary concentration is recommended.)	27
<i>General Electives</i>	17
<i>Total</i>	192

This degree requires study in a foreign language, as specified in the General Studies Program. (See Chapter 3, page 18.)

Secondary Concentration

A secondary concentration in journalism consists of Journalism 103-3, 201a,b-8, 210a-3, 320-4, 340-4, 402-2, and 415-4 for a minimum of 28 hours; or alternate courses as approved by the director of journalism.

A student of journalism must work in five areas: skills courses, history and philosophy of journalism, theory of and research in communication, study of professional performance and behavior, and practical experience—completing a specified number of hours in each area. As a junior and senior, a student can specialize in an area of journalism by planning much of his own journalism program, if he chooses, through independent studies, work-experience, and special problems courses. He is also encouraged to elect coursework in television-radio and to draw widely from offerings throughout the university. A student must complete a secondary concentration outside mass communications.

Mathematics

The Mathematics Department offers four programs leading toward baccalaureate degrees conferred by the Science and Technology Division. Two programs with concentrations in mathematics lead to the Bachelor of Arts degree, and two programs with specializations in applied mathematics or computer science lead to the Bachelor of Science degree. In addition, prospective teachers may meet certification requirements through any one of these programs or through a program that leads to a Bachelor of Science degree from the Education Division.

Upon electing a concentration in mathematical studies a student should consult with an adviser in the mathematics faculty. A student who has received a *D* grade in a course that is a prerequisite for a mathematics course should retake the prerequisite before proceeding.

Bachelor of Arts Degree, SCIENCE AND TECHNOLOGY DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) . . .	84
<i>Requirements for Concentration in Mathematics</i>	62
Foreign Language	(9)
Chemistry 125a-5 (satisfies GSA 101c-3)	(3) + 2
Physics 211a,b or 211a,c (satisfies GSA 101a-5)	(5) + 3
Mathematics core courses: 150-8, 250-4, 321-4, 350-8	24
Mathematics 421-9 and 452-9	18
One of the following: 455a,b, 472a,b, 475a,b, 483a,b	6
One of the following: 420a,b, 435a,c, or 435a,b, or a two-quarter sequence approved by the B.A. adviser	6
Senior Seminar 499a-1,b-1,c-1	3
<i>Approved Supporting Courses</i>	12
<i>Electives</i>	34
<i>Total</i>	192

The student seeking a Bachelor of Arts degree with a concentration in mathematics may elect the following alternate program which requires a secondary concentration:

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) . . .	84
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<i>Requirements for Concentration in Mathematics</i>	53
Foreign Language	(9)
Chemistry 125a-5 (satisfies GSA 101c-3)	(3)+2
Physics 211a,b or 211a,c (satisfies GSA 101a-5)	(5)+3
Mathematics core courses: 150-8, 250-4, 321-4, 350-8	24
Mathematics 421a,b-6 and either of 452a,b-6 or 455a,b-6	12
One of the following: 455a,b, 472a,b, 475a,b, 483a,b	6
Mathematics electives from courses numbered 400 or above	6
<i>Secondary Concentration</i>	27
<i>Electives</i>	28
<i>Total</i>	192

Bachelor of Science Degree, SCIENCE AND TECHNOLOGY DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ..	84
<i>Requirements for Concentration in Mathematics</i>	62
Chemistry 125a-5 (satisfies GSA 101c-3)	(3)+2
Physics 211a,b or 211a,c (satisfies GSA 101a-5)	(5)+3
Mathematics core courses: 150-8, 250-4, 321-4, 350-8	24
Mathematics 225-4, 305-4	8
Mathematics 455a,b, 475a,b, 483a,b	18
Mathematics electives (recommended: 405, 406, 455c, 472, 475c, 483c)	7
<i>Approved Supporting Courses</i>	12
<i>Electives</i>	34
<i>Total</i>	192

The student seeking a Bachelor of Science degree with a concentration in mathematics may elect the following alternate program which requires a secondary concentration:

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ..	84
<i>Requirements for Concentration in Mathematics</i>	53
Mathematics core courses 150-8, 250-4, 321-4, 350-8	24
Chemistry 125a-5 (satisfies GSA 101c-3)	(3)+2
Physics 211a-4 and 211b or c-4 (satisfies GSA 101a-5)	(5)+3
APPLIED MATHEMATICS COURSES	
Two of three: Mathematics 455a,b, 475a,b, or 483a,b ..	12
Mathematics 225-4, 305-4	8
Mathematics electives (recommended: 405, 406, 455c, 472, 475c, 483c)	4-6
<i>Secondary Concentration or Approved Supporting Courses</i>	27
<i>Electives</i>	28
<i>Total</i>	192

The following alternate program prepares the student for a career in computer science.

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ..	84
<i>Requirements for Concentration in Mathematics</i>	76
Chemistry 125a-5 (satisfies GSA 101c-3)	(3) + 2
Physics 211c-4 and 211b or c-4 (satisfies GSA 101a-5) (5) + 3	
Mathematics core courses 150-8, 250-4, 321-4, 350-8	24
APPLIED MATHEMATICS COURSES	
Mathematics 305-5, 483a-3	7
COMPUTER SCIENCE COURSES	
Mathematics 225-4, 226-4, 229-8, 326-9, 470-6,	
475a-3	34
One of the following: Mathematics 473-6 or 474-6	6
<i>Electives</i>	32
<i>Total</i>	192

Bachelor of Science Degree, EDUCATION DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ..	84
<i>Requirements for Concentration in Mathematics</i>	53
Chemistry 110a or 125a-5 (satisfies GSA 101c-3)	(3) + 2
Mathematics core courses: 150-8, 250-4, 321-4, 350-8	24
Mathematics 311-4, 420-6	10
Mathematics 435a-3, 460-4 or 435b or c-3	6-7
Mathematics electives (recommended: 225, 305, 425, 433,	
452, 483 or alternates above)	8-7
Physics 211a-4 and 211b or c-4 (satisfies GSA 101a-5) (5) + 3	
<i>Secondary Concentration</i>	27
<i>Professional Education Requirements</i> (See Secondary Education,	
pp. 89-91.)	32
<i>Total</i>	196

Secondary Concentration

A secondary concentration in mathematics consists of 27 hours, including Mathematics 150a,b, and 19 hours selected from courses numbered 200 or above. At least 6 of these 19 hours must be courses numbered 300 or above.

A secondary concentration in computer science consists of 27 hours of courses approved by a computer science adviser and must include Mathematics 225-4 or 226-4 and 229-8.

It is recommended that a student taking a secondary concentration in mathematics consult with a mathematics adviser.

Teacher Certification

The requirement for teacher certification is 30 hours in mathematics.

Medical (Preprofessional)

See Preprofessional Science curriculum, page 87.

Microbiology

See Biology. A specific microbiology program is not offered. The biology program includes microbiology courses adequate for career specialization and subsequent graduate study.

Music

During the academic year, distinguished musicians join the faculty and students for workshops, seminars, and performances. The list of musicians who have appeared includes Sigurd Rascher, saxophone; Leonard Smith, cornet; Sidney Foster, piano; the Riter-Allen Duo, violin-piano; Reginald Kell, clarinet; John Barrows and Philip Farkas, French horn; Vincent Abato, clarinet-saxophone; Paul Price, percussion; Sol Schoenbach, bassoon; composers Gunther Schuller and Halsey Stevens; Daniel Pinkham, composer-choral conductor; Walter Susskind, Conductor with the St. Louis Symphony Orchestra; Roger Wagner, Director of the Roger Wagner Chorale; Paul Steinitz, Director of the London Bach Chorale; Abram Stassevich, Moscow conductor; Ernst Wolff, leier-opera coach.

General Requirements

The requirements for entrance and graduation as set forth in this catalog are in accordance with the published regulations of the National Association of Schools of Music, of which this Faculty of Music is a member. The Bachelor of Music degree with specialization in performance, or in music education, and the Bachelor of Arts degree with concentration in music are offered.

Each full-time student must receive credit in a major ensemble during the quarter registered. Part-time students should consult with the adviser as to the minimum ensemble requirement. Substitute credit is permitted to selected students.

Each candidate for the Bachelor of Music degree with a concentration in music education must pass a piano proficiency examination. Unless he is enrolled in private applied piano, he must enroll in class piano during the first six quarters (summer quarter possibly excepted). If he fails to pass the proficiency examination by the end of the sixth quarter in class piano, he must continue the course without credit until the examination is passed. Voice class is required of all music education concentrations for three quarters with the exception of those students enrolled for an equivalent amount of private applied voice.

All students in private applied music must attend convocation and studio recitals in their performance areas. In addition, a minimum number of recitals, concerts, or other musical events stipulated by the Department of Music must be attended.

Students with a concentration in performance must present the minimum of a shared recital during their junior year and a full recital during their senior year. Music education students must present the minimum of a half-recital during their senior year.

Students desiring concentrations in music should consult with a music adviser before their first appointment with General Studies Advisement and must audition before a music faculty committee for acceptance into a music concentration.

Senior comprehensive examinations are required of all music education concentrations in the quarter directly preceding graduation. These exams may also be used in lieu of entrance exams for graduate study in music education if graduate study is begun within five years of the date of the awarding of the baccalaureate degree.

A handbook is published by the Music Department with additional detailed information concerning the Bachelor of Music degree requirements.

Bachelor of Arts Degree, FINE ARTS DIVISION

These courses are for students who wish to specialize in music as part of their general cultural education. They may also be taken as background for advanced studies in music.

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) . . .	84
<i>Requirements for Concentration in Music</i>	57
GSC 156, GSD FL	(14)
Music 105-12, 205-9, and electives	39
Music private applied (2 hours per quarter)	12
Music major ensemble	6
<i>Secondary Concentration</i>	24
<i>Electives</i>	27
<i>Total</i>	192

Bachelor of Music Degree, FINE ARTS DIVISION

Music Performance

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) . . .	84
<i>Requirements for Concentration in Music</i>	111-123 ¹
Foreign Language	(9) + 12 ¹
Music 105-12, 205-9, 309a, 312a, 318a, 326a, 442a . . .	36 ²
Music 357-9	9
Music, private applied (major instrument)	48
Music, major ensemble (1 hour per quarter)	12 ³
Music, class piano, or secondary instrument/voice . . .	6
<i>Total</i>	195-207 ¹

Music Education

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) . . .	84
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¹ Students with a specialization in voice should include two years of foreign language (generally one year each of French and German). The student should consult with his music adviser as to the sequence to be followed.

² Students with a specialization in piano may substitute 9 hours in Music 413 and/or 461 in lieu of 309a, 312a, and 442a.

³ Students with specialization in piano may substitute a maximum of 6 hours in 365 as partial fulfillment of this requirement.

<i>Requirements for Concentration in Music</i>	78-93
Music 105-12, 205-9, 309a-3, 318a,b-6, 326a-3	33
Music 357-9	9
Music, private applied (major instrument)	24
Music, major ensemble (1 hour per quarter)	12
Piano proficiency or class	0-6 ¹
Voice proficiency or class	0-3 ¹
Music: class strings, woodwinds, brass—2 hours in each area	0-6 ¹
One year of French or German is recommended for the student with a choral emphasis in music education.	
<i>Professional Education Requirements</i>	32
GSC 331-3	3
Foundations of Education 355	4
Music 301-9	9
Counselor Education 305	4
Elementary Education 351, Secondary Education 352d ..	12
<i>Total</i>	195-210

Before a student is approved for student teaching, he must satisfy the course of study and proficiency prerequisites as established by the Music Department.

Music Theory/Composition

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) ..	84
<i>Requirements for Concentration in Music</i>	114
Music 105-12, 205-9, 309-9, 312-9, 326-9, 357-9, 442-9 ..	66
Music, private applied	18 ²
Music, major ensemble	12
Music electives	18 ³
<i>Total</i>	198

Students with specialization in theory/composition include one year each of French and German. In their fourth year degree candidates must present to the Music Department either a composition or a written thesis in music theory as evidence of their achievement.

Secondary Concentration

A secondary concentration in music includes 105-12, 2 hours of credit per quarter for three quarters in performance concentration, 6 hours in a major ensemble, GSC 156, Music 357c (357a or b will substitute). Total: 32 hours.

¹ Study on a secondary instrument or/and voice is possible if requirements for class instruction are met by proficiency.

² Private applied piano until proficiency is satisfied; thereafter any instrument or voice. Students are expected to enroll for applied study for a total of nine quarters.

³ A program of electives must be approved by the theory committee. Students with emphasis in composition normally elect 412-9; those with emphasis in music theory normally elect 481.

Nursing

The Division of Nursing 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.

Bachelor of Science Degree, DIVISION OF NURSING

<i>Prerequisites for Nursing 280a</i>	31
GSA 101a	5
GSA 204-4, 205-4	8
GSD 114a	5
Chemistry 110-5, 240-4	9
Biology 210	4
<i>Additional General Studies Requirements (See Chapter 3.</i>	
Waive GSA-6.)	41
<i>Divisional Requirements</i>	51
GSB 103a-4, 201a-4, 201c-4, GSC 252-4, GSD 114d-4	20
Biology 220-3, 312a-4, 312b-4	11
Counselor Education 350-4	4
Philosophy 300-level-4	4
Psychology 307-4, 465-4	8
Sociology 321-4	4
<i>Professional Nursing Education Requirements</i>	71-74
a. Prerequisites:	
Nursing 280a,b,c	12
b. Nursing:	
Nursing 301-8	8
Nursing 302a,b	8
Nursing 303a,b	8
Nursing 304-2	8
Nursing 350a,b	8
Nursing 360a,b	8
Nursing 370a,b	8
Nursing 382-6	6
Nursing 384-2	2
Nursing 385-1 to 4	1-4
<i>Total</i>	194-197

All students interested in nursing should seek advisement from the Division of Nursing during the first quarter of the freshman year. The nursing curriculum for the fall quarter 1972 was, when this catalog was being prepared, undergoing extensive revision. For the latest information, please contact the Nursing Division, Room 3330, Science Laboratory Building. The grade of C or above is required of all nursing courses and General Studies Area A.

Philosophy

Students seeking a Bachelor of Arts degree with a concentration in philosophy enroll in the program below.

Bachelor of Arts Degree, HUMANITIES DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.)	84
<i>Requirements for Concentration in Philosophy</i>	50
Foreign Languages (equivalent of two years)	8
Philosophy 385a,c-8, 385b or d or e-4, 490-4 or 495-4, GSA 363a or b-3, GSC 375-3	22
Philosophy electives. GSA 363a or b-3 may be included	20
<i>Secondary Concentration</i>	24-27
<i>Electives</i>	34-31
<i>Total</i>	192

Secondary Concentration

A secondary concentration consists of 24 hours in philosophy courses. Toward this 24, 6 hours from GSA 363a or b and GSC 375 may count.

Physical Education

Completion of the concentration in physical education fulfills the Education Division requirements for the Bachelor of Science degree and qualifies a student for the Illinois Standard Special Certificate (K through 14). All physical education students take the physical education theory core and the general professional education requirements.

Students complete the physical education course, 025-0, Scott Motor Ability Test, and an attitudinal inventory prior to admission as a degree candidate in physical education.

A student completing a degree with a concentration in physical education must have a minimum of a *C* average within his area of concentration, pass all physical education required and prerequisite courses, and pass enough physical education elective courses to complete the degree requirements.

In the broad teaching field program, students may develop specialized options by combining electives and certain required courses. These options include: coaching, driver education, health education, and/or recreation.

Bachelor of Science Degree, EDUCATION DIVISION

Broad Teaching Field

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ¹	84
<i>Requirements for Concentration in Physical Education</i>	72

¹ Student takes GSE 117b and 118i,w.

Physical education theory core	51-59
Required theory courses	41
Health Education 334s-4	4
Physical Education 025-0, 303-12, 305-3, 341-3, 350-4, 354-3, 370-4, 382-4	33
Physical Education 383-2, 384-2, 385-2, 387-2, 388-2, 389-4 (any 4 hours)	4
Elective theory courses (physical education, health education, theater-dance)	10-18
Physical education activity courses	21-13
MEN	
Required: GSE 102, 104f or g; 104u; 117a,f; 118r,s	7
Select 3 hours (one from each area): GSE 104, 116, 118	3
Electives: any additional activity courses may be selected	11-3
WOMEN	
Required: GSE 112 or 114o; 114c,f,j,n; 117e; 118h,s	8
Select 5 hours from: GSE 112 or 114o; 116b,d; 117a,c,f; 118a,b,d,m,r	5
Electives: any additional activity courses may be selected	8-0
<i>General Professional Education Requirements</i>	32
Counselor Education 305-4	4
Foundations of Education 355-4	4
Student teaching distributed between Elementary Educa- tion 351 and Secondary Education 352	16
Electives	8
<i>Electives</i>	4
<i>Total</i>	192

Secondary Level

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ¹ ..	84
<i>Requirements for Concentration in Physical Education</i>	45
Required theory courses	27-28
Health Education 334s-4 or Physical Education 376-3	4-3
Physical Education 025-0, 303-12, 350-4, or 384-2 and 387-2, 370-4, 382-4	24
Physical Education activity courses	13
MEN	
Required: GSE 104f or g, 104u, 117f, 118r, 118s ...	5
Select 7 hours from: 104 (2), 116 (1), 117 (1), 118 (3)	7
Electives: any additional activity course may be selected	1
WOMEN	
Required: GSE 112 or 114o; 114c,f,j,n; 117e; 118h,s	8

¹ Student takes GSE 117b and 118i,w.

Select 5 hours from: GSE 112 or 114o; 116b,d; 117a,c,f; 118a,b,d,e,m,r	5	
Electives: (GSE first-level or PE)	5-4	
<i>General Professional Education Requirements</i>		33
Counselor Education 305-4	4	
Secondary Education 315-5	5	
Foundations of Education 355-4	4	
Student teaching, Secondary Education 352	16	
Electives	4	
<i>Secondary Concentration, Electives</i>		30
<i>Total</i>		192

Elementary Level

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ¹ ..	84	
<i>Requirements for Concentration in Physical Education</i>		47
Required theory courses	41	
Health Education 334s-4	4	
Physical Education 025-0, 303-12, 341-3 or 354-3, 370-4, 382-4, 383-2, 384-2, 385-2, 387-2, 388-2, 389-4	37	
Physical Education activity courses	6	
GSE 112 or 114o; 114f; 117a,f; 118r,s		
<i>General Professional Education Requirements</i>		34
Counselor Education 305-4	4	
Secondary Education 315-5	5	
Foundations of Education 355-5	5	
Student Teaching, Elementary Education 351	16	
Electives	4	
<i>Secondary Concentration, Electives</i>		27
<i>Total</i>		192

Physical Science

The Physics Department in cooperation with the secondary education faculty has developed a broad teaching field program in the field of physical science.

This program has been developed in order to encourage those people who will become good precollege level teachers to teach physical science, chemistry, earth science, and physics. The program is designed for students who have shown verbal rather than mathematical ability, and it is hoped that by emphasizing the physical phenomena rather than the mathematical formalities, the student will obtain an appreciation for the important role played by the physical sciences in the development of our Western culture.

Bachelor of Science Degree, EDUCATION DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ..	84
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¹ Student takes GSE 117b and 118i,w.

<i>Requirements for Concentration in Physical Science</i>	67
GSA 110	(8)
GSA 101a-5, 356-3, 363a-3	11
Chemistry 105-5, 125-10, 135-5	20
Physics 206-15	15
Science and Technology 402-4, 403-6, 415-3	13
Mathematics 150-8	8
<i>Professional Education Courses</i> (See Secondary Education, pp. 89-91.)	33
<i>Electives</i>	9
<i>Total</i>	193

Physics

The Physics Department provides three degree programs for students wishing to study physics. The B.S. degree program is recommended for those students planning to work in industry immediately upon graduating. The program is somewhat more rigid than the B.A. program in that it contains fewer electives, though approximately the same number of required hours. The B.A. degree program is very similar to the B.S. except that a year of language is required for this degree, and there is somewhat more freedom in the student's choice of physics courses. The majority of physics students take many more than the minimum of 48 hours in physics, thereby satisfying the physics requirements for either degree. If they also meet the foreign language requirement, the choice of degree then becomes merely a matter of personal preference. Students wishing to pursue a career in teaching may obtain certification with either degree by meeting the additional requirements or may elect the B.S. degree in education with a concentration in physics.

Bachelor of Arts Degree, SCIENCE AND TECHNOLOGY DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA- 300 level-3.)	84
<i>Requirements for Concentration in Physics</i>	74
Foreign Languages (equivalent of one year)	(9)
Chemistry 125-10	10
Mathematics 150-8, 250-4, 350a-4	16
Physics 211-12, 212-3, 300a-4, 300b-1, 301-8, 305-8	36
Physics electives numbered 299 (excluding 306) or above, including 4 hours of laboratory, to com- plete 48 hours	12
<i>Secondary Concentration</i>	11-27
<i>Electives</i>	23-7
<i>Total</i>	192

Bachelor of Science Degree, SCIENCE AND TECHNOLOGY DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA- 300 level-3.)	84
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<i>Requirements for Concentration in Physics</i>	82
Chemistry 125-10	10
Mathematics 150-8, 250-4, 350-8, 305-4	24
Physics 211-12, 212-3, 300a-4, 300b-1, 301-8, 305-8, 415a-4, one from 415b, 415c, 450, plus 4 additional hours of upper level laboratory work.....	48
<i>Secondary Concentration</i>	3-23
<i>Electives</i>	23-3
<i>Total</i>	192

Bachelor of Science Degree, EDUCATION DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA- 300 level-3.)	84
<i>Requirements for Concentration in Physics</i>	59
Chemistry 125-10, 135-5 (can satisfy GSA 101c-3) (3) + 12	
Mathematics 150-8, 250-4 (can satisfy GSD-8) ... (8) + 4	
Science and Technology 412a,b	6
Physics 211-12, 212-3, 300a-4, 300b-1, 310-4, 311-1, plus 2 hours of upper level laboratory work (can satisfy GSA 101a-5)	(5) + 22
Physics electives (recommended: 301, 304, 305, 320)	15
<i>Secondary Concentration</i>	17
<i>Professional Education Requirements</i> (See Secondary Educa- tion, pp. 89-91.)	32
<i>Total</i>	192

Secondary Concentration

A secondary concentration in physics includes Physics 211-12, 212-3, 300a-4, 300b-1, and electives numbered 300 (excluding 306) or above to total 27 hours.

The above is the minimum required for graduation. Most students take more than the required number of hours and still graduate in four years. It is important that the student contact the Physics Department concerning his program at the earliest possible date, even if he has not officially declared his concentration.

Preprofessional (Predental, Premedical, Preveterinary)

Dental, medical, and veterinary schools do not require specific baccalaureate degree subject area concentrations for admission consideration, but do require applicants to have taken certain courses. The requirements are not uniform, and such preprofessional students should consult an adviser from the Preprofessional School Advisory Committee in the Science and Technology Division at least two years before graduation. Most students concentrate in biology or chemistry. Both programs have options designed for the preprofessional student.

Psychology

Undergraduate courses in psychology introduce the student to the

methods and findings of the scientific study of human behavior. He is given an opportunity to learn what research has shown about how we perceive, learn, and think; how individuals differ from one another; how the personality develops from infancy to maturity; and how interpersonal factors affect human relations in the home, on the job, and in the community.

Bachelor of Arts Degree, EDUCATION DIVISION

For this degree, a concentration requires a minimum of 44 hours in psychology. The primary aim is to provide a broad general education rather than specialized professional training in psychology; a maximum of three courses in any one specialized area of psychology may be included in the 44-hour concentration. Students should consult with the designated psychology adviser in planning their courses of study and especially in selecting electives.

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.)	84
<i>Requirements for Concentration in Psychology</i>	40
GSB 201c (counts toward minimum of 44 hours in psychology)	(4)
Psychology 211a,b; 311; 312, 313, or 314; 409 (must be taken in order listed)	20
Psychology electives 301, 303, 304, 305, 307, 320 (any two)	8
Psychology electives 404, 407, 408, 420, 421, 431, 440, 451, 461, 465, 473, 474, 479, 490, 495 (any two)	8
Psychology electives (any 300- or 400-level course excluding 432)	4
<i>Secondary Concentration</i>	27
<i>Electives</i>	41
<i>Total</i>	192

Bachelor of Science Degree, EDUCATION DIVISION

For this degree, a concentration in psychology requires a minimum of 48 hours in psychology. This course of study is designed for the student who intends to teach, pursue graduate studies in counselor education, school psychology, or in psychology with an educational orientation. Student teaching is required for this degree. A strong second teaching field should be planned in consultation between the secondary education adviser and the student.

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.)	84
<i>Requirements for Concentration in Psychology</i>	48
GSB 201c (counts toward minimum of 48 hours in psychology)	4
Psychology 211a,b, 311, 312 or 313, 409 (in sequence)	20
Psychology 301, 303, 305, 307, 320 (any three)	12
Psychology 407, 421, 431, 440, 461, 465 (any three)	12
<i>Professional Courses</i>	33
Counselor Education 305	4
Foundations of Education 355	4
Secondary Education 315	5
Secondary Education 352	12-16

Education electives to complete 33 hours	8-4
Secondary Concentration (should be planned as a strong second teaching field)	27
Total	192

Secondary Concentration

A secondary concentration in psychology consists of a minimum of 27 hours. Students intending to pursue an occupation related to psychology (e.g., counseling, personnel work, or teaching psychology) include in their program GSB 201c, Psychology 211a,b, and 311 plus psychology electives to meet minimum hour requirements. Students with a general interest in psychology but not planning related academic or vocational pursuits should include in their program GSB 201c and Psychology 211a plus psychology electives to meet minimum requirements.

Students who have completed GSD 114d or Sociology 308 should not include Psychology 211b in their program of study for a secondary concentration in psychology.

Sanitation Technology

Sanitation technology is a program designed to prepare students for a professional career in the field of water and wastewater processing. The curriculum supplies the student the basic background of fundamental principles required to deal with current problems in future-oriented ways. Individuals can become professionally qualified at the managerial level, operational level, and technical level.

Interested students who are considering a concentration in sanitation technology are urged to contact the director of sanitation technology before registering for any courses.

Bachelor of Science Degree, SCIENCE AND TECHNOLOGY DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSA-3.) ..	84
<i>Requirements for Concentration in Sanitation Technology</i>	98
GSA 241-4	(4)
GSD 114-9	(9)
Biology 215-3	3
Chemistry 110-15, 201-5, 202-5	25
Engineering 101a,b-6, 220-3, 221-1, 363a-3	13
Mathematics 214-4	4
Physics 206-15	(5) + 10
Sanitation Technology 101-3, 203-3, 204-3, 311-3, 320-5, 330-3, 390-3, 420-4, 430-3, 440-4, 450-3, 460-3, 490-3	43
<i>Electives</i>	10
Total	192

Secondary Education

It is assumed a candidate for the Bachelor of Science degree has made a commitment to the scholarly study of education and to teaching as a

career. Secondary education programs include courses in professional education, the teaching fields, and general education. Students should apply to the Education Division for acceptance to a teacher education program no later than the sixth quarter of their enrollment at Southern Illinois University.

Completion of the program in secondary education qualifies the student for the Illinois standard high school certificate with an endorsement in the teaching field selected by the student. The program includes GSB 203a-4 or GSB 300a-3, thereby fulfilling the state requirements for a course in either American history or government.

Students seeking certification in Missouri need to seek advisement in the Education Division Office of Teacher Education located in the General Office Building.

No general requirement in foreign language applies to the Bachelor of Science degree in the Education Division.

Bachelor of Science Degree, EDUCATION DIVISION

<i>General Studies Requirements</i> (See Chapter 3.)	84
GSB 201c-4, 203a-4, 300a-3, or 331-3	(10-11)
<i>Professional Requirements</i>	33
A. Psychological Background	4
Counselor Education 305	
B. Educational Foundations	4
Foundations of Education 355	
C. Curriculum and Instruction	5
Secondary Education 315	
D. Student Teaching	12-16
Secondary Education 352	
E. Professional Education Electives	8-4
Foundations of Education 431-4, Counselor Education 422-4, Instructional Technology 417-4, Psychology 303-4, Secondary Education 407-4, 480-4, 487-4, 488-4	
<i>Teaching Fields and Electives</i>	75
A minimum of 48 hours is required for the principal teaching field.	
If a student prepares for a second teaching field, at least 27 hours are required in that subject.	
The number of elective hours is determined by the difference between teaching field requirements and 75 hours.	
<i>Total</i>	192

Teaching Fields

In cooperation with other divisions at the Edwardsville Campus a wide range of teaching fields are available to students concentrating in secondary education. While it is possible to include two teaching fields in a given baccalaureate program, the Education Division does not usually recommend the arrangement. A focus on a single field is also urged by the North Central Association of Colleges and Secondary Schools.

Assistance in making a choice between these fields can be obtained from a secondary education major adviser in the Education Division Office of Teacher Education, room 2228 in the General Office Building. The adviser also provides students with the details of the teaching field programs and directs students to a teaching field adviser.

Art ¹	Instructional Technology
Business Education ² — a concentration in any one of the following may be elected:	Language Arts ² (junior high school)
accounting, data processing,	Mathematics
marketing, economics, office	Music Education ¹
services, secretarial administration	Physical Education ¹
Biology	Physical Science ²
Chemistry	Physics
Economics	Psychology
English	Social Studies ² (either junior or senior high school)
Foreign Languages:	Sociology
French, German, Spanish	Speech
General Science and Mathematics ² (junior high school)	Special Education ¹ — a concentration in any of the following may be elected:
Geography	gifted, educable mentally
Government	handicapped, emotionally
Health Education	disturbed
History	

Sociology

Bachelor of Arts Degree, SOCIAL SCIENCES DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.) . . .	84
<i>Requirements for Concentration in Sociology</i>	44
Sociology 301, 312, 321, 451	16
Sociology electives. 410a is recommended for students planning to pursue graduate work in sociology. GSB 103a does not count toward the concentration.	28
<i>Secondary Concentration</i>	28
<i>Electives</i>	36
<i>Total</i>	192

Social Welfare

<i>General Studies Requirements</i> (See Chapter 3. Waive GSB-3.) . . .	84
<i>Requirements for Concentration in Sociology</i>	44
Sociology 301, 312, 321, 451	16
Social Welfare 375, 383, 481, 482a	16
Sociology and social welfare electives. Sociology 410a is recommended for those planning graduate studies in	

¹ Programs which lead to a Standard Special Certificate, K through 14. See education adviser for requirements.

² Broad teaching fields not requiring a secondary concentration. See education adviser for requirements.

social welfare. GSB 103a does not count toward the concentration.	12
<i>Secondary Concentration</i>	28
<i>Electives</i>	36
<i>Total</i>	192

Bachelor of Science Degree, EDUCATION DIVISION

The requirements for this degree with a concentration in sociology include 301, 312, 321, and 451 and sociology electives to complete 48 or 36 hours, depending on whether the student has one or two secondary concentrations. See Secondary Education requirements, pages 89-91.

Secondary Concentration

A secondary concentration in sociology consists of 28 hours of course work in sociology. GSB 103a may be counted toward the 28 hours required in the secondary concentration.

Special Education

The special education program outlined below fulfills University and Education Division requirements for a Bachelor of Science degree. The student, upon completion of one of the 48-hour areas of specialization, is qualified to receive by entitlement an Illinois Standard Special Certificate with an endorsement for teaching educable mentally handicapped, emotionally disturbed, or learning disabled children in grades K-14. No special certificate is issued by the state in the area of the gifted at the present time.

Students wishing a secondary concentration in special education must complete 27 hours in one or more of the areas of specialization.

Students enrolled in 410a, b, f, g, 411, 420a, b, are required to spend four hours per week in observation participation and/or in the Special Education Micro-Teaching Lab in addition to the usual four hours of class attendance. (See Education Division, page 33).

Bachelor of Science Degree, EDUCATION DIVISION

General Studies Requirements (See Chapter 3. Waive GSC-3.) .. 84

Requirements for Concentration in Special Education 48

One of the following specializations: (Must be taken in sequence.)

EDUCABLE MENTALLY HANDICAPPED

Special Education 414, 410b, 410g, 411, 420b, 430, 481b 28

Special Education 353 (student teaching educable mentally handicapped children) 8

Counselor Education 422 4

Psychology 432 4

Special Education elective 4

EMOTIONALLY DISTURBED

Special Education 414, 410a, 410g, 411, 420a, 430, 481a 28

Special Education 353 (student teaching emotionally disturbed children) 8

Counselor Education 422	4
Psychology 432	4
Special Education elective	4
GIFTED (no state certification available)	
Special Education 414, 410c, 420c, 481c	16
Special Education 353 (student teaching gifted children) ..	8
Electives (with consent of adviser)	16
Counselor Education 422	4
Psychology 432	4
LEARNING DISABLED	
Special Education 414, 410g, 411, 420a, 430, 481a, 496	28
Special Education 353 (student teaching learning disabled children)	8
Counselor Education 422	4
Psychology 432	4
Special Education elective	4
<i>Professional Courses</i>	36
Counselor Education 305	4
Foundations of Education 355	4
Elementary Education 337, 437, 415	12
Instructional Technology 417	4
Psychology 301	4
Special Education 354 (elementary student teaching)	8
<i>Electives</i>	24
<i>Total</i>	192

Speech

Students who plan either a primary or a secondary concentration in speech must, at the time they declare their concentration or earlier, consult with the chairman of the Speech and Theater Department for appointment of an adviser to plan his concentration.

All students must participate in one or more of the performance activities: debate, forensics, theater production, oral reading, television-radio. Or, they may meet this requirement by enrolling in Speech 302.

Students with a primary concentration in their senior year present to an examining committee of speech and theater faculty a special senior project consisting of an oral presentation that reveals the student's grasp of speech subject matter on a topic that embraces a relatively broad area of speech. Early in the senior year the student, with the consent of his adviser, determines the area and extent of the topic selected. The committee certifies the project as acceptable only if it meets minimal standards of effective and meaningful communication.

Bachelor of Arts or Bachelor of Science Degree,

FINE ARTS DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) ..	84
<i>Requirements for Concentration in Speech</i>	48

GSC 157, GSD 103, FL or equivalent for B.A., or mathematics for B.S.	(17)
Speech 202, 205, 224, 301	16
Speech Pathology and Audiology 200 or Speech 104	4
Electives in at least three of the following areas: television-radio, speech, speech pathology and audiology, and theater	28
<i>Secondary Concentration</i>	24
<i>Electives</i>	36
<i>Total</i>	192

Students seeking certification for teaching must take the program outlined above, including Speech 406 and 8 hours of Theater 100-400 and meet the other minimum standards for certification listed under Secondary Education in this chapter.

Bachelor of Science Degree, EDUCATION DIVISION

Students seeking the Bachelor of Science degree offered by the Education Division must take the program outlined above, including Speech 406 and 8 hours in theater and meet the other minimum standards for certification set by the Education Division.

Secondary Concentration

A 30-hour secondary concentration in speech must be planned in consultation with the chairman of the Speech and Theater Department at the time the secondary concentration is declared. Students electing speech as a second teaching subject must include Speech 406.

Speech Pathology and Audiology

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 Center, in neighboring hospitals and clinics, and in the public schools. The concentration below meets the requirements for a Limited Specialization Certificate for public school clinicians in Illinois schools which will be granted until July 1973, and leads to meeting requirements for the Certificate of Clinical Competence of the American Speech and Hearing Association. Certification by ASHA requires a master's degree or its equivalent and students are encouraged to attain this level. For present certification students must accumulate 200 clock hours (275 ASHA) of supervised clinical practicum. The requirement is satisfied by Elementary Education 351 and Speech Pathology and Audiology 405.

The Illinois Limited Specialization Certificate will be replaced in July 1973 by the Certificate in Speech and Language Impaired which requires a master's degree and 400 clock hours of clinical practicum in communication disorders.

Bachelor of Arts or Bachelor of Science Degree,
FINE ARTS DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) . .	84
<i>Requirements for Concentration in Speech Pathology and Audiology</i>	96
GSB 201c, 331	(7)
GSC 157	(5)
GSD 103, FL or equivalent for B.A., or mathematics for B.S.	(13)
Counselor Education 305	4
Foundations of Education 355	4
Elementary Education 351-12	12
Psychology 301, 305	8
Special Education 414	4
Speech Pathology and Audiology 200, 203, 212, 312, 314, 318, 319, 405-8, 412 or 415, 414, 416, 417, 418, 419, 422. (Student may elect Elementary Education 314, 337 and Counselor Education 422 instead of Speech Pathology and Audiology 314, 418, and 422.)	64
<i>Electives</i>	12
<i>Total</i>	192

Student Teaching

Student teaching is the culminating experience in all professional baccalaureate programs of the Education Division. It is needed in order to meet the degree requirements of the Division, the certification requirements of the states of Illinois and Missouri, and the standards of the National Council for the Accreditation of Teacher Education.

A fully satisfactory student teaching experience necessitates full day involvement in a public school. Therefore, students should avoid taking other courses or employment during student teaching, and should schedule it at a time when they will be free of other demands upon time and energy. Requests for an overload during student teaching must be approved by the Director of Student Teaching.

Student teaching during the summer quarter is not available to undergraduates in a degree program.

Application Procedure

The student teaching application procedure begins during the year prior to the assignment. During each winter quarter, an application meeting is scheduled for juniors requesting assignment in their senior year. Students should attend this meeting in order to obtain an application and receive additional information concerning placement. The time and place of this meeting is published several weeks in advance. Complete applications are submitted to the Education Division Office of Teacher Education. Junior and senior transfer students should

contact an adviser in that office during Orientation Week to make application.

Prerequisites to Student Teaching

GENERAL

The following are prerequisites that need to be met prior to registering and receiving an assignment for student teaching:

1. An intensive two-week pre-student teaching experience is required of all winter and spring student teachers. It consists of orientation sessions, and classroom observation and participation during the first ten days of the cooperating school's fall term. This usually begins the last week of August or the first week of September.

Students may enroll in this assignment at the beginning of either the junior or senior year; however, the former is preferred.

Application for the September Experience must be submitted to the Education Division's Office of Teacher Education no later than the mid-term of the spring quarter in order to insure the availability of a public school situation.

Fall quarter student teachers fulfill the September Experience requirements by assuming their regular student teaching assignment at the beginning of the cooperating school year.

2. Student teaching assignments are made after the completion of at least 144 quarter hours. Students must have a minimum overall 3.2 grade-point average two quarters in advance of the teaching assignment. This grade-point average must be maintained for the assignment to be allowed. Transfer students need to be in residence for a quarter prior to student teaching.

3. In compliance with state law, record of a physical examination taken within the last four years must be on file in the University Health Service. A report of a tuberculosis skin test or X-ray taken within six months of the student teaching assignment is also required.

EARLY CHILDHOOD EDUCATION

In addition to meeting the elementary education prerequisites, students concentrating in early childhood education must complete a 16-hour sequence in that specialization, culminating in Elementary Education 317. (See Early Childhood Education, pages 64-65).

ELEMENTARY EDUCATION

Students concentrating in elementary education complete a minimum of 24 quarter hours in professional education courses prior to student teaching. Courses to be included are: Counselor Education 305, Foundations of Education 335, Elementary Education 314 and 337.

INTERCULTURAL/INTERNATIONAL STUDENT TEACHING

The Intercultural/International Student Teaching Program is sponsored jointly by International Services Division, Foundations of Education Department, and Office of Teacher Education. The program was created to provide American students an opportunity to complete the student teaching requirement in one of the overseas American Schools in Central America and Mexico or in one of the Indian Reservation

Schools within the continental United States. The program seeks to provide (1) a center for in-service teachers with provisional certification to complete their required student teaching, (2) a center for mature students with no teaching experience to complete the student teaching requirement, (3) a center which is typical of an American school system in a foreign environment, (4) an opportunity for students to work in an American school abroad, live in a foreign environment, and absorb a foreign culture while completing a part of their regular undergraduate preparation, (5) training for teachers who may wish to be employed in the American Overseas School System or in one of the American Indian Schools sponsored by the Bureau of Indian Affairs, and (6) an opportunity for students interested in American Indian cultures to live and work with Indian children.

Interested students seeking additional information concerning the Intercultural/International Student Teaching Program should contact either the Office of Teacher Education or the International Services Division.

SECONDARY EDUCATION

1. Students concentrating in secondary education must complete 16 quarter hours in professional education courses prior to student teaching. These courses are to include Counselor Education 305, Foundations of Education 355, Secondary Education 315, or a specialized methods course in the student's teaching field, and one elected course.

2. It is also expected that secondary education students will have completed 32 hours of their studies in their chosen teaching field except that 48 hours will be completed by students who have chosen one of the following teaching fields: art education, business education, general science and mathematics, language arts, physical education, physical science, and social studies.

3. Prospective secondary student teachers must present two recommendations, one from their education adviser and one from their teaching field adviser. Forms for this purpose are available in the Education Division Office of Teacher Education.

SPECIAL EDUCATION

In addition to the above elementary education prerequisites, a student concentrating in special education completes a minimum of 24 hours in special education before registering for student teaching.

SPEECH PATHOLOGY AND AUDIOLOGY

Students must secure written consent of the Speech Pathology and Audiology Department and must have completed GSB 331, Counselor Education 305, Foundations of Education 355, and Elementary Education 314 before registering for student teaching.

Theater

A concentration in theater provides instruction and training in all phases of dramatic production for the stage, television, and film.

Training in theater at the undergraduate level provides for the

interrelated presence of three fundamental considerations: (1) a liberal arts orientation, (2) a liberal theater education, and (3) a meaningful, purposeful study of the theory and practice of the art of theater and/or dance.

The carefully devised complex of training studios enables the student to learn the art of theater and dance through instruction and participation in an extensive series of major and minor presentations for class, campus, and community audience through the Quonset Theater, the University Theater, and the Dance Company. Each student's background and training is appraised to determine his needs. Individual programs provide training and practice in acting, directing, technical production (including stage craft, costuming, lighting, and scene design), business management, and/or dance.

For the first two years the student follows a program of from four to eight hours of instruction and four hours of participation in theater practice each quarter. The last two years provide a more individualized program including special projects in the elements of theater and/or dance. All productions are an integral part of the instruction. Upon graduation, the student possesses a background of training and practice in acting, directing, dance performance and choreography, technical production and business management; an understanding of the nature of theater art through the study of aesthetics, history, and criticism; and a knowledge of dramatic literature.

Bachelor of Arts or Bachelor of Science Degree,
FINE ARTS DIVISION

<i>General Studies Requirements</i> (See Chapter 3. Waive GSC-3.) . . .	84
<i>Requirements for Concentration in Theater</i>	89
GSC 157-5	(5)
GSC 354-9	9
GSD 103-4, FL or equivalent for B.A., or mathematics for B.S.	(13)
Speech 104-4 or Theater 100v-4, Speech 224-4	8
Theater 100, 200, 300, 400 (a program arranged with the Director of Theater, prior to advisement, with studios in acting/directing, design/technical theater, costuming/ makeup, management/publicity, dance/stage movement)	72
<i>Electives</i>	19
<i>Total</i>	192

Secondary Concentration

A 36-hour secondary concentration in theater must be planned in consultation, prior to advisement, with the Director of Theater.

Zoology

See Biology. A specific zoology program is not offered. The biology program includes zoology courses adequate for career specialization and subsequent graduate study.

ASSOCIATE DEGREE

Child Care Services

The Associate in Arts degree with a specialization in Child Care Services is designed to help the student develop skills in working with children under seven years of age. All Child Care Services courses combine theory with its practical application through field experience.

This program is intended both for those who wish to acquire the skills needed to enter the field of nursery education and day care, and for those already holding positions in this field but who wish also to make use of the opportunity to improve performance of their current job or to prepare for advancement.

Students planning to specialize in Child Care Services should consult the Education Division.

Associate in Arts Degree, EDUCATION DIVISION

<i>General Studies Requirements</i>	47
<i>Child Care Services Courses</i>	41
<i>Electives</i>	8
<i>Total</i>	96

Bachelor's Degrees

Each bachelor's degree candidate is expected to fulfill the requirements of his academic field, and to maintain a minimum grade-point average of 3.00 for work completed at Southern Illinois University as well as overall.

Each candidate for the degree must also complete a minimum of 192 hours of credit in approved courses. A student transferring from an accredited two-year institution must earn at Southern Illinois University, or at any other approved four-year institution, at least 36 quarter hours required for the degree. Each degree candidate must complete a minimum of 48 quarter hours in residence at Southern Illinois University as well as meeting all degree program requirements.

A student seeking a second baccalaureate degree must complete a minimum of 48 quarter hours in addition to those required for the first degree, and must satisfy the requirements of his primary concentration.

6 / Degrees

SOUTHERN ILLINOIS UNIVERSITY at Edwardsville grants the following undergraduate degrees:

Bachelor of Arts
Bachelor of Science

Bachelor of Music
Associate in Arts

Graduation

Every candidate for a degree must file an Application for Graduation with the Registrar no later than the first week of his next-to-last quarter of attendance. (A student who will complete his degree requirements at the end of a spring quarter should file the graduation application during the first week of the winter quarter.) The application forms are available in the Registrar's Office.

At the time of application the student must pay his graduation fee. Subsequently, he must order his cap and gown through the University Bookstore and register with University Placement Services. Students who will be unable to attend commencement exercises, and who have received permission to graduate *in absentia*, will not be required to pay that portion of the graduation fee which is designated for cap and gown rental.

Bachelor's Degrees

Each bachelor's degree candidate is expected to fulfill the requirements of his academic unit, and to maintain a minimum grade-point average of 3.000 for work completed at Southern Illinois University as well as overall.

Each candidate for the degree must also complete a minimum of 192 hours of credit in approved courses. A student transferring from an accredited two-year institution must earn at Southern Illinois University, or at any other approved four-year institution, at least 96 quarter hours required for the degree. Each degree candidate must complete a minimum of 48 quarter hours in residence at Southern Illinois University as well as meeting all degree program requirements.

A student seeking a second baccalaureate degree must complete a minimum of 48 quarter hours in addition to those required for the first degree, and must satisfy the requirements of his primary concentration.

Associate Degree

Each candidate for the associate degree must complete a minimum of 96 hours of credit in approved courses, and maintain a cumulative grade-point average of at least 3.000. The associate degree program is listed in detail at the end of Chapters 5 and 8 in this catalog, following the information on bachelor's degree programs.

Constitution Requirement

No student may be graduated from the University who has not satisfied the State of Illinois legal requirement 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 supported or maintained in whole or in part by public funds." (Section 27-3 of *The School Code of Illinois*, 1969.) This stipulation may be satisfied by examination administered by the Counseling and Testing Office, or by satisfactorily completing one of the following courses: GSB 203a or GSB 300a.

Preprofessional Programs

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

In some cases the completion of concentration requirements is possible by their taking certain courses at the professional school, but this is permitted only upon the prior approval of the appropriate division dean. 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, or an approved medical technology or law school. In all cases, all University graduation requirements must be met. It is advisable for a 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. Preprofessional training is offered in the areas of medical technology, medicine, dentistry, and veterinary science.

Students working toward the Bachelor of Science degree in agriculture may attend the Edwardsville Campus their freshman year and transfer to the Carbondale Campus for the completion of the degree. In preparing for one of the agriculture professions, the student should follow closely the appropriate course of study as suggested in the Carbondale Campus Undergraduate Catalog.

Students working toward a Bachelor of Science degree in home economics may attend the Edwardsville Campus their freshman and sophomore years and transfer to the Carbondale Campus for the completion of the degree. In preparing for this degree, the student should follow closely the appropriate course of study in the Carbondale Campus Undergraduate Catalog.

Advanced Degrees

For information concerning master's degrees or the specialist's certificate, refer to the Graduate School Catalog or direct inquiries to the Dean, Graduate School, Southern Illinois University, Edwardsville, Illinois 62025.

Vice President for Student Affairs

The Vice President for Student Affairs is responsible for the administration and coordination of the following services: The Dean of Students Office, Student Housing, Student Activities, Health Service, Student Work and Financial Assistance, University Placement Services, Veterans Counseling Program, Testing Service, Foreign Student Services, and the Twenty-Year Education Area. The department heads of these various offices work closely with students, faculty, and other University offices in planning and implementing an integrated program of activities and services. All members of the Vice President's staff function as generalists in helping individual students with a variety of questions and problems.

The Dean of Students Office

The personnel in the Dean of Students Office develop pre-orientation programs to assist new students at the University; conduct exit interviews with students withdrawing from the University; provide orientation service to instructors for students who must be absent from class for a specific length of time; and assist in locating students on campus in emergency situations such as accident or illness in the family. Staff members try to keep abreast of information of current social interest and provide counseling and referral service when necessary.

7 / Student Affairs

Student Affairs Division

SOUTHERN ILLINOIS UNIVERSITY at Edwardsville recognizes the importance of providing students every opportunity to benefit in the fullest manner from their university experiences. The primary goals of Student Affairs are to provide services which help students to continue their education and be in the best possible mental and physical conditions for learning in the classroom and to facilitate the growth and development of students through a variety of programs and activities.

The University is concerned with an integrated approach to student needs and problems in intellectual, social, spiritual, and physical areas. Students may learn about and be referred to specialized services throughout the University by publications describing the services and by various offices within the Student Affairs Division.

Vice President for Student Affairs

The Vice President for Student Affairs is responsible for the administration and coordination of the following services: The Dean of Students Office, Student Housing, Student Activities, Health Service, Student Work and Financial Assistance, University Placement Services, Veterans Counseling Program, Testing Service, Foreign Student Services, and the Tower Lake Recreation Area. The department heads of these various offices work closely with students, faculty, and other University offices in planning and implementing an integrated program of activities and services. All members of the Vice President's staff function as generalists in helping individual students with a variety of questions and problems.

The Dean of Students Office

The personnel in the Dean of Students Office develop pre-orientation programs to assist new students at the University, conduct exit interviews with students withdrawing from the University, provide notification service to instructors for students who must be absent from class for a specific length of time, and assist in locating students on campus in emergency situations such as accident or illness in the family. Staff members try to keep abreast of information of current social interest and provide counseling and referral service when necessary.

The Dean of Students functions as the primary officer to work with students charged with actions which are prohibited under the current Student Rights and Conduct Code. Necessary measures taken are intended to be constructive and not punitive in nature. Top priorities are given to protecting the rights of the student and the University community.

The Testing Service functions as an aid in helping students evaluate their strengths and limitations. The tests which are used may include measures of interest, aptitude, personality, and achievement. Testing programs for selection, placement, and research purposes are also provided. The American College Testing Program is administered regularly on the Edwardsville Campus. Personal and career counseling services are offered by trained personnel who can help students solve problems related to selecting careers, choosing and succeeding in academic programs, and surviving in a college environment.

Student Housing

At its meeting in August, 1971, the Board of Trustees amended its 1965 policy and passed a resolution which established the current basic policy on student housing as follows.

Subject to the covenants of the bonding agreement, Southern Illinois University at Edwardsville accords all students the privilege to select their places of residence while in attendance at the University. However, the Housing Office has established a range of services, available to students on a voluntary basis, to include off-campus housing listings, informational material, advisory services, and model rental agreements to assist students, faculty, and staff, in locating suitable off-campus facilities. The University does require that landlords desiring to use the Housing Office listing services comply with certain minimum standards. The University reserves the right to deny the privilege of listing accommodations with the Housing Office if landlords do not comply with the Civil Rights Act of 1968, other laws governing discrimination, and minimum governmental health and safety standards.

The Housing Office annually reviews the Housing Policies and Standards and makes appropriate recommendations to the Board of Trustees for upgrading living conditions for Students.

UNIVERSITY HOUSING

The University's first housing facilities, Tower Lake Apartments, were approved February 16, 1968. Official occupancy began during the winter quarter, 1970. The thirty-one attractive two-story apartment buildings contain eight apartments each. The University's objective is to provide temporary housing for faculty and staff members, and long-term housing for single and married students. These minimum cost apartments are designed to provide a comfortable, convenient living environment conducive to effective study habits and social growth. Information concerning application and qualifications to live in University housing may be obtained from the Housing Office, Southern Illinois University, Edwardsville, Illinois 62025.

OFF-CAMPUS HOUSING

Owners of off-campus housing facilities may use the University's contract form for student rental housing. Each student contract should be signed by the owner or his legal representative, by the student renter, and by an appropriate staff member of the Office of the Vice President for Student Affairs.

The Office of the Coordinator of Off-Campus Housing is available to advise students who seek off-campus accommodations. Experience has indicated that attempting to obtain off-campus facilities by mail is generally unsatisfactory. Therefore, prospective students are urged to visit the campus and personally seek desirable living accommodations.

Detailed information concerning housing may be obtained at the Housing Office located in the General Office Building, Room 1113.

Student Activities

The staff members of the Student Activities Office are available to all campus groups and individuals in planning, conducting, and evaluating activities and programs.

Besides honorary organizations which stimulate and recognize academic achievements, other groups and organizations exist to meet the educational, religious, social, recreational, political, and other special interests of the student.

Through the use of the Student Activities funds, certain all-campus groups are able to initiate and plan a wide variety of programs for the entire campus community.

Through the establishment and recognition of such organizations and programs at Southern Illinois University at Edwardsville, students are able to become involved with the academic community. Participation in any group or organization is open to all students.

Health Service

Health Service provides medical services to the students, faculty, and staff within the limits imposed by the size and professional status of the staff, by legal obligations, and by the available facilities and funds.

When entering the University for the first time a student must have a pre-entrance physical examination. This is to be completed by a private physician and submitted on a form provided by the Health Service prior to reporting on campus to register.

Physical examinations from other colleges will not be accepted if the examinations are more than one year old. A physical examination must be in the hands of the Health Service prior to registration.

Detailed information about the services provided and the voluntary health insurance program available to students at special rates may be obtained through a brochure available at Health Service.

Office of Student Work and Financial Assistance

Southern Illinois University at Edwardsville has an excellent program whereby a student may combine student work with other types of financial assistance to defray a large part of his educational expenses.

The Student Work Program provides part-time employment which relates, if possible, to the student's academic program. In addition to numerous jobs on campus, opportunities exist for employment in area businesses, industries, and community service agencies. Preference for on-campus employment is given to full-time students.

The University has, in addition to student work, multiple programs of scholarships, loans, and grants. Specific information about financial aid programs can be obtained by writing or contacting the Office of Student Work and Financial Assistance. Students are encouraged to visit the office to discuss a financial aid plan best suited to their needs. Students desiring to apply for financial assistance should normally apply between January 1 and March 15 prior to the September when assistance is needed. There is no general application for financial assistance; therefore, students must apply for specific programs. Submission of an A.C.T. Family Financial Statement is normally required in all programs before a student can be considered for financial assistance. A.C.T. forms are available from the Office of Student Work and Financial Assistance, from high school and junior college counselors, or directly from A.C.T. by writing to: The American College Testing Program, P.O. Box 1000, Iowa City, Iowa 52240.

University Placement Services

The University Placement Services provides career counseling and assists students seeking career positions. Those desiring to use that office are urged to register in the fall quarter of the year they expect to obtain their degree. Its facilities and services are free to students and alumni.

One of the principal functions of that office is bringing qualified candidates to the attention of prospective employers from the business and industrial world as well as the educational world. On-campus interviews, which are conducted with visiting recruiters throughout the academic year, save students much time and effort. Thus, that office provides a meaningful service to both students and employers.

For further information, call 692-2800 or contact the Director in Room 0233 of the General Office Building.

Veterans Service Programs

The Veterans Counseling Office is located in the Vice President for Student Affairs Office, second floor of the General Office Building. Staffed by student veterans, its purpose is to give veterans in need of assistance a chance to talk to someone who understands their problems and who is concerned enough to help them. The types of assistance available range from helping veterans to receive their VA benefits, such as the GI Bill or disability compensation, to just listening and helping them work out personal problems.

The Association for Collegiate Veterans (ACV) is another service available to student veterans. Organized under the theme of "veterans helping each other," the ACV's purpose is to offer veterans the chance of getting together to solve their particular problems through a concerted group effort.

Religious Center

The Religious Center ministers to as many segments of the University as possible. Supported financially by Baptists (American), Catholics, Disciples, Episcopalians, Lutherans, Methodists, Presbyterians, and the United Church of Christ, the Religious Center is available to a wide variety of campus and off-campus groups and activities. Regular Sunday morning worship services as well as a myriad of activities throughout the week are held there.

The Center itself was designed by R. Buckminster Fuller and features a geodesic dome with a diameter of forty feet. The dome is a scaled representation of the earth. Oceans are painted in blue; land masses are left in natural gray colors of the Plexiglas. Religion is thus placed in the setting of the world and of the universe.

Student Rights and Conduct Code

This code contains the specific rights of students, disciplinary standards, and sanctions that may be applied to violations. Copies of the code may be obtained in the Vice President for Student Affairs Office.

University Regulations Pertaining to Students

Regulations and policies pertaining to functions of Student Affairs and other University activities may be obtained from the appropriate office. Students should be familiar with those policies which directly affect their lives such as motor vehicle regulations, housing regulations, and policies pertaining to Student Activities.

Identification Cards as Certificate of Registration

Each student receives an identification card which bears his photograph and serves to identify him while he is enrolled at Southern Illinois University at Edwardsville.

A certificate of registration, issued each quarter at the time of registration, certifies payment of tuition and various fees. The identification card is used with the certificate of registration for the current quarter to identify students who have paid the student activity fee and are eligible to use University facilities.

The identification card and the certificate of registration are legal documents. A student who loans, borrows, or alters these cards is subject to disciplinary action; in addition, such action may be considered a criminal offense as well as an infraction of University regulations. It is important to obtain a new certificate of registration each quarter and to carry both the identification card and the current certificate of registration at all times. These cards are also used to borrow books from the University Libraries and for other situations on the campus where positive student identification is required. In special cases, the identification card, the certificate of registration, and other corroborating evidence may be requested to verify identification.

Residency Regulations

Regulations governing the determination of residency status for ad-

mission and assessment of student tuition at Southern Illinois University are contained in this section.

For the purpose of these regulations an *adult* student is considered to be a student eighteen years of age or over; a *minor* student is a student under eighteen years of age. 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.

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 have established and are maintaining a bona fide residence in the State and who resides with them or elsewhere in the State will be regarded as a resident student.

Minor Student

The residence of a minor student shall be considered to be, and to change with and follow: that of his parents, or living parent, if one is dead; or that of the adoptive parents, or that of the legally appointed guardian, or natural guardian of the person.

Parent or Guardian

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

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.

Some Factors Considered

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 ten 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 a written request with the appropriate official within twenty days of the notice of the ruling.

8 / Course Descriptions

HERE ARE LISTED all of the courses offered by the Edwardsville Campus for credit toward a bachelor's, master's, doctor's, or associate degree. Courses are listed numerically within each subject-matter area. Areas are listed below in the order of their appearance on the following pages. Courses in these areas do not necessarily indicate that a concentration is available.

Subject-Matter Areas

General Studies Area A	Portuguese
General Studies Area B	Russian
General Studies Area C	Spanish
General Studies Area D	Foundations of Education
General Studies Area E	General Business Administration
Accounting	Geography
Administrative Services	Government
Aerospace Studies	Health Education
American Studies	History
Anthropology	Honors Hours
Art	Humanities
Behavioral Science	Human Services
Biology	Instructional Technology
Business Education	Journalism
Chemistry	Management Science
Colloquium	Marketing
Comparative Literature	Mathematics
Counselor Education	Music
Economics	Nursing
Educational Administration	Philosophy
Elementary Education	Physical Education
Engineering	Physics
English	Production
Experiment in Higher Education	Psychology
Finance	Rehabilitation
Foreign Languages	Sanitation Technology
General Foreign Language	Science and Technology
French	Secondary Education
German	Social Welfare
Greek	Sociology
Italian	Special Education
Latin	Speech

Speech Pathology and Audiology Theater
 Technical and Adult Education Child Care Services ¹
 Television-Radio

Explanation of Entries

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, 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 History 410-2 to 5. Some courses do not terminate at the end of one quarter, as evidenced by two or more numerals in parentheses indicating the credit allowed for each quarter of participation in the course, such as GSC 370-9 (3,3,3). The bold face letters in parentheses correspond to the numerals in parentheses and are followed by a description of the material to be covered that quarter. 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.

Departments occasionally offer experimental courses with varying titles and content. The distinguishing course titles are recorded on the transcripts of students taking the courses. Course descriptions are available from department chairmen or the Registrar's Office. Experimental courses are offered for only one year, evaluated, and, if determined appropriate, then made a part of the regular curriculum. Experimental courses carry the numbers 199, 299, and 399.

Not all of the courses described here are offered every quarter or even every year. To find out when and where a course is to be offered, consult the Schedule of Classes, which may be obtained from University Graphics and Publications, Southern Illinois University, Edwardsville, Illinois 62025. When requesting a schedule, please specify *quarter* (fall, winter, spring, or summer).

Man's Physical Environment and Biological Inheritance (GSA)

101-8 (5,3) Introduction to Physical Science. (a) A study of the fundamentals of physics covering aspects of mechanics, electricity and magnetism, optics and atomic physics. (c) A study of chemical principles and the atomic structure of matter. Must be taken in a,c sequence. Prerequisite: satisfactory score on placement test or Mathematics 101.

110-8 (4,4) The Earth and Its Environment. A study of the earth, its major domains and its space environment; student investigation of earth substances, processes and utilization of energy. An investigative approach for study of the observational and measurement techniques of the earth scientist. Lecture, laboratory, and individual study. Must be taken in a,b sequence.

204-4 Man's Biological Inheritance. The basic principles of biology and their implications for man. Four lecture hours per week.

205-4 Man and His Diseases. The biological basis of the structure, function and development of man, his microorganisms, and his diseases. Three lecture, two laboratory hours per week. Prerequisite: 204.

206-4 Life: Ecology and Diversity. A study of living organisms and the

¹ Courses count only toward the Associate in Arts degree.

environmental factors influencing their diversity and distribution. Three lecture, two laboratory hours per week. Prerequisite: 204.

210-4 The Fossil Origins of Man. A study of the origin, evolution, and morphology of the major invertebrate phyla and vertebrate classes that occur as fossils.

215-4 Technology and Society. (Same as GSB 215.) The interaction of technology and society with emphasis on: impact of technology on the social structure; whether technology is good, evil, or neutral (ethical and/or moral aspects); history of technology in relation to social development; present status in highly industrialized society, in emerging nations; technology assessment; technology forecasting.

241-4 Man's Polluted Environment. A study of the types of causes of controlling pollution. Four lecture hours per week. Prerequisite: high school or college chemistry.

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

314-3 Man's Genetic Heritage. Principles of heredity as related to man, with emphasis on the effects of environment on his biological inheritance.

320-3 Plants and Civilization. An examination of the role of plants in man's social and economic history and of the role of man in the modification and distribution of plants. Prerequisite: 204.

322-3 Introduction to Rocks and Minerals. Specifically designed to acquaint the nonprofessional with the origin, distribution, character, and value of the common materials and rocks in the earth's crust. Prerequisite: 110.

328-3 Human Reproduction and Development. Descriptive aspects of human reproduction and development; developmental anomalies; fertility; principles and practices of population control. Three lectures per week. Prerequisite: 204.

330-3 Weather. A study of weather elements basic to understanding the various atmospheric happenings, with application to agriculture, industry, recreational resources, etc. May take only 330 or 331 for General Studies credit.

331-3 Climate. Description and interpretation of climatic regions and their influence on human activity. May take only 330 or 331 for General Studies credit.

341-3 Ecological Aspects of Pollution. A study of pollution from the viewpoint of an ecologist with emphasis on the general concept that man and nature must live in balance. Three lectures per week. Prerequisite: 204.

350-3 The Energy Crisis and the Environment. Stimulation and guidance in designing a program of independent study on the problems of meeting our national worldwide energy demands, the present and future roles of nuclear power in meeting those demands, and the environmental impact of meeting them. Providing the scientific background information required to maintain a healthily critical attitude toward the controversies surrounding nuclear power.

352-3 Radiation and Life. A brief survey of the types, sources, and uses of radiation; of the effects of radiation on biological systems including man; and of the impact of the use of radioisotopes on society. Prerequisite: 204.

356-3 Astronomy. The solar system, nebulae, clusters, galaxies, theories of stellar evolution, and cosmology. Evening observations in addition to lecture.

361-3 Physics of Music and Acoustics. 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.

363-6 (3.3) Philosophy of Science. (a) The logic of scientific explanation illustrated by analysis of physical concepts and theories. (b) The logic of explanation in the biological and behavioral sciences and their implications for the individual and society. Should be taken in a,b sequence.

365-3 Human Origins. A consideration of the fossil record and basic principles of human evolution. Prerequisite: 204.

Man's Social Inheritance and Social Responsibilities (GSB)

101-8 (4.4) Survey of Western Tradition. (b) Political, economic, and cul-

tural history of Europe from the Early Middle Ages to the end of the Napoleonic Age. (c) History of Europe from Congress of Vienna to the present.

103-8 (4,4) Sociology-Economics. An introduction to the great economists and sociologists and especially to those writers who are regarded as both. (a) A historical development of sociological ideas and introduction to such concepts as social structure, role behavior, and social institutions. (b) A historical development of economic ideas and an introduction to economic concepts, institutions, and problems.

105-8 (4,4) The Black Experience in American Life. A survey sequence to develop interest, understanding, and appreciation of black American culture and its African antecedents. Some factors leading to the current black social protest.

201-8 (4,4) The Individual and His Cultural Environment. A study of human behavior in the light of cultural and psychological processes. (a) Anthropology: An examination of the biological and cultural origins of mankind; cultural diversity and human behavior; characteristic features of tribal societies, including economy, social organization, language, art, religion, and political organization; place of non-industrialized societies in the modern world. (c) Psychology: Surveys modern psychological approaches to individual behavior; includes basic developmental processes such as learning and motivation plus a study of personality and related adjustment problems. Prerequisite: 101 or 103.

203-8 (4,4) American Politics in the World Environment. (a) The theory, organization, and operation of American government. (b) Analysis and interpretation of human geographic patterns; world population, settlement, economic activities. Meets State Constitution requirements.

215-4 Technology and Society. (See GSA 215.)

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. Prerequisite: sophomore standing.

302-3 Contemporary Social Problems. Discussion and analysis of selected contemporary social problems with consideration of alternative courses of action. Prerequisite: 103a or 301 or consent of instructor.

305-3 Urban Environmental Problems. Analysis and discussion of such urban related environmental problems as urban development, location factors, classification, economic base, land use, recreational needs, and others. Content changes from year to year.

311-3 Economic Development of the United States. Emphasizes the underlying trends and forces of change that have led to our present economic structure, level of performance, and world position. Prerequisite: 101c or 103b.

312-3 Comparative Economic Systems. A comparative study of the goals, structure, and operation of the major economic systems, such as capitalism, socialism, and fascism. Emphasis upon basic systems of organization and control, and upon mixed economies.

314-3 The American Character. (Same as GSC 314.) An attempt to define what is meant by the character or the image of Americans. Through extensive readings in the bibliography of the area offered by historians, literary figures, philosophers, anthropologists, sociologists, psychologists, etc., and through a discussion of the important themes in American history, some understanding of national consciousness can be gained.

318-6 (3,3) American State and Local Government. (a) State. An examination of the role of the states in the federal system and a survey of the governmental processes within the fifty states. (b) Local. A survey of the structure, functions, and problems of the counties, municipalities, towns, townships, and special districts in the United States. Prerequisite: 203a.

331-3 The American Educational System. A critical and problematic study of education as a major social enterprise of a free society in its context of international involvements. The formative influences upon the American educational system, its basic characteristics, difficulties and prospects are explored through the disciplines comprising the intellectual-cultural foundations of education. Designed for all students irrespective of major discipline or professional pursuit.

341-3 Marriage. An examination of marriage in various societies with an emphasis on the origins, changes, and present status of dating, courtship, and marriage in the United States.

351-6 (3,3) Geographic and Cultural Background of Developing Africa. (a) The relation of geography to the culture of Africa, with emphasis on the place cultural and geographic factors have in the developing nations of Africa. (b) An introduction to the many diverse cultures of Africa from the Egyptian civilization to the Bushman hunters. May be taken separately.

366-3 Growth of Old World Civilization. Cultural origins and dispersals from Paleolithic to Protohistoric times with particular attention to the complex environmental and cultural factors that led to the rise of early Old World civilizations.

380-6 (3,3) East Europe: Cultural Heritage and Present Institutions. (a) Cultural Heritage, (b) Present Institutions. An introduction to the European area east of the iron curtain with attention evenly divided among Russia, the Balkans, and North East Europe.

388-3 Communism. A critical examination of various modern theories of communism, with special emphasis on Karl Marx. Prerequisite: completion of second-level GSB requirements.

Man's Insights and Appreciations (GSC)

151-3 Introduction to Poetry. Introduction to the enjoyment of poetry. Practice in techniques of critical reading and writing. Prerequisite: GSD 101a,b.

155-5 Introduction to Art. Basic introduction to the visual arts, particularly painting, sculpture, and architecture. The primary objective is to cultivate skill and discrimination in seeing and understanding works of art from many periods.

156-5 Introduction to Music History-Literature. An introduction to the elements of music, and to the important composers, periods, styles, and forms of music.

157-5 The Dramatic Media: Theater, Cinema, and Television. A study of dramatic media, theater, television, and film with emphasis on the roles and techniques of artists and craftsmen involved. Required theater attendance and television and film viewing. Appropriate research activity.

158-5 The Fine Arts. An introduction to the principal branches of fine arts: visual art, music, and literature. The relationships that bind them together. Due attention is given to the distinguishing attributes of each.

252-4 Logic. Study and practice in the analysis of verbal traps, relations between statements, deductive arguments, and inductive inferences. Prerequisite: sophomore standing or completion of first-level GSC requirements.

253-4 Literary Masterpieces of Antiquity. Reading and discussion of selected literary texts from Classical and Hebraic Antiquity. Prerequisite: sophomore standing recommended.

254-4 Philosophical Masterpieces. Reading and discussion of selected philosophical masterpieces of western civilization. Prerequisite: sophomore standing recommended.

310-3 The Problem of War and Peace. A survey of philosophical views concerning the problem of war and peace. Prerequisite: completion of second-level GSC requirements.

313-3 Folklore. The types of folklore, with extensive readings in American and European folklore: practice in collecting and classifying, and in the use of Thompson's index, etc. Prerequisite: completion of second-level GSC requirements.

314-3 The American Character. (See GSB 314.)

315-3 Studies in Biography. Reading, discussion, and reviews of various forms of biographical work. Some individual work in the students area of concentration. Prerequisite: completion of second-level GSC requirements.

325-3 Afro-American Literature. Reading and discussion of selected literary texts by major Afro-American authors from Frederick Douglass to the present. Prerequisite: completion of second-level GSC requirements.

330-3 Religion, Reason, and Man. A philosophical examination of selected views on the question of a religious dimension in human experience, with emphasis on the factors involved in belief and non-belief. Prerequisite: completion of second-level GSC requirements.

333-3 The Bible as Literature. The Bible in English translation considered as literature. Prerequisite: completion of second-level GSC requirements.

335-3 Studies in Short Fiction. The development of the short story as an artistic expression, its techniques, and its versatility, from the early 19th century to the present. Prerequisite: completion of second-level GSC requirements.

336-3 Studies in the Novel. A study of the novel, emphasizing the technique of the novelist and his concern with continuing human problems. Prerequisite: completion of second-level GSC requirements.

337-3 The English Language Heritage. A survey of the resources of the English language with emphasis upon the processes of change in vocabulary, meaning, and linguistic pattern. Prerequisite: completion of second-level GSC requirements.

339-3 Classical Mythology and Its Influence. The major myths: their nature, origin, interpretations, influence, relevance, and use in the modern world. Prerequisite: completion of second-level GSC requirements.

340-3 Modern Art A: The Art of the 19th Century. The principal movements of the 19th century: neo-classicism, romanticism, realism, impressionism, and post-impressionism. The styles of David, Ingres, Delacroix, Corot, Courbet, Manet, Degas, Monet, Renoir, Seurat, Van Gogh, and Gauguin are emphasized.

341-3 Modern Art B: Art of the Early 20th Century 1890-1925. A study of modern art as manifest in Fauvism, cubism, and expressionism. Emphasis on the artistic development of Cezanne, Matisse, Rouault, Picasso, Braque, Gris, Leger, Kirchner, and Kandinsky.

342-3 Modern Art C: Art of the Mid 20th Century 1920-1945. Abstraction, later German expressionism, the school of Paris, and surrealism. Special attention to the work of de Chirico, Klee, Miro, Beckman, Chagall, Kokoshka, Soutine, and late Matisse, Picasso, Braque, and Leger.

345-6 (3,3) Masterpieces of World Literature. A study of the representative works of the varying cultures and eras: (b) medieval, renaissance and 18th century, (c) romantic, Victorian, and modern periods. Prerequisite: completion of second-level GSC requirements.

354-9 (3,3,3) History of the Theater. Drama, performance, architecture, design, and cultural environment of: (a) Primitive. Greek, Roman, Hindu, and medieval; (b) the Renaissance, the 17th and 18th centuries in Europe, Japan, and China; (c) the modern theater in Europe, the United States, Africa, and Latin America. May elect any one or more quarters in any sequence.

357-3 History of Music Literature. Development of choral and instrumental music from the Renaissance to the present.

358-3 Jazz. Jazz forms and styles: development, illustrations, performances.

360-6 (3,3) Arts and Ideas in Famous Cities. A presentation of the chief art styles and aesthetic ideals of Western culture as they flowered in seven famous cities. A close study of selected masterworks of architecture, fine art, music, literature, and philosophy of art as expressions of men who shaped the physical faces and cultural lives of their cities. (a) 5th century B.C. Athens, 13th century Chartres, late 15th century Florence, and early 16th century Rome. (b) 18th century London, 19th century Paris, 20th century New York. Prerequisite: junior standing or completion of second-level GSC requirements.

363-6 (3,3) Philosophy of Science. (a) The logic of scientific explanation illustrated by analysis of physical concepts and theories. (b) The logic of explanation in the biological and behavioral sciences and their implications for the individual and society. Should be taken in a,b sequence. Prerequisite: junior standing or completion of second-level GSC requirements.

365-3 Introduction to Shakespeare. Designed to acquaint the general student with Shakespeare's life, the theater of his time, and his most interesting plays and poems. Prerequisite: completion of second-level GSC requirements.

370-9 (3,3,3) American Art. A study of the visual arts in the United States. While the emphasis is upon architecture, painting, and sculpture in the context of American social and cultural evolution, the minor arts also are placed in perspective. May be taken in any sequence.

375-3 Ethics. An investigation of the basic problems related to deciding how men ought to act and of modern discussions of individual and social morality. Prerequisite: junior standing or completion of second-level GSC requirements.

390-3 Existentialism. A critical examination of existentialism as a contemporary perspective on life and reality. Prerequisite: 254 or Philosophy 200.

391-3 Pragmatism. A critical examination of pragmatism as a contemporary perspective on life, reality, and American culture. Prerequisite: 254 or Philosophy 200.

Organization and Communication of Ideas (GSD)

100-1 Study Skills. Techniques and opportunities to improve the basic learning skills of the motivated student. Reading improvement, effective listening, and general study skills as they apply to note-taking, studying for examinations, budgeting of time, and use of the library.

101-8 (4,4) English Composition. Emphasis on writing expository prose and reading comprehension. Must be taken in a,b sequence.

103-4 Oral Communication of Ideas. The basic principles and techniques of oral communication as applied to everyday speech activities.

112-9 (4,5) Introduction to Mathematics. A study of logical rules of deduction: the real number system, and mathematical structures. Prerequisite: one year of high school algebra and satisfactory scores on A.C.T. An alternative course for 114-9. Must be taken in a,b sequence.

114-9 (5,4) College Algebra, and Trigonometry. A logical study of the algebraic properties of number systems, polynomials, equations, functions, matrices, exponential and logarithmic functions, trigonometric function. (a) principally algebra. (c) principally trigonometry. An alternative course for 112-9. Must be taken in a,c sequence. Prerequisite: one and one-half years high school algebra and one year high school geometry, or equivalent.

114d-4 Statistics. Descriptive statistics, probability distributions, sampling, statistical inference, regression and correlation. An alternative course for 114c. Prerequisite: 114a.

123-9 (3,3,3) Elementary French. Open to students who have had no previous work in French. Must be taken in a,b,c sequence.

126-9 (3,3,3) Elementary German. Open to students who have had no previous work in German. Must be taken in a,b,c sequence.

127-5 Elementary German. Aspects of the culture, traditions, and reasoning of the German people. Emphasis on intensive reading rather than on writing or speaking. May be taken after 126a to complete the General Studies foreign language requirement. Prerequisites: 126a, and German 126a or equivalent.

136-9 (3,3,3) Elementary Russian. No previous knowledge of Russian required. Must be taken in a,b,c sequence.

140-9 (3,3,3) Elementary Spanish. Open to students who have had no previous work in Spanish. Must be taken in a,b,c sequence.

144-9 (3,3,3) Elementary Italian. Open to students who have had no previous work in Italian. Must be taken in a,b,c sequence.

Health and Physical Development (GSE)

Courses numbered 102-104 are for men; 112-114 are for women; 115-118 are for both men and women.

102-1 Physical Fitness (Men).

104-(1 per activity) Individual and Team Activity (Men). (c) Basketball, (f) Soccer, (g) Speedball, (j) Softball, (n) Cross Country, (t) Touch Football, (u) Wrestling, (x) Handball.

112-1 Basic Body Movement (Women).

114-(1 per activity) Individual and Team Activity (Women). (c) Basketball, (f) Soccer, (g) Speedball, (j) Softball, (n) Field Hockey, (o) Physical Conditioning.

115-3 (1,1,1) Restricted Physical Education.

116-(1 per activity) Swimming. (a) Beginning Swimming, (b) Intermediate Swimming, (c) Diving.

116d-1 Life Saving and Water Safety. Theory and practice of techniques involved in water safety. Personal safety and rescue methods for use in, on, and about the water. Leads to American Red Cross Senior Life Saving Certificate. Prerequisites: proficiency test, preliminary swimming.

117-(1 per activity) Dance. (a) Square, (b) Folk, (c) Social, (d) Beginning Contemporary, (e) Intermediate Contemporary, (f) Basic Rhythms.

118-(1 per activity) Individual and Team Activity. (a) Archery, (b) Bad-

minton, (d) Bowling, (e) Golf, (f) Billiards, (h) Tennis, (i) Volleyball, (k) Horseback Riding, (l) Sailing, (m) Fencing, (o) Boating and Canoeing, (p) Ice Skating, (q) Fly and Bait Casting, (r) Stunts and Tumbling, (s) Gymnastics, (w) Track and Field, (y) Judo, (z) Recreational Sports.

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

Accounting

301-1 to 6 Accounting Readings.

332-4 Accounting Principles. Study of the basic accounting principles, concepts, conventions, and standards; their application to the analysis and recording of business transactions; and the reporting of the accumulated results. Measurement of income, and matching of expense with revenues through the use of the accrual basis in the accounting system. Prerequisite: sophomore standing.

333-4 Financial Accounting Analysis. Introduction to valuation concepts of assets, liabilities, and ownership equities; control of cash, valuation of receivables, inventory valuations and price level changes, fixed asset valuation and depreciation policy, equity accounting and concepts, bonds, partnerships, and corporations; basics in financial statement analysis—use of ratios and their interrelationship with other factors; funds and cash flow concepts. Prerequisite: 332.

334-4 Managerial Cost and Budgeting. Control concepts, essentials of job order and process costing; budgets and budgeting for planning and control, standards and flexible budgets and use of "exception" principle through variance analysis; control of fixed costs, relevant cost analysis for managerial decision making, capital planning. Prerequisite: 333.

335-4 Principles of Income Taxation. Study of the Federal Income Tax laws as they affect individuals, partnerships, corporations, estates, and trusts, in determination of the taxable income for computing the tax liability due. Prerequisite: 333.

341-4 Cost Accounting Principles. Comprehensive study of job order and process cost systems, related joint and by-product costing, and estimated cost procedures. Prerequisite: 333.

351a-4 Accounting Theory and Problems I. Comprehensive study of the asset accounts, their valuation, presentation, and preservation. Prerequisite: 333.

351b-4 Accounting Theory and Problems II. Comprehensive study of the equity accounts, their valuation, presentation, etc. Prerequisite: 351a.

432-4 Accounting Problems in Federal Taxation. Income tax problems of partnerships, corporations, estates, and trusts; brief study of social security, federal estate, and gift taxes; solving of complicated tax problems by research in source materials. Prerequisites: 335, consent of instructor and department chairman.

439-1 to 4 Independent Study in Accounting. An investigation of topical areas in greater depth than regularly titled courses permit. Individual or small group readings and projects. For qualified seniors. Prerequisite: consent of instructor and department chairman.

442-4 Advanced Cost Accounting. Comprehensive study of budgeting concepts, standard costing and analysis of variances, decision making with alternatives, planning of capital acquisitions, direct costing, relevant cost concepts, and distribution cost problems. Prerequisite: 341.

453-4 Advanced Accounting Problems. Comprehensive study of problems in consolidation of financial statements, partnerships dissolution and liquidation, consignment, installment sales, and other advanced accounting topics. Prerequisite: 351b.

456-4 Auditing. Study of the concepts, principles, and practices of auditing, including ethics, professional standards, internal control, preparation of audit working papers, audit reports, and related services. Prerequisites: 351b, 442.

458-4 Accounting Systems.

461-4 Advanced CPA Problems.

530-4 Conceptual Framework of Accounting.

533-4 Managerial Accounting.

538-4 Seminar in Accounting.

594-4 Professional Development in the Fundamental Concepts of Accounting and Financial Management.

Administrative Services

300-4 Introduction to Data Processing. An introduction to the principles underlying unit record equipment, information theory, electronic data processing applications, and management systems. Includes applications to demonstrate systems, concepts, and computer capabilities through the use of data processing equipment.

301-4 COBOL Programming. A study of the COBOL programming language, reserved words, programmer-supplied names, symbols, literals, level numbers, and pictures. Work requires preparation of flow charts, source programs, coding, testing, and debugging using the IBM-360 computer. Prerequisite: 300 or equivalent.

426-4 Office Management. The principles of management as applied to office problems. Emphasis on the role of the office in business management; office organization; physical facilities and layout of the office; office services, procedures, standards, and controls.

427-4 Information Storage and Retrieval Systems. The requisites for records administration. The value of files and their creation, control, retention, and disposition. Applications to such records as medical, legal, educational.

428-4 Systems and Procedures. A problems approach to the office systems-procedures function in the modern business firm; seminar and laboratory work on improvement of systems and procedures, administrative information and paperwork engineering; theory of office-systems design; systems administration and work simplification. Prerequisite: 426 or consent of instructor.

Aerospace Studies

100-0 Corps Training. Supervised training laboratory. Conducted as an organized cadet corps. Designed to develop each student's leadership potential. Prerequisite: concurrent enrollment in 101, 102, 103.

101-1 Evolution of Conflict. General military course. Lecture discussion. Introduction to factors of national powers; nature of war; military institutions of the great powers; legislation, organization, and function of the Department of Defense.

102-1 United States Defense Organization. Lecture discussion. Introduction to history, missions, and organization of the U.S. Air Force. Surveys the history and development of U.S. strategic offensive and defensive forces including their missions, functions, organization, and conventional nuclear weaponry.

103-1 United States Military Posture. Lecture discussion. Surveys civil defense, aircraft and missile defense, concepts of present and projections of future strategic defense requirements.

200-0 Corps Training. Supervised training laboratory. Conducted as an organized Cadet Corps. Designed to develop each student's leadership potential. Prerequisite: concurrent enrollment in 201, 202, 203.

201-1 United States Military Forces. Study of U.S. general purpose forces and how they support the U.S. commitment to allied nations. Includes army, navy, and marine forces with emphasis on American air power. Prerequisite: 101, 102, 103 or consent of PAS.

202-1 Aerospace Support Forces. Study of America's aerospace support forces, including airlift, research and development, logistics, education and training, and related supporting agencies. Prerequisite: 101, 102, 103 or consent of PAS.

203-1 Ideological Conflicts. Discussion of the conflict between totalitarian and democratic ideologies, including a historical analysis of Soviet and Red Chinese communism and the continuing struggle for peace through treaty organizations and international cooperation. Prerequisite: 101, 102, 103 or consent of PAS.

300-3 Corps Training. Provides a supervised training laboratory in support of and mandatory when enrolled in 301, 302, and 303. Instruction is conducted within the framework of a cadet corps, organized and operated by cadets in

300 and 340, with a progression of experience designed to develop each student's leadership potential at the junior level. Emphasis is placed on Air Force customs and courtesies, drill and ceremonies, career opportunities in the Air Force, and the life and work of an Air Force junior officer.

301-3, 302-3, 303-3 Professional Officer Course. A study of the growth and development of aerospace power, the United States Air Force, astronautics and space operations, and the projected development of aerospace power. Involves specific exercise of each student's written and oral communication skill. Prerequisite: satisfactory completion of the GMC or the six-week field training course.

340-0 Corps Training. Provides a supervised training laboratory in support of and mandatory when enrolled in 351, 352, and 353. Instruction is conducted within the framework of a cadet corps, organized and operated by cadets in 300 and 340, with a progression of experience designed to develop each student's leadership potential at the senior level. Emphasis is placed on Air Force customs and courtesies, drill and ceremonies, career opportunities in the Air Force, and the life and work of an Air Force junior officer.

350-2 Flight Regulation and Navigation. A study of flight regulations, weather, and navigation. Four hours lecture, demonstration-performance. Prerequisite: enrollment in the Air Force ROTC Flight Instruction Program or consent of the PAS.

351, 352, 353-3 Professional Officer Course. A study of military leadership, professionalism as it relates to the Air Force, the military justice system, and the theory and practice of management principles and functions with special reference to the Air Force and the junior officer. Participation in problem-situation, and oral and written student assignments. Prerequisites: 301, 302, 303, or consent of the PAS.

American Studies

480-4 Popular Literature in America. A study of literary media, genre, and works not generally considered in literature courses or other courses but which are representative of popular tastes, or have helped form popular taste and hence American character.

490-4 Seminar in American Studies. A study of American culture with a view towards crossing the boundaries of traditional disciplines. Prerequisite: senior standing.

Anthropology

GSB 201a-4 The Individual and His Cultural Environment.

305-9 (3,3,3) Peoples and Cultures of the World I. The biological and cultural history of man in (a) North America, (b) Asia, and (c) Oceania from early times to the present.

307-3 Peoples and Cultures of Latin America and the Caribbean. Social and cultural aspects of contemporary Mexico, Central America, South America, and the Caribbean viewed in their historical and environmental contexts. Prerequisite: sophomore standing or consent of instructor.

GSB 351b-3 Cultural Background of Developing Africa.

GSA 365-3 Human Origins.

GSB 366-3 Growth of Old World Civilization.

367-3 Growth of New World Civilization. Beginnings and rise of culture-centers in the New World, with special attention on Mexico, Yucatan, and Andean developments; ecological and cultural factors conditioning the rise of regional and inter-regional cultural manifestations.

375-4 to 8 Archaeological Field Methods. An introduction to archaeological field techniques including site survey and evaluation techniques, excavation and data recording, laboratory methods and interpretation. Emphasis on new techniques for the recovery of information. Prerequisite: GSB 201a or consent of instructor.

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.

401-4 Anthropological Linguistics. Introduction to concepts, methods, analytical techniques of linguistics with examination of their applicability to more general anthropological concerns; linguistic approaches to the anthropological study of meaning; applied anthropological linguistics.

404-4 Primitive Art and Technology. The development of man as a tool-using and art-loving being. Artistic and technological traditions of non-Western peoples, past and present.

405-4 Kinship and Kin Groups. A comparative approach to the basic organization of small societies. Functional aspects and distributions of kinship and kin groups.

408-4 History of Anthropological Thought. The beginnings of anthropology in the eighteenth century and its development as a discipline; important shifts in theory, method, and problem definition; evolution, structure, and configuration in anthropological thought. Prerequisite: 400 or consent of instructor.

409-4 Anthropology and Modern Life. 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.

410-4 Anthropological Perspectives on Primitive Religion. An anthropological approach to the study of primitive religion, with emphasis on religion as one aspect of culture. Historical and contemporary perspectives, and various religious expressions from selected ethnographic areas. Prerequisite: GSB 201a or consent of instructor.

411-4 Urban Anthropology. An anthropological approach to urban society, with an emphasis on the study of ethnic communities and the effects of industrialization and social complexity on modern man and his culture. Prerequisite: GSB 201a or consent of instructor.

416-4 Culture Change. Examination of long and short range culture change, acculturation process and innovation, theory and method in study of culture change.

424-4 Culture and Personality. A cross-cultural comparison and survey of personality in relation to cultural differences found in the "folk societies" with emphasis on the socialization and enculturation of the child; group variants in personality and measurement of their cultural correlates. Prerequisite: junior standing or consent of instructor.

426-4 The Family in Cross-Cultural Perspective. Family systems of the world, with a concentration on Asian, American Indian, and black family types. Alternative ways of organizing family relationships and how they articulate with economic and political systems within a society. The family as enculturating agent and as a unit in which age, sex, and kinship roles are structured and integrated within the total society. Prerequisite: GSB 201a.

432-4 Archaeology of the Midwest. A survey of prehistoric cultural developments in the Mississippi River drainage, with emphasis on events leading to the climax of the Mississippian culture at Cahokia; contributions to archaeological theory; field trips to local archaeological sites. Prerequisite: 330 or consent of instructor.

442-4 Human Ecology. Systematic consideration of man-habitat relationships, especially concerned with cultural adaptations. Problems related to environmental change, migration, and population growth, technological and institutional changes; attitudes toward change and perception by people of problems involved in modifying their traditional habits and values. Prerequisite: junior standing or consent of instructor.

452-4 Political Anthropology. Cross-cultural comparison of political systems with emphasis on non-European peoples; functional relations between politics and society; the growth of political complexity; and systems of authority and leadership. Prerequisites: junior standing, consent of instructor.

470-4 Special Topics in Anthropology. Focus on a limited subject area on the frontiers of anthropology. Investigation of significant problems and issues which are not treated in other course offerings. Content varies with each offering and is announced in advance. Prerequisite: GSB 201a or consent of instructor.

482-4 Indians of the Plains: Prehistory, Ethnohistory, and Culture. An advanced introduction to dynamic changes which produced the Plains Indian

Culture-Area, including the acculturative history of Plains Indians after contact with Europeans. Prehistoric antecedents of the historic tribes; basic features of Plains Indian culture, with subareal variations; and ethnohistory and acculturation in the wake of the advancing frontier. Prerequisites: junior standing, consent of instructor.

483-1 to 8 Individual Study in Anthropology. Guided research on anthropological problems. Consult chairman before enrolling.

507-9 (3,3,3) Pro-seminar in Social Anthropology.

508-8 (4,4) Pro-seminar in Cultural Anthropology.

586-3 to 12 Advanced Readings in Anthropology.

Art

Art Education Courses: 300, 365, 408, 460, 466, 560, 566.

Art History Courses: 225, GSC 340, GSC 341, GSC 342, 345, 347, 349, 369, GSC 370, 424, 483, 571.

Studio Courses: 100, 202, 305, 310, 312, 325, 358, 384, 386, 393, 401, 402, 410, 420, 441, 501, 502, 511, 520.

050-3 Avocational Painting. An exploration of painting and drawing media for the interested non-major. Emphasis upon individual development of understanding and appreciation of painting media through direct experience in the practice of painting. May be repeated. Three hours credit applicable to degree except in art and design and teacher education.

051-3 Avocational Ceramics. An exploration of the ceramics arts for the interested non-major. Emphasis upon individual development of understanding and appreciation of pottery media through direct experience in the practice of the craft. May be repeated. Three hours credit applicable to degree except in art and design and teacher education.

100-15 (3,3,3,3,3) Basic Studio. (a) Drawing I. Introduction to some of the various approaches to drawing, utilizing a variety of media. (b) Drawing II. Continuation of (a) with emphasis on development of ideas. (c) Life Drawing. A study of the human figure, utilizing a variety of media and further development of ideas and composition as they relate to the human figure. (d) Visual Organization I. Introduction to and exploration of art concepts and form with special emphasis given to color. Work in two dimensions. (e) Visual Organization II. Continuation of (d) with special emphasis given to three dimensions. **202-21 (3,3,3,3,3,3,3) Intermediate Studio.** (a) Sculpture. A study in form and design. (b) Printmaking. Introduction to fundamental printmaking techniques in relief and intaglio methods and multiple color printing. (c) Ceramics. Introduction to handbuilding with clay and to simple techniques and technology of glazing and firing. (d) Painting. Introduction to and exploration of oils as a medium of expression. (e) Drawing. Exploration of various approaches to drawing and composition including some figure work. (f) Design. Problem solving relative to two-dimensional visual design, exploring a variety of tools and media stressing the organization and structure of creative design. (g) Watercolor. Introduction to and exploration of tools and media and their application. Need not be taken in sequence. Prerequisite: 100-15.

225-9 (3,3,3) History of World Art. A study of painting, sculpture, and architecture from prehistoric to modern times. Emphasis is placed upon the major periods and great styles in relation to their geographical and social backgrounds. Open to all students. (a) The art and architecture of ancient and classical man. (b) Art of the medieval epoch. (c) Art from the Renaissance to the present.

289-3 Practicum in Art Education. An exploration of appropriate activities for art education in the elementary and secondary schools. Observation and involvement with children and youth at work. An introduction to the profession of art education. Prerequisite: 100-15.

300-12 (3,3,3,3) Art Education in the Elementary Schools. For students preparing to teach in elementary schools. A study of objectives, theory, and practice of art activities for grades K-6. (a) Exploration and experimentation of a variety of media with emphasis on interdisciplinary learning. (b) Study of crafts suitable to the interests and abilities of children in grades K-6. (c) Providing opportunity to pursue an individual interest in-depth, studio or academic. (d) For art concentrations only to introduce them to the elementary

school child and his creative processes. A,b,c must be taken in sequence. Prerequisite: (a,b,c) junior standing; (d) 289.

305-12 (3,3,3,3) Ceramics. Intensive study of ceramics as an art form. Must be taken in a,b,c sequence. Prerequisite: 202-9, including 202c.

310-12 (3,3,3,3) Painting. Intensive study of painting as a medium of expression. Individual rather than group problems are engaged. Prerequisite: 202-9, including 202d.

312a-4 Advertising and Graphic Design. Deals with the basic tools of the advertising designer. Introduction to styles of type, lettering techniques, layout problems, and reproduction processes for advertisements and illustrations in papers, magazines, posters, television, and pamphlets. Creative exercises in designing with type and illustrations. Prerequisite: 202-9, including 202f.

312b-4 Advertising and Graphic Design II. Introduction to the problems of the advertising designer, with special emphasis on typography. Includes typesetting, proof printing, engraving, and lithographic processes. Application of the principles of design to a variety of contemporary projects, with professional standards and performances exacted. Creative and technical class work is supplemented by field trips to printing firms and advertising design studios. Prerequisite: 312a.

325-3 to 12 Studio. No more than 6 hours per quarter. Prerequisites: 9 hours in medium of choice (except where courses do not exist), consent of instructor.

GSC 340-3 Modern Art A: The Art of the 19th Century.

GSC 341-3 Modern Art B: The Art of the Early 20th Century 1890-1925.

GSC 342-3 Modern Art C: The Art of the Mid 20th Century 1920-1945.

347-9 (3,3,3) Ancient Art. An interpretation of painting, sculpture, and architecture from prehistoric times through the ancient Egyptian, Mesopotamian, Greek, and Roman civilizations, presented with consideration of the general cultural settings of the peoples involved.

349-9 (3,3,3) Renaissance and Baroque Art. Architecture, sculpture, and painting from the waning of the middle ages to the beginnings of modern movements in the 18th century. (a) The Renaissance in northern Europe. (b) The Renaissance in Italy and the south. (c) Mannerism, Baroque, and Rococo art. May be taken independently. Recommended preparation, but not prerequisite: 225.

358-12 (3,3,3,3) Printmaking. (a) Relief. A study of the materials, tools, and methods used in relief printing. (b) Intaglio. Fundamental etching, engraving, collographic, and embossing processes. (c) Serigraphy. An investigation of the various stencil processes used in screen printing. (d) Lithography. A study of the basic theories and processes of stone printing. Each part may be repeated once. Prerequisite: 202-9, including 202b.

365-4 Art Education in the Secondary Schools. For art education students preparing to teach at secondary level; includes studio projects designed to develop awareness of technical and aesthetic needs of high school students, reading and discussion of literature, planning of curriculum. Fall quarter only.

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.

GSC 370-9 (3,3,3) American Art.

384-12 (3,3,3) Weaving and Design in Textiles. Problems of design and techniques of working in fibers of various kinds. Consideration of the craft as an art form. Prerequisite: 202-9.

386-12 (3,3,3,3) Jewelry and Design in Metals. The basic processes involved in forming and finishing art objects of metal. Prerequisite: 202-9.

393-12 (3,3,3,3) Sculpture. Problems in modeling, carving, casting, and construction. Prerequisite: 202-9, including 202a.

401-3 to 12 Research in Painting. Prerequisite: 310-12.

402-3 to 12 Research in Sculpture. Prerequisite: 393-12.

408-3 to 12 Art Education for Elementary Teachers II.

410-3 to 12 Research in Prints. Prerequisite: 358-12.

420-3 to 12 Research in Pottery. Prerequisite: 305-12.

424-3 Art in the Eighteenth Century. A study of the visual arts during the

eighteenth century. Rococo, rationalist, romantic, and middle class styles are examined against the revolutionary shift from the baroque to modern societies.

441-9 (3,3,3) Studio in Drawing. Studio in Drawing. Prerequisites: 12 hours 300-level art, junior or senior standing.

448-9 (3,3,3) Early Christian and Mediaeval Art. (a) 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. (b) Early Mediaeval 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. (c) 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. Prerequisite: 225a-3 or consent of instructor.

460-3 to 12 Research in Art Education.

466-3 to 12 Studio in Art Education.

483-3 to 12 Research in Art History.

501-3 to 12 Graduate Painting.

502-3 to 12 Graduate Sculpture.

503-3 to 12 Studio in Painting.

504-3 to 12 Studio in Sculpture.

511-3 to 12 Graduate Printmaking.

512-3 to 12 Studio in Printmaking.

520-3 to 12 Graduate Ceramics.

521-3 to 12 Studio in Ceramics.

560-3 to 12 Seminar in Art Education.

566-3 to 12 Research in Art Education.

571-2 to 5 Readings in Art History.

599-5 to 9 Thesis.

Behavioral Science

593-2 to 4 Practicum.

596-2 to 8 Readings in Behavioral Science.

599-2 to 9 Thesis.

Biology

200-4 Introduction to Biological Sciences. An introduction to the major unifying concepts among the biological sciences, metabolism, physiology, organization, genetics, evolution, and ecology. Three hours lecture, three hours laboratory per week. Prerequisite: Chemistry 125a or concurrent enrollment.

204-1 Elementary Biology Laboratory. To accompany GSA 204. Optional. A laboratory designed for those who do not wish to concentrate in biology. Observations are made on biological materials, and elementary physiological experiments performed. Prerequisite: concurrent enrollment in GSA 204.

GSA 205-4 Man and His Diseases.

GSA 206-4 Life: Ecology and Diversity.

210-4 Bacteriology. A treatment of cytology; theories and techniques of staining; physiology and classification of microorganisms; and their medical relationships. Two lecture and four laboratory hours per week. Prerequisite: GSA 204.

215-3 Sanitary Microbiology. The microbiology of water, wastes, and sewage from the standpoints of significance, ecology, and conversion of organic matter. Laboratory work includes aseptic techniques, sterilization of culture media, plate counts, use of selective and differential culture media, staining techniques, and microscopy. Two lecture hours, one two-hour lab per week. Prerequisites: GSA 204, Sanitation Technology 101, 203, 204.

220-3 Nutrition and Metabolism. An introduction to biochemistry, with particular emphasis on the metabolism and energy production of carbohydrates, lipids, and proteins. Genetic aspects of metabolism. Three lectures per week. Prerequisites: 312a, Chemistry 240.

301a-4 Cell Biology. Structure, organization, and function of cells, organelles, and macromolecules. Three lecture and three laboratory hours per week. Prerequisites: 200, Chemistry 305a, 341a.

301b-3 Cell Biology. A continuation of 301a. The structure, function, and biogenesis of various cell parts; the biosynthesis of macromolecules; the mechanisms through which the cell regulates such processes as growth, metabolism, and gene expression. Research papers in the above areas are emphasized. Three lectures per week. Prerequisite: 301a.

301c-4 Developmental Biology. Morphogenesis, differentiation, growth, and regeneration in plants and animals. Three lecture and three laboratory hours per week. Prerequisite: 301a.

301d-2 Cell Biology. Experiments designed to study the functional properties of cellular components, the regulation of cellular activities, and the response of the cell to changes in the chemical and physical environment. Various techniques used in the study of cells are introduced. Six hours laboratory per week. Prerequisite: concurrent enrollment in 301b.

301e-3 Basic Biochemistry. The relation between the structure and function of biologically important macro-molecules. Nucleic acids, proteins, and carbohydrates, with emphasis on the regulation of their biosynthesis and degradation. The importance of these ideas to modern biology. Three lecture hours per week. Prerequisites: Chemistry 305b, 341b.

302a-5 Animal Life. Sponges through mammals. Two lecture and six laboratory hours per week. Prerequisite: 200.

302c-5 Plant Life. Bryophytes through flowering plants. Three lecture and four laboratory hours per week. Prerequisite: 200.

302d-5 Physiology. Function and regulation in animals. Four lecture and three laboratory hours per week. Prerequisites: 302a, Chemistry 125.

303a-3 Genetics. Mechanisms of inheritance, gene action, and the origin of genetic diversity. Three lecture hours per week. Prerequisite: 200.

303b-3 Evolution. Evolutionary change including population genetics, ecological factors, selection, and speciation. Three lecture hours per week. Prerequisite: 200.

303c-4 Ecology. Life and environment; energy relationships and succession. Saturday field trips required. Three lecture and three laboratory hours per week. Prerequisite: 200.

303d-1 Genetics Laboratory. Prerequisite: 303a or concurrent enrollment.

304-14 (5,3,2,3,1) Basic Microbiology. (a) Introduction to Microbiology. The biology of bacteria, molds, yeasts, and viruses. Structure, growth, and the significance of these organisms in medicine, industry, and environment. Three lecture, six laboratory hours per week. Prerequisites: 200, Chemistry 125b.

(b) Medical Microbiology. Cultural and immunological properties, medically-important bacteria, and viruses and their epidemiology. Three lecture hours per week. Prerequisite: 304a. (c) Medical Microbiology Laboratory. Methods for isolating pathogenic bacteria, and determining their significant properties and immunological features. Six laboratory hours per week. Prerequisite: 304b or concurrent enrollment. (d) Microbial Physiology. Bacterial growth, biochemical and genetic regulation of metabolism, and effects of the physical and chemical environment. Three lecture hours per week. Prerequisites: 304a and Chemistry 305b or 341b. (e) Microbial Physiology Laboratory. Metabolic patterns of bacterial growth as a function of nutrition, environment, and genetic control. Three laboratory hours per week. Prerequisite: 304d or concurrent enrollment.

312-8 (4,4) Human Anatomy and Physiology. (a) The structure and function of the human body. Tissues, skeletal, muscular, and nervous systems. Three lecture and two laboratory hours per week. Prerequisite: college chemistry. (b) Continuation of a. Endocrine, circulatory, respiratory, digestive, and urinary systems. Three lecture and three laboratory hours per week. Prerequisite: 312a.

GSA 314-3 Man's Genetic Heritage.

GSA 320-3 Plants and Civilization.

GSA 328-3 Human Reproduction and Development.

390-0 to 1 (.3, .3, .4) Undergraduate Biology Seminar. Presentations by faculty, visiting investigators, and students. Students give one seminar per year. May be repeated. Prerequisite: junior or senior standing.

406a-3 Cell Organelles and Inclusions. The function, structure, and formation of selected organelles and inclusions of eucaryotic cells. Current literature

is covered in some detail and discussion sessions are held. Three hours lecture per week. Prerequisite: 301a, 301b, or biochemistry.

406b-1 Readings in Cell Organelles and Inclusions. Covering of current literature in a given topic. Presentation of a term paper covering this material. Prerequisites: consent of instructor, concurrent enrollment in 406a.

406c-1 Laboratory in Cell Organelles and Inclusions. Experiments studying cell organelles and inclusions. Three hours laboratory per week. Prerequisites: consent of instructor, concurrent enrollment in 406a.

407-5 (3,2) Electron Microscopy. (a) Theory, demonstration, exercises and review; two lecture hours and one demonstration hour per week. (b) Laboratory; six laboratory hours per week. Enrollment limited to number of lab spaces available. Prerequisite for a: consent of instructor; for b: concurrent or recent enrollment in 407a, consent of instructor.

410-4 Advanced Genetics. A study of quantitative inheritance, chromosomal evolution and organization, the regulation of gene action, and radiation genetics. Three lectures and one laboratory per week. Prerequisites: 303a, GSD 114d.

415-4 Experimental Embryology. A survey of the literature from the beginning of experimental embryology; the laboratory includes classical and modern techniques. Two lectures and two laboratories per week. Limited to ten students. Prerequisite: 301c.

420-4 Plant Synecology. The structure, development, and causative factors in the distribution of plant communities. Field techniques for quantitative measurements and interpretations of successful dynamics. Three lectures, one laboratory per week. Saturday field trips required. Prerequisite: 303c.

423-4 Principles of Parasitism. Principles dealing with parasitic relationships. Study of types of association, morphologic and physiologic adaptations of parasites, defensive mechanisms, immunity, and specificity. Selected examples from the plants and animals are used to illustrate the general principles and life histories. Two lectures, two laboratories per week. Prerequisite: 302a,b,c.

430-4 Environmental Microbiology. An examination of the ecological interrelation between microbes and animal and plant life, and the interaction of microorganisms with our terrestrial and aquatic environment. Three lectures and one laboratory per week. Prerequisite: 302b.

435-4 Ethology. A survey of animal interactions and the response of animals to environmental stimuli. Three lectures and one laboratory per week. Prerequisite: 302a.

441-3 Mammalian Physiology. Nervous and endocrine coordinating processes, sensory function, circulation, respiration, alimentation, and regulation of body fluids, with special reference to man. Three lecture hours per week. No graduate credit. Prerequisites: organic chemistry and 302d or 310.

442-1 Mammalian Physiology Laboratory. Selected experiments with mammals including man. One three-hour laboratory per week. No graduate credit. Prerequisite: concurrent enrollment in 441.

444-4 Integrative Physiology. Mechanisms of response and integration with emphasis on the role of the nervous systems. Three lectures and one laboratory per week. Prerequisites: 301a, 302a.

445-5 (3,1,1) Endocrinology. A survey of endocrine organs in chordates, higher invertebrates and plants with major emphasis on roles of endocrine glands and their hormonal secretions in integration, control systems and metabolism. (a) Lecture. (b) Laboratory. (c) Reading and conference. Prerequisites: (a) 301a or consent of instructor; (b,c) concurrent enrollment in a, consent of instructor.

447-4 Topics in Plant Physiology. Photosynthesis, mineral nutrition of plants, water regime, growth and movement of plants. Two lectures and two laboratories per week. Prerequisite: 302c, Chemistry 125b.

455-4 Plant Anatomy. Cell types, tissues, and organography of seed plants with emphasis on phylogeny and trends of specialization. Laboratory on microscopical observations of plant tissues. Two lectures, two laboratories per week. Prerequisite: 302c.

456-2 Plant Microtechnique. Principles and techniques of preparing plant tissues for microscopic study. Four hours of laboratory per week. Prerequisite: 302c, 455, or consent of instructor.

- 458-5 Functional Morphology of Vertebrates.** The phylogenetic approach to comparative form, function, and development of vertebrate organisms. Two lectures and three laboratories per week. Prerequisite: 302a.
- 470-4 Field Botany.** Taxonomy, natural history, and distribution of local plants. Two lectures and two laboratories per week. Field trips cost \$10-\$25 per student. Prerequisite: 302c.
- 471-4 The Algae.** Morphology, reproduction, ecology, and physiology of algae. Laboratory includes field work, identification, culturing, and experimentation. Two lectures, two laboratories per week. Prerequisite: 302b or consent of instructor.
- 479-1 to 16 Tropical Studies.** Courses taken in the tropics under the auspices of Associated Universities for International Education. May be repeated. Prerequisite: consent of department chairman.
- 480-4 Field Zoology.** Taxonomy, natural history, and distribution of local animals. Two lectures and two laboratories per week. Field trips cost \$10-\$25 per student. Prerequisite: 302a.
- 483-4 Principles of Entomology and Insect Pathology.** A study of the principles of insect development, morphology, physiology, ecology, and pathology. Three lectures, one laboratory per week. Prerequisite: 302a.
- 485-4 Ichthyology.** Relationships, ecology, behavior, physiology, and anatomy of fishes. Field study of local fauna is stressed. Two lectures and two laboratories per week. Saturday field trips required. Prerequisite: 302a or consent of instructor.
- 486-4 Herpetology.** A study of amphibians and reptiles, their evolution, relationships, morphology, and behavior. Two lectures and two laboratories per week. Saturday field trips required. Prerequisite: 302a,c or consent of instructor.
- 488-4 Mammalogy.** Taxonomy, natural history, and evolution of mammals. Two lectures and two laboratories per week. Prerequisite: 302a.
- 491-1 to 4 Readings in Biology.**
- 493-2 to 8 Research in Biology.** Research on biological problems. No credit toward a secondary concentration in biology. Prerequisites: senior standing, consent of faculty.
- 504-9 (3,3,3) Instructional Innovation in Secondary School Biology.**
- 506-4 Cellular Regulation.**
- 509-3 Nucleic Acids.**
- 510-3 Proteins.**
- 511-4 Population Genetics.**
- 512-4 Cytogenetics.**
- 513-3 Molecular Genetics.**
- 521-4 Limnology.**
- 522-3 Zoogeography.**
- 523-3 Plant Geography.**
- 525-3 Virology.**
- 530-2 to 8 Biology Field Studies.**
- 545-3 Physiology of Sense Organs.**
- 547-3 Mineral Nutrition of Plants.**
- 553-4 Morphology of the Spermatophytes.**
- 580-4 Advanced Invertebrates.**
- 581-4 Helminthology.**
- 585-4 Advanced Ichthyology.**
- 590-0.4 Graduate Biology Seminar.**
- 591-1 to 4 Readings in Biology.**
- 593-1 to 4 Special Problems in Biology.**
- 595-1 to 2 Topics in Cellular and Molecular Biology.**
- 596-1 to 2 Topics in Organismic Biology.**
- 599-2 to 9 Research and Thesis.**

Business Education

- 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. (a) Prerequisite: may not be taken for credit by students who have had previous high school or other formal instruction in

typewriting. (b) Prerequisite: 201a or one semester of other formal instruction in typewriting and the ability to type at least 30 words per minute. (c) Prerequisite: 201b or two semesters of other formal instruction in typewriting and the ability to type at least 40 words per minute and to prepare simple business correspondence, tables, manuscripts, and forms.

221-12 (4,4,4) Shorthand and Transcription. Study of Gregg shorthand theory and the development of skill and knowledge required for dictation and transcription. (a) Prerequisite: may not be taken for credit by students who have had previous high school or other formal instruction in shorthand. (b) Prerequisite: 221a or one semester of other formal instruction in shorthand-transcription. (c) Prerequisites: 221b or two semesters of other formal instruction in shorthand-transcription and the ability to take new-matter dictation at 60 words per minute for three minutes.

241-2 Duplicating.

304-3 Advanced Typewriting. Development of advanced skills in typing business correspondence, manuscripts, forms, and tables; preparation of copy from rough draft materials. Prerequisites: 201c or three semesters of other formal instruction in typewriting and the ability to type at least 50 words per minute and to prepare business correspondence, tables, and manuscripts.

324a-4 Advanced Shorthand and Transcription I. The development of high-level dictation and transcription skill and knowledge. Prerequisites: 221c or three semesters of other formal instruction in shorthand-transcription and the ability to transcribe on the typewriter new-matter dictation taken at a sustained rate of 80 words per minute.

324b-4 Advanced Shorthand and Transcription II. A continuation of 324a. Prerequisites: 324a or four semesters of other formal instruction in shorthand-transcription and the ability to transcribe on the typewriters new-matter dictation taken at a sustained rate of 90 words per minute.

327-4 Office Theories and Procedures. A study of office efficiency, techniques, filing procedures, financial and legal responsibilities, and other office activities. Opportunities to explore reference sources, to prepare for and participate in interviews, to make self evaluations, and to pursue areas of special interest. Operation of dictating and transcribing equipment. Prerequisite: 201c or equivalent.

341-4 Office Machines. A study of the capabilities and operational characteristics of basic types of office machines; a consideration of appropriate uses of each kind of machine. Laboratory practice required. A unit in data processing gives opportunity for key-punch instruction.

350-4 Consumer Income Management. The development of concepts relative to the management of the personal financial affairs of the American consumer. Budgeting income and expenses, installment purchasing, comparison of prices, insurance, real estate, taxation, and savings and investments.

351-4 Foundations of Business Education. The role of the business teacher in the secondary and post-secondary school. An analysis of business education objectives and curriculum. A survey of trends and external influences as they affect business education. Should be taken in junior year.

360-4 Practicum in Vocational Education. Pre-student teaching clinical experiences in business education which develop an understanding of and techniques for working with economically disadvantaged students and give the prospective business education teacher an awareness of the needs of the disadvantaged youth and the techniques used in meeting these needs of these particular youth.

402-4 Teaching Typewriting and Office Practice. Instructional procedures, skill-building principles and techniques, selection and preparation of instructional materials, standards of achievement, and evaluation of pupil performance. Prerequisite: 9 hours of typing, 304, 341 or equivalent 351.

404-4 Teaching Shorthand and Transcription. Instructional procedures, skill-building principles and techniques, selection and preparation of instructional materials, standards of achievement, and evaluation of pupil performance. Prerequisites: 324a, 351.

405-4 Teaching General Basic Business Subjects. Instructional procedures, analysis and selection of materials, preparation of teaching units, evaluation of pupil performance. Prerequisite: 351.

408-4 Teaching Data Processing and Bookkeeping. Instructional procedures,

analysis and selection of materials, preparation of a teaching unit in data processing, and evaluation of pupil performance. Prerequisite: 351.

414-6 (3,3) Organization and Administration of Cooperative Vocational Business Education Programs. Philosophy and objectives of cooperative vocational programs, methods of selecting students and work stations, placing and supervising students on part-time jobs, preparation of instructional materials, job analyses, conducting related information courses, evaluating workers and work stations, advisory committees, and public relations aspects of cooperative programs.

415-6 Supervised Business Experience and Related Study. Classroom study of the principles and problems of coordinating in-school and cooperative vocational business education programs, with 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.

500-4 Contemporary Problems in Business Education.

502-4 Introduction to Research in Business Education.

503-4 Tests and Measurements in Business Education.

505b-4 Observation and Analysis of Business and Industry.

505c-4 Machine Shorthand.

505d-4 New Media and Curriculum in Business Education.

505g-6 Individually Prescribed Programs for Disadvantaged Youth in Office and Distributive Education.

505h-6 Office Simulation Techniques.

505i-4 Emerging Patterns of Distribution for the '70's.

505j-4 Data Processing for Vocational Administrators.

505k-4 Proseminar on Consumer Education.

507-4 Teaching Data Processing.

508-4 Administration and Supervision in Business Education.

509-4 Improvement of Instruction in General (Basic) Business Subjects.

510-4 Improvements of Instruction in Secretarial Subjects.

530-4 to 6 Research Seminar in Business Education.

550-4 History and Philosophy of Vocational Education.

580-2 Problem Seminar in Business Education.

590-2 to 5 Readings in Business Education.

591-2 to 5 Individual Research in Business Education.

599-1 to 9 Thesis.

Chemistry

105-5 Introduction to Chemistry. Preparation for university chemistry course. Mathematical techniques and problem solving; fundamental chemical terms, concepts, and laws. For students who do not have the basics of high school chemistry. Grades are Pass or Fail. May not be applied to a primary or a secondary concentration in chemistry. Three lecture, one quiz, three laboratory hours per week. Prerequisite: one year high school algebra or Mathematics 101.

110-15 (5,5,5) General and Organic Chemistry. A course in general chemical principles and practice for students other than chemistry majors. (a) Atomic structure and chemical bonding, periodicity, ionic equilibrium. (b) Study of the elements, general principles of carbon chemistry. (c) An introduction to aliphatic and aromatic compounds with emphasis on those of biological and environmental importance. Credit not applicable to a primary or secondary concentration in chemistry. Four lectures and one laboratory per week. Prerequisite: (a) GSD 114a or concurrent enrollment, or equivalent.

125-10 (5,5) Chemical Structure and Dynamics. University-level treatment of modern chemistry. (a) Atomic structure, molecular bonding and structure, and states of matter. Four lecture and three laboratory hours per week. (b) Solutions, equilibrium calculations, kinetics, and oxidation-reduction. Laboratory work includes qualitative analysis. Three lecture and six laboratory hours per week. Prerequisite for a: 105 or one year high school chemistry; for b: 125a.

135-5 General Quantitative Analysis. Introduction to theories and methods of volumetric and gravimetric techniques. Lecture and laboratory. Prerequisite: 125b with grade of C or better.

201-5 Water Quality I. A systematic study of laboratory procedure in water purification analysis as related to plant control. Introduction to theory and laboratory techniques. Prerequisites: 105, 110, 240, Engineering 101.

202-5 Water Quality II. A systematic study of laboratory procedures used in wastewater treatment and disposal plants. Introduction to theory and laboratory. Prerequisites: 105, 110, 240, Engineering 101, 201.

261-3 Chemical Energetics and Kinetics. Introduction to the principles of chemical thermodynamics, kinetics, and spectroscopy. Three lecture hours per week. Prerequisites: 125b, concurrent enrollment in Mathematics 150a.

305-9 (3,3,3) Organic Chemistry, Preprofessional. For secondary concentration in chemistry and preprofessional students. Three lecture hours per week. Prerequisite: 125b.

311-3 Inorganic Chemistry. Introduction to theories of bonding and structure; descriptive chemistry of less familiar elements, coordination compounds, and organometallics. Three lecture hours per week. Prerequisite: 125b.

341-9 (3,3,3) Organic Chemistry. A study of fundamental structure types of organic compounds correlated with their chemical and physical properties. Bonding, reaction dynamics, reaction types, stereochemistry, functional groups, and spectroscopic methods. Must be taken in a,b,c sequence. Prerequisite: 125b.

345-7 (2,2,3) Organic Chemistry Laboratory. (a,b) Introduction to the tools and techniques for determining physical and chemical properties of organic systems. Six laboratory hours per week. (c) Introduction to organic qualitative analysis; determination of unknown structures using chemical and spectroscopic analysis. One lecture and six laboratory hours per week. Must be taken in a,b,c sequence. Prerequisite: (a) 305a or 341a; (b) 305b or 341b; (c) 341c.

361-9 (3,3,3) Physical Chemistry. A study of mathematical models of the causes of chemical behavior, and their foundations in experiment. Thermodynamics, statistical mechanics, kinetics, and quantum mechanics with applications. Must be taken in a,b,c sequence. Prerequisites: 135, 261, 12 hours of physics, one year of calculus.

365-4 (2,2) Physical Chemistry Laboratory. One lecture hour and four laboratory hours per week. Prerequisites: 135, 345a, 361a.

375-0 to 3 Chemistry Seminar. One lecture hour per week. Prerequisite: senior standing.

396-2 Introduction to Research. Investigation of relatively simple research problems in chemistry under the direction of a staff member. May be repeated for maximum of 6 hours credit. Prerequisites: 3.0 average in chemistry courses, prior arrangement with a staff member, consent of chairman.

411-4 Physical Inorganic Chemistry. Modern inorganic chemistry including symmetry, atomic structure, chemical bonds, and stereochemistry of complex ions and metal chelates. Four lecture hours per week. Prerequisite: concurrent enrollment in 461b.

412-3 Inorganic Preparations. A study of several important types of inorganic syntheses. One lecture and six laboratory hours per week. Prerequisites: 135, 345b.

419-2 to 6 Special Topics in Inorganic Chemistry. The topic to be covered is announced by the faculty. Prerequisite: consent of instructor.

432-8 (4,4) Instrumental Analytical Measurements. Theory and practice of instrumental analytical measurements, including spectrophotometric, electro-analytical, and chromatographic methods. Two lecture and six laboratory hours per week. Prerequisite: 461b or concurrent enrollment.

439-2 to 6 Special Topics in Analytical Chemistry. The topic to be covered is announced by the faculty. Prerequisite: consent of instructor.

441-3 Physical Organic Chemistry. Chemical equilibria, kinetics, and structure-reactivity relationships are studied in detail for their value as methods for determining the mechanisms of organic reactions. Lecture. Prerequisites: 261, 341c.

444-3 Organic Reactions. An intermediate course with emphasis on mono-functional compounds. Additional topics, not included in elementary courses. Three lecture hours per week. Prerequisite: 341c.

449-2 to 6 Special Topics in Organic Chemistry. The topic to be covered is announced by the faculty. Prerequisite: consent of instructor.

451-6 (3,3) Biochemistry. A study of life processes at the molecular level with emphasis on the relationships between the structure and function of biological molecules. Three lecture hours per week. Prerequisite: 305b or 341c.

455-2 (1,1) Experimental Methods in Biochemistry. (a) Some modern separation techniques. (b) Biochemical preparations, syntheses, and methods of identification. Three laboratory hours per week. Prerequisites: 345b, concurrent enrollment in 451a.

459-2 to 6 Special Topics in Biochemistry. The topic to be covered is announced by the faculty. Prerequisite: consent of instructor.

460-5 Physical Chemistry, Preprofessional. For secondary concentrations in chemistry and preprofessional students. Suggested for B.S. in Education degree. Traditional and biological aspects of physical chemistry without the requirement of calculus. Four lecture, three laboratory hours per week. Prerequisites: 135, 305b or 341c, 345b, and one year of physics.

464-3 Intermediate Physical Chemistry. Intermediate between the first year of undergraduate physical chemistry and advanced physical chemistry. Three lecture hours per week. Prerequisite: 461c.

469-2 to 6 Special Topics in Physical Chemistry. The topic to be covered is announced by the faculty. Prerequisite: consent of instructor.

486-15 Argonne Quarter. Intensive course work and original research under the direction of Argonne National Laboratory staff to be taken in residence at the Laboratory. Prerequisites: senior standing, 4.0 average, consent of department chairman, prior approval of application by Argonne National Laboratory.

490-2 Chemical Literature. A study description of the various sources of chemical information and the techniques for carrying out literature searches. Two lecture hours per week. Prerequisites: 135, 305b or 341c, reading knowledge of German or consent of instructor.

496-2 to 6 Chemical Problems. Investigation of chemical problems under the direction of a staff member. Prerequisites: senior standing, concentration in chemistry with 4.0 average, consent of department chairman.

511-3 Advanced Inorganic Chemistry.

519-2 to 30 (2 to 6 per quarter) Advanced Topics in Inorganic Chemistry.

531-3 Theory of Quantitative Analysis.

539-2 to 30 (2 to 6 per quarter) Advanced Topics in Analytical Chemistry.

541-3 Advanced Organic Chemistry.

549-2 to 30 (2 to 6 per quarter) Advanced Topics in Organic Chemistry.

551-3 Advanced Biochemistry.

559-2 to 30 (2 to 6 per quarter) Advanced Topics in Biochemistry.

561-3 Chemical Thermodynamics.

562-3 Atomic and Molecular Structure.

569-2 to 30 (2 to 6 per quarter) Advanced Topics in Physical Chemistry.

575-0 to 3 Graduate Seminar.

596-1 to 2 Advanced Chemical Problems.

597-3 to 15 Research and Thesis.

Colloquium

300-1 to 4 Student Colloquium. Student-initiated, student-developed, student-run experimental colloquia. Credit offerings for innovative and experimental student-run courses not otherwise available in the university curriculum. Prerequisite: sophomore standing.

Comparative Literature

410-20 (4,4,4,4,4) Comparative Literature: Genres. (a) lyric and epic poetry. (b) drama. (c) prose. (d) tragedy. (e) novel.

499-4 Traditional Themes of World Literature. Prerequisites: any course in comparative literature and a course in English, foreign, or comparative literature.

Counselor Education

305-4 Educational Psychology. Study of the learner and the learning process.

Includes study of behavior, discipline, development, the school environment, application of learning theories, and methods of assessment. Prerequisite: GSB 201c.

350-4 Survey of Human Development. Surveying knowledge and understanding of human development throughout the life cycle. The various phases of life in the areas of physical, affectional, socialization, peer-group relations, and self-development.

410-4 (2,2) Dynamics of Campus Leadership. An organized presentation of accurate information about the University's historical development and plans for future growth, organizational structure, philosophy, administrative policies, and goals with emphasis on the role of student groups in the educational community. (a) Elected or potential student leaders. (b) Resident assistants. Prerequisite: consent of instructor.

422-4 Educational Measurements. Study of the philosophy and techniques of measurements. Special attention to statistical foundations of and use of teacher-made tests. Prerequisite: 305.

426-4 Individual Inventory. Procedures for studying individual pupils and their problems for guidance purposes. Emphasis on interview, observation, ratings, case study, cumulative record, etc. Prerequisite: 422.

442-4 Introduction to Guidance. Introductory course on student personnel services. Survey of philosophy, principles, and organization of guidance services. Not to be taken for graduate credit. Prerequisite: 305.

443-4 Introduction to Counseling the Disadvantaged Student. A study of the affective and cognitive factors in personal development and positive mental health with particular emphasis upon special problems encountered in aiding in the fullest development of disadvantaged students.

483-4 to 8 Community Programs for the Prevention of Juvenile Delinquency. Analysis of delinquency prevention in community programs administered by the public schools, social welfare, governmental agencies. A study of the various categories of juvenile delinquency is applied to a critique of existing programs and to the development of experimental programs. The roles of professional workers pertinent to such programs is delineated with special reference to the public school administration, counselor, the social workers, the court, probation officers, and police. Prerequisite: consent of instructor.

485-4 to 9 Workshop in Educational Utilization of Community Resources.

501-2 to 8 Special Research Problems.

502-4 Research in Counseling Education.

510-4 College Student Personnel Services.

511-4 Educational Implications of Learning Theories.

515-4 Psychological Aspects of Education.

519-4 Statistical Methods.

520-8 (4,4) Educational Statistics and Experimental Design.

522-4 Advanced Educational Testing.

525-4 Behavior Problems and Their Prevention.

526-4 Elementary School Counseling.

528-4 Counseling with Children.

530-4 Consultation: Theory and Practice.

535-4 Introduction to Individual Measurement.

536a-4 Appraisal of Intelligence: Child.

536b-4 Appraisal of Intelligence: Child and Adult.

536c-4 Appraisal of Intelligence.

537-4 Counseling Theory and Practice I.

538-4 Counseling Theory and Practice II.

541-4 Occupations and Careers.

542-4 Basic Principles of Guidance.

543-4 Group Counseling.

544-4 Principles of Career Education.

545a-2 to 4 Seminar: Problems in Guidance.

545b-2 to 4 Seminar: Learning and Communication.

545f-2 to 4 Seminar: Pupil Adjustment.

545j-2 to 4 Seminar: Organization and Administration.

562-8 (4,4) Human Development in Education.

575-1 to 12 Practicum in Guidance.

576-4 to 8 Practicum in School Personnel Work.

Economics

200-4 Macroeconomics. An introduction to national economic systems with attention to the meaning and measurement of national income, and the causes of fluctuations therein. National economic objectives and policies, including the distribution of income, the level of employment factors affecting stability and growth, the role of taxation. Prerequisite: sophomore standing.

201-4 Microeconomics. Principles and characteristics of the market economy. Theory of the business firm, supply, demand, and prices. Analysis of earnings of productive resources, including wages, rent, interest, and profit. Introduction to market structure and public policy. Prerequisite: sophomore standing.

300-4 The Monetary System and Economic Policy. Study of relationships between money, credit, prices, and economic activity. How the banking system creates money; the Federal Reserve System. Introduction to public finance and fiscal policy; the role of public finance in full employment policy. Introduction to international financial relationships. Prerequisite: 200.

310-4 Labor Problems. Survey of labor force, wage and employment theory, unemployment including economic insecurity, trade unionism, and collective bargaining from the standpoint of public policy. Prerequisites: 200, 201.

GSB 311-3 Economic Development of the United States.

GSB 312-3 Comparative Economic Systems.

317-4 Economic History of the United States.

330-4 Public Finance I: National. The role of government in the economy, optimum levels of public activities, government budgets, and national income; financing of government expenditures, principles of taxation, examination of fiscal policy. Prerequisite: 300.

340-4 Intermediate Micro Theory. An intensive treatment of price and income theory with emphasis on degrees of price and other competition. Prerequisite: 201.

409-1 to 4 Independent Study in Economics. An investigation of topical areas in greater depth than regularly titled courses permit. Individual or small group readings and projects. Prerequisites: 340 or 441, consent of instructor and department chairman.

410-4 Government and Labor. A study of labor relations and legislation considering both constitutional and economic aspects. Prerequisite: 310.

411-4 Collective Bargaining and Dispute Settlement. An analysis of the collective bargaining process as determined and changed by labor legislation. Collective bargaining contracts, their scope and significance, together with the methods of dispute settlement such as grievance procedures and arbitration. Prerequisite: 410 or consent of instructor.

416-4 Money and Banking II. Evolution of money systems, theories of effect of money supply on national income, debt, asset-holdings, etc.; relationships of money supply to specific industries and key economic variables and considerations. Prerequisite: 300.

418-4 Economic History of Europe. A survey of the economic growth of Europe with emphasis on the development of European agriculture, industry, finance, and international trade since 1750. Prerequisite: 201.

422-4 Introduction to Economic Development. The preconditions, processes, and problems involved in economic development. The theory and policy relevant to development, with emphasis on the "developing" or "emerging" economies. Prerequisites: 200, 201.

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 and balance of payment theory. Prerequisites: 200, 201.

430-4 Regional Economy. Regional economic development, including theoretical and practical problems in designing and implementing development programs.

431-4 Public Finance II. State and Local. Prerequisite: 330.

432-4 Fiscal Policy of the United States. Countercyclical, secular, and emergency use of government expenditures, debt, and taxes.

433-4 An Introduction to Urban Economics. The economic causes of urban growth and the economic-social problems which rapid unregulated growth

creates. The growth of cities including a study of location theory, the effects of agglomeration, the structure of the economic base, and regional income accounting. A solution to the problems of cities including a designation of goals to eliminate the misuse of resources and an examination of possible techniques to attain these goals. Prerequisites: 200, 201.

441-4 Intermediate Macro Theory. Basic analytical concepts of the modern theory of aggregative income. Prerequisite: 200, 201 or consent of instructor.

450-4 History of Economic Thought. Contributions of political and economic philosophers and schools of thought from mercantilism to J. M. Keynes, with emphasis on the development of economic ideas and their influence on contemporary economic theory and national policy. Prerequisites: 200, 201.

465-4 Mathematical Economics I. A systematic survey of mathematical economic theory. Conditions of static equilibrium (including stability conditions), dynamic models using difference equations, and linear production models of input-output analysis and activity analysis (linear programming). Prerequisites: 440, consent of instructor.

467-4 Econometrics I. Introduction to resource allocation under uncertainty. Probabilistic economic models, theory of games and economic choices, and stochastic economic processes. Prerequisite: consent of instructor.

472-4 Dynamic Economics: Fluctuations and Growth. A study of the causal factors which produce fluctuations in economic activity and/or growth. An identification of the factors which affect the length of the cycle, its amplitude, and the stability or instability of equilibrium. An examination of the theories and issues of economic growth. Prerequisite: 441 or consent of instructor.

473-4 Business Enterprise and Public Policy. Some of the major problems of social control of business arising out of the operation of business in modern society; types of control, necessity, and effects of controls. Prerequisite: senior standing.

481-3 Comparative Economic Systems. Capitalism, socialism, fascism, and other forms of the economy. Prerequisites: 200, 201.

501-1 to 5 Economic Readings.

504-4 Economic Analysis.

505-4 Theory of the Firm.

510-4 Seminar on Selected Economic Topics.

512-4 Labor Economics.

516-4 Econometrics II.

517-4 Monetary Theory and Policy.

519-4 Economic Growth.

520-4 Economic Development Theory and Policy.

530-4 International Economics and Finance.

533-4 Public Finance Theory and Practice.

541-4 National Income Theory.

542-4 Price Theory.

543-4 Seminar in Economic Policy.

561-4 Advanced Topics in Economic History.

566-4 Mathematical Economics II.

582-4 Economic Behavior.

591-4 Professional Development in Economics/Marketing.

599-1 to 9 Thesis.

Educational Administration

501-4 Seminar in Educational Administration.

505-1 to 8 Current Problems in Educational Administration.

511-12 (4,4,4) Internship Practicum.

517-4 Research Seminar in Educational Administration.

518-4 Cases and Simulation in Administrative Decision-Making.

519-4 Legal Basis of American Education.

520-4 Illinois School Law.

524-4 Fundamentals of Educational Administration.

525-1 to 4 School Personnel Administration.

532-4 Public Opinion, Propaganda, and Education.

533-4 School Facility Planning.

534-4 School Finance.

- 535—4 School Business Administration.
536—4 Introduction to Systems Analysis in Educational Administration.
537—4 Economics in Educational Administration.
555—4 Educational Supervision.
556—4 Seminar in Educational Supervision.
557—4 Elementary School Organization and Administration.
563—4 School Public Relations.
564—4 Secondary School Organization and Administration.
575a-e, j,k—2 to 4 each Individual Research.
596—5 to 9 Field Study.
599—3 to 9 Thesis.

Elementary Education

- 201—4 (2,2) Understanding the Pre-Primary Child. Introductory study of characteristics of pre-school children. (a) Emphasis on study and observation of individual infants and toddlers in informal settings. (b) Emphasis on group behavior of young children in more formal pre-school settings. Must be taken in a,b sequence.
- 202—4 (2,2) Leadership Roles in Early Childhood Education. Study of teacher roles in relation to others in the early childhood educational setting. (a) Development of individual role concepts among trainees. (b) Role interrelationships: teacher vis-a-vis children, colleagues, and administrators. Must be taken in sequence. Prerequisite: 201.
- 203—4 Understanding the Elementary School Child. Concepts needed to understand the child in the elementary school situation. Three hours lecture and two hours observation. Prerequisite: GSB 201c.
- 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: Counselor Education 305.
- 316—4 Kindergarten-Primary Methods. 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: Counselor Education 305.
- 317—4 Pre-Kindergarten Methods. Instructional strategies appropriate for pre-school children, with emphasis on interrelatedness of sensorimotor, conceptual, and social development. Learning objectives in language, numbers science, and social studies in the context of creative activities such as art, dramatics, storytelling, poetry, and music. Prerequisites: 201, 202.
- 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 12 Kindergarten-Primary Student Teaching. Prerequisites: 316, Counselor Education 305, approval of elementary education adviser.
- 351—4 to 16 Elementary Student Teaching. Prerequisites: 314, Counselor Education 305, consent of elementary education adviser.
- 365—4 Learning Theories and the Elementary School Child. Principles of learning applied to the mastery of materials used in elementary school subjects.
- 410—4 Principles of Pre-Primary Education. Examination of research and other materials dealing with intervention for strategies for preschool children. Principles governing the stimulation of readiness for school experiences and related strategies both for preschool children and of parent involvement.
- 412—4 Early Childhood Curriculum. Curriculum theory, design, and implementation of pre-primary education. Developing original sequences for field testing. Prerequisite: 317.
- 413—4 Children's Literature. Emphasizes types of literature, analysis of literary qualities, and selection and presentation of literature for children. Not for students who have had English 213. Prerequisite: Counselor Education 305.
- 415—4 Teaching Mathematics in the Elementary School. Items to be taught, the grade placement of content, newer instructional practices and materials of instruction, and means of evaluating achievement. Prerequisites: 314, GSD 112.

433-4 Problems in Elementary Education. Meets needs of in-service teachers in such areas as curriculum adjustment, remedial teaching, child development, and early childhood education.

437-4 Corrective Procedures in Reading. Techniques and materials for diagnosing and correcting reading disabilities with emphasis on meeting instructional needs of each individual in the classroom. Involvement in laboratory experiences with disabled readers. Prerequisite: 337.

442-4 Teaching Science in the Elementary School. Study of content and methods of elementary school science. Prerequisite: 314.

443-4 Social Studies in the Elementary School. Organization of materials for teaching purposes, techniques of classroom presentation, bibliographies or materials, use of audio and visual aids to instruction, and techniques for evaluating student progress. Readings, lectures, and discussions related to required teaching experience.

470-3 Workshop in Sex Education for Elementary Teachers. (Same as Health Education 470.) Designed to encourage elementary school teachers to integrate sex education concepts into their teaching program. Current theories and knowledge concerning the psychosocial aspects of the maturation process are related to the content used for teaching pupils at various grade levels. Specialists in psychology, public health, and social welfare offer a multi-discipline approach to help teachers plan a program based upon characteristics and needs of pupils.

480-4 Backgrounds of Urban Education. (Same as Secondary Education 480.) Social, economic, and demographic factors as they impinge upon programs in urban schools. Prerequisite: consent of instructor.

500-4 Education and the Development of Intellectual Functions.

505-4 Improvements of Reading Instruction.

507-2 to 4 Readings in Reading.

509-4 to 8 Practicum in Reading.

513-4 Materials and Methods for the Assessment of the Disabled Reader.

514-4 Organization and Administration of Reading Programs.

515-4 Problems in Elementary School Mathematics.

518-2 to 4 Supervision of Student Teachers.

521-12 (4,4,4) Diagnosis and Correction of Reading Disabilities.

533-2 to 12 Practicum in Urban Education.

541-4 Curriculum Problems in Elementary School Science.

542-4 Language Arts in the Elementary School.

544-4 Investigation in Elementary School Social Studies.

553-2 to 12 Practicum in Urban Education.

559-4 Instructional Leadership in Elementary Education.

561-4 The Elementary School Curriculum.

567-12 (4,4,4) Teaching Competencies and Their Application.

575a-k-2 to 4 each Individual Research.

580-4 Research Seminar in Urban Education.

588-4 Advanced Research in Elementary Education.

590-8 (4,4) Seminar in the Instructional Process.

596-5 to 9 Field Study.

599-3 to 9 Thesis.

Engineering

101-9 (3,3,3) Engineering Graphics. (a) Principles of graphic communications. Sketching for shape description, pictorial projection, multiviews, various types of sectional views, auxiliary views, geometric construction. (b) Shop processes, dimensioning, axonometric drawing, tolerances, fasteners, and the complete detail and assembly drawing of a jig or fixture for an assigned problem. (c) Geometry of lines, planes, points solids, and irregular figures. Development of surfaces, solids, and intersections of planes and solids, transition pieces. Finding intersections and development by primary and secondary auxiliary drawings, use of cutting planes, and rotation of elements and planes.

110-1 Freshman Seminar. Introduction to engineering; description of major areas of engineering activity; discussion of available curricula at this University; procedures of the University and the engineering faculty. Team-taught

by members of Department of Engineering with invited lecturers from industry and other departments. Grades are Pass or Fail.

200-9 (3,3,3) Circuit Analysis. Required core curriculum course for electronic engineering concentrations. Integrated study of lumped element electric circuits in DC, sinusoidal steady state, and transient modes. Emphasis on analysis techniques including those suitable for digital computer implementation. Graphical, linear incremental modeling, convolution, and state space approaches as well as classical and transform methods for linear time-invariant circuits. Singularity functions, network theorems, and two part analysis. Must be taken in a,b,c sequence. Prerequisite: concurrent enrollment in Mathematics 305.

201-2 Circuit Analysis Laboratory. Laboratory experiments exemplify the material covered in 200. Laboratory procedures, techniques of measurement, and report writing are stressed. Prerequisites: 200a, concurrent enrollment in 200c.

205-4 Applied Electricity-Electronics. Fundamental principles and practice of AC/DC circuits, and equipment and control devices. Introduction to electronic instrumentation and control; special selected projects to illustrate application. Not for engineering concentrations or secondary concentrations; primarily a service course for sanitation technology program.

210-2 Engineering Computations. Engineering computation techniques including introduction to mechanical aids such as slide rule, desk calculators, mini-computers, time-sharing and computer center services. Complex number manipulations, logarithms, functional notation, graphs, roots of equations, simultaneous equations, and computer routines associated with all the presented topics.

220-3 Electrical Circuits. DC and AC electrical circuits, including network models, Kirchhoff's laws, mesh current equations, superposition theorem, phasors, rms values, AC power, and the Fourier Series. Not for electronic engineering concentrations. Prerequisites: Mathematics 150b, concurrent enrollment in 221.

221-1 Electrical Circuits Laboratory. Laboratory study of DC and AC circuits, illustrating principles discussed in 220. Prerequisite: concurrent enrollment in 220.

230-3 Engineering Geology. Geological principles governing the solution of civil engineering problems which are connected with the use and occurrence of rocks, minerals, soils, and water in the design and construction of engineering works.

260-8 (4,4) Engineering Mechanics. (a) Static equilibrium conditions for external and internal force and moment systems. First and second moments of lines, areas, and volumes. Vector algebra used throughout. (b) Kinematics and kinetics of particles and rigid bodies. Newton's laws, momentum, and energy methods. Vector algebra and calculus used throughout. Prerequisites for a: Physics 211a, Mathematics 250 or concurrent enrollment; for b: 260a.

270-4 Mechanics of Solids. Uniaxial states of stress and basic static loading in tension, compression, bending, torsion, and shear. Force and deformation behavior of solids in the elastic and inelastic range. Superposition of stress and strain. Biaxial and triaxial states of stress. Stress and strain transformations, Mohr's Circle, principal stresses and strains. Laboratory demonstrations and experiments where necessary. Prerequisites: 260a, Mathematics 350a.

300-3 Thermodynamics. Elements of classical thermodynamics. Laws of thermodynamics and applications to open and closed systems. Introduction to statistical thermodynamics and its relationship to macroscopic properties of matter and transformation of energy. Prerequisites: Mathematics 305, Physics 211b.

301-3 (1,1,1) Junior Electronic Engineering Laboratory. Laboratory experiments which exemplify the material covered in junior electronics engineering courses. Characteristics of active devices and their uses, laboratory procedures, and measurement techniques. Prerequisites: 200c, 201.

314-6 (3,3) Soils Engineering. Sampling, identification, classification, and testing of soils. (a) Theories and measurement of essential properties, such as moisture, strength, permeability, and seepage. (b) Soil-bearing capacity and earth pressures as related to pile and pier foundations, stability of slopes, re-

taining walls, and abutments. Must be taken in a,b sequence. Prerequisite: 270.

315-3 Substructure Analysis. Site investigations; principles of settlements; principles of design of pile foundations; study of cofferdams, caissons, piers, abutments, and underpinning. Prerequisites: 311, 312, concurrent enrollment in 314.

320-3 Electronic Circuits. Active networks including physics of tubes and transistors, biasing of active devices, simple amplifier circuits, R-C coupled amplifiers, basic oscillators, feedback circuits. Not for electronic engineering concentrations. Prerequisite: 220.

321-1 Electronic Circuits Laboratory. Laboratory study of active networks illustrating principles discussed in 320. Prerequisites: 220, concurrent enrollment in 320.

325-4 Physical Electronics. Solid-state physics as applied to band theory of semiconductor devices; electron emission; diffusion and mobility of electrons and holes; selected topics in charged particle dynamics and statistical mechanics; analysis of some new semiconductor devices. Prerequisites: 200, Mathematics 305, Physics 300.

326-4 Linear Electronic Circuits. Linear electronic circuits using transistors, FET's, and vacuum tubes. Load lines and biasing of active devices. Feedback and its effects on circuits. Small signal amplifiers. Integrated circuits. Frequency response. Prerequisite: 325.

327-4 Pulse and Digital Circuits. Pulse and digital electronic circuits. Pulse transformers. Switching characteristics of active devices. Transistor switches. Comparators, clippers, and clippers. Logic circuits. Registers. Multivibrators. Prerequisites: 326, GSC 252.

330-8 (4,4) Engineering Electromagnetics. (a) Static electric and magnetic fields theory including field distributions and experimental field mapping methods. The formulation of Maxwell's equations in time-varying form and the retarded potentials. (b) Maxwell's equations for time-varying fields, derivation and solution of the wave equation field theory approach to transmission lines. Steady state solutions for the loss-less transmission line, the Smith Chart, lossy transmission lines. Pulse propagation on transmission lines transient response of lossy lines. Must be taken in a,b sequence. Prerequisites: Mathematics 350b, Physics 211c.

340-8 (4,4) Structural Analysis and Design I, II. (a) Analysis of statically determinate structures; reactions, shears, bending moments, and direct stresses due to fixed and moving loads; influence lines and loading criteria for beams and framed structures. (b) Computation of beam deflections; statically indeterminate analysis by moment areas, consistent deflection, and moment distribution. Must be taken in a,b sequence. Prerequisites: 260, 311, Mathematics 305.

351-3 Linear Systems Analysis. Introduction to the analytical tools available for study of the input-output relations of linear systems. Classification of systems, time and frequency domain techniques for both continuous and discrete systems, and signal flow graphs. Prerequisites: 200, Mathematics 305 or concurrent enrollment.

352-3 Stochastic Processes. Introduction to probability, stochastic processes, and methods of representing stochastic signals. Processing of stochastic signals, noise, and introduction to detection theory. Prerequisite: 351.

353-3 State Space Techniques. Introduction to general methods for study of input-output relations of engineering systems, particularly nonlinear systems. State space representation, transition matrices, and Liapunov stability theory for both continuous discrete systems. Machine computation and stimulation. Prerequisite: 352.

363-9 (3,3,3) Surveying. (a) Use and care of surveying instruments. Fundamental principles of surveying, computation, land surveying. (b) Field astronomy, route surveying, introduction to photogrammetry, hydrographic surveying, and subsurface surveys. (c) Techniques in the use of air photos as source material for research in the physical and social sciences. Laboratory. Prerequisite for a and b: GSD 114c; for c: 363b, consent of instructor.

370-4 Engineering Materials. Quantitative and qualitative behavior of materials as related to the structure of solids. Specification and determination

of material constants for mechanical, electrical, magnetic, chemical, and thermal properties of materials. Laboratory demonstrations and experiments where necessary. Prerequisites: 260a, Mathematics 350a.

375-0 to 6 Seminar. Prerequisite: junior or senior standing.

380-12 (4,4,4) Environmental Engineering I, II, III. (a) The scientific foundation of environmental engineering: air, water, and soil pollution problems and general approach to control and treatments. (b) Planning and design of water supplies, distribution systems, sewers, and waste water treatment facilities. (c) Control of industrial wastes and by-products to reduce air, water, and soil pollution. Must be taken in a,b,c sequence. Prerequisite: junior or senior standing.

395-2 to 8 Readings in Engineering. Supervised reading in selected subjects. Prerequisites: junior or senior standing, concentration in engineering, consent of chairman.

401-2 (1,1) Senior Electronic Engineering Laboratory. Laboratory experiments which exemplify the material covered in junior and senior engineering courses. Introduction to advanced measurements techniques. Must be taken in a,b sequence. Prerequisite: 301c.

419-3 Mechanics of Fluids. Fundamental properties of fluids; fluid statics and dynamics; continuity, momentum and energy equations; selected problems in laminar, compressible and turbulent flow, closed conduit and open channel flow. Prerequisites: 270, 300, 370.

420-4 Mass and Energy Transport. Principles and mechanisms of energy, mass, and momentum transport. Molecular motion, laminar flow of a continuum, and transport in solids. Turbulent flow, inter-phase transport, radiative transfer, and macroscopic balances of mass, energy, and momentum. Scheduled laboratory projects. Prerequisite: 419.

421-1 Fluid Dynamics Laboratory. Laboratory experiments and projects to study the flow of fluids in free flow, conduits, and porous media. Dynamic similitude and basic concepts of laminar flow, boundary layers, turbulence, and energy dissipation. Prerequisite: concurrent enrollment in 419.

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. Prerequisite: Mathematics 225.

440-8 (4,4) Structural Analysis and Design III, IV. (a) Design of members in tension and in compression, built-up flexural members; study of structural connections. Laboratory. (b) Design project under supervision. Laboratory. Must be taken in a,b sequence. Prerequisite: 340.

442-4 Concrete Structures. The mechanics of reinforced and prestressed concrete structural elements with emphasis on ultimate strength and time-dependent behavior. Systematic procedures for member checking and member design, with emphasis on design criteria. Detailing, formwork design, and construction procedures for in situ and precast reinforced and prestressed concrete. Prerequisite: 440.

443-4 Engineering Design. Principles of engineering design. Individual laboratory projects of a research, design, or development nature to study the principles of engineering systems or components. Prerequisite: senior standing or consent of chairman.

450-3 to 6 Topics in Engineering. A selected topic of special interest. The title includes the name of the topic (e.g. "Topics in Engineering: Urban Systems"). Prerequisite: consent of instructor.

460-8 (4,4) Engineering Analysis for Decision Making. (a) Introduction to fundamental concepts and theorems of engineering analysis with emphasis on the theory of linear, dynamic, and integer programming. Network analysis, inventory theory, simplex and revised simplex method, and dual theorem. (b) Introduction to advanced linear programming, nonlinear, probabilistic, and stochastic programming.

465-4 Automatic Control Theory. Principles of feedback control of linear systems, using Nyquist, Bode, and root-locus methods: stability criteria; engineering examples, demonstrations, laboratory exercises. Prerequisites: 200c, 260b, Mathematics 305a.

475-3 Transportation Engineering. Fundamentals of transportation system

planning, analysis, design, and development. Selected topics in highway, air, rail, and sea transport including system simulations, network flow, optimization techniques, traffic flow theory, and economic analysis of transportation systems. Prerequisite: Mathematics 305.

476-3 Highway Planning and Design. The development and application of concepts of modern highway planning and design for rural and urban transportation systems. Prerequisite: 475.

477-3 Construction Engineering. Application of engineering principles to modern methods of construction; office and field procedures; construction planning including elements of critical path scheduling. Linear programming, and computer methods for civil engineering, design, and simulation. Prerequisite: Mathematics 305.

480-8 (4,4) Urban Systems Engineering. (a) Methods of systems analysis and mathematical modeling of complex civil engineering projects in urban areas, such as transportation networks, refuse disposal, or water supplies. (b) Techniques of computer simulation of problems, or projects, of urban areas with study of the analysis and the design of typical modern urban systems. Must be taken in a,b sequence. Prerequisites: Mathematics 305, consent of instructor.

485-4 Communication Theory I. Elements of communication systems, spectral representation of signals and noise, filters and filtering, signal-to-noise ratios, analog (linear and exponential) modulation, sampling theory, pulse modulation and multiplexing. Prerequisites: 327, 353.

486-4 Communication Theory II. Continuation of 485. Introduction to information theory, error correcting coding, signal processing for maximum signal-to-noise ratio, detection theory, estimation theory, topics of current interest from the literature. Prerequisite: 485.

490-4 Microwave Principles. An introduction to microwave principles beginning with Maxwell's equations. Plane wave propagation and reflections of waves at boundaries. The mathematical theory of waveguides both rectangular and circular. Resonant cavities, periodic structures, filters, and ferrite components. Prerequisites: 330b, 353.

491-4 Microwave Electronic Devices. The study of microwave electronic devices and some of their applications. Microwave tubes including the traveling wave tube, the klystron, the magnetron, and the backward wave oscillator. Microwave solid state diodes including the tunnel diode amplifier and the parametric amplifier. PIN diodes. Microwave transistors. The cavity maser amplifier and the traveling wave maser amplifier. Prerequisite: 490 or consent of instructor.

523-3 Digital Simulation Techniques.

524-6 (3,3) Linear and Non-Linear Programming.

525-3 Analog and Digital Methods.

526-3 Simulation and Data Processing.

531-8 (4,4) Operations Analysis and Synthesis.

533-3 Program Evaluation and Review Techniques.

550-3 to 6 Topics in Engineering.

560-8 (4,4) Automatic Control Theory.

590-2 to 4 Readings in Engineering Mathematics.

English

300-4 Principles of English Grammar. Required for English students. Others should take 391. Credit not allowed for both courses.

302-12 (4,4,4) Survey of English Literature. (a) Beginnings to 1660, excluding Milton, (b) 1660-1830, including Milton, (c) 1830 to present. May be taken in any sequence, but chronological sequence is recommended. Prerequisite: completion of GSC 200-level requirements.

309-8 (4,4) Survey of American Literature. (a) to 1860, (b) since 1860. May be taken in either sequence.

GSC 313-3 Folklore.

GSC or GSC 314-3 The American Character.

GSC 315-3 Studies in Biography.

GSC 325-3 Afro-American Literature.

GSC 333-3 The Bible as Literature.

GSC 335-3 Studies in Short Fiction.

GSC 336-3 Studies in the Novel.

GSC 337-3 The English Language Heritage.

GSC 339-3 Classical Mythology and Its Influence.

GSC 365-3 Introduction to Shakespeare.

391-4 English Grammars and Usages. Different grammars of English as models of actuality. Practical applications. Prerequisite to student teaching, except in English concentrations, which require 300. Prerequisite: junior standing.

392a-4 Creative Writing: Fiction I. Emphasis on the writing of fiction that strives for literary excellence. Classroom conducted as a workshop, devoted to discussion and evaluation of student manuscripts. Readings in fiction; problems of fiction examined in the work of established writers. Prerequisite: consent of instructor.

392b-4 Creative Writing: Poetry I. Major emphasis on the writing of poetry, but with study of the fundamentals of poetry, including prosody, figurative language, symbolism, and theories of poetry. Readings in poetry. In-class critiques of student writing by students and instructor to develop objective analysis as means of improvement. Prerequisite: consent of instructor.

400-4 Introduction to English Linguistics. An introduction to the methods of descriptive linguistics as applied to English: the phonemics, morphemics, and syntax of English. Recommended for those preparing to teach English.

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.

404-12 (4,4,4) Middle English Literature. (a) Middle English literature excluding Chaucer; (b) Chaucer: *Canterbury Tales*. (c) Chaucer; early poems and *Troilus and Criseyde*. May be taken separately. Prerequisites: completion of second-level GSC requirements, junior standing.

405-8 (4,4) Methods and Theories of Language Analysis. (a) Procedures for identifying, describing, and constructing models of the smallest units in a linguistic system. Discussions of the relations between phonic, phonemic, and feature analysis concepts as currently formulated. Construction of an actual model of a grammar as limited by evidence in tape recordings of American English. (b) Procedures for identifying language units as large as or larger than a word. The usefulness of slot and filler, distributional, immediate constituent, and transformational-generative models is tested in their applicability to the structure of spoken and written English statements. May be taken independently. Prerequisites: completion of second-level GSC requirements, junior standing.

410-4 Fundamentals of Literary Scholarship. Through lectures and practical exercises, an introduction to the use of research tools, form and style in critical writing, and literary history. Prerequisite: junior standing.

412-16 (4,4,4,4) English Nondramatic Literature. (a) 16th century, (b) 17th century, (c) 18th century, (d) 1744-1798. May be taken separately.

413-4 Spenser and Analysis. Reading of *The Faerie Queene*, *Amoretti*, and other major poems. Prerequisites: completion of second-level GSC requirements, junior standing.

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 separately. Prerequisite: 309a or 309b.

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 of England, 1830-1900; (d) modern British poets. May be taken separately.

431-12 (4,4,4) Major American Writers. Significant writers of fiction and non-fictional prose from the Puritans to the 20th century. (a) 1620-1800, (b) 1800-1865, (c) 1865-1915. May be taken separately.

438-4 Intellectual Backgrounds of American Literature. The relationship of basic ideas in America to American literature. Prerequisite: 309a or 309b.

441-4 The 18th Century Essay. The informal essay and the literary periodi-

cals—**The Spectator, Tatler, Guardian, Rambler, Idler, and Goldsmith's Citizen of the World** ("Chinese Letters").

442—4 Romantic Prose. Fiction of Austen, Scott, Mary Shelley, Peacock, the Gothic novelist; prose of Lamb, Landor, Hazlitt, DeQuincey; criticism, journals, and letters.

443—4 Victorian Prose. The chief writers of nonfictional prose from the late romantics to 1900. Prerequisite: 302c.

447—4 American Humor and Satire. A consideration of the writers and forms of 19th and 20th century humor.

454—12 (4,4,4) English Fiction. (a) 18th century: Defoe through Jane Austen. (b) Victorian novel: 1830-1900. (c) 20th century. May be taken separately.

456—4 Modern Continental Fiction. Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse.

458—8 (4,4) American Fiction. (a) The novel in America from its beginnings to the early 20th century. (b) Trends and techniques in the American novel and short story since 1914. May be taken separately.

460—16 (4,4,4,4) English Drama. (a) Elizabethan drama: from the beginning of the drama in late Middle Ages through its flowering in such Elizabethan playwrights as Greene, Peele, Kyd, Marlowe, Heywood, Dekker, but excluding Shakespeare; (b) Jacobean drama: the Jacobean and Caroline playwrights: Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley; (c) Restoration and 18th century drama: after 1660, representative types of plays from Dryden to Sheridan; (d) modern British drama. May be taken separately.

464—4 Modern Continental Drama. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal.

468—4 American Drama. The rise of the theater in America, with readings of plays, chiefly modern. Prerequisite: 309a or 309b.

471—8 (4,4) Shakespeare. (a) Comedies and histories, (b) tragedies and non-dramatic works. May be taken separately. Prerequisite: completion of second-level GSC requirements.

473—4 Milton. Reading of *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, minor poems, major treatises.

485—4 Problems in the Teaching of 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. Intensive study in lectures, laboratory, conferences, to arrive at agreement on the teaching of English in high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field.

487—2 to 8 Workshop in Junior High School English. Intensive workshop study in lectures, laboratory, conferences on the teaching of English in junior high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field.

488—10 (4,3,3) Methods of Teaching English as a Foreign Language. (a) Classroom techniques, (b) laboratory methods, (c) preparation of materials. Restricted to English as a foreign language and must be taken in a,b,c sequence. Prerequisites: completion of second-level GSC requirements, junior standing.

490—8 (4,4) Advanced Composition. Expository writing. Prerequisites: completion of second-level GSC requirements, junior standing.

492a—4 Creative Writing II: Fiction. Emphasis on the writing of fiction that strives for literary excellence. Classroom conducted as a workshop, devoted to discussion and evaluation of student manuscripts. Readings in fiction; problems of fiction examined in the work of established writers. May be repeated for total of 8 hours credit. Prerequisite: 392a and/or consent of instructor.

492b—4 Creative Writing II: Poetry. Major emphasis on the writing of poetry. In-class critiques of student writing by instructor and fellow students to develop objective analysis as means of improvement. May be repeated for total of 8 hours credit. Prerequisite: 392b and/or consent of instructor.

495—8 (4,4) Literary Criticism. (a) History of criticism: ideas and techniques from Aristotle to the end of the 19th century, (b) modern criticism: recent critics and critical attitudes, and practice in writing criticism.

498—4 Directed Writing. Not given for graduate credit. May be repeated for total of 8 hours credit. Prerequisite: consent of department.

- 499-2 to 6 Readings in English. For English students only. Departmental approval required. No more than 4 hours may be taken in any one quarter.
- 500-4 Materials and Methods of Research in English.
- 501-4 Old English Grammar.
- 502-4 Beowulf.
- 504-4 Advanced English Syntax.
- 505-4 Contrastive Linguistic Structures.
- 508-4 or 8 Studies in Chaucer.
- 509-4 or 8 Studies in Middle English Literature.
- 511-4 or 8 Studies in the Renaissance.
- 513-4 or 8 Studies in 17th Century Literature.
- 514-4 or 8 Studies in Restoration and 18th Century Literature.
- 518-4 to 8 Studies in English Literature, 1885-1914.
- 519-4 or 8 Studies in Contemporary British Literature.
- 520-4 or 8 Studies in Romantic Writers.
- 521-4 or 8 Studies in Victorian Poetry.
- 524-4 or 8 Studies in the Metaphysical Poets.
- 531-4 or 8 Studies in American Colonial Period.
- 532-4 to 8 Studies in American Transcendentalism.
- 534-4 or 8 Studies in Early 19th Century American Writers.
- 536-4 or 8 Studies in Later 19th Century American Writers.
- 537-4 or 8 Studies in 20th Century American Writers.
- 538-4 or 8 Problems in American Literature.
- 540-4 Studies in Linguistics (Historical and Dialectal).
- 543-4 or 8 Studies in Victorian Nonfiction Prose.
- 555-4 or 8 Studies in the Victorian Novel.
- 560-4 or 8 Studies in Renaissance Drama.
- 566-4 or 8 Studies in Shakespeare.
- 569-4 Seminar in Special Problems of English as a Foreign Language.
- 579-16 (4 or 8, 4 or 8) Studies in Modern Literature.
- 580-4 Traditional Themes.
- 581-12 (4,4,4) Problems in High School English.
- 585-4 Teaching College Composition.
- 587-4 Literature for Young People.
- 597-2 to 4 Readings in Linguistics.
- 598-4 Independent Review of English and American Literature.
- 599-2 to 9 Thesis.

Experiment in Higher Education

101a,b,c,d-1 to 18 per quarter, 201a,b,c,d-1 to 18 per quarter University Studies. General education course series for the E.H.E. designed to provide General Studies equivalence credits on the first and second levels. Prerequisite for 201: 101a,b,c,d.

Finance

- 320-4 **Corporation Finance.** A study of the principal duties of corporate financial officers and the problems of administrative financial management of business. Topics include planning, budgeting and control, external sources of capital. Prerequisites: Accounting 332, 333; Economics 200, 201.
- 420-4 **Problems in Corporation Finance.** Application of principles of finance to specific cases. Development of analytical ability and fuller comprehension of the nature of financial problems as encountered in business and industry by combining specific cases and collateral readings. Prerequisite: 320.
- 423-4 **Commercial Banking Operations.** The administration and operation of a commercial bank, including organization structure and asset management. Major problems are analyzed through the study of cases. Prerequisite: 420.
- 424-4 **Financial Institutions.** A study of the evolution, functions, and practices of the many types of financial intermediaries especially which have come into prominence since World War II. Particular attention is given to commerce and government. Prerequisite: 420.
- 425-4 **Investments.** A survey of the investment field in theory and practice. Study of the state and federal agencies concerned with regulation of the

issuance and exchange of securities in the interest of the investing public. The analysis of the particular types of investment securities and the bases for investment decisions and the management of investment portfolios. Prerequisite: 420.

520-4 Finance.

523-4 Financial Management.

528-4 Seminar in Finance.

Foreign Languages

The student who has completed one year of foreign language in high school usually begins with the first quarter of the first year course which is in General Studies. The student who has completed two years of high school foreign language usually begins with the intermediate course.

Students taking work in any first year college foreign language series should note that the first two terms are not counted as electives toward graduation unless the third term is also completed.

General Foreign Language

390-2 to 6 Readings. Readings in selected works of representative writers in the student's special field of interest. Offered in French, Spanish, German, Russian and Italian. May be taken for one, two, or three quarters. Primarily for students with no foreign language concentration, but may be taken for credit in foreign language concentration with consent. Prerequisites: 250, consent of department chairman.

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 concentration in these fields. Prerequisite: senior standing in Romance language.

486-8 (4,4) Materials and Methods for Teaching Foreign Languages. Application of language learning principles to classroom procedures at different levels. Theory and practice of the audio-lingual approach, the language lab, applied linguistics. Required for all majors intending to teach foreign languages. Prerequisite: one quarter of any 300-level course, or consent.

French

123-3 (1,1,1) French Conversation. Conversation and oral drill taken with GSD 123 by students who wish additional oral training; elected only by students enrolled in GSD 123. May be taken separately.

130-3 Elementary Intensive French I. Intensive training in speaking and aural understanding. Open to Deans College students with no previous training in French, or by consent of department chairman. Prerequisite: concurrent enrollment in 131.

131-6 Elementary Intensive French II. Intensive training in reading and writing. Open to Deans College students with no previous training in French, or by consent of department chairman. Prerequisite: concurrent enrollment in 130.

132-3 Elementary Intensive French III. Completion of the intensive training in speaking and oral-aural understanding which is based on the fundamental grammar of the language. Prerequisites: 130 and 131 or consent of department chairman, 232, concurrent enrollment in 230.

220-4 (2,2) Intermediate French Conversation. (a) Practice in conversation. (b) Additional practice in conversation. May be taken separately. Prerequisite: GSD 123 or equivalent.

230-6 Intermediate Intensive French I. Continuation of 130. Intensive training in understanding the spoken language and in the oral expression of ideas. Special attention to the role of French culture in world civilization. Prerequisites: 130, 131, concurrent enrollment in 132.

231-3 Intermediate Intensive French II. Continuation of 131. Development of reading comprehension and writing skills. Rapid reading of a variety of more difficult material. Writing of reports on various phases of French literature and culture. Prerequisites: 132, 230, concurrent enrollment in 232.

232-6 Intermediate Intensive French III. Continuation of 230 and 231. Ex-

tended practice in listening, speaking, reading, and writing. Special emphasis on contemporary aspects of French culture. Prerequisites: 132, 230.

250-8 (4,4) Intermediate Comprehensive French. Development of comprehension of the spoken language and oral expression, reading of modern prose selections, simple composition. Must be taken in a,b sequence. Prerequisite: GSD 123 or two years high school French, or consent of department chairman.

280-4 History of French Literature and Language. A comprehensive view of literature and language with special emphasis on the development of dominant literary themes, schools and interpretation. This course or its equivalent is the prerequisite for all French courses numbered above 300. Prerequisite: 250 or equivalent.

301-12 (4,4,4) French Literature from the 18th Century to the Contemporary Period. (a) Montesquieu, Voltaire, Diderot, Rousseau, and others, with reference to the social, political, and philosophic environment of the 18th century. (b) 19th century romanticism, realism, and naturalism. (c) Representative works of the 20th century with special emphasis on the novel and drama. May be taken separately. Prerequisite: 280 or consent of department chairman.

311-9 (3,3,3) French Culture and Civilization. Analysis of significant aspects of French culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, written reports, and laboratory practice. May be taken separately. Prerequisite: 280 or consent of department chairman.

338-12 (4,4,4) French Literature from the Middle Ages Through the 17th Century. (a) French literature from *La Chanson De Roland* to Francois Villon with special reference to the social, political, and cultural development of the Middle Ages. (b) Representative works of the Renaissance: Rabelais, Montaigne, Marot, Ronsard, and others. (c) Corneille, Racine, Moliere, Pascal and other writers of the 17th century with reference to the political and social environment of the period. May be taken separately. Prerequisite: 280 or consent of department chairman.

351-6 (3,3) Advanced French Conversation and Composition. (a) Oral work of a practical nature for advanced students. Prerequisite: 280 or consent of department chairman. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence.

451-6 (2,2,2) Seminar. Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization.

461-4 French Stylistics. Study of writing style in French and its application to the development of skill in written expression. For those who wish to do advanced work in the principles of French grammar and composition. Prerequisite: 9 hours of 300-level courses or consent of department chairman.

499-2 to 9 Readings in French. Readings in selected areas of French language, literature, culture, and civilization. Individual work or small groups under direct supervision of one or more members of the foreign language faculty. Prerequisites: 280, consent of department chairman.

500-2 Seminar in Contemporary French Literature.

501-2 to 6 Seminar on a Selected French Author.

507-3 A Study of Romanticism.

510-4 19th Century Realism.

520-4 Graduate Composition and Diction.

544-4 French Language and Culture.

545-3 Applied Linguistics and Remedial Phonetics.

German

126-3 (1,1,1) German Conversation. Conversation and oral drill taken with GSD 126 by students who wish additional oral training: elected only by students enrolled in GSD 126. May be taken separately.

220-4 (2,2) Intermediate German Conversation. (a) Practice in conversation. (b) Additional practice in conversation. May be taken separately. Prerequisite: GSD 126 or equivalent.

250-8 (4,4) Intermediate Comprehensive German. Development of comprehension of the spoken language and oral expression, reading of modern prose selections, simple composition. Must be taken in a,b sequence. Prerequisite:

GSD 126 or two years high school German, or consent of department chairman.
251-4 Scientific German. Study of vocabulary and sentence construction as commonly found in German scientific writings. Prerequisite: one year of college German, or equivalent.

280-4 History of German Literature and Language. A comprehensive view of literature and language with special emphasis on the development of dominant literary themes, schools and interpretation. This course or its equivalent is the prerequisite for all German courses numbered above 300. Prerequisite: 250 or equivalent.

311-18 (3,3,3,3,3,3) German Culture and Civilization. Analysis of significant aspects of German culture designed to improve intercultural understanding and to develop language skills. (a) Beginnings to the Reformation. (b) The Reformation to the new Empire (1871). (c) Empire, Weimar Republic, and National Socialism. (d) The post-war years: collapse and renaissance. (e) Cultural life in the new Federal Republic. (f) The other German-speaking areas after 1945. May be taken separately. Prerequisites for a,b,c: 280 or equivalent; for d,e,f: one quarter of any 300-level German course or equivalent.

313-12 (4,4,4) German Literature Before Romanticism. (a) The Old High German and Middle High German periods. (b) From the Ackermann in Bohmen to Johann Christian Gunther. (c) German literature from 1700 to the death of Schiller. May be taken separately. Prerequisite: 280 or consent of department chairman.

316-12 (4,4,4) German Literature from Romanticism to Modern Times. (a) Introduction to the background, personalities and works of the period from 1798 to Heine. (b) The leading 19th century realists from Droste-Hulshoff to Fontane including the novel and drama of the period. (c) German literary masterpieces from naturalism to the present. May be taken separately. Prerequisite: 280 or consent of department chairman.

351-6 (3,3) Advanced German Conversation and Composition. (a) Oral work of a practical nature for advanced students. Prerequisite: 250 or consent of department chairman. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence.

401-4 Faust. Analysis of both parts of Goethe's masterpiece, its background, meaning, and impact on world literature together with a general survey of the life and times of the author. Prerequisite: 280 or consent of department chairman.

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. Prerequisite: senior standing in German language.

413-3 German Linguistics. Introduction to comparative German linguistics tracing relationships among German languages on the basis of phonology, morphology, and syntax. Prerequisite: senior standing in German language.

451-6 (2,2,2) Seminar. Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization.

499-2 to 9 Readings in German. Readings in selected areas of German language, literature, culture, and civilization. Individual work or small groups under direct supervision of one or more members of the foreign language faculty. Prerequisites: 280, consent of department chairman.

500-2 Seminar in Contemporary Literature.

501-2 to 6 Seminar on a Selected German Author.

506-2 Romanticism I.

507-2 Romanticism II.

509-4 (2,2) Old High German.

512-3 19th Century German Novel.

513-3 Twentieth Century German Novel.

514-3 Seminar in Folklore.

Greek

499-24 (4,4,4,4,4,4) Readings in Ancient Greek. (a) Selected readings designed to develop basic lexical and structural competence. (b) Continuation of a. (c) Study of a selected masterpiece of Greek literature. (d) Masterpieces in history. (e) Poetry. (f) Philosophy. A,b,c must be taken in sequence; d,e,f may

be taken separately. Prerequisite for a,b,c: one year of college study of another foreign language, or the equivalent, or consent of instructor; for d,e,f: a,b,c or consent of instructor.

Italian

144-3 (1,1,1) Italian Conversation. Taken with GSD 144 by students who wish additional oral training; elected only by students enrolled in GSD 144. May be taken separately.

220-4 (2,2) Intermediate Italian Conversation. (a) Practice in conversation. (b) Additional practice in conversation. May be taken separately. Prerequisite: GSD 144 or equivalent.

250-8 (4,4) Intermediate Comprehensive Italian. Development of comprehension of the spoken language and oral expression, reading of modern prose selections, simple composition. Must be taken in a,b sequence. Prerequisite: GSD 144 or two years high school Italian, or consent of department chairman.

280-4 History of Italian Literature and Language. A comprehensive view of literature and language with special emphasis on the development of dominant literary themes, schools and interpretation. This course or its equivalent is the prerequisite for all Italian courses numbered above 300. Prerequisite: 250 or equivalent.

311-9 (3,3,3) Italian Culture and Civilization. Analysis of significant aspects of Italian culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, oral and written reports. May be taken separately. Prerequisite: 280.

499-2 to 9 Readings in Italian. Readings in selected areas of Italian language, literature, culture, and civilization. Individual work or small groups under direct supervision of one or more members of the foreign language faculty. Prerequisites: 280, consent of department chairman.

Latin

499-24 (4,4,4,4,4) Readings in Latin. Basic principles of the Latin language taught through reading selections from classical, mediaeval, and Renaissance Latin. For students specializing in Romance languages, English, history, or philosophy. (a) The Human Comedy: Aesopic fables by Odo, Phaedrus, Petronius, epigrams of Martial, humorous tales of shrewish women, and rogues from classical and mediaeval literature. (b) Loyalty and Love: Cicero on patriotism, on friendship; epitaphs; Apuleius; *Love and the Soul*; lyrics from Ovid, Catullus, Petrarch, Boccaccio. (c) Historical Selections: Joseph and his Brethren (the Vulgate); Alexander, King Lear (Geoffrey of Monmouth), Charlemagne (Einhard), Joan of Arc (Aeneas Silvius). Science and Discovery: Pliny's *Natural History*, Roger Bacon, Columbus' report on America, scientific method (quarrel of the seventeenth century). Philosophy: Alcuin on inductive logic; Quintillian on education; Seneca on stoicism; Cicero on immortality. (d) Classical: Comedy by Plautus, selections from Livy's and Tacitus' histories; satire of Horace, Martial, and Juvenal, selections from philosophic works of Cicero, lyric and epic poetry. (e) Mediaeval: Romances, miracle plays, Dante's *De Monarchia*, selections from the Church Fathers, historical annals, religious and secular poetry. (f) Neo-Latin: Selections from the following translators into Latin of Greek authors: Valla's *Iliad*, Herodotus, and Thucydides; Ficino's Plato; Guarino's Plutarch; selections from religious writers: Melancthon, Beze, Zivingli, *Hammer of Witches*; writers on international law: Grotius; science: Copernicus, Galileo, Kepler, Linnaeus, Harvey; Mathematics: Newton, Leibnitz, Pascal; and literary selections, prose and poetry; Falengo's *Maccarouri*. A,b,c must be taken in sequence; d,e,f may be taken separately. Prerequisite for a,b,c: one year of college study of another foreign language, or the equivalent, or consent of instructor; for d,e,f: a,b,c or two years high school Latin or consent of instructor.

Portuguese

152-12 (4,4,4) Elementary Portuguese. Development of listening, speaking, reading, and writing skills on the elementary level with special emphasis on pattern practice and structure drills, and on gaining cultural insight into the Luzo-Brazilian heritage. Credit given for the entire sequence only.

Russian

136-3 (1,1,1) Russian Conversation. Conversation and oral drill taken with GSD 136 by students who wish additional oral training; elected only by students enrolled in GSD 136. May be taken separately.

220-4 (2,2) Intermediate Russian Conversation. (a) Practice in conversation. (b) Additional practice in conversation. May be taken separately. Prerequisite: GSD 136 or equivalent.

250-8 (4,4) Intermediate Comprehensive Russian. Development of comprehension of the spoken language and oral expression, reading of modern prose selections, simple composition. Must be taken in a,b sequence. Prerequisite: GSD 136 or two years high school Russian, or consent of department chairman.

280-4 History of Russian Literature and Language. A comprehensive view of literature and language with special emphasis on the development of dominant literary themes, schools and interpretation. This course or its equivalent is the prerequisite for all Russian courses numbered above 300. Prerequisite: 250 or equivalent.

499-2 to 9 Readings in Russian. Readings in selected areas of Russian language, literature, culture, and civilization. Individual work or small groups under direct supervision of one or more members of the foreign language faculty. Prerequisites: 280, consent of department chairman.

Spanish

140-3 (1,1,1) Spanish Conversation. Conversation and oral drill taken with GSD 140 by students who wish additional oral training; elected only by students enrolled in GSD 140. May be taken separately.

220-4 (2,2) Intermediate Spanish Conversation. (a) Practice in conversation. (b) Additional practice in conversation. May be taken separately. Prerequisite: GSD 140 or equivalent.

250-8 (4,4) Intermediate Comprehensive Spanish. Development of comprehension of the spoken language and oral expression, reading of modern prose selections, simple composition. Must be taken in a,b sequence. Prerequisite: GSD 140 or two years high school Spanish, or consent of department chairman.

280-4 History of Spanish Literature and Language. A comprehensive view of literature and language with special emphasis on the development of dominant literary themes, schools and interpretation. This course or its equivalent is the prerequisite for all Spanish courses numbered above 300. Prerequisite: 250 or equivalent.

301-12 (4,4,4) Spanish Literature from the Medieval Period Through Romanticism. (a) Spanish literature from the 12th to the 15th century; the epic, *El Cantar Del Cid*, ballads, lyric poetry, chronicles and other prose works. (b) Representative works of the 16th and 17th centuries: Cervantes, Tirso de Molina, Lope de Vega, and others. (c) Romanticism in Spanish literature during the 18th and 19th centuries: Espronceda; Duque de Rivas, Jose Zorrilla, and others. May be taken separately. Prerequisite: 280 or consent of department chairman.

304-8 (4,4) Modern Spanish Literature. (a) Spanish literature of the 19th century as influenced by trends of European thought of the period: Galdos, Bazan, Benavente, and others. (b) Spanish literature of the 20th century with emphasis on the novel, essay, and poetry: Unamuno, Ortega y Gasset, Garcia Lorca, and others. May be taken separately. Prerequisite: 280 or consent of department chairman.

311-9 (3,3,3) Spanish Culture and Civilization. Analysis of significant aspects of Spanish culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, written reports, and laboratory practice. May be taken separately. Prerequisite: 280 or consent of department chairman.

351-6 (3,3) Advanced Spanish Conversation and Composition. (a) Oral work of a practical nature for advanced students. Prerequisite: 280 or consent of department chairman. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence.

375-9 (3,3,3) Spanish-American Literature. (a) Colonial Spanish-American literature. The main writers of the Spanish-American colonial period until independence. (b) Writers and movements of the post-colonial period until

the first World War. (c) Spanish-American literature from the first World War until the present. Prerequisite: 280.

415-3 Spanish Phonetics. Analysis of the sounds of Spanish and their manner of production; intonation; levels of speech; oral practice. Prerequisite: 250 or graduate standing or consent of department chairman.

451-6 (2,2,2) Spanish Seminar. Integration of the specialized major courses and development of a comprehensive view of the major field in terms of its relationships to the growth of Western Civilization.

461-4 Spanish Stylistics. Study of writing style in Spanish and its application to the development of skill in written expression. For those who wish to do advanced work in the principles of Spanish grammar and composition. Prerequisite: 9 hours of 300-level courses.

499-2 to 9 Readings in Spanish. Readings in selected areas of Spanish language, literature, culture, and civilization. Individual work or small groups under direct supervision of one or more members of the foreign language faculty. Prerequisites: 280, consent of department chairman.

500-2 Seminar in Latin American Fiction.

501-2 to 6 Seminar on a Selected Spanish Author.

502-2 to 6 Seminar on a Selected Spanish-American Author.

505-3 The Picaresque Novel.

506-4 The Renaissance.

520-3 Seminar in Syntax.

525-3 The Spanish Ballads.

535-3 Mexican Essayists of the 19th Century.

Foundations of Education

GSB 331-3 The American Educational System.

355-4 Philosophy of Education. The philosophical principles of education and the educational theories and agencies involved in the work of the schools. Prerequisite: Counselor Education 305.

431-4 History of Education in the United States. Theory and practice of formal education in the United States since the seventeenth century in the perspective of contemporary issues.

490-4 to 12 International Study in Comparative Education. Selected aspects of national systems of education examined in their social matrix. By means of direct observation, conferences, lectures, or seminars, the student is helped to gain a mature understanding of other cultures and subcultures, to evaluate critically American educational patterns in light of alternatives, and to develop fresh curricular approaches in the area of intercultural understandings through an examination of other cultural patterns. May be repeated for credit with permission of instructor.

500-4 Research Methods in Education.

501-4 Sociological Foundations of Education.

502-4 Comparative Education.

503-4 Political Foundations of Education.

504-4 History of Western Education.

506-4 Contemporary Educational Theory.

520-4 The School and the Urban Community.

554-4 Philosophic Inquiry and Educational Issues.

563-4 Seminar in Philosophy of Education.

575-2 to 4 Individual Research.

General Business Administration

140-4 Introduction to Business. An overview of the basic nature of business in an essentially market-disciplined economic system. Emphasis on the interdisciplinary nature of business and the broad administrative principles governing organized human endeavor. Introduction to business and economic terminology and to the case method of developing analytical ability.

340-4 Organization and Decision-Making. Development of understanding of organizational behavior and decision theory and of analytical skills through case analysis and discussion. Examination of processes group formation and development, conformity and direction, influence and decision-making,

problem solving, role specialization and differentiation, status and social power distribution, satisfaction, and goal internalization and commitment. Prerequisites: 140, GSB 201a,c.

341-4 Organizational Problems. Application of the concepts, understanding, and techniques to major categories of recurring organizational problems faced by complex business units and described in case situations. Features such as position specifications, authority structures, territorial imperatives, performance measurements, and procedures involving compensation, communication, and employee selection and promotion. Designing organizational patterns to meet specific situational needs. Prerequisite: 340.

342-4 Contracts-Agency Law. Study and discussion of the terminology, definitions, and principles of contract law applicable to the contractive problems in the operation of a business, including the relevant provisions of the uniform commercial code. The application of the principles of agency law by the entrepreneur in operating his firm, and his legal liability to his agency and third parties with whom he deals.

430-4 Personnel Administration. The manager's role in effectively using manpower resources to achieve company objectives is the major focus. The personnel function as a corporate staff organization with its specialized task and liaison/service role to management and employees. Case discussion and reports on selected topics assist in developing the varied responsibilities of managing personnel.

431-4 Leadership in Formal Organizations. Designed to develop understanding of the context and function of the leadership role in formal organizations through the examination of leadership research and theories of leadership effectiveness. The various bases for exercising influence and the situational factors affecting leadership. Emphasis on understanding the leadership function as well as developing thinking and action capabilities for improving leadership effectiveness.

432-4 Management of Conflict and Change. The study of the function of managing organizational change processes at the individual, group, and total organization levels of analysis. Understanding the sources, nature, uses, and resolution of differences and conflict at the interpersonal and intergroup levels of analysis is a major change. Emphasis on student development of skills pertinent to planning and implementing organizational change strategies.

433-4 Advanced Studies in Organizational Behavior and Development. A capstone course to develop an understanding of relationships between individuals, social interaction patterns, technology, and organizational arrangements and their environmental contexts. The objective is to explore the dimensions of effective organizational environments. The relationships between man and systems (technical and organizational) and the broader environment is the focal point. Emphasis on analyzing and evaluating related contemporary theories and issues.

440-4 The Legal Environment of Business. Varied facets of the external and internal legal environments within which business firms operate. Use of cases and readings which describe and analyze the legal framework supporting, facilitating, and guiding everyday business decisions. Common law, statutory law, administrative law as they affect business environment. Prerequisite: 140.

441-4 Business Policy. Development of a top-management view leading to the formulation of general policies to be followed by the organization. Determination of objectives, the development of plans for their achievement, organizing administrative personnel to carry them out, implementation of programs, measurement of results, and the reappraisal of objectives, plans, and action-patterns in the light of evolving situations. Prerequisites: 341, 440.

449-1 to 4 Independent Study in Business Administration. An investigation of topical areas in greater depth than regularly titled courses permit. Individual or small group readings and projects. Prerequisite: consent of instructor and department chairman.

526-4 Managerial Economics.

540-4 Concepts of Managerial Performance.

541-4 Business and Its Legal Environment.

543-4 The Administrator.

544-4 The Methodology of Business Research.

545-4 The Social Framework of Business.

- 547-4 Seminar in International Business.
548-4 Seminar in Managerial Performance.
549-4 Corporate Policy Formulation and Administration.
593-4 Professional Development in Administration.

Geography

- GSB 203b-4 American Politics in the World Environment.
GSA 210-4 The Fossil Origins of Man.
302-4 Introduction to 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.
304-4 Introduction to Economic Geography. Study of the spatial distribution and interaction of economic activities. Introduction to locational theory. Prerequisite: GSB 203b.
GSB 305-3 Urban Environmental Problems.
306-4 Introduction to Cultural Geography. An overview of the geographic viewpoint in the study of the human occupancy of the earth. Aspects of population, settlement, and political geography, and a generalized survey of major world cultural areas.
308-3 Introduction to Geographic Methods. Designed to introduce the geographic methods of integrating physical, economic, and cultural elements in the study of areas. Cartographic and quantitative techniques utilized.
310-8 (4,4) Introduction to 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.
GSA 312-3 Conservation of Natural Resources.
GSA 322-3 Introduction to Rocks and Minerals.
GSA 330-3 Weather.
GSA 331-3 Climate.
GSB 351a-3 Geographic and Cultural Background of Developing Africa.
400-4 The Earth in Space. Planetary and stellar composition and structure; energy sources and arrangements of the universe as to position, size, dimensions, age, origin, and evolution. Prerequisite: GSA 356.
401-4 The History of the Earth. Methods and problems of interpreting geologic history. Physical history of continents (emphasis on North America) in terms of rocks, orogenies, and history of development and evolution of organisms and their adaptation to various environments. Prerequisite: GSA 110b.
402-10 (4,3,3) Physical Geography I. (a) Soils, (b) climate, (c) water. Prerequisite: GSA 110a.
403-8 (4,4) Physical Geography II. (a) Geomorphology. (b) Physiography. Prerequisite: GSA 110.
404-10 (4,3,3) Urban Geography and Ecology. (a) Urban Geography and Ecology. (b) Industrial Location. (c) Economic Development. Prerequisite: 304.
405-7 (4,3) Location of Economic Activities II. (a) Marketing and location theory. (b) Transportation. Prerequisite: 304.
406-7 (4,3) Cultural Geography I. (a) Population. (b) Settlement Geography. Prerequisite: 306.
407-7 (4,3) Cultural Geography II. (a) Political geography. (b) Historical geography.
410-8 (4,4) Quantitative Methods in Geography. Statistical and computer research techniques for geographers.
412-1 to 2 Illinois Conservation Problems. Such problems as water, land use, air, mineral use, recreation, and waste disposal.
416-8 (4,4) Cartography. Instruction and practice in (a) thematic mapping, (b) planimetric mapping. Prerequisite: 310a.
417-3 Air Photo Interpretation. Techniques in the use of air photos as source material for research in the physical and social sciences. Laboratory. Prerequisite: 310a or consent of instructor.
424-4 Regional Problems in Conservation. The distribution, use, and interrelationship of the resources of the U.S. and the conservation techniques applied to them. Field study of selected cases.

- 426-12 (4,4,4) Photogrammetry.**
- 443-4 Teaching of Geography.** (Same as Secondary Education 443.) Presentation and evaluation of methods of teaching geography. Emphasis on geographic literature, illustrative materials, and teaching devices suitable to particular age levels.
- 444-4 Teaching of Earth Sciences.** (Same as Secondary Education 444.) The objectives of earth science education with emphasis on methods, skills, and techniques of instruction in lectures and laboratories. Prerequisite: junior standing.
- 450-3 to 15 Travel Study Course.** Enrichment through travel, supervised study, and readings on areas visited.
- 461-7 (4,3) Regional Geography of Anglo-America.** (a) Present day United States and Canada. (b) Specific concentration on certain areas and topics.
- 462-7 (4,3) Regional Geography of Europe.** (a) A general survey of the area. (b) Special concentration on a region and topics.
- 463-7 (4,3) Regional Geography of Mediterranean Lands and Southwestern Asia.** (See 462.)
- 464-7 (4,3) Regional Geography of Soviet World.** (See 462.)
- 465-7 (4,3) Regional Geography of Africa.** (See 462.)
- 466-7 (4,3) Regional Geography of Asia.** (See 462.)
- 467-7 (4,3) Regional Geography of Latin America.** (See 462.)
- 468-7 (4,3) Advanced Regional Geography: Oceania.** (See 462.)
- 470-20 (4,4,4,4,4) Urban Planning.** (a) History of planning, (b) planning codes and ordinances, (c) housing and community facilities, (d) planning problems, (e) planning seminar. Prerequisite: 308.
- 471-8 (4,4) Regional Planning.** (a) Regional planning, (b) location of urban and regional economic activity. Prerequisite: 470a.
- 472-2 to 12 Planning Internship.** Work experiences in various planning agencies, both public and private, located anywhere in Illinois or nearby states. Seniors and graduate students are screened for these internships. Prerequisite: senior or graduate standing.
- 475-4 to 8 Methods of Field Geography.** Application of geographic field techniques.
- 480-4 Workshop in the Teaching of Geography.** The geographic approach to man's activities in various cultural, economic, and political geography problems. Skills, techniques, and visual materials essential to the teaching of geography. Prerequisite: 8 hours of geography or a teacher of geography.
- 490-1 to 2 (8 total) Tutorial in Geography.** Individual and small group conferences with staff members to examine geographic concepts.
- 500-4 Geographic Techniques I.**
- 501-4 Geographic Techniques II.**
- 511-4 Philosophy of Geography.**
- 515-4 to 6 Field Course.**
- 520-2 to 8 Seminar in Physical Geography.**
- 521-2 to 8 Seminar in Economic Geography.**
- 522-2 to 12 Seminar in Regional Geography.**
- 523-4 Seminar in Cartography.**
- 524-2 to 8 Seminar in Cultural Geography.**
- 527-2 to 8 Seminar in Urban and Regional Planning.**
- 530-2 to 10 Independent Studies in Geography.**
- 570-4 Philosophy, Theory, and Practice of Planning.**
- 571-4 (2,2) Environmental Aspects of Planning.**
- 572-8 (4,4) Quantitative Planning Research.**
- 573-8 (4,4) Urban Renewal.**
- 574-10 (4,4,2) Urban Planning Design Studio.**
- 575-4 (2,2) Urban Planning Analysis.**
- 576-2 to 8 Planning and Design Seminar.**
- 577-2 to 8 Seminar in Urban Problems.**
- 599-2 to 9 Thesis.**

Government

- 200-4 Introduction to Political Science.** A general introduction to the study of politics with emphasis on contemporary theories for ordering political sys-

tems, the institutions of government and their processes, and the social roots of political behavior.

308-4 Data Analysis and Elementary Statistics. (Same as Sociology 308.) Elementary data analysis including coding of data, data processing, table construction, and simple multivariate analyses. Introductory statistical concepts such as measures of central tendency, measures of dispersion, probability and tests of significance.

GSB 318-6 (3,3) American State and Local Government.

320-4 Introduction to Public Administration. A study of principles and problems of administrative organization and co-ordination, personnel and fiscal management, regulatory administration, and public responsibilities of administrative agencies. Prerequisite: GSB 203a.

321-1 to 6 Readings in Government. Prerequisite: consent of instructor.

330-3 Illinois Government. The development and functioning of government in Illinois.

340-12 (4,4,4) American Political Institutions. (a) The American Chief Executive. A review of the legal, political, and administrative responsibilities of the chief executive in national, state, and local political units in the United States, with emphasis on the national level. (b) The American Legislative Process. An investigation of the legislative organization and processes in Congress and state legislatures. (c) The American Judicial System. A survey of the nature, purposes, and limitations of law as administered and interpreted by courts. The development, organization, and operation of the American judicial system with emphasis on the federal level. Prerequisite: GSB 203a.

342-4 Issues in American Public Policy. A study of domestic public policy in the United States. Major emphasis on the substantive results produced. Such policy areas as poverty, civil rights, education, the regulation of business, labor and agriculture.

345-8 (4,4) American Political Parties and Interest Groups. (a) A study of the historical development of American political parties. (b) An analysis of contemporary American political parties and interest groups. Prerequisite: GSB 203a.

350-12 (4,4,4) The Political Systems of Major European States. (a) A comparative study of the British and German political systems. (b) An analysis of the French and Italian political systems. (c) An examination of the organization and operation of the Soviet political system. Prerequisite: 200.

355-12 (4,4,4) Political Systems of Major Non-European States. (a) Latin America. An examination of the political systems of five representative states: Mexico, Brazil, Ecuador, Cuba, and Uruguay. (b) Asia. An analysis of four major political systems: China, Japan, India, and Indonesia. (c) Africa. A survey of African political systems.

370-4 Introduction to International Relations. The nation-state system, diplomatic practice, problems of national interest, power, ideology, and conflict; strategy and instruments of foreign policy. Prerequisite: GSB 203a.

385-4 Introduction to Political Theory. An introduction to the basic concepts and topics of political theory. Prerequisite: 200.

399-4 to 8 Legal Aid Internship. Experimental course. Assisting legal-aid attorneys with legal research, preliminary interviews of clients, investigating of complaints, and organizing welfare-rights groups. May be taken for one or two quarters, but no more than 8 hours credit may be earned. Students work as paraprofessionals ten hours per week for 4 hours credit and twenty hours for 8 hours credit. Prerequisite: 340c or 495.

410-8 Quantitative Methods in Political Science. Statistical and computer research techniques for political scientists. (Same as Geography 410 and Sociology 410.)

421-4 Public Personnel Administration. An analysis of problems of recruiting, retaining, and developing public service employees and related topics such as political neutrality, motivation, security, and manpower planning. Prerequisite: 320.

422-4 Public Financial Administration. A survey of the problems encountered in the administration of public financial resources, including budgeting, accounting, auditing, and fiscal and monetary policy. Prerequisite: 320.

423-4 Comparative Public Administration. An introduction to the adminis-

trative organization and practice of selected Western and non-Western nation states. Prerequisite: 320.

424-4 Administrative Law. A study of the principles of administrative law in the United States with special emphasis on the law of public officers and on legal procedure for the enforcement of bureaucratic responsibility. Prerequisite: 320.

425-4 Constitutional Law and the Mass Media. Meaning of the First Amendment of U.S. Constitution, as interpreted by the U.S. Supreme Court and the Illinois Supreme Court, in relation to speech, assembly, and mass media (press). Development and current status of American jurisprudence as to libel, invasion of privacy, regulation of "obscenity," prior restraint, and developing "right of access" to mass media by minority opinion groups. Surveys trends in FCC administration of broadcast standards and contrasts such administration against parallel judicial standards.

426-4 Public Administration and Public Policy Formation. An analysis of the role of formal organizations in contemporary society with an emphasis on decision-making in government administrative organizations. A treatment of internal and external forces affecting the policies and structure of operations in these organizations. Prerequisite: 320.

429-4 Topics in Public Administration. An intensive study of an administrative problem or process. Primarily for government students with advanced standing. May be repeated for total of 8 hours credit when content differs and consent of department chairman is received. Prerequisite: 320.

442-4 Politics in Metropolitan Areas. An investigation of significant problems that face metropolitan areas. Emphasis on the political implications of these problems and the difficulties involved in attempting to solve them. Prerequisite: GSB 203a.

444-4 Ethnic Politics in the United States. An analysis of the impact of the ethnic factors, race, religion, national origin and ancestry, on the politics in the United States. A discussion of the difficulties in participation and contribution of the various minority groups to the structure and process of American politics. Prerequisite: GSB 203a.

445-12 (4,4,4) American Political Behavior. (a) American Voting Behavior. Survey of studies of American elections emphasizing the psychological, sociological, and political-legal bases of voting behavior. (b) Personality and Politics in the United States. A survey of research findings concerning the relationship of psychological and sociological characteristics to the political process. (c) Public Opinion, Propaganda, and the Mass Media in the United States. A survey of research findings concerning the relationship of communications content and communications media to the political process. Prerequisite: GSB 203a.

446-4 Public Policy Analysis. An intensive analysis of a selected area of public policy. Content varies from quarter to quarter. Examples of areas are education, science and technology, the environment, or welfare. May be repeated for total of 8 hours credit. Prerequisite: GSB 203a.

448-4 Intergovernmental Relations in the United States. An introduction to the relationships—political, legal, fiscal, administrative, etc.—between and/or among the national, state, and local governments. Prerequisites: GSB 203a, GSB 318 or consent of instructor.

449-4 Topics in American Politics. An intensive examination of one significant facet of the American political system. Primarily for government students already having had considerable course work in the area. May be repeated for total of 8 hours credit when content differs and consent of department chairman is received. Prerequisite: GSB 203a.

456-4 Topics in Comparative Politics. A selective and detailed study of a major question of relevance to students of comparative politics. May be repeated for total of 8 hours credit when content differs and consent of department chairman is received. Prerequisite: 350 or 355.

472-8 (4,4) International Organizations. (a) General International Organizations. Description and analysis of both past and contemporary general international organizations, with special emphasis on the principles, structure, decision-making processes, operations, and problems of the United Nations and its related agencies. (b) Regional International Organizations. Examination and comparative analysis of the foundations, nature, and functioning of contemporary regional organizations, their relationship to the United Nations

System, and their role in world politics. Attention is focused on such bodies as NATO, the Warsaw Pact, the OAS, SEATO, the Commonwealth, the Arab League, the Organization for African Unity, the European Communities, Comecon, and Lafta. Prerequisite: 200.

473-16 (4,4,4,4) Foreign Politics of Major Powers. (a) American Foreign Policy. Institutional framework and decision-making processes of American foreign policy; idealist and realist schools of thought; the national interest in historic and geographic perspective. (b) Soviet Foreign Policy. Analysis of objective strategy, and tactics of Soviet foreign policy, with emphasis on the combination of conventional and unconventional instruments including role of Communist parties. (c) Foreign Policies of Western European States. Analysis of foreign policies of the major European powers, with emphasis on structural changes incident to the two world wars and the dissolution of colonial empires. (d) United States and Latin American Relations. Analysis of the foreign policy of the United States towards the Latin American nations with emphasis on the historical development of Pan-Americanism and its effect on the foreign policies of the member nations. Prerequisite: 370.

479-4 Topics in International Relations. A detailed study of a selected topic. Primarily for government students with advanced standing. May be repeated for total of 8 hours credit when content differs and consent of department chairman is received. Prerequisite: 370.

481-8 (4,4) Descriptive Political Theory. (a) Contemporary Systematic Political Theory. Intensive study of major contemporary attempts to devise a general systems theory of politics. (b) Contemporary Political Analysis. The character of scientific inquiry as it relates to the discipline of political science. Prerequisite: 200.

484-12 (4,4,4) History of Western Political Theories. Various topics are employed as analytical tools in the chronologically successive examinations of certain theories in the history of Western political thought. (a) The theories of Plato, Aristotle, the early and middle Stoa, Cicero, Augustine, and Aquinas. (b) The theories of Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, and Bentham. (c) The theories of Publius, Hegel, Comte, Mill, Marx, Green, Kropotkin, Sorel, the Fabians, and John Dewey. Prerequisite: 385.

485-4 Contemporary Political Philosophy. Analysis of recent works in normative political theory. Such thinkers as Arendt, Strauss, Voegelin, Juvenal, Oakeshott, as well as the political ideas associated with existentialism, the Freudian left, and postwar European communism, socialism, liberalism, Christian democracy, etc. Prerequisite: 385.

486-3 Workshop on Teaching the American Political Heritage. The major concepts and topics of the American political heritage including myth, symbol, signal, natural rights, limited government, libertarianism, totalitarianism, and socialism; and methodological tools which aid communication of those topics to elementary and secondary students in palatable and comprehensive form.

487-6 (3,3) American Political Theory. A chronological examination of leading American political thinkers. The concepts and topics of political thought in the United States are examined in relation to both the political milieu of their given periods as well as the manner in which they contributed to a developing policy. (a) From Puritan thought to Alexis de Tocqueville. (b) From Calhoun to the present. Prerequisite: 385.

489-4 Topics in Political Theory. A comprehensive examination of the works of one major political thinker and the treatment of one major topic or idea by selected political thinkers. Primarily for government students with advanced standing. May be repeated for total of 8 hours credit when content differs and consent of department chairman is received. Prerequisite: 385.

495-12 (4,4,4) Constitutional Law. (a) A study of the development of American constitutional law chiefly through judicial opinion. Emphasis is placed on the analysis of federalism and the distribution of powers. (b) A study of government power and the rights of property. Special attention is directed to tension between the public welfare and private rights, the extent of government power to regulate property rights, and state versus federal power over commerce and taxation. (c) A study of the nature and extent of civil rights and liberties in the United States. Special attention to freedom of speech, press, and association, separation of church and state, equal protection of the laws, rights of persons accused of crime. Prerequisite: GSB 203a.

- 496-4 **American Judicial Behavior.** Introduction to the methods, goals, and limitations of behavioral research on American courts and judges. Attention given to the impact of technology on the judicial process. Prerequisite: 340c.
- 500-4 **Scope and Method of Political Science.**
- 514-3 **Studies in Asian History and Politics.**
- 521-1 to 12 **Readings in Government.**
- 522-4 **Organization Theory and Public Administration.**
- 529-2 to 9 **Seminar in Public Administration.**
- 545-2 to 9 **Seminar in American Politics.**
- 555-2 to 9 **Seminar in Comparative Politics.**
- 575-2 to 9 **Seminar in International Relations.**
- 585-2 to 9 **Seminar in Political Theory.**
- 590-2 to 9 **Seminar in American Public Law.**
- 595-2 to 6 **Individual Research.**
- 599-2 to 9 **Thesis.**

Health Education

- 205-4 **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-level courses and above.
- 300-3 **Communicable Disease.** A study of the communicable diseases with emphasis on control and principles of prevention, and application of these principles to the individual school and community.
- 302-4 **Driver Education and Training.** Preparation of the college student for teaching driver education and training in the secondary school. Prerequisite: a valid driver's license.
- 313s-4 **Introduction to Safety Education.** Preparation for safety education in the public schools. Concerned with safety as a social problem, development of safety skills, accident causes, teacher liability, and research in the field.
- 334s-4 **First Aid.** Red Cross First Aid Course with lectures, demonstrations, and practical applications. Red Cross Instructor's Certificate given.
- 350-4 **Methods and Materials in Elementary Health Education.** 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.
- 400-4 **Health Appraisal of School Children.**
- 415s-4 **Workshop in Driver Education and Traffic Safety.**
- 443s-4 **Methods and Materials in Driver Education.**
- 445s-2 **Driver Simulation.** For in-service and pre-service teachers and supervisors of driver and traffic safety education. A program enabling teachers to instruct a large number of students in correct driving procedures and orient students to emergency situations too hazardous to duplicate on the highway. Prerequisite: 443s.
- 460-4 **Methods and Materials in Secondary School Health Education.**
- 461-4 **Workshop in Health Education.**
- 470-3 **Workshop in Sex Education for Elementary Teachers.** (See Elementary Education 470.)
- 471-4 **Organization and Administration of School Health.**
- 480s-4 **Workshop in Safety Education.**
- 525s-4 **Organization, Administration, and Supervision of Safety Education.**

History

- 100-4 **Survey of Ancient Civilization.** Ancient Period to 1000 A.D.
- GSB 101-8 (4,4) **Survey of Western Tradition.**
- 102-4 **Survey of Asian Civilization.** An introduction to the history of East Asia from the earliest times to the twentieth century. Emphasis on China and Japan.
- GSB 105a-4 **The Black Experience in American Life.**

GSB 300-9 (3,3,3) History of the United States.

306-12 (4,4,4) History of Rome. (a) The Republic. (b) The Western Empire. (c) The Eastern Empire. Prerequisite: 100 or equivalent.

309-4 The Negro in America. The role of the Negro in America from the 17th century to the present with emphasis on the period since 1865.

316-9 (3,3,3) History of Africa. (a) Africa south of the Sahara from pre-historic to colonial times. (b) Africa south of the Sahara from colonial times to the present. (c) Africa north of the Sahara. Emphasis on the lands, people, and state from Islamic times to the present.

317-8 (4,4) The Westward Movement in American History. (a) To 1845. (b) 1845 to the present. The land policies, immigrations, settlements, and exploitation of the American lands since the first European settlements.

322-9 (3,3,3) History of the Near East. (a) The formation of Islamic civilization. (b) Islamic civilization in the period of the Crusades and the Ottoman Empire. (c) Nationalism and modernization in the Near East.

332-12 (4,4,4) Medieval History. (a) Early Middle Ages, 500-1000. (b) High Middle Ages, 1000-1300. (c) Late Middle Ages, 1300-1500. Prerequisite: sophomore standing.

334-12 (4,4,4) History of China. The study of Chinese civilization from pre-historic times to the present with emphasis on institutional development, Chinese society, and the principal intellectual achievements. (a) Pre-modern China to 1800; (b) modern China to the present; (c) Chinese intellectual history.

335-4 History of Modern Japan. A study of Japan in the 19th and 20th centuries with particular reference to its relationships with the Western World. An emphasis on the traditional versus the Western-inspired elements in Japan in modern times.

338-8 (4,4) History of Greece. (a) Hellenic history. (b) 401-133 B.C. Prerequisite: 100 or equivalent.

341-8 (4,4) History of Religion in Western Civilization. (a) Religion in European history. (b) Religion in the United States. A study of religious institutions, ideas, and practices in Western civilization and their relationship to society.

342-8 (4,4) History of Canada. (a) French period to Dominion status (1867). (b) Modern Canada since 1867. The origins, and political, economic, and social development of the modern Canadian state.

352-12 (4,4,4) History of Latin America. (a) Colonial Latin America, (b) Independent Latin America, (c) Latin America in World Affairs. May be taken separately or in any sequence.

367-9 (3,3,3) History of East Asia. (a) Pre-modern East Asia; (b) 19th century; (c) 20th century.

372-12 (4,4,4) History of Russia. (a) 900-1801-The Early Empire. (b) 1801-1914-The Late Empire. (c) Since 1914-War, Revolution, and Soviet Russia.

GSB 380-6 (3,3) East Europe.
401-8 (4,4) History of the South. (a) The Old South. (b) The New South. An intensive study of the social, economic, political, and cultural developments of the South.

405-4 The American Civil War. Emphasis upon the clash of national and sectional interests; economic, political, and military aspects of the conflict. Prerequisite: GSB 300b or consent of instructor.

406-4 Post Civil War America: 1865-1896. Prerequisite: GSB 300.

408-8 (4,4) History of the Ancient Near East. (a) Earliest times to 1200 B.C. (b) 1200 B.C. to 330 B.C. Prerequisite: 100 or equivalent.

410-2 to 5 Special Readings in History. Supervised reading for students with sufficient background. Registration by special permission only. Offered on demand. Prerequisites: minimum 4.0 average in history, consent of chairman.

412-8 (4,4) Intellectual History of the United States. (a) To 1865. (b) Since 1865. Prerequisite: GSB 300.

414-8 (4,4) History of Eastern Europe. (a) 1815-1918. An analysis of the rise of nationalism with emphasis on the problems of the Austro-Hungarian Monarchy. (b) Since 1918. An analysis of the problems of the Succession States.

415-12 (4,4,4) Early Modern Europe. (a) Renaissance. (b) Reformation. (c) Age of Absolutism and Enlightenment. Prerequisite: GSB 101b,c.

- 417-16 (4,4,4,4) Advanced English History.** (a) Constitutional and Legal History to 1485. (b) Tudor England, 1485-1603. (c) Stuart England, 1603-1714. (d) The Empire-Commonwealth. Prerequisite: GSB 101b,c.
- 420-4 The French Revolution.** A sketch of the passing of feudalism in France, the background and development of the revolutionary movement, and the Napoleonic period. Prerequisite: GSB 101b.
- 421-12 (4,4,4) Great Britain Since 1760.** (a) 1760-1850; (b) 1850-1914; (c) since 1914.
- 424-12 (4,4,4) Intellectual History of Modern Europe.** A study of the principal intellectual currents in European history from the Age of Louis XIV to the present. (a) 17th and 18th centuries; (b) 1815-1870; (c) 1870-1950. Prerequisite: GSB 101b,c.
- 425-4 American Colonial History.** Founding of the American colonies and the development of their institutions to 1763. Prerequisite: GSB 300a.
- 426-4 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. Prerequisite: GSB 300a.
- 427-4 History of the Arab-Israeli Conflict.** A history of the origins and developments of relations between the Arab world and Israel.
- 428-4 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 1815-1844 considered in detail. Prerequisite: GSB 300a.
- 430-12 (4,4,4) Late Modern Europe.** (a) Age of Revolution, 1815-1880. (b) 1880-1918. (c) Since 1918. Age of Dictatorships.
- 434-4 Problems in the History of the Modern Near East.** A study of select problems relevant to contemporary times, e.g. the Great Powers and the Near East since World War I, Arab social and intellectual thought, Islam and the West. Prerequisite: 322 or consent of instructor.
- 435-12 (4,4,4) Advanced American History.** (a) 1896-1921. (b) 1921-1945. (c) 1945 to present.
- 437-6 (3,3) American Military History.** (a) The development of American military institutions and their place in American society to 1914. (b) The increasing power and influence of the military establishment in an era of global conflict. Prerequisite: GSB 300.
- 440-8 (4,4) History of American Diplomacy.** (a) To 1919. (b) Since 1919.
- 445-4 The Russian Revolutions: 1900-1930.** A study of the revolutions and civil war of 1917-1921 within the context of the problems which Russia encountered under the Tsarist regime, the Tsarist government's efforts to solve them, and the extent to which the Soviet government continued or changed Tsarist policies. Delineation of the relationship between Russian and Communist elements in shaping Russian Communism.
- 446-4 The Grand Duchy of Moscow, 1450-1613.** Economic, political, and social relations in the emerging Russian state; foreign affairs and Muscovite expansion; Russia, the Renaissance, and the Reformation. Prerequisite: GSB 101b or equivalent.
- 447-4 Problems in Russian Social and Cultural History.** An overview of Russian cultural history concentrating on such problems as the schism and the Old Believers, the *mir*, definition of the role of the autocrat, the police, and law in Russian society. Prerequisite: one course in Russian studies.
- 451-8 (4,4) A Survey of Historical Writing.** (a) Classical and European historiography. (b) American historiography. Prerequisite for a: GSB 101b,c; for b: GSB 300c.
- 452-4 Historical Research and Thesis Writing.** The rules of historical research studied and applied to a selected topic. Required of all students with a primary concentration in history. Prerequisite: junior standing.
- 453-8 (4,4) History of Modern France.** (a) An in-depth study of the problem of nineteenth century France which led from an empire to a democratic republic. (b) A study of France in the twentieth century.
- 454-4 Biography in American History.** Outstanding leaders and their contributions to the history of the United States. Attention to historical writers who specialize in biography. Prerequisite: a course in U.S. history.
- 456-8 (4,4) Recent German History.** (a) Germany from the close of the

Napoleonic Wars through unification. (b) Germany from the Second Empire through World War II. Prerequisite: GSB 101c.

458-8 (4,4) **History of Science.** (a) Science and civilization to 1500 A.D. (b) Western science since 1500 A.D. Prerequisite: GSB 101b,c.

460-12 (4,4,4) **Social and Intellectual History of the Middle Ages.** (a) 500-1000. (b) 1000-1250. (c) 1250-1500.

470-4 **History of Brazil.** The history of Brazil from the fall of the Empire until the present.

471-8 (4,4) **History of Mexico.** (a) Spanish conquest to the death of Juarez. (b) Death of Juarez to the present.

473-6 (3,3) **The Caribbean Area.** (a) Island States of the Caribbean. (b) Central American Area.

477-8 (4,4) **American Economic History.** Aspects of American economic history from (a) the colonial period to 1860 and (b) from the Civil War to 1929, with special attention to recent econometric studies of the American growth. Prerequisite: GSB 300.

500-3 to 9 **History Seminar.**

501-3 **Problems in Modern Eastern Europe.**

510-2 to 5 **Readings in History.**

511-3 **Studies in the Middle Ages.**

512-3 **Studies in Nineteenth Century Europe.**

513-4 **Problems in Ancient History.**

514-3 **Studies in Asian History and Politics.**

515-3 **Current United States History and Problems.**

519-4 **The Age of Jefferson.**

530-4 **City-States of the Italian Renaissance.**

534-4 **Eighteenth-Century England.**

540-4 **American Reform Movements.**

545-4 **Problems in Russian History.**

553-4 **New Viewpoints in American History.**

554-4 **Problems in 19th Century America.**

557-3 **Origins, Rise and Fall of Nazi Germany.**

575-8 (4,4) **Studies in Latin American History.**

599-1 to 9 **Thesis.**

Honors Hours

101, 201, 301, 401-16 (1 to 4) **Deans College.** Special and pertinent activity, designed and supervised by carefully selected faculty members, suited to advance the educational development of a Deans College student (e.g. work on a specific project, progress through a set of assigned readings, preparation of a major paper, etc.).

Humanities

301-3 to 4, 302-3 to 4, 303-3 to 4 **Humanities Honors.** Prerequisite: completion of the second-level General Studies courses and invitation of the Humanities Honors Program Committee. Accepted in lieu of third-level GSC requirement.

Human Services

101-12 (4,4,4) **Orientation to Human Services.** A seminar on human problems in American society, focusing on the interrelated topics of poverty, education, employment, delinquency, crime, health, and welfare. Occupations pertinent to the alleviation of these problems are explored. Field trips to social agencies and institutions. Prerequisite: consent of instructor.

201-12 (4,4,4) **Field Study in Human Services.** Prerequisite: 101.

301-12 (4,4,4) **Research in Human Services.** Emphasis on applied research in such fields as demography, ecology, education, economic development, criminal behavior, and social planning. Acquisition of skills in the areas of problem formulation, questionnaire construction, interviewing, observation, data analysis, and program evaluation. Prerequisite: consent of instructor.

Instructional Technology

401-4 Introduction to School Librarianship. Organization of library materials for effective service. Acquisition, classification, cataloging, preparation, preservation, and circulation. 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 the 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.

408-4 Introduction to Cataloging and Classification. Underlying principles, existing theories, practical applications and experience in the cataloging and classification of book type materials.

410-4 Public Library Administration. Administration of municipal, county, and regional libraries, both large and small, with emphasis on meeting the needs of different types of communities.

413-4 Cataloging of Non-Book Materials. The classification, cataloging preparation, and circulation of all types of non-book material such as films, filmstrips, slides, realia, etc. Prerequisite: 308.

417-4 Audio-Visual 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.

420-4 School Library Activities and Practice. Supervised practice and observation integrated with instruction in typical activities of school librarianship: storytelling, publicity, developing units of library instruction, and work with students. Prerequisites: 308, 403, 405.

422-4 Book Selection. Principles for selection and evaluation; use of standard selection aids, reviews and annotations, including policies governing the building and maintenance of the collection.

430-2 Basic Audio-Visual Maintenance Techniques. Basic instruction in simple maintenance techniques required to keep audio-visual equipment operating in instructional situations. Useful in media centers without services of an audio-visual technician. Laboratory type course with short lectures.

440-2 Photography for Teachers. Techniques of picture-taking and the preparation of color slides of community resources for use in classroom instruction and for school public relations.

445-4 Preparation of Teacher-Made Audio-Visual 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.

456-4 Graphics for Instructional Television. Preparation of visual materials for instructional television programs for teaching in home schools. Prerequisite: 445.

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 Programmed 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.

- 510-4 Mass Communications in Education.
- 514-4 Survey of Research and Development in Instructional Materials.
- 530-4 History of Books and Libraries.
- 546-4 Integration of Audio-Visual Materials in the Classroom.
- 547-4 School Film and Filmstrip Production.
- 548-4 Supervision and Administration of an Audio-Visual Program.
- 549-4 Visual Learning.
- 554-4 Administration of an Instructional Materials Center.
- 560-4 Seminar in Instructional Materials.
- 576-2 to 8 Problems in Instructional Materials.

Journalism

- 101-3 Journalism and the Day's News I. The role of the press in modern society by surveying contemporary newspapers and magazines and how they cover the day's news; interpretation of the day's events in response to information and commentary from the print media; attention to the development of the newspaper and other media in America.
- 102-3 Journalism and the Day's News II. Further studies of press performance in covering the day's news; interpreting current events. Prerequisite: 101.
- 103-3 News. Study of the newspaper story with experience in writing and rewriting news; the fundamentals of copyreading.
- 201-8 (4,4) News Writing and Editing. Advanced practice in reporting and writing the news; preparation of copy for publication in local media; copy editing; introduction to typography and makeup. Two-hour laboratory session required. Prerequisite: 103.
- 210-6 (3,3) Introduction to Photojournalism. Experience with cameras used in journalism; darkroom techniques, including developing, enlarging, special processes; a study of the elements of good news and feature photography; weekly assignments covering news stories with camera; exercises in photo editing; legal aspects of photography. Still photography, black and white, some with color. Prerequisite: 103.
- 212-2 Editing of Photographs and Artwork. The assignment of illustration for newspaper and magazine stories; the evaluation of photographs and artwork; the selection, the editing, and the production of such artwork; the study of esthetics of photography combined with practical exercises in editing and displaying it. Prerequisite: 210a.
- 245-4 The Contributions of Journalism to Literature. A study of the newspaper and magazine writings of such American authors as Ernest Hemingway, Mark Twain, William Cullen Bryant, Theodore Dreiser, and Stephen Crane; a study of the contemporary press for instances where writing exceeds everyday standards and may approach the status of literature; a look at history to determine where journalists—writers, photographers, cartoonists—have contributed to literature and art.
- 303-4 News Editing. Advanced copy editing, makeup, production techniques for newspapers and magazines; stress on simulating newsroom of professional publication; the role and performance of editors; creative editing. Includes one three-hour laboratory session. Prerequisites: 103, 201.
- 320-4 Depth Reporting and Writing. Reporting contemporary events, problems, and issues in greater depth than required in 103 and 201; studying techniques for writing the long news story; interpretive and investigative reporting; analyzing and backgrounding the news; planning, reporting, and writing the series of articles. Prerequisite: 201 or Television-Radio 302.
- 321-4 Public Affairs Reporting. Covering the courts and the affairs of city, county, and state government; practical assignments in news coverage of governmental agencies and of court trials; a study of stories of socioeconomic nature, such as urban renewal, the poverty program; local politics. Seminar techniques are used. Prerequisite: 201 or Television-Radio 302.
- 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.
- 340-4 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.

345-4 History of Journalism. Development of American journalism with emphasis upon the struggle for freedom of the press, leading editors, outstanding newspapers and periodicals.

352-8 (4,4) Magazine Article Writing and Production I, II. The nature of magazine operation as it applies to the staff member and by the free lance writer; studies of nonfiction magazine articles with submission by students of articles for publication; experience in magazine editing and production. Prerequisite: 103, 391, or consent of instructor.

355-4 Business and Industrial Publications. The role of trade, company, and institutional newspapers and magazines; how they function, how they are staffed, and how they are produced; relationship of management and administration to editorial policies. Articles are written by students for submission to these specialized publications. Prerequisites: 103, consent of instructor.

361-3 Contemporary Readings in Journalism. In a seminar, students read new books (published within the year) about journalism and discuss responses to them; written responses required; final paper required of student. May be repeated for 6 hours credit. Prerequisite: concentration in journalism.

362-1 to 4 Independent Studies in Journalism. Selecting an area of journalism for reading and research, presenting a final written report to a faculty member who approves the plan for study and agrees to be consultant to the student. May be repeated for total of 8 hours credit. Prerequisite: consent of instructor.

370-4 Principles of Advertising. Advertising fundamentals in relation to modern business activities; economic and social aspects, research, media, appeals, production, schedules. Prerequisite: GSB 103b.

375-4 Advertising Copywriting. Processes and practices in the preparation of copy and layouts in the production of advertising for the print media. Prerequisite: 370 or Television-Radio 303.

391-3 Feature Writing. How to plan and write newspaper features and special articles.

402-2 to 8 Journalism Practicum. Study, observation, and participation in publication of the campus newspaper, and/or participation in a comparable professional setting, with the number of credit hours to be determined by agreement of the instructor and the student's adviser in his concentration. Prerequisite: consent of instructor.

410-4 to 16 Internship in Journalism. Professional experience with local media in the various phases of journalism, under joint supervision of members of the journalism faculty and of the media. May be repeated to maximum of 16 hours credit. Prerequisites: upperclass standing in journalism, consent of director of journalism.

415-4 Senior Seminar in Journalism: Communication in the World of the Future. A study of such topics as the new journalism—fact or myth?; the underground press and its effect on society; space-age communications systems; automation and its effects on publications. Prerequisite: upperclass standing in journalism.

424-2 or 3 Workshop in High School Publications. A short course for prospective and in-service teachers to give them practical experience in reporting, writing, editing, and producing publications fitted to the high school.

426-4 High School Publications. Designed for prospective teachers of journalism and mass communications and advisers to publications, as well as for in-service teachers. The role of the school newspaper, editorial leadership and responsibility, reporting and writing school news, production techniques, the journalism or mass communications curriculum, experience producing a publication; preparing course outlines.

435-4 Seminar in Publications Management. A study of advertising, business, and circulation phases of newspaper and magazine production with the aid of guest speakers and instructors; observation of professional techniques and operations; assignments in solving management problems. Prerequisite: upperclass standing.

480-1 to 3 Special Problems in Journalism. Students and/or faculty initiate a significant topic drawn from journalism; members of the class undertake investigation of the topic, making final reports in oral or written form. May be repeated to include 8 hours credit. Prerequisite: junior standing in mass communications or consent of instructor.

481-4 Practicum in Specialized Reporting. Specific practical experience with

local media in areas of specialized reporting, such as sports, science, education, critical writing for mass media, technical writing, investigative journalism. May be repeated with consent of adviser. Prerequisite: consent of instructor.

482-3 or 4 Special Studies in Photojournalism. Students and faculty choose an area in photojournalism for special study (i.e. photo essay, special reproduction techniques) and then combine theory and experience to solve problems in that area. May be repeated to include 8 hours credit. Prerequisites: 201, consent of instructor.

483-4 Critics and Philosophers of Journalism. Study and evaluation of the commentaries of Marshall McLuhan, Will Irwin, Daniel Boorstin, Harold Innis, and other individuals, past and present, who have offered criticism and theory about print media, and their successes and failures.

Management Science

311-4 Statistical Analysis for Business Decisions. A continuation of statistical concepts as applied to business, including analysis of variance, correlation and regression analysis, stochastic processes, and probability distributions. Prerequisites: 380, GSD 114d.

313-4 Introduction to Quantitative Methods. Introduction to modern mathematical concepts and methods applicable to business decisions including matrix algebra, linear programming, and elementary calculus. Prerequisites: 311, GSD 114a.

315-4 Operations Research Applications in Business. The study of application of operation research techniques to business problems. Mathematical programming, queueing, and other models are examined through application to production, marketing, and other functional areas. Prerequisite: 313.

380-4 Management Systems I. A study of organizational decision making within the concept of systems with emphasis on information flows, decision centers and the application of data processing techniques. A major portion of the course is student development of an information, decision-making, and control system for a specific small-scale business enterprise. Prerequisite: General Business Administration 140.

381-4 Management Systems II. The study of the application of principles of systems analysis and systems design to business problems. Attention upon the complexities involved in the simultaneous design and integration of production, marketing, and other sub-systems. Prerequisites: 313, 380, concurrent registration in 315.

382-4 Management Systems Simulation. Presentation of theoretical and practical aspects of simulation techniques in the evaluation of design and control of management systems. Construction of simulation models to evaluate the effectiveness of a systems model. Prerequisites: 315, 381.

480-4 Integrated Management Systems. The study of organizations from a total systems concept—integrated decisions, physical, and information systems. Prerequisite: 382.

489-1 to 4 Independent Study in Management Science. An investigation of topical areas in greater depth than regularly titled courses permit. Individual or small group readings or projects. For qualified seniors. Prerequisite: consent of instructor and department chairman.

510-4 Statistical Analysis for Decision-Making.

511-4 Quantitative Methods for Decision-Making.

513-4 Deterministic Models in Decision-Making.

518-4 Seminar in Probabilistic Models.

580-4 Management Systems.

583-4 Advanced Management Systems.

588-4 Seminar in Management Systems.

592-4 Professional Development in Quantitative Systems.

Marketing

370-4 Consumer Behavior. An interdisciplinary approach to the analysis and interpretation of consumer buying habits and motives and the resultant pur-

chases of goods and services. The purchaser's psychological, economic, and sociocultural actions and reactions are stressed as they relate to a better understanding of consumption. Prerequisites: GSB 103a,b, GSB 201c.

371-4 Principles of Marketing Management. An introductory survey of the problems encountered by the marketing executive and the analytical and evaluative systems available which can be used to improve his operating efficiency. Emphasis is placed on the use of marketing management factors in the areas of markets, products, distribution, price, and promotion. Prerequisite: 370.

452-4 Physical Distribution Management. A systematic integrated treatment of problems of managing the flow of raw materials, parts, semi-manufactured and finished goods from their sources to the ultimate consumer. Stress on the application and logic of quantitative decision tools to the problems of spatial relationships of plant capacity and storage facilities and their connecting transportation linkages. Prerequisites: 470, Management Science 315.

470-4 Marketing Research. A development of the concepts necessary for understanding and performing research in the area of marketing. The basic procedures and theories underlying research are investigated, evaluated and applied to marketing decision making. Market, advertising, and sales research. Prerequisites: 371, Management Science 311.

471-4 Advertising Policy and Management. Advertising strategy, planning, and research and their relationship to other marketing tools. Emphasis on problems faced by marketing and business executives in administering the advertising effort. Prerequisite: 470.

472-4 Sales Policy and Management. An examination of the organization of the sales effort and of functions of salesmen and sales managers (including all echelons from the general marketing managers to the territory salesmen). Problem areas such as sales department organization, recruitment of salesmen and their motivation and supervision, design and administration of sales territories, appraisal of salesmen's performance. Prerequisite: 470.

473-4 Advanced Marketing Management. Development of the student's ability to identify marketing problems, investigate alternative solutions, and render decisions. Should be the final marketing course taken by the undergraduate marketing major. Prerequisite: senior standing.

474-4 Retail Management and Promotion. Functions, organization, and management of retail enterprises; impacts of recent and contemporary forces. Detailed study of merchandising and promotional activities. Retailing careers and appropriate preparation. Designed for teachers of Distributive Education and applies toward state Distributive Education certification. Prerequisite: 370.

479-1 to 4 Independent Study in Marketing. An investigation of topical areas in greater depth than regularly titled courses permit. Individual or small group readings and projects. For qualified seniors. Prerequisite: consent of instructor and department chairman.

570-4 Marketing Concepts.

573-4 Marketing Policies.

578-4 Seminar in Marketing.

Mathematics

101-4 Fundamental Mathematics. Basic notions of sets; number systems and their algebraic properties and some computational aspects; ordering of real numbers, inequalities, and absolute value; intuitive geometry; relations, variables, and functions. Individual instruction given as needed until completion of intermediate algebra. Ten lecture and laboratory hours per week. May not carry credit toward some degrees. Graded on pass-fail basis only.

150-8 (4,4) Elementary Calculus and Analytic Geometry. Elementary differential and integral calculus with analytic geometry and applications. Includes the definite integral and differentiation of transcendental functions. Must be taken in a,b sequence. Prerequisite: GSD 114c.

214-4 An Introduction to Differential and Integral Calculus. Functions; limits; derivatives; area under a curve; exponential and logarithmic functions; differential equations of growth and decay; applications to biology, economics, and elementary physical problems. May not be taken for credit after credit

has been received for 150b and does not count as credit toward a mathematics concentration. Prerequisite: GSD 114c.

225-4 Programming in Fortran IV. Basic programming techniques and program structure. Debugging. Introduction to the use of flow charts. Emphasis on various computer applications throughout. Prerequisite: GSD 114a.

226-4 Algorithmic Languages for Digital Computers. Basic features of PL/1, plus string manipulation features, ON-conditions, and dynamic storage allocation. Comparisons to Fortran and Algol. Computer applications emphasized. Prerequisite: GSD 114a.

229-8 (4,4) Introduction to Computer Science. (a) Number systems and internal representation; procedures and algorithms; introduction to computer organization; information systems and components. (b) Machine language, assembler language; addressing techniques; macros; symbol tables; specification languages; general features of supervisory systems. Prerequisite: 225 or 226.

250-4 Calculus and Analytic Geometry. Continuation of 150. Differential and integral calculus, applications, infinite series. Prerequisite: 150b.

300-12 (4,4,4) Introductory Analysis. A transition from elementary calculus to modern analysis. (a) Sets and mappings; properties of real numbers, completeness; limits and continuity; univariate calculus, differentiation and integration. (b) Differential calculus of several variables. (c) Integral calculus of several variables. No credit given for both b,c and 350. Prerequisite: 250 or consent of instructor.

305-4 Differential Equations for Applications. Ordinary differential equations, numerical methods of solution, second order linear differential equations with singular points, special functions. (Some knowledge of computer programming is desirable.) Prerequisite: 250.

310-4 The Teaching of Elementary Mathematics. (For elementary education concentrations only.) A professional treatment of the subject matter of arithmetic methods and a study of trends and current literature on the teaching of arithmetic. Prerequisite: GSD 112-9.

311-4 The Teaching of Secondary Mathematics. A study of the nature and objectives of the secondary mathematics curriculum. Stress on the means of introducing new ideas into the high school program. For students preparing to be certified teachers of secondary mathematics. Does not count toward a mathematics concentration for Bachelor of Arts degree students. Prerequisites: 321, Secondary Education 315.

321-4 Elementary Linear Algebra. The arithmetic of matrices, determinants, and inverses; systems of linear equations; a first look at vector spaces, linear mappings, Euclidean spaces, and eigenvalue problems. Prerequisite: 150.

326-9 (3,3,3) Applied Logic, Algorithms, and Discrete Structures. Sets, relations, and mappings; Boolean algebra; the propositional calculus; algorithms and computing machines; the first order predicate calculus; formal languages; introduction to combinatorial mathematics; graphs, trees, networks; introduction to data structures. Prerequisite: 225 or 226.

350-8 (4,4) Multivariable Calculus. Linear algebra, vector calculus functions of several variables, the differential and integral calculus, directional derivatives, maxima and minima, gradient, divergence and curl, line and surface integrals, Green's theorem, Stoke's theorem, and integrals independent of path. Students may not receive credit for both this course and 300b,c. Prerequisite: 250.

395-2 to 12 Readings in Mathematics. Supervised reading in selected subjects. Prerequisites: 12 hours of 300- or 400-level mathematics, 4.0 average in mathematics and consent of chairman.

400-3 History of Mathematics. An introduction to the development of major mathematical concepts. Particular attention 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: 350.

405-4 Fourier Series for Applications. Fourier series and boundary value problems, series solutions of the partial differential equations of heat conduction and wave motion, special functions. Prerequisites: 305, 350a.

406-4 Transforms for Applications. Convolution integrals, the Fourier transform, the delta distribution, brief survey of complex integration, the Laplace

transform, and selected topics from the Mellin, Hankel, Abel, Z., and Hilbert transforms. Prerequisites: 305, 350a.

410-16 (4,4,4,4) Statistical Analysis. For students in fields using statistical methods but not required to take calculus. Includes (a) elements of probability, estimation, and testing hypotheses; (b) the general linear model (multiple linear regression, analysis of variance, analysis of covariance) and non-parametric statistics; (c) design of experiments; (d) sample survey techniques. May not be used to satisfy requirements for a mathematics concentration. Three lectures and two laboratory hours per week. Must be taken in either a,b,c,d or a,b,d,c sequence. Prerequisite: GSD 114a.

413-4 Solid Analytic Geometry. An algebraic study of equations of the first and second degree in three variables, with applications to geometry. Systems of planes; equations of lines in symmetric and parametric form. Spheres, cylinders, surfaces of revolution. Matrix algebra; real orthogonal and symmetric matrices. Coordinate transformations; orthogonal similarity. Quadratic forms and quadric surfaces; invariants; principal axes and planes. Prerequisite: 350a.

420-6 (3,3) Fundamental Concepts of Algebra. Introduces abstract algebraic structures including groups, rings, fields, and vector spaces. Must be taken in a,b sequence. Prerequisite: 321.

421-9 (3,3,3) Linear Algebra. A thorough study of vector spaces and linear mappings. Special attention to two and three dimensional Euclidean spaces. Basic to advanced work in mathematics, pure or applied. Must be taken in sequence. Prerequisite: 321 or consent of instructor.

425-3 Theory of Numbers. Topics in elementary number theory, including properties of integers and prime numbers, divisibility. Diophantine equations, and congruence of numbers. Prerequisites: 321, 350.

433-3 Point Set Topology. Designed to provide sufficient background for advanced topics in analysis and topology. Elements of set theory, metric and topological space, connectedness, compactness, product and quotient topology, separation axioms, locally compact space, complete metric space. Prerequisite: 350.

435-9 (3,3,3) Fundamental Concepts of Geometry. A balanced presentation of geometry as a branch of mathematics using both synthetic and analytic methods. (a) Foundations of geometry; axiom systems for geometries, models, selected theorems from absolute and Euclidean geometry. (b) Projective geometry: quality, theories of Desargus and Pappus, algebraic models, homogeneous coordinates, conics, geometric invariants under projective transformations. (c) Non-Euclidean geometry: Euclid's fifth postulate; models of non-Euclidean geometries; basic results and comparison of elliptic, parabolic, hyperbolic, and absolute geometries. Must be taken in either a,b,c or a,c,b sequence. Prerequisites: 321, 350a.

440-2 to 4 Modern Algebra for Teachers. An introduction to algebra as a logical system, including groups, rings, and fields. Prerequisite: consent of instructor.

442-2 to 4 Survey of Geometry. A survey of geometry, including projective geometry, topology, etc. Prerequisite: consent of instructor.

445-2 to 4 Fundamental Concepts of Calculus. A careful study of the basic concepts of calculus offered as part of the special graduate program for secondary school teachers. Prerequisite: consent of instructor.

446-2 to 10 Structure of Mathematics. Designed to assist experienced teachers in extending their understanding of mathematics. (a) Elementary School Mathematics, (b) Junior High School Mathematics. Does not count credit toward a mathematics concentration. Prerequisites: experience in teaching, consent of instructor.

447-4 The Structure of Secondary School Mathematics. Designed to assist experienced secondary school teachers in extending their understanding of mathematics. May not be taken for credit after credit has been received for 446 and does not count toward a mathematics concentration. Prerequisites: experience in secondary teaching, consent of instructor.

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: 350.

455-9 (3,3,3) Advanced Calculus for Applications. (a) A survey of the theory of analytic function of a complex variable. (b,c) Selected topics from applications of complex analysis, operational analysis, partial differential equations, orthogonal polynomials, and generalized functions. Prerequisite: 350.

458-6 (3,3) Finite Mathematics. An introduction to topics in finite mathematics such as logic, sets, probability, linear algebra, and Markov chains. Designed for students preparing for high school teaching and for advanced students in the behavioral sciences. Prerequisite: 250.

460-4 Modern Geometry. Advanced topics in Euclidean geometry by the synthetic method. Topics include the nine-point circle, Simson line, theorems of Ceva and Menelaus, coaxial circles, harmonic sections, poles and polars, similitude, and inversion. Prerequisite: 20 hours of college mathematics.

470-9 (3,3,3) Data Structures, Programming Languages, and Compiling Techniques. (a) Data structures—lists, trees, multilinked structures; formal specifications and algorithms. Dynamic allocation. (b) Characteristics of programming languages. Structure of simple statements; algorithmic languages, list processing and string manipulation languages. (c) Compiler construction; compiler organization. Prerequisites: 229b, 326 or consent of instructor.

472-9 (3,3,3) Operations Research. Linear system problems, linear programming and network problems; probabilistic systems, queueing and inventory theory; digital simulation; time dependent processes, single and multi-channel time series analysis. Prerequisites: 225a, 483a.

473-9 (3,3,3) Computer Organization and Systems Programming. (a) Digital arithmetic, digital storage and accessing, control functions, input/output, system organization, error detection and correction. (b) Comparative study of systems programming. Batch processing, multiprogramming and multiprocessor systems; addressing techniques; core management, file system design and management; parallel processing; interprocess communication. (c) Systems programming—applications. Prerequisites: 229a, 326c or consent of instructor.

474-6 (3,3) Switching Theory and Sequential Machines. (a) Number systems and codes, switching algebra, Boolean algebra, gate network analysis, combinational circuit minimization, sequential circuits. (b) Finite automata and sequential machines. Equivalence of states and machines, congruence, generalized and incomplete machines, multitape nonwriting automata. Prerequisite: 326 or consent of instructor.

475-9 (3,3,3) Numerical Analysis. Introduction to approximation methods including finite differences and interpolation; numerical differentiation and quadrature; least squares approximation; numerical solution of linear and nonlinear systems; numerical integration of systems of ordinary and partial differential equations. Emphasis upon error analysis throughout. Must be taken in a,b,c sequence. Prerequisites: 225, 305.

483-9 (3,3,3) Introduction to Mathematical Statistics. A mathematical development of the elements of statistical theory. (a) Probability distributions, generating functions, and limit theorems. (b) Statistical inference, estimation, tests of hypotheses, general linear hypotheses. (c) Design of experiments and special topics—a mathematical model approach. Must be taken in a,b,c sequence. Prerequisite: 350.

499-3 (1,1,1) Senior Seminar. A problem seminar for senior mathematics concentrations. Prerequisites: 421a,b and 452a,b or 455a,b.

501-9 (3,3,3) Real Variables.

505-9 (3,3,3) Theory of Ordinary Differential Equations.

520-9 (3,3,3) Abstract Algebra.

523-9 (3,3,3) Simulation Theory, Applications, and Languages.

524-9 (3,3,3) Linear, Non-Linear, Dynamic Programming.

526-9 (3,3,3) System Analysis for Decision-Making.

527-9 (3,3,3) Probabilistic Models.

530-6 (3,3) Topics in Topology.

536-3 Differential Geometry.

545-4 Intermediate Analysis for High School Teachers.

550-1 to 10 Seminar.

551-9 (3,3,3) Functional Analysis.

555-9 (3,3,3) Complex Variables.

575-9 (3,3,3) Advanced Topics in Numerical Analysis.

576-9 (3,3,3) Advanced Topics in Applied Mathematics.

580-9 (3,3,3) **Mathematical Methods of Statistics.**
 582-9 (3,3,3) **Applied Probability and Stochastic Processes.**
 595-1 to 10 **Special Project.**
 599-3 to 9 **Thesis.**

Music

021-1 **Symphonic Bnd.** May be repeated. Prerequisite: by audition.
 022-1 **University Band.** May be repeated.
 023-1 **Stage Band.** May be repeated. Prerequisite: by audition.
 031-1 **University Orchestra.** May be repeated. Prerequisite: by audition.
 041-1 **Community Choral Society.** May be repeated.
 042-1 **University Chorus.** May be repeated.
 043-1 **Concert Chorale.** May be repeated. Prerequisite: by audition.
 101-3 (1,1,1) **Class Applied Piano.** Minimum instruction for passing proficiency examination in piano which is required for all music concentrations. Must be taken in sequence.
 105-12 (4,4,4) **Theory of Music.** Fundamentals of music through sight singing, dictation, written and keyboard harmony. Must be taken in a,b,c sequence. Prerequisite: piano proficiency or concurrent enrollment in 101.
 106, 206-15 (5,5,5) **Technics and Literature of Music Practice.** Theoretical and historical study of music of all periods from plainsong and folksong to the present; performance and analysis of music within a historical framework which forms the basis for ear-training, sight-reading, conducting, and composition. Five class periods weekly plus laboratory and drill sessions. Prerequisite: piano proficiency or concurrent enrollment in 101.
 111-3 (1,1,1) **Class Applied Strings.** Practical training in basic principles of playing violin, viola, cello, and string bass. Introductory techniques and methods for teaching these instruments in elementary and secondary schools. May be taken in any sequence.
 112-2 (1,1) **Class Applied Woodwinds.** Practical training in basic principles of playing woodwind instruments of the band and orchestra. Introductory techniques and methods for teaching these instruments in elementary and secondary schools. (a) Clarinet. (b) Mixed Woodwinds. Must be taken in sequence.
 113-2 (1,1) **Class Applied Brass.** Practical training in basic principles of playing brass instruments of the band and orchestra. Introductory techniques and methods for teaching these instruments in elementary and secondary schools. May be taken in either sequence.
 114-1 **Class Applied Percussion.** Practical training in basic principles of playing the percussion instruments of the band and orchestra. Introductory techniques and methods for teaching these instruments in elementary and secondary schools.
 115-3 (1,1,1) **Class Applied Voice.** Training in the basic principles of correct singing and diction. Introductory techniques and methods for teaching singing in the elementary and secondary schools. Must be taken in sequence.
 140, 240, 340, 440, 540-2 or 4 **Private Applied Music.** Offered at five levels in the areas listed below. Credit is given at 2 or 4 hours on each level. Consult with adviser for details of credit and requirements. May be repeated for three quarters at each level. Students with a concentration in Performance usually take 4 hours. Concentrations in Music Education and all secondary concentrations usually take 2 hours. Prerequisite for 140: music concentration or secondary concentration or consent of music faculty. Prerequisite for higher levels: three quarters at the previous level on the same instrument or consent.

a. Violin	k. Piano
b. Viola	l. French Horn
c. Cello	m. Trumpet
d. String Bass	n. Trombone
e. Flute	o. Tuba
f. Oboe	p. Baritone
g. Clarinet	q. Voice
h. Bassoon	r. Organ
i. Saxophone	s. Harpsichord
j. Percussion	t. Harp
	u. Classical Guitar

- 165-3 (1,1,1) Piano Practicum.** Keyboard harmony, sight reading, score reading, transposition, analysis at keyboard, improvisation, and harmonic examination of keyboard forms and techniques. May be repeated for credit up to 3 hours.
- 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 101.
- 201-3 (1,1,1) Class Applied Piano.** Minimum instruction for passing piano proficiency examination which is required of all music concentrations. Must be taken in sequence.
- 205-9 (3,3,3) Theory of Music.** Advanced harmonic techniques, modulation, altered chords, chromatic harmony, counterpoint, and introduction to contemporary harmonic principles. Must be taken in sequence. Prerequisite: 105c.
- 206-15 (5,5,5) Technics and Literature of Music Practice.** (See 106.)
- 240-2 or 4 Private Applied Music.** (See 140.)
- 300-3 Music Education—Elementary.** (For non-music concentration only.) Teaching music in the elementary grades. Prerequisite: 200 or equivalent.
- 301-9 (3,3,3) Music Education.** (a) Music in the elementary school curriculum, grades K-6. Analysis of instructional materials, development of rhythmic and melodic expressions, creative, instrumental, listening activities. Creating a musical environment in the classroom. (b) Junior high school: Curriculum, organization, and administration of choral, instrumental, and general music classes; resource units; the adolescent voice. (c) Senior high school: Curriculum, organization, and administration of choral, instrumental, and general music classes. May be taken in any sequence. For music concentration only.
- 307-4 Recreational Music.** For those interested in the less formal approach to music and for prospective leaders for recreational activities.
- 309-9 (3,3,3) Orchestration.** The techniques of writing for orchestral instruments. Must be taken in a,b,c sequence. Prerequisite: 205c.
- 312-9 (3,3,3) Composition.** Original composition in the smaller forms. Must be taken in sequence. Prerequisite: 205c or consent of instructor.
- 318-6 (3,3) Conducting.** (a) General: Fundamental conducting patterns, size of beats, use of each hand; conducting experience with laboratory groups both choral and instrumental; discussion and study of musical terminology. (b) Choral and Instrumental: Continued conducting experience through laboratory group; study of rehearsal techniques, balance, blend, and the relationship of parts to the total ensemble; evaluation and analysis of literature suitable for school groups of all levels of ability. Must be taken in a,b sequence.
- 326-9 (3,3,3) Analysis.** Analysis of the important musical forms and styles. Must be taken in sequence. Prerequisite: 205c.
- 340-2 or 4 Private Applied Music.** (See 140.)
- 355-4 (1,1,1,1) Chamber Music Ensembles.** (a) Brass, (b) Woodwinds, (c) Strings, (d) Percussion. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisite: consent of instructor.
- 357-9 (3,3,3) Music History and Literature.**
- 358-3 Jazz.** Jazz forms and styles: development, illustrations, and performances.
- 365-1 Piano Ensemble.** Piano four hands, two pianos; piano and voice; piano and other instruments. May be repeated for credit at discretion of instructor.
- 401-3 Psycho-Physiology of Music.** The essential human capacities, their relationship to musical potentials and development as well as with the acoustical foundations of the world of music.
- 411-9 (3,3,3) Music Literature.** (a) Symphonic Literature. Development of the symphony and the symphonic poems to 1900. (b) Choral Literature. The literature of the larger vocal forms such as the cantata and oratorio to 1900. (c) Chamber Music Literature. Chamber music literature from the Renaissance to the present.
- 412-9 (3,3,3) Composition.** Original composition in the larger forms for various media. Must be taken in sequence. Prerequisite: 312c or consent.
- 413-9 (3,3,3) Piano Literature.** A survey of the entire spectrum of repertory for piano; methods of teaching the techniques of such literature. Taught in sequence. Prerequisite: 340k.
- 420-1 Music Education Practicum.** A shop-laboratory course dealing with the selection, adjustments, maintenance, and repair of musical instruments.

- 440—2 or 4 Private Applied Music. (See 140.)
- 442—9 (3,3,3) Counterpoint. (a) Sixteenth-century counterpoint; (b) eighteenth-century counterpoint; (c) larger contrapuntal forms with emphasis on fugue. Prerequisite: 205c.
- 451—3 Teaching General Classroom Music.
- 453—4 to 6 Workshop in Common Learnings in Music.
- 455—2 to 6 Elementary Music Education Workshop.
- 460—6 (2,2,2) Practicum in Opera. Skills, techniques, and literature used in the performance and production of operatic scenes, chamber operas, and operettas. Prerequisite: audition.
- 461—9 (3,3,3) Teaching Techniques and Materials. (a) Methods, (b) materials, (c) observation and teaching. Designed to meet the needs of applied students in which the problems of private studio teaching and college-level teaching are discussed. Must be taken in a,b,c sequence. Prerequisite: 340k.
- 465—3 Development and Teaching of Strings. Place and function of string education in the elementary and secondary schools. Techniques of heterogeneous and homogeneous string teaching. Developing and sustaining interest in the string program. Resource aids. May be repeated for a total of 9 hours credit. Prerequisite: senior standing.
- 481—2 to 6 Readings in Music Theory.
- 482—2 to 6 Readings in Music History and Literature.
- 483—2 to 6 Readings in Music Education.
- 499—1 to 3 Independent Study. The capable student engages in original investigations with faculty specialists. May be repeated for credit. Prerequisite: consent of instructor.
- 501—3 Introduction to Graduate Study in Music.
- 502—9 (3,3,3) History and Analysis of Musical Style.
- 514—2 to 6 Collegium Musicum.
- 515—3 20th Century Literature.
- 518—3 Pedagogy of Music Literature.
- 519—9 (3,3,3) Vocal Pedagogy and Literature.
- 520—3 American Music.
- 522—3 Seminar: Music History and Literature.
- 535—3 Contemporary Idioms.
- 540—2 or 4 Private Applied Music. (See 140.)
- 550—6 (3,3) Organization and Administration of the Music Education Program.
- 553—6 (3,3) Seminar in Materials and Techniques.
- 556—3 Advanced Conducting.
- 560—6 (3,3) Seminar in Music Education.
- 566—1 or 2 Instrumental Ensemble.
- 567—1 or 2 Vocal Ensemble.
- 590—6 Graduate Recital.
- 599—1 to 9 Thesis.

Nursing

Courses on the 300 level are open only to those students who are concentrating in nursing.

280—12 (4,4,4) Nursing and Community Health. (a) A survey of professional nursing and the nurse's role in community health. Observation in a variety of community agencies. (b) Fundamental skills basic to all clinical nursing. Administering beginning patient-centered nursing care to patients in community clinical facilities. (c) Basic principles and skills related to the fields of pathology and pharmacology. Through a problem-solving process, students plan and administer patient-centered nursing care in clinical facilities in the community.

301—6 Maternal and Newborn Nursing. Developing a concept of family-centered care for mothers and newborns. The aspect of nursing necessary to provide effective care throughout the maternity cycle—antipartum, intrapartum, puerperium, and care of the newborn. Opportunities to participate in prenatal care in a clinic setting. Concurrent clinical laboratory within an appropriate setting. Prerequisite: 280c.

302-8 (4,4) Nursing of Children. Developing a concept of family-centered care for infants and children. Planning nursing care based upon the developmental needs of the child as a person, and the problems confronting him and his family. (a) The needs of the child with respiratory embarrassment; inflammatory reaction; and circulatory impairment. (b) The needs of the child with metabolic disturbance; change in body image; and disturbance of consciousness.

303-8 (4,4) Medical-Surgical Nursing. The nursing intervention and underlying scientific principles relevant to the care of the adult during illness. (a) The care of the adult having a problem maintaining gaseous exchange, maintaining transportation of material to and from cells, and maintaining body defenses. (b) The care of the adult having a problem maintaining metabolism, maintaining body image, and maintaining consciousness. Prerequisite: junior standing.

304-2 Social Forces in Nursing. A study of nursing at the present time in relation to historical and other influences upon it, and the implications for its future developments.

350-8 Medical-Surgical Nursing. The care of the adult having a problem maintaining locomotion, maintaining absorption of nutrients, and elimination of waste, maintaining perception and maintaining generative function. Prerequisite: senior standing.

360-8 Psychiatric Nursing. Understanding psychiatric nursing premises in: developing basic skills in observing and interpreting behavior; communicating effectively and establishing meaningful relationships with others. Understanding and effectively meeting needs of patients manifesting various behavioral disturbances in living. Prerequisite: senior standing.

370-8 (4,4) Community Health Nursing. Gaining greater depth of knowledge as well as breadth of experience in professional nursing for the senior student. The periods of practice in the actual community affords the student an opportunity to synthesize and to apply previous learnings in all areas of nursing as she works with families and community groups in the community setting. (a) Family health supervision and care of the sick in the home with emphasis on the process and methods. (b) A continuation of (a) with emphasis on settings other than family health service, although students carry their assigned families for the two quarters. Occupational and school health nursing, working with groups, and study of the community.

382-6 Leadership in Nursing. The need for responsible leadership in nursing. Basic principles of administration and supervision as means of developing effective relationships within health and nursing teams and other institutional and community situations.

384-2 Senior Seminar. Study in areas of nursing which present certain professional, national, and international challenges. Prerequisite: senior standing.

385a,b,c,d-1 to 4 Independent Study. Student projects and study carried out under guidance in investigation of a problem in an area of interest. A maximum of 3 hours may be taken in one quarter. Prerequisites: consent of instructor and dean, closed class card.

Philosophy

200-4 Introduction to Philosophy. Survey of the traditional branches and problems of philosophy, such as religion, metaphysics, epistemology, ethics, political theory, aesthetics, and history.

300-4 Introduction to 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.

301-4 Philosophy of Religion. An analysis of problems in the psychology, metaphysics, and social effects of religion. The nature of mystical experience, the existence of God, and problems of suffering, prayer, and immortality.

302-4 World Religions. A historical and comparative study of the principal religions of the world. Particular attention is given to such non-Christian faiths as Hinduism, Buddhism, and Islam.

306-4 Introduction to Phenomenology. An introduction to the dominant movement in contemporary continental philosophy. Attention to the central works of representative thinkers, e.g., Husserl, Heidegger, Sartre, Merleau-Ponty,

and Ricoeur, in order to expose the problems, doctrines, and methods which characterize phenomenology as a mode of philosophizing. Prerequisite: sophomore standing.

307-4 Advanced Philosophy of Science. A critical exploration of the connections between scientific and nonscientific modes of knowing, the logical structure of scientific accounts, and the modifications of our views of the world resulting from such scientific theories as the theories of relativity and quantum mechanics. Prerequisite: consent of instructor or one of the following courses—GSA 363a or b, GSC 363a or b.

308-4 Introduction to Philosophical Analysis. An introduction to the dominant movement in contemporary philosophy in English speaking countries. Attention to the central works of representative thinkers, e.g., G. E. Moore, Bertrand Russell, Gilbert Ryle, and Ludwig Wittgenstein, in order to explain the problems, doctrines, and methods which characterize analytic philosophy as a mode of philosophizing. Prerequisite: sophomore standing.

342-4 Social and Political Philosophy. Analysis of the philosophical problems of social and political theory and conduct, and their expression in social and political organization and values. Prerequisite: sophomore standing.

345-4 The Aesthetics of Film. An examination of the major genres of film and film theory. Prerequisite: completion of third-level GSC requirements.

355-4 Philosophy of Education. Survey of theories of education and their relationships to educational policies and practices, as elucidated by the great teachers. Satisfies the education requirement, Foundations of Education 355.

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.

GSC 360-6 (3,3) Arts and Ideas in Famous Cities.

GSA or GSC 363-6 (3,3) Philosophy of Science.

GSC 375-3 Ethics.

376-4 Advanced Ethics. An investigation of problems raised in modern discussions of individual and social morality. Prerequisite: GSC 375.

385-20 (4,4,4,4,4) History of Western Philosophy. (a) Greek and Roman. (b) Medieval and Renaissance. (c) Classical Modern (17th and 18th centuries). (d) 19th Century. (e) 20th Century.

386-4 American Philosophy. A survey of American philosophic thought from colonial days to the present, with emphasis on such recent thinkers as Peirce, James, Royce, Dewey, and Santayana.

391-4 Introduction to Theory of Knowledge. A study of the various kinds of knowledge, of the foundations of knowledge in thought and perception, and of the rational and empirical elements constituting the structure of knowledge.

402-4 Hindu Thought. A historical survey of Indian philosophy from the Upanishads to Vedanta. Prerequisite: 302.

403-4 Buddhist Thought. An investigation of Buddhist philosophy from Theravada through Zen. Prerequisite: 302.

430-4 Symbolic Logic. Use of symbols as tools for analysis and deduction. Study of truth tables, Boolean Expansions, propositional calculus and quantifiers, logic of relations, and their functions in logistic systems.

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.

484-12 (4,4,4) History of Western Political Theory. (Same as Government 484.) (a) Ancient and Medieval. (b) Renaissance and Early Modern. (c) Recent. May be taken separately.

490-2 to 12 Special Problems. Seminar for qualified seniors and graduate students to pursue specific topic in depth. Varied content. Prerequisite: consent of instructor.

495-2 to 12 Independent Readings. Independent study in philosophy on a tutorial basis. Prerequisite: consent of instructor and chairman.

502-4 (2,2) Methods of Teaching Philosophy.

520-4 Practicum in Teaching Philosophy in the Community College.

531-4 Plato.

535-4 Aristotle.

545-4 Rationalism.

546-4 Empiricism.

- 560—4 Logic.
565—4 Ethical Theory.
572—4 Seminar in the History of Philosophy.
575—4 Seminar in the Problems of Philosophy.
599—2 to 8 Thesis.

Physical Education

- 025—0 Orientation.
300—10 (2,2,2,2,2,2) Techniques for Men. (a) Soccer, Flag Football, and Speedball. (b) Stunts, Tumbling, and Gymnastics. (c) Fitness and Wrestling. (d) Softball and Track and Field. (e) Basketball, Volleyball, and Badminton. Prerequisite: primary or secondary concentration in physical education.
301—10 (2,2,2,2,2,2) Techniques for Women. (a) Soccer, Flag Football, and Speedball. (b) Stunts, Tumbling, and Gymnastics. (c) Basic Movement and Modern Dance. (d) Softball and Track and Field. (e) Basketball, Volleyball, and Badminton. Prerequisite: primary or secondary concentration in physical education.
302—12 (2,2,2,2,2,2) Techniques for Men and Women. (a) Basic Rhythms, Folk Dancing, and Square Dancing. (b) Golf and Tennis. (c) Archery, Bowling, and Fencing. (d) Canoeing and Sailing. (e) Beginning and Intermediate Swimming. (f) Advanced Swimming and Senior Life Saving. Prerequisite: primary or secondary concentration in physical education.
303—12 (4,4,4) Homokinetics. (a) Structural and functional basis of human movement; analysis of human systems and system integration. (b) Physiological and physical principles essential to motor activity. (c) Analysis of selected motor activities; typical and atypical patterns of movement; applications of kinesiological principles to specific instructional problems. Must be taken in a,b,c sequence. Prerequisite: GSA 204.
305—3 Physical Education for the Atypical Student. The recognition of physical deviations and the provisions of special or modified physical education or recreational activities for such students. Prerequisite: 303.
312—2 to 6 Playground Leadership. (Field Experiences).
323—3 (1,1,1) Officiating Techniques. Study of rules and their interpretation; requirements for ratings given by the United States Field Hockey Association and the Division for Girls' and Women's Sports. Officiating practice required. (a) Fall: field hockey and soccer. (b) Winter: basketball. (c) Spring: volleyball and softball.
341—3 Principles of Physical Education. The scientific foundations of physical education based on accepted principles of psychology, physiology, sociology, biology, educational method, philosophy, anatomy, kinesiology, and related areas.
348—3 Camp and Community Leadership. Fundamentals of scouting, camping, and counseling. A weekend camping trip required.
349—2 Camping Education. Designed to give the potential camp counselor an understanding of the camp; its physical set-up, equipment and necessary routines; its personnel, purpose, traditions, and possibilities.
350—4 Methods and Materials for Teaching Physical Education Activities in the Elementary School. The organization and conduct of the program, program planning, evaluation of materials, observation and practice in creative rhythms, singing games, folk dancing, and games of low organization. (Required for elementary education.)
352—2 History and Physical Education. A study of the background and development of physical education.
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—2 Techniques of Teaching Swimming. Methods of teaching, analysis of strokes, and the devices for teaching swimming and life saving. Prerequisite: senior lifesaving.
365—2 to 4 Organization and Administration of Community Recreation. The social, economic, and governmental structure of the community; establishing the community recreation program; problems of facilities, equipment, finance,

promotion; selecting and supervising personnel; integration with associated programs.

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.

376-3 Emergency 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.

381-4 Theory of Coaching. Principles underlying participation in competitive interscholastic athletics. Theory of coaching sports, technique, strategy, organization and administration of programs.

382-4 Methods and Materials in Secondary Schools. Preparation of teachers and supervisors for group management related to recreational activities. Emphasis on proper class arrangements for maximum teaching effectiveness. Considerable attention to appropriate teaching material.

383-2 Outdoor Group Games. Prepares student to develop outdoor group game activities. Emphasis on correct techniques, fundamentals, strategy, and evaluation procedures. Stresses lead-up approach to group activity. Includes practical experiences. Prerequisite: consent of instructor.

384-2 Rhythmical Activities. Deals with all phases of the rhythmical program, teaching techniques, analysis of problems, evaluation techniques. Includes experience in working with children. Prerequisites: GSE 117a,b,f.

385-2 Indoor Group Games. Basic indoor activities of the elementary school program. Stress on correct techniques, fundamentals, strategy, and evaluation procedures. Emphasizes lead-up approach to group activity. Prerequisite: consent of instructor.

387-2 Development Skills. Stresses basic developmental skills that should be included in physical education program for the elementary school. Emphasis upon progression from gross skills to refined skills. Prerequisite: consent of instructor.

388-2 Self Testing Activities. Prepares the student to develop programs of self testing skills. Stresses knowledge of problems, techniques, materials, safety factors, and evaluation procedures. Includes experience with children. Prerequisite: GSE 118s.

389-4 Affiliation in Physical Education. Observing and assisting instructor in planning, scheduling, and conducting a physical education program by working in area schools. Prerequisite: consent of instructor.

390-3 Evaluation Techniques in the Elementary School Physical Education Program. A study of the methods and concepts in measuring a child's growth and development and physical fitness index with emphasis on analyzing various skill tests and their application to the child.

400-16 (2,2,2,2,2,2,2,2) Coaching. Advanced theory and practice relating to skills, strategies, conditioning, organization, and administration of the principles underlying participation in interscholastic (a) soccer, (b) baseball, (c) basketball, (d) wrestling, (e) cross country, (f) track and field, (g) golf, (h) tennis. Prerequisite: related activity course.

402-4 Organization and Administration of Intramural and Extramural Activities. Planning intramural programs of sports. Planning and co-ordinating extramural activities commonly associated with physical education.

404-4 Workshop in Dance for In-Service Teachers. Includes history of dance, values of dance, interpretation of music for dance, teaching techniques and facilities, and fundamental dance movements leading to knowledge and command of dance skills.

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.

427-4 Physical Education and Recreation for the Handicapped. (Same as Special Education 427.) Characteristics of handicapped children as they affect the feasibility of physical education and recreation activities. Values of specific activities for certain types of children, and methods and materials for teaching physical education and recreation skills. Emphasis on activities suitable to classroom, home, and institution. Prerequisite: Counselor Education 305.

475-2 to 4 Individual Research. The selection, investigation, and writing of a research paper under the supervision of instructor.

476-2 to 4 Teaching Athletic Skills. Modern techniques of teaching skills, conditioning, and strategies; for prospective physical education teachers and coaches.

500-4 Techniques in Research.

501-4 Curriculum in Physical Education.

502-4 Foundations of Motor Skills.

503-4 Seminar in Physical Education.

504-4 Problems in Physical Education.

509-4 Supervision of Health and Physical Education.

525-1 to 6 Readings in Physical Education.

Physics

206-15 (5,5,5) College Physics. Designed to meet premedical requirements and the needs of students majoring in the biological sciences. Laboratory. Must be taken in a,b,c sequence. Prerequisite: GSD 114a.

211-12 (4,4,4) University Physics. A basic course for science, mathematics, and pre-engineering students. (a) Kinematics, dynamics, and statics. (b) Thermodynamics, wave motion, acoustics, electrostatics. (c) Optics, electric current theory, magnetism, and electromagnetic waves. Three lecture and two recitation hours per week. Prerequisite: (a) Mathematics 150b or concurrent enrollment; (b,c) 211a.

212-3 (1,1,1) University Physics Laboratory. Experiments in mechanics, heat, sound, light, electricity, and magnetism. Meets three hours per week. Must be taken in a,b,c or a,c,b sequence. Prerequisite: concurrent enrollment in 211.

300a-4 Introduction to Modern Physics. A continuation of 211 covering topics from atomic, nuclear, and solid state physics. Three lectures and two recitation hours per week. Prerequisites: 211, Mathematics 150a.

300b-1 University Physics Laboratory IV. Classical experiments in modern physics; Millikan oil drop, e/m, Franck-Hertz, Foucault velocity of light and black body radiation along with experiments in nuclear physics. Prerequisites: 212, concurrent enrollment in 300a.

301-8 (4,4) Introduction to Classical Mechanics. Statics of a particle, of a rigid body, and of a flexible string; the principle of virtual work, motion of a particle in a uniform and in a central force field, simple harmonic motion, motion of a system of particles, rigid body motion in a plane; non-inertial reference frames; generalized coordinates, Lagrange's and Hamilton's equations of motion; vibrating systems, normal coordinates, and wave motions. Prerequisite for a: 211a,b, Mathematics 250; for b: 301a.

304-4 Thermodynamics and Kinetic Theory. A macroscopic study of the thermal properties of matter and the laws of the thermodynamics. Kinetic theory and the distribution of molecular velocities. Transport phenomena. Prerequisites: 211b, Mathematics 250.

305-8 (4,4) Introduction to Electromagnetic Field Theory. Vector treatment of the theory: electrostatics in vacuum and in matter, steady currents, magnetism, magnetic materials, and electromagnetic radiation. Must be taken in a,b sequence. Prerequisite for a: 211c, Mathematics 250; for b: 305a.

306-4 Elementary Health Physics. An introductory health physics course for students in biology, nursing, pre-dentistry, pre-medicine, and other health related fields. What radiation is, how it interacts with matter, and how it is measured. Some of the harmful effects and beneficial uses of radiation. Ionizing and non-ionizing radiation. Prerequisite: 206 or GSA 101.

310-4 Physical Optics. Theory of interference and interferometers, Fresnel and Fraunhofer diffraction, Fourier transform theory of diffraction; velocity of light, polarization, electromagnetic theory of light applied to reflection and refraction in isotropic media and anisotropic media; birefringence, optic axis, crystal optics, optical activity; theory of normal and anomalous dispersion, scattering of light by particles; quantum optics, lasers. Prerequisites: 211, Mathematics 250.

311-1 Optics Laboratory. Advanced experiments in geometrical and physical optics. Two laboratory hours per week. Prerequisite: 310 or concurrent enrollment.

320-4 Special Relativity. An introduction to Einstein's Theory of Special Relativity. Develops the notion of space and time and treats relativistic kinematics, dynamics, and electromagnetism. Four lecture hours per week. Prerequisites: 211, Mathematics 250.

375-0 to 6 Seminar. Topics selected from a wide range of physical theories and applications (maximum credit per quarter 2 hours). Prerequisite: consent of instructor. Junior or senior standing recommended.

390-1 to 15 Physics Honor Project. Honors work in physics mostly in the junior and/or senior years. Entrance by invitation of any member of the Physics Department. Prerequisite: 305a.

399-3 Dynamical Meteorology. Experimental course. Thermodynamics of atmosphere, water vapor, radiation, transport equation, circulation, turbulence, storm systems, and weather modification. Prerequisite: 301.

404-3 Introduction to Statistical Mechanics. A brief treatment of the kinetic theory of gases; introduction of phase spaces and ensemble theory. Shows the connection between mechanical and thermodynamic concepts and obtains a statistical interpretation of thermodynamic processes. Prerequisite: 301, 304, or consent of instructor.

415a-4 Wave Mechanics. Cites the evidence for a need of new "quantum theory." Considers the Schroedinger equation, and the Born interpretation of the wave function. Develops the theory of quantum harmonic oscillators, the rigid rotator and hydrogen-like atoms. Develops perturbation theory and a description of radiation from atomic systems. Prerequisites: 300a, Mathematics 405.

415b-4 Atomic Physics. Exploits the theoretical considerations developed in 415a by considering their application to the study of atomic and molecular systems. Prerequisite: 415a.

415c-4 Nuclear Physics. A systematic discussion of the properties of the atomic nucleus. Examples of the application of wave mechanics to the study of the nucleus. A consideration of nuclear forces, subnuclear particles, and nuclear models. Prerequisite: 415a.

418-1 to 4 Modern Physics Laboratory. An advanced laboratory course including work with pulsed and continuous lasers and optical detectors, nuclear magnetic resonance, nuclear spectroscopy, vacuum techniques, mass and beta spectroscopy, semiconductor physics. May be repeated. Prerequisite: 300 or consent of instructor.

419-8 (4,4) Introduction to Theoretical Physics. Discussion and application of a variety of mathematical techniques to problems selected from the area of theoretical physics. (a) Treatment of solutions of the homogeneous partial differential equations of theoretical physics in the presence of boundaries. (b) Treatment of inhomogeneous equations and the comparison of the eigenvalue problem in a matrix representation with that in the function space representations. Prerequisites: 300a, Mathematics 305a.

420-2 to 5 Special Projects. Each student is assigned to a definite investigative topic. Adapted to advanced undergraduate students. Prerequisite: 8 hours of physics courses above 300.

435-3 Plasma Physics. Basic equations and conservation laws; first order orbit theory with applications to static and dynamic problems; small amplitude plasma waves; hydromagnetic shocks; collision effects; diffusion across a magnetic field; stability; coupling of plasmas and radiation. Prerequisite: 305a,b.

445-4 Solid State Methods. Symmetry elements, development of space groups, reciprocal space, geometrical theory of diffraction, determination of lattice parameters, Fourier representations of periodic structure. Production of X-rays, kinematical theory of X-ray diffraction, diffraction techniques, factors affecting the intensity of reflections, extinction contrast methods, introduction to the dynamical theory. Prerequisite: 300.

450-4 Introduction to Solid-State Physics. A study of the fundamentals of solid-state physics including classification of solids, interatomic and intermolecular forces, lattice energies, specific heats, lattice dynamics, free electron theory of metals, lattice defects, color centers, luminescence, magnetic materials, radiation damage, transport in ionic crystals. Fermi-Dirac statistics, Fermi distribution, and semiconductors. Prerequisites: 300a, 305.

510-9 (3,3,3) Classical Mechanics.

- 516-2 to 5 Independent Study.
- 520-2 to 5 Graduate Physics Project.
- 521-3 Physics and Physicists.
- 522-4 The Structure of Matter and the Nucleus.
- 523-3 Physical and Geometrical Optics.
- 524-2 Optics Laboratory.
- 525-9 (3,3,3) Concepts of Electricity and Magnetism.
- 530-9 (3,3,3) Electromagnetic Theory.
- 531-9 (3,3,3) Quantum Mechanics.
- 540-3 Nuclear Physics.
- 560-3 Statistical Mechanics.
- 570-3 Solid State Physics.
- 575-1 to 4 Graduate Seminar.
- 576-2 to 6 Seminar on Physics Teaching.
- 580-3 to 6 Selected Topics in Physics.
- 590-1 to 9 Research in Physics (Thesis).

Production

460-4 Production Management. Analysis of the basic functions of manufacturing firms. Students work on a project of their choice in conjunction with the lectures and class discussions. Topics include blueprint reading, equipment and tools, plant layout, product flow, materials handling, quality control, cost control, production control, methods engineering, product engineering, inventory control, the use of PERT, and financial concepts as related to production management. Several plant visits are conducted during the course. Prerequisite: General Business Administration 340.

461-4 Methods Design and Work Measurement. Design of work systems, methods, and the techniques employed in the measurement of work. Emphasizes current philosophy underlying improvement of work methods and procedures used to measure work performed. The course covers four major areas: methods design, standardizing the operation, work measurement, and training the operator. A number of projects correlating with the course material are assigned. Prerequisite: 460.

462-4 Production Planning and Control. Analyzes and describes the recurrent problems of managing the flows of materials, services, and information produced in response to changes in market demand. Emphasizes the top-level decisions necessary to plan and control operations so that customers are served on time and penalty costs are minimized, as well as the decisions made by middle and first line managers in regard to scheduling and controlling, purchasing, production, and distribution. Selected decision-making techniques are analyzed and evaluated from the production manager's point of view. Prerequisite: 460.

463-4 Advanced Production Management. Examines the operating decisions that confront the managerial and supervisory production personnel of large, medium, and small scale manufacturing firms using a variety of production processes. Emphasizes decision-making leading to the solution of production operating problems, and to the formulation of plans of action. Assigned cases provide a view of the types of decisions involved in planning, organizing, coordinating, integrating, and controlling resources so that production goals may be realized. Prerequisites: 460, 461, 462.

Psychology

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 psychological data. Lecture and laboratory. Prerequisite: GSB 201c.

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 201c.

303-4 Adolescent Psychology. Examines the physical and psychological development of the adolescent, and the relevance of childhood development to ado-

lescent problems. Prerequisite: GSB 201c.

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 201c.

305—4 Introduction to Personality Dynamics. Exploration of human motivations, personality patterns, and ways of coping with the stresses of modern life. Prerequisite: GSB 201c.

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 201c.

311—4 Experimental Psychology: Learning. Investigates the processes governing behavioral change. Emphasizes experimental studies of conditioning, memory, and forgetting. Laboratory work includes 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: 311.

313—4 Experimental Psychology: Motivation. An examination of both biological and social variables influencing the activation, direction, and maintenance of behavior. Laboratory work examines the effects of motivation upon behavior. Lecture and laboratory. Prerequisite: 311.

314—4 Experimental Psychology: Comparative and Physiological. An examination of the physiological and phylogenetic variables affecting behavior. The laboratory involves work with different types of organisms emphasizing physiological concomitants of behavior. Lecture and laboratory. Prerequisite: 311.

320—4 Industrial Psychology. A study of the functions of psychology as a science and as a profession in contemporary business and industry. Prerequisite: GSB 201c.

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. Prerequisite: 312 or consent of instructor.

407—4 Theories of Learning. A consideration of the major contemporary learning theories and their relation to experimental data. Prerequisite: 311 or consent of instructor.

408—4 Theories of Motivation. An examination of instinct theories, biological drives, emotions, social motives, and psychodynamic theories as they contribute to a comprehensive psychology of motivation. Prerequisite: 313 or consent of instructor.

409—4 History and Systems. Study of the important antecedents of contemporary scientific psychology. Considers issues, conceptual developments, and research advances, and presents the major schools and systems. Prerequisite: advanced standing or consent of instructor.

420—4 Experimental Analysis of Behavior. An examination of the principles of respondent and operant conditioning in human and animal behavior. Lecture and laboratory. Prerequisite: GSB 201c.

421—4 Psychological Tests and Measurements. Principles of psychological measurement, including errors of measurement, techniques of estimating reliability and validity, techniques of test construction, and problems in assessment and prediction. The laboratory includes the use of selected instruments. Lecture and laboratory. Prerequisite: 211b or consent of instructor.

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.

432—4 Mental Hygiene. An integration of psychological knowledge and principles concerning factors and conditions affecting the individual which tend to facilitate or determine health.

440—4 Theories of Personality. A review and critical evaluation of major personality theories and their supporting evidence. Prerequisite: 305 or consent of instructor.

451—4 Advanced Child Psychology. An examination of concepts, methods,

and problems of human development with consideration of both its psychological and psychosocial aspects. Prerequisite: 301 or 303 or 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 problem-solving, leadership, etc. Prerequisite: 307 or consent of instructor.

471-4 Work Methods and Measurement. A study of the analysis and evaluation of jobs and the measurement of work performances by the use of standard time tables. Prerequisite: 320 or consent of instructor.

473-4 Personnel Psychology. Psychological methods in selection, placement, evaluation, and criterion development. Emphasis is on principles and techniques with some examples of application to decision making in business and industry. Prerequisite: 320 or consent of instructor.

474-4 Psychology of Employee Relations. A study of job satisfaction and morale, psychological aspects of labor relations, industrial counseling, social and organizational variables as they affect psychological climate in employee relations. Prerequisite: 320 or consent of instructor.

479-4 Psychology of Industrial Conflict. Consideration of social and psychological factors underlying controversies between workers and management. Prerequisite: 320 or consent of instructor.

490-1 to 8 Independent Projects. Independent readings and projects in psychology. Prerequisite: consent of instructor and chairman.

495-1 to 8 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.

501-12 (4,4,4) Proseminar in General Psychology.

506-4 Learning Processes and Their Application.

511-8 (4,4) Advanced Learning.

512-4 Sensory Processes.

514-8 (4,4) Physiological Psychology.

517-4 Human Performance.

520-4 Research Design & Inference I.

521-4 Research Design & Inference II.

522-4 Research Design & Inference III.

530-4 Personality Theory and Dynamics.

531-2 to 4 Advanced Psychopathology.

537-4 Counseling and Psychotherapy.

541a-4 Psychodiagnostics I.

541b-2 to 4 Psychodiagnostics II.

543-6 (4,2) Psychodiagnostics II.

552-4 Experimental Child Psychology.

553-4 Seminar in Clinical Child Psychology.

556-2 Psychological Treatment of the Child.

561-4 Social Influence Processes.

564-4 Communication and Group Behavior.

571-4 Industrial Motivation and Morale.

586-4 Psychology of Early and Middle Adulthood.

590-1 to 16 Readings in Psychology.

591-1 to 36 Research in Psychology.

593-1 to 18 Practicum in Psychology.

598-2 Ethical and Professional Problems in Psychology.

599-1 to 9 Thesis.

Rehabilitation

480-2 Introduction to Rehabilitation. A survey of historical and legal developments in rehabilitation agencies, with particular emphasis on current theories and trends.

511-2 to 4 Vocational Developments and Occupational Choice.

519-2 Selection, Placement, and Follow-up.

- 531-2 Vocational Appraisal.
- 541-2 Medical Aspects of Rehabilitation.
- 561-2 Psycho-Social Aspects of Disability.
- 580-1 to 6 Practicum in Rehabilitation Services.
- 585-1 to 16 Practicum in Rehabilitation Counseling.
- 589-0 to 12 Internship in Rehabilitation.

Sanitation Technology

- 101-3 Introduction to Water Supply. A study of physical, chemical, and biological means of prevention of pathogens and nuisance organisms as this relates to water resources.
- 203-3 Wastewater Treatment. A study of the elementary engineering aspects of design, maintenance, and operation of wastewater treatment plants. Prerequisites: 101, Engineering 101a,b, Chemistry 202.
- 204-3 Water Purification. A study of the elementary aspects of the design, operations, and maintenance of water purification plants. Prerequisites: 101, Chemistry 201.
- 311-3 Contracts, Specifications, Codes, and Costs. A study of the procedures for completing an engineering contract which involves two or more parties, and codes and cost limitation. Prerequisites: 203, 204, GSD 114, Engineering 101a,b.
- 320-5 Basic Hydraulics. An understanding of practical design as it applies to the collection, treatment, and distribution of water and the collection and treatment of domestic and industrial wastewater. Prerequisites: 311, Physics 206a.
- 330-3 Air Pollution Principles. An introduction to the broad field of air pollution. Characteristic emissions from stationary and mobile sources, atmospheric dispersion and meteorological models, health and ecological effects, and methods of assessment.
- 390-3 to 6 Supervised Work Experience. Supervised work experience with industries, municipalities, or some other water related organization. A range of experience related to course work. Prerequisites: 203, 204.
- 420-4 Water Pollution. An investigation of the causes and effects of stream pollution, the mechanisms of stream self-purification, and nature's ecological balance in rivers and streams. Prerequisites: 203, 204, Chemistry 202.
- 430-3 Air Pollution Principles. An understanding in the measurement and control of air pollution. Air quality standards, methods for evaluation of emissions from transportation vehicles, municipal incinerators and specific industries, and the legal and enforcement aspects of air pollution control. Prerequisite: 330.
- 440-4 Advanced Treatment of Wastewater. A review of hydraulics, hydrologic cycles, sewage systems, characteristics of sewage, sludge characteristics, digestion, chemical treatment of wastewater, and principles of biological treatment. Prerequisites: 203, 320, Chemistry 201, 202.
- 450-3 Special Topics. Advanced topics in water and wastewater processing. Prerequisite: consent of instructor.
- 460-3 Industrial Waste. A study of specific processes, operational characteristics and associated problems encountered in industrial waste treatment facilities, treatment of combined municipal and industrial water, and by-products recovery. Prerequisites: 203, 420, Chemistry 202.
- 490-3 Supervised Work Experience. Supervised work experience with industries, municipalities, or some other water related organization. A range of experience related to course work. May be repeated for maximum of 6 hours credit. Prerequisites: 203, 204, 320.

Science and Technology

- 400-3 Concepts of Classical Physics. Classical physics from a phenomenological point of view and at a level which does not require a previous course in the calculus. Primarily for teachers of the physical sciences; subject matter is related to texts and materials available in the teachers' own schools.
- 401-10 (5,5) Classical Mechanics. A systematic treatment of mechanics which assumes only a modest background in algebra. Emphasis on those concepts

which historically were defined for mechanical systems but which have proven important in all areas of physics.

402-4 Modern Physics. The development of physics in this century. For teachers of the physical sciences. Emphasis on the phenomena which led to the formulation of quantum theory in the twenties. Includes a qualitative discussion of atomic and nuclear physics. Prerequisite: 400 or Physics 206.

403-6 (3,3) Experiments and Techniques of Physics. Students perform experiments and consider equipment for teaching physics at the pre-college level. Lectures on experimental techniques.

406-10 (5,5) Mathematical Physics for Teachers. Mathematical topics from trigonometry, analytical geometry, the calculus and applied mathematics with regard to their usefulness in describing physical concepts such as work, power, energy, and potential.

412-9 (3,3,3) Physical Science Curriculum. A study of the secondary school physical science curriculum and instructional methods, including evaluation of curricular materials and specialized equipment. Prerequisite: 401 or Physics 206.

415-1 to 6 Instructional Innovation for the Physical Sciences. A variety of subject matter is considered with regard to its order of presentation in a course, the type of plausibility arguments most successful in a "derivation," the types of demonstrations most appropriate to the subject matter, and the relation of laboratory work to the lecture content.

421-4 Basic Concepts of Chemistry. A general background in chemistry. A body of chemical principles with emphasis on the existence, size, structure, and bonding of atoms. Four lecture hours per week.

Secondary Education

315-5 High School Methods. Study and discussion in various types of procedures used for effective classroom teaching. The problem approach and unit method are stressed. Participation in micro-teaching laboratory. Prerequisites: Counselor Education 305, Foundations of Education 355.

352-8 to 16 Secondary Student Teaching. Practice of teaching in junior and senior high school subjects in the student teacher's area of concentration. The application of theory to practice as it applies to the teacher's responsibility in the secondary education classroom and the school as a whole. These experiences to be arranged under the direction of a University supervisor in cooperation with a qualified and experienced public school teacher.

407-4 The Middle and Junior High School. Designed to help prospective middle and junior high school teachers understand the background and present status of these schools. The development, population, curriculum purposes, and methods of the schools with a major emphasis on curriculum.

440-4 Teaching Reading in the Secondary School. A foundation course in how to teach reading in junior and senior high school: developmental and corrective reading programs, appraisal of reading abilities; methods and materials of instruction. Prerequisite: 315.

443-4 Teaching of Geography. (See Geography 443.)

444-4 Teaching of Earth Sciences. (See Geography 444.)

480-4 Backgrounds of Urban Education. (See Elementary Education 480.)

481-4 Drug Use and Abuse. Relevant background information for teachers, curriculum development specialists, administrators, and others who are interested in the problems in drug use and abuse as they relate to students at the secondary school level and above.

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 materials; development of a course outline and at least one instruction unit.

488-4 Teaching Social Studies in Secondary Schools. Objectives, scope and sequence of curriculum, methods of teaching different courses and age groups, materials and evaluation. Prerequisite: 315.

495-1 to 8 Selected Topics. Varied content. To be offered from time to time as need exists and as faculty interest and time permit. May be repeated until a maximum of 16 hours have been earned provided no topic repeats itself. Prerequisite: consent of instructor.

- 500-4 Education and the Development of Intellectual Functions.
- 505-4 Improvement of Reading Instruction.
- 507-2 to 4 Readings in Reading.
- 508-4 Recent Issues and Trends in Secondary Education.
- 509-4 to 8 Practicum in Reading.
- 510-4 The Analysis of Instruction.
- 513-4 Materials and Methods for the Assessment of the Disabled Reader.
- 514-4 Organization and Administration of Reading Programs.
- 515-4 Community College Practicum.
- 518-2 to 4 Supervision of Student Teachers.
- 520-4 The School and the Urban Community.
- 521-12 (4,4,4) Diagnosis and Correction of Reading Disabilities.
- 553-2 to 12 Practicum in Urban Education.
- 555-4 Improvement of Instruction in the Middle and Junior High School.
- 560-4 Concepts and Principles of Curriculum Development.
- 562-4 Secondary School Curriculum.
- 565-4 The Community Junior College.
- 566-4 Strategy Problems in Community College Teaching.
- 567-12 (4,4,4) Teaching Competencies and Their Application.
- 570-4 Student Activities in the Secondary School.
- 575-2 to 4 Individual Research.
- 580-4 Research Seminar in Urban Education.
- 581-4 Research Seminar in Secondary Education.
- 590-8 (4,4) Seminar in the Instructional Process.
- 591-4 Current Education Practices in Secondary Schools.
- 596-5 to 9 Field Study.
- 599-3 to 9 Thesis.

Social Welfare

- 380-4 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. Prerequisite: GSB 103a or Sociology 301 or consent of instructor.
- 381-4 The Field of Social Work. A pre-professional course intended to acquaint the student with the philosophy, theoretical base, scope and aims of the helping services and of social work as a helping service profession. Prerequisite: GSB 103a, 301 or consent of instructor.
- 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. Prerequisite: GSB 103a or Sociology 301 or consent of instructor.
- 389-2 to 5 Readings in Social Welfare.
- 481-4 Processes in Social Work. Theory, rationale, and practice of casework, group work, social welfare organization, and the roles of supervision, administration, and research in relation to each. Case material study and discussion with field observation and practice. Prerequisite: Sociology 312 or 321 or consent of instructor.
- 482-8 (4,4) Social Work in Selected Agencies. Study of representative literature on casework in family, psychiatric, medical, school, military, child welfare, and correctional settings, and others. Case material study and discussion with field observation and practice. Prerequisite: 481.

Sociology

- 301-4 Social Theory and Methods of Inquiry. An examination of the relations between theory construction and research methods. Problem identification, hypothesis formulation, research design and report writing.
- GSB 302-4 Contemporary Social Problems.
- 306-4 Social Control. The means and principles of social controls; social institutions as factors in control; techniques of directing social action. Prerequisite: 301 or GSB 103a or consent of instructor.

308-4 Data Analysis and Elementary Statistics. (See Government 308.) Prerequisites: 301 or GSB 103a or consent of instructor.

312-4 Research Methodology and Data Analysis. Principles of research design; methods of data collection and data analysis. Prerequisite: 301 or GSB 103a or consent of instructor.

320-4 Race and Ethnic Relations. Racial and cultural contacts and conflicts; causes of prejudice; status and participation of minority groups; national and international aspects of racial, ethnic, and minority problems. Prerequisite: 301 or GSB 103a or consent of instructor.

321-4 Individual and Society. The process of socialization in infancy, childhood, and adolescence; development of habits; attitudes, sentiments; emergence of the self; integration of the individual and society. Prerequisite: 301 or GSB 103a or consent of instructor.

322-4 Propaganda and Public Opinion. Techniques and characteristics of propaganda; methods of measuring public opinion. Prerequisite: 301 or GSB 103a.

332-4 Social Organization. An examination of the determinants of social organization; intensive analysis of institutional configuration, social stratification, and systems of social control; review of significant writing. Prerequisite: 301 or GSB 103a or consent of instructor.

333-4 Community Organization. Factors involved in community organization; types, aims, and objectives; community analysis; individual case study of specific community.

335-4 Urban Sociology. The rise, development, structure, culture, planning, and problems in early and modern cities. Prerequisite: 301 or GSB 103a.

336-4 Local Urban Problems. General examination of urban problems as they exist in the local community. Problems of welfare, race, city government, federal program administration, with emphasis on the city of East St. Louis, Illinois.

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: 301 or GSB 103a.

340-4 The Family. The family in historic and contemporary society; evolution of the modern family; change in family functions, structures, and roles. Prerequisite: 301 or GSB 103a.

GSB 341-3 Marriage.

351-4 Sociology of Religion. Functions of religious institutions in society and their relationship to other major social institutions; role in social control and group solidarity. Prerequisite: 301 or GSB 103a.

371-4 Population and Migration. Characteristics of population, problems of growth, composition, distribution differential fertility, international and internal migration. Prerequisite: 301 or GSB 103a or consent of instructor.

372-4 Criminology. The nature of crime; criminal statistics; causal factors; theories and procedures in prevention and treatment. Prerequisite: 301 or GSB 103a or consent of instructor.

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: 301 or GSB 103a, or consent of instructor.

396-1 to 5 Readings in Sociology. Supervised reading in selected subjects. Prerequisite: consent of chairman.

405-4 Current Sociology. A survey of important trends in contemporary sociology and social thought and an examination of the social organization of sociology as a profession. Prerequisite: 312 or 321 or consent of instructor.

406-4 Social Change. An examination of the 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: 312 or 321 or consent of instructor.

410-8 (4,4) Quantitative Methods in Sociology. Statistical and computer research techniques for sociologists. (Same as Geography 410 and Government 410.) Prerequisite: (a) 312 or 321 or consent of instructor; (b) 410a or consent of instructor.

414-4 Complex Organizations. Analysis of formal and informal organizations. Theories of function and structure, with reference to the work of Weber,

Barnard, Simon, and others. Comparative analysis of various kinds of organizations: factories, schools, prisons, hospitals, churches, voluntary associations. Pressures toward equilibrium and change. Prerequisite: 312 or 321 or consent of instructor.

420-4 Social and Cultural Aspects of the Afro-American Experience. An examination of the experiences of black people in America; a comparison of the African cultural modes of their origin and the essentially European cultural modes black people encounter in America; the economic, political, and social factors in past and current Afro-American history. Prerequisite: 312 or 321 or consent of instructor.

424-4 Collective Behavior. The behavior of people in large groups; collective interstimulation and emotions; crowds, audiences, and publics; mass stimuli and mass response. Prerequisite: 312 or 321 or consent of instructor.

426-4 Social Psychology of Interpersonal Relations. The study of how group situations and interpersonal relations affect beliefs, behavior, and personality; the development of concepts, attitudes, and values; theories of motivation, perception, and cognition as related to social processes. Prerequisite: 312 or 321 or consent of instructor.

427-4 Sociology of Deviance. Comparative theoretical orientations to the study of deviance; the relationship between deviant and conforming behavior; deviance as a social product; the effect of societal reaction on deviance; the development of deviant subcultures; selected deviances. Prerequisite: 312 or 321 or consent of instructor.

429-4 Sociology of Drug Use. A survey of drug use and abuse with emphasis on the sociological implications for institutions in the United States; an analysis of not only the behaviors associated with use but also the social and legal response to such use. Prerequisite: 301 or 312 or 321 or consent of instructor.

433-4 Urban Social Problems. A focus on some of the major social problems found in contemporary urban life. Of particular concern are the problems of race relations, poverty, ghettoization, urban decay, urban education, and political structures and responses. Includes both micro and macro analyses of the urban situation. An attempt to relate the structural conditions of American urban life to the problems that are conventionally viewed as personal troubles or characteristic of particular groups. Prerequisite: 312 or 321 or consent of instructor.

434-4 The Urban Family. The family is studied as (1) an institution and (2) the origination of personal values and attitudes. Special attention to social reform in relationship to problems of families in the city. Prerequisite: 312 or 321 or consent of instructor.

435-4 Social Inequality. Social inequality with respect to status, income, and power as these vary among societies. Factors affecting the degree of inequality in a society and the consequences of inequality and social class on individuals and societies. Prerequisite: 312 or 321 or consent of instructor.

436-4 The Social Structure of the United States. An examination of the social structure of the United States with special attention to the structures of government, the military, and the economy. Prerequisite: 312 or 321 or consent of instructor.

437-4 Social Structure of Latin America. Analysis of social structures and processes including the major social institutions, demographic characteristics, agrarian reform, racial and ethnic groups, stratification, and the urbanization. Special attention to sociocultural change in contemporary societies and to Brazil as a case study.

438-4 Sociology of Occupations. 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: 312 or 321 or consent.

439-4 Medical Sociology. An analysis of the sociological factors in illness and health and the role of medicine and the health professions in modern society. Prerequisite: 312 or 321 or consent of instructor.

451-4 Social Thought: The Sociological Movement. The rise and development of sociological reasoning as a response to the Industrial Revolution. Prerequisite: 312 or 321 or consent of instructor.

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: 312 or 321 or consent of instructor.

460-4 Sociology of Punishment. Theoretical and methodological aspects of the study of punitive behavior in everyday life encounters and situations. Analysis of interpersonal relations in a given social area with reference to unsanctioned punishment of human beings. Prerequisite: 312 or 321 or consent of instructor.

470c-4 Urban Planning. (See Geography 470.)

472-4 Treatment and Prevention of Crime. Principles of penology; history of punishment and prisons; criminal law, police function, criminal courts; the prison community; the juvenile court and related movements. Prerequisites: 312 or 321 or consent of instructor, 372.

474-4 Crime and the Legal Process. An analysis of the administration of criminal law in America. The emergence of legal norms, law enforcement, prosecution, trial and sentencing, with consideration of the impact of legal sanctions on deviant behavior. Prerequisites: 312 or 321 or consent of instructor, 372.

484-4 Marriage Counseling. Survey and analysis of the field of marriage counseling; assessment of current practices and techniques; case studies and supervision. Prerequisite: consent of instructor.

485-6 Community Programs for the Prevention of Juvenile Delinquency. Analysis of delinquency prevention in community programs administered by various agencies. A critique of existing programs and development of experimental programs. The roles of professional workers pertinent to such programs is delineated with special reference to the public school administration, counselor, the social workers, the court, probation officers, and police. Prerequisite: 312 or 321 or consent of instructor.

501-4 Survey of Sociological Theory.

504-4 Seminar in American Sociology.

506-4 Seminar in Contemporary Sociological Theory.

519-4 Methodological Foundations of the Social Sciences.

520-4 Special Topics.

521-4 Seminar in Social Psychology.

525-4 Methods of Field Research.

534-4 Seminar in Intergroup Relations.

536-4 Seminar in Bureaucracy.

538-4 Seminar in Industrial Sociology.

542-4 Seminar on the Family.

567-4 Seminar in the Sociology of Deviance.

578-4 Advanced Criminology.

595-2 to 6 Individual Research.

596-2 to 12 Readings in Sociology.

599-2 to 9 Thesis.

Special Education

351d-8 Elementary Student Teaching.

353-8 to 16 Special Education Student Teaching. The practice of teaching, under the immediate supervision of a critic teacher and the general supervision of a University instructor. Involves lesson preparation and planning of instruction.

354-8 Elementary Student Teaching. Student teaching in elementary grades. Regular student teaching experience coordinated with special education experience. Prerequisite: concurrent registration with 353.

410a-4 Problems and Characteristics of the Emotionally Disturbed Child. Diagnosis, screening, classroom management, placement considerations, goals, and the effective use of ancillary services. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior dynamics. Observations.

410b-4 Problems and Characteristics of the Mentally Retarded. Objectives, curriculum, methods, and materials of instruction for slow learners. Emphasis upon the principles of learning as they can be applied to this group. Observations. Prerequisite: Counselor Education 305 or Psychology 301 or 303.

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: Counselor Education 305 or Psychology 301 or 303.

410f—4 Problems and Characteristics of the Socially Maladjusted Child. Definition and characteristics of the socially maladjusted, as related to problems of identification and classroom practice. A developmental approach to causes and to recommended practice at pre-school, elementary, and secondary levels. Prerequisite: 414.

410g—4 Problems and Characteristics of the Learning Disabled Child. Study of the child with a wide discrepancy between ability and achievement, accompanied by serious educational maladjustment. Emphasis on definition, identification, diagnosis, individualized remedial programs and placement. Prerequisite: 414.

411—4 Assessment and Remediation of Learning Disabilities. 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. Prerequisites: 410a or g, 414.

413a—4 Directed Observation of the Emotionally Disturbed. Taken concurrently with 410a. Provides student observation and participation in individual work with emotionally disturbed children.

413b—4 Directed Observation of the Educable Mentally Handicapped. Taken concurrently with 410b. Provides student observation and participation in individual work with educable mentally handicapped children. Prerequisite: consent of instructor.

413c—4 Directed Observation of the Gifted. Taken concurrently with 410c. Provides student observation and participation in individual work with gifted children. Prerequisite: consent of instructor.

414—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. Individual case studies used; observations and field trips. Prerequisites: Counselor Education 305, Psychology 301 or 303.

420a—4 Methods and Materials for Children with Learning and/or Behavioral Problems. Methods and materials needed in teaching children with learning and/or behavioral problems in special education programs. Prerequisites: 410a,g, consent of instructor.

420b—4 Methods and Materials in the Education of the Educable Mentally Handicapped. Offered in conjunction with practice teaching. Methods and materials needed in teaching educable mentally handicapped children.

420c—4 Methods and Materials in the Education of the Gifted. Offered in conjunction with practice teaching. Methods and materials needed in teaching gifted children.

427—4 Physical Education and Recreation for the Handicapped. (See Physical Education 427.)

428—4 Speech Correction for the Classroom Teacher. (Same as Speech Pathology and Audiology 428.) Etiology and therapy of common speech defects. Open to in-service teachers and administrators, seniors, and graduate students in education.

430—4 Behavior Modification in Special Education. The application of learning theory to the management of behavior in retarded, emotionally disturbed, and other exceptional children. Prerequisites: 414, Psychology 420.

453—4 or 8 Practicum. Supervised classroom, small group, or individual teaching experiences in a school or institutional program for atypical children. Open only to graduate students with no prior student teaching experiences with the exceptional child in the area of specialization. Prerequisites: 410, 420, candidate in the area of specialization, consent of staff.

470—4 Secondary School Programs for Exceptional Children. Organizational, administrative, and curricular aspects of programs for exceptional children at the secondary level. Emphasizes adjustments needed because of intellectual, behavioral, physical, or learning disabilities. Stresses work-study programs. Prerequisites: 410, 420.

481a—4 Seminar: Emotionally Disturbed.

481b—4 Seminar: Educable Mentally Handicapped.

481c—4 Seminar: Gifted.

496—1 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. Prerequisites: 414, consent of staff.

498-4 Seminar: Selected Topics in Special Education. Special education concepts, teaching strategies, or current concerns to various educational personnel. Prerequisite: consent of department chairman.

501-4 Special Research Problem.

513-4 Organization, Administration, and Supervision of Special Classes.

517-4 The Atypical Child and Social Agencies.

518-4 Workshop in Special Education.

570-2 Seminar: Vocational Guidance of the Handicapped.

571-2 Special Problems of the Handicapped I.

572-2 Special Problems of the Handicapped II.

577-4 to 12 Practicum in Special Education.

580-8 (4,4) Seminar: Education of Exceptional Children.

590-12 (4,4,4) Seminar: Mental Retardation.

597-4 Research in Special Education.

Speech

104-4 Training the Speaking Voice. Designed for those students who desire to improve their voice and articulation. Prerequisite: GSD 103.

202-4 Principles of Discussion. Principles and methods of group discussion. Current problems used as materials for discussion.

205-4 Oral Confrontation of Ideas. Principles of argument, analysis, evidence, reasoning, fallacies, briefing, and delivery.

224-4 Communicative Reading. Study of and practice in the analysis of literature and its oral communication to an audience.

301-4 Persuasion. Psychological principles involved in influencing individuals and groups.

302-8 (4,4) Campus and Community Speech Practicum. In-class analysis of, preparation for, and evaluation of various speaking experiences on campus and in the community. Emphasis on out-of-class participation before campus groups, area churches and schools, service clubs, etc. Can be taken out of sequence with consent of instructor. Prerequisite: GSD 103.

303-4 Business and Professional Speaking. Speaking needs of business and professional people. Technical reports and lighter types of speaking included in the types studied. Primarily for adult and extension classes.

309-1 Forensic Activities.

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) History of 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. May be taken separately.

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 to c. 1920. Selection of materials is governed both by men and the issues that moved men throughout British history.

427-4 Secondary School Forensic Program. Coaching and organizational methods for extracurricular and curricular forensic programs in school and college. Prerequisite: 406 or equivalent.

429-4 Experimental Studies in Oral Communication. Survey, analysis, and criticism of experimental approaches to the study of oral communication, with practice in planning and conducting experimental studies.

441-4 Oral Communication in the Elementary Classroom. 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.

449-4 General Semantics. Means of changing implications so that language, in spoken or written form, describes the life facts.

500-4 Survey of Classical Rhetoric.

503-4 Areas and Techniques of Research in Speech.

505-4 Modern Rhetorical Theory.

510-4 Seminar: Persuasion and Social Control.

511-4 (2,2) Teaching the College Speech Course.

525-4 Seminar: Speech Education.

530-1 to 4 Research Problems.

599-2 to 9 Thesis.

Speech Pathology and Audiology

100-0 to 2 Speech Clinic. Designed for students with speech and hearing deviations who need individual help.

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.

212-4 Disorders of Articulation and Language Development. Designed to acquaint the student with articulatory speech defects and disorders of language development. Diagnostic and therapeutic techniques stressed. Prerequisite: 200 or concurrent registration.

312-4 Language Development. The development of speech and language including the social, psychological, emotional, and intellectual development necessary for normal oral communication.

314-4 Diagnostic and Clinical Methods, Materials, and Equipment. Principles underlying the clinical interview and client relationships. Procedures in obtaining, recording, and evaluating test results. Orientation to diagnostic instrumentation. Emphasis on therapeutic methods, materials, and equipment. Prerequisites: 200, 212.

318-4 Voice and Cleft Palate. Voice disorders including cleft palate. Prerequisite: 212 or consent of instructor.

319-4 Stuttering. Deals with diagnostic and therapeutic techniques for the understanding and treatment of stuttering. Prerequisite: 212 or consent of instructor.

400-1 to 4 Independent Study in Speech Correction and Audiology. Activities involved are investigative, creative, or clinical in character. May be repeated up to 6 hours of credit. Prerequisites: graduate standing, consent of instructor.

405-4 Clinical Practice in Speech Pathology and Audiology. Diagnostic and therapeutic procedures in speech pathology and audiology; record keeping and preparation of reports. One hour of class per week and two hours of clinical activity for each hour of credit. May be repeated up to 12 hours of credit. Prerequisites: 200, 212.

409-4 Research Techniques and Instrumentation in Speech Science. A presentation of the research techniques used in speech science. Experimental projects using laboratory equipment, as well as study of instruments for speech and hearing research, their design and application.

412-4 Cerebral Palsy. An investigation of the etiology, problems, and therapy of cerebral palsy. Prerequisite: 212 or consent of instructor.

414-4 Anatomy and Physiology of Speech and Hearing Mechanisms.

415-4 Aphasia. An investigation of the etiology, problems, and therapy of aphasia. Prerequisite: 412, 414 or consent of instructor.

416-4 Introduction to Audiology. A 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. Prerequisite: 406.

417-4 Techniques and Interpretation of Hearing Tests. Principles and techniques of testing hearing and interpretation tests in terms of the individual's needs. Prerequisite: 416 or consent of instructor.

418-4 Methods and Materials for Speech-Clinical Practice in the Schools. Orientation to speech-clinical practice in the schools. Emphasis on methods, organization, administration, procedures and materials for speech-clinical practice in the schools. Stresses techniques and materials for group speech therapy. Prerequisite: 405.

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.

420-4 Advanced Clinical Audiometry. Principles and procedures for advanced audiometric testing, advanced problems in bone conduction measurements, in evaluation of loudness recruitment, in topodiagnostic audiometry, and non-organic hearing loss. Practical techniques include speech audiometry, Bekesy audiometry, conditioned pure tone electrodermal audiometry, and use of the Zwislöcki Acoustic Bridge. Prerequisite: 416.

422-4 Tests and Measurements for Speech Pathology and Audiology. Study of philosophy and techniques of measurement for speech pathology and audiology. Special attention to tests utilized in these fields. Prerequisite: junior standing.

428-4 Speech Correction for the Classroom Teacher. (See Special Education 428.)

515-1 to 4 Readings in Speech Pathology.

519-4 Seminar in Language.

521-4 Seminar in Articulation.

522-16 (4,4,4,4) Seminar in Organic Speech Problems.

529-8 (4,4) Seminar in Stuttering Behavior.

531-4 Seminar in Advanced Phonetics.

532-4 Seminar in Audiology.

535-4 Seminar in Supervision and Administration of Speech Pathology and Audiology Programs.

Technical and Adult Education

100-0 Speed Reading. Twenty contact hours. Development of skills and techniques, for average and above average readers, in order to gain more knowledge from printed matter in less time. Topics are common reading faults, basic reading skills, good comprehension, vocabulary, techniques of survey, skimming, scanning, intensive and critical reading and flexibility in their use. Both films and printed articles have comprehension tests to measure individual and group progress. Dramatically increases reading effectiveness.

101-0 English Review. Twenty contact hours. A review course covering the fundamentals of English composition. Emphasis on theme writing and correct usage. Covers the paragraph, the word, the sentence, verbs, adjectives, adverbs, phrases and clauses, unity, coordination and subordination, modifiers, transitions, conciseness and parallelism, and other items of effective written expression.

Television-Radio

100-4 Process and Effects of Mass Communication. Lecture. Examination of the theories, processes, and effects of the mass media in society. Interrelationships of the media.

200-4 Survey of Broadcasting. Lecture. The history of broadcasting, network structure, the industry as a part of American business, the Federal Communications Commission, and related areas.

201-4 Broadcast Continuity Writing. A study of the fundamentals of radio and television continuity writing including commercial copy, talks, interviews, music, and feature programs.

202-4 Broadcast Performance. A skills course. Provides extensive studio practice in all forms of broadcast talent, including both commercial and voice-over announcing, on-camera host experiences for talk, and/or public affairs presentations. Preparation of own material for studio presentation. One lecture, four hours laboratory per week, intensive practice in studios.

230-5 Radio Production. A skills-content course. Production of programs for WSIE-FM, and/or participation in preparation of programs for other broad-

cast agencies. Intensive use of tools of broadcasting. Work with faculty, staff, and students in planning and producing programs. One lecture-critique session, four laboratory hours per week.

251-3 Survey of Broadcasting. The history of the American system of broadcasting including the industry network structure, and local station organization and economics. Various systems of foreign broadcasting.

252-4 Television Laboratory. A skills-content course designed to acquaint the student with basic television equipment and principles of studio operation. Emphasis on the production of laboratory programs with students participating in various jobs involved in studio production. Prerequisite: consent.

273-3 Fundamentals of Radio Program Production. Techniques of producing and directing various types of radio programs with emphasis on the creative use of sound effects and music. Matters of timing, pacing, perspective, and microphone techniques.

274-5 Basic Television Production. Use of equipment and basic techniques in production of television programs of all types. Three one-hour lectures, one four-hour laboratory per week.

301-5 Television Production. A skills-content course. The use of scenic design and set construction, properties, lighting, special effects, graphics, costuming, make-up, and acting for television. Each student produces no less than a thirty-minute program suitable for presentation on public television. Three lecture-critique sessions, 4-6 hours laboratory per week. Prerequisites: 252, consent of instructor.

302a-4 Radio News. The principles and philosophy of radio news. Instruction and exercises in writing news copy for radio, including broadcast on WSIE. Emphasis on style, format, and delivery. Recording news events on assignment in the field. Prerequisite: 201.

302b-4 Television News. The principles and philosophy of television news. Emphasis on writing style and format, news program structuring and editing. Examines newscast, develops skills in newscast shooting, editing, and writing. Filming and editing news stories on assignment. Prerequisite: 201.

303-4 Broadcast Advertising. Radio and television as advertising media and comparison with other media. Planning a campaign, production techniques, agency relationships, cost factors. Extensive preparation of commercial materials. Merchandising, promotion, interpretation of research. Case studies. Prerequisite: 200 and/or consent of instructor.

356-4 Motion Picture Production for Television. The philosophies, techniques, and equipment used in the production of film for the television medium. Participation in film production learning skills of camera operation, lighting, sound recording, editing, and finishing. Prerequisite: consent of instructor.

358-4 Radio Writing. Oral forms of writing for radio, including commercials, features, music scripting, women's and children's programs. Prerequisite: 273.

359-4 Dramatic Writing. A study of basic structure of drama; writing of scenes and analysis of short and long dramatic works. Term project is a play analysis paper or original short play. Individual students are given permission to work in the areas of television, film, or radio. Prerequisite: consent of instructor.

390-3 Special Problems in Mass Communications. Special projects, research, and independent reading in mass communications for students capable of individual study under the guidance of a faculty adviser. Prerequisite: consent of instructor.

393-3 Radio, Television, and Society. The interrelation of radio and television with social habit patterns and with economic and political systems. International broadcasting. Prerequisite: 251.

400-4 Seminar in Mass Communications. Problem-solving term projects using inter-media approaches. A team-taught course involving many members of the faculty, both in the mass communications area and the faculty at large. Invited professional guests. Prerequisites: consent of instructor, completion of other broadcast concentration courses.

401-4 Criticism in the Public Arts. Television, radio, and film programs as art forms. Comparison and contrast with other of the "lively" and fine arts. Social, moral, aesthetic, and commercial evaluations. Development of critical standards, extensive viewing and hearing programs on videotape, film, and other. Prerequisite: senior standing.

402-4 Seminar in Broadcast Management. Management executives from stations are "guest faculty." Management responsibility, research goals, use of capital, advertising, public relations, etc. A research paper. Prerequisite: consent of instructor.

403-4 Seminar in Educational Broadcasting. Application of broadcasting skills and technology to the dissemination of information in a formal or an informal manner. Intended for those who expect to continue their education on the advanced degree level in educational broadcasting, who plan to enter educational broadcasting, or for teachers who will have responsibilities in the administration or use of the broadcast media as a part of their curriculum. Prerequisite: senior standing or consent of instructor.

404-4 Research in Broadcasting. The application of research techniques to the broadcast media. Evaluation of research. Participation in a research project designed by the class. Three class sessions per week, extensive arranged laboratories. Prerequisite: consent of instructor.

405-4 Television Documentary. The filmed and/or taped documentary as a basic programming concept in American television. The use of tools, editing, sound, sound and videotape recording. Selection of topics, research, planning, budgeting, etc. Group preparation of filmed and/or videotaped projects for television. Prerequisite: consent of instructor.

406-4 Special Events. Broadcasting on radio and television of special events. Emphasis on remote broadcasting. Training in the preparation and production of one-time and/or occasional broadcasts. Live, audio, and videotaped program preparation. Prerequisite: consent of instructor.

407-4 World Broadcasting. Analysis of foreign systems of broadcasting and comparison with the American system. Broadcasting as an international force in social, economic, and political areas. Problems and developments in space communications, satellite broadcasting, international cooperation. Prerequisite: consent of instructor.

408-4 Television and Radio Regulations. Federal legislation with emphasis on Communications Act of 1934 and the regulations of the Federal Communications Commission, legal problems in program operations, censorship and editorial selections, copyright, and author-producer relations. Prerequisite: 200 or consent of instructor.

410-4 to 16 Internship in Broadcasting. Professional experience with local media in the various phases of broadcasting, under joint supervision of members of the broadcasting faculty and of the media. May be repeated to maximum of 16 hours credit. Prerequisites: upperclassman in this concentration, consent of instructor.

450-4 Seminar in Special Problems. Varied content. To be offered from time to time as need exists and as faculty interest and time permit. Prerequisite: consent of instructor.

466-6 (3,3) Advanced Practices. Advanced work in any area in which the student has completed all of the formal material or course work. Project work in news, advertising, writing, announcing, and production and direction. Prerequisite: consent of instructor.

Theater

100, 200, 300, 400-2 or 4 Applied Theater. Offered at four levels in the areas listed below. Credit is given at 2 or 4 hours on each level. Consult Schedule of Classes and adviser for information regarding credit and offerings during a particular quarter. May be repeated three additional quarters at any level.

- | | |
|----------------------------------|----------------------------|
| a. Acting | l. Lighting |
| b. Business Management | m. Make-up |
| c. Costume Design-Production | n. Rhythmic Structure |
| d. Scene Design | o. Dance Composition |
| e. Contemporary Theater Problems | p. Rehearsal-Performance |
| f. Fencing | q. Special Projects |
| g. Musical Theater | r. Directing |
| h. Ballet | s. Stagecraft |
| i. Improvisation | t. Modern Dance Techniques |
| j. Mime | u. Movement |
| k. Sound for Theater | v. Voice |

GSC 157-5 The Dramatic Media: Theater, Cinema, and Television.**200-2 or 4 Applied Theater.** (See 100.) Prerequisite: 100.**300-2 or 4 Applied Theater.** (See 100.) Prerequisite: 200.**GSC 354-9 (3,3,3) History of the Theater.****400-2 or 4 Applied Theater.** (See 100.) Prerequisite: 300.**403-4 Dramatic Theory and Criticism.** Principles and practice of modern dramatic production in the light of modern aesthetic theory. An attempt to formulate an aesthetic judgment of the theater. Prerequisite: graduate standing.**404-2 Workshop in Dance for In-Service Teachers.** History of dance, values of dance, interpretation of music for dance, teaching techniques and facilities, and fundamental dance movements leading to knowledge and command of dance skills.**410-3 Children's Theater.****411-4 Playwriting.** The writing of a full-length play, a children's play, or a historical pageant-drama. May elect to write two one-act plays. Individual conferences supplement class discussion and analysis of student writing.**412-8 (4,4) Stage Design.** A design of settings for the stage and other dramatic media. Prerequisite: graduate standing.**507-4 The History of Acting.****509-4 The High School Theater and Its Production Problems.****519-1 to 12 Theater Practicum.****526-3 to 12 Seminar in Theater Arts.****ASSOCIATE DEGREE****Child Care Services****101-4 Child Care.** An introduction to the development of children from infancy to year seven. Observations in preschool centers and principles of preschool education.**103-2 Child and Nutrition.** Nutritional needs of the young child. The establishment of good food habits. The individual child and his feeding behavior.**105-3 Language Arts.** The development of language and cognition in the preschool child. A study of appropriate literature, story telling, and creative dramatics. The presentation of projects in preschool centers and their evaluations. Prerequisite: 101.**107-2 Health and First Aid.** The physical needs, development, and care of the young child.**109-5 (2,3) Personal Interaction.** (a) Analysis of interpersonal relations with an emphasis on the role development in preschool centers of teachers, directors, and aids within the educational facility. (b) Analysis of interpersonal relations with an emphasis on teacher-parent and teacher-community interaction. Must be taken in a,b sequence.**111-2 Audio-Visual Aids.** The study of films, filmstrips, and other materials suitable to the preschool child and the development of skills in operating audio-visual equipment. Artistic preparation and display of materials for children and parents.**115-2 Art and Music.** Creative arts materials suitable for the preschool child and methods of presentation. Appropriate musical instruments and experiences. Development of projects; their presentation and evaluation in preschool centers.**117-6 (3,3) Science and Nature.** (a) Introduction to general knowledge in biological and natural sciences that the student must know to develop experiences for the child under seven. (b) The development of projects in the natural and physical sciences appropriate to the young child; their presentation and evaluation in preschool centers. Must be taken in a,b sequence.**203-3 Parent and Community.** Through contacts, both individual and group, the student experiences ways of working with the parents of children under seven. Some focus is given to the relationship of community agencies to educational centers and parents. Prerequisites: 101, 109, or consent of adviser.**207-4 Administration of Preschool Centers.** Policy and ethics of the preschool center, selection of personnel, records and record keeping, the purchase of

appropriate equipment, toys and materials, state regulations and licensing. Prerequisite: consent of adviser.

209-4 Preschool Practicum. Field experience in a preschool center combined with total program planning and child guidance. Prerequisite: sixth quarter standing or consent of adviser.

211-4 Socially Disadvantaged Child. Sociology of the disadvantaged and special needs of the preschool child.

Business Division

JOHN W. LEONARD, *Dean*

Accounting

Professors Vera Vincent, Ph.D., C.P.A.; Stuart White, J.D., C.P.A.
Associate Professors James Eason, Ph.D., C.P.A.; Richard Miller, Ph.D., C.P.A.

Assistant Professor Burton Nisling, M.S., C.P.A.

Instructor Larry Dann, M.B.A., C.P.A.

Lecturers And Iva, M.S.; Mason, Richard, M.P.A.; Robert Vary, Registered, M.B.A.

Business Administration

Professors Walter Blackledge, Ph.D.; Marshall Burns, D.B.A.; Homer Cox, Ed.D.; Arthur Hoover, Ph.D.; S. Kumar Jati, Ph.D.; Robert Scott, Ph.D.; Harold Schroder, Ph.D.; William Watt, Ph.D., L.L.P. (Chairman).

Associate Professors Melvin Hansen, Ph.D.; Hans Stollen, Ph.D.

Assistant Professors Garth Gardner, Ph.D.; Richard McKimney, Ph.D.; James Miller, Jr., M.S.; Edward Welch, L.L.P.

Instructors Morris Cam, M.S.Ed.; William Gardner, M.S.; Edward Harick, M.B.A.; Luther Stader, M.S.

Business Education

Professors Vaughne Lindsay, Ed.D.; Robert Scholthuis, Ph.D. (Chairman).

Associate Professors E. Carl Hall, Ed.D.; Gene Huber, Ed.D.; Patricia Patchoff, Ed.D.

Instructors W. Elax Hansel, M.A.; Mary Vaughn, M.S.

Economics

Professor Lee Cohen, Ph.D.; Louis Drake, Ph.D.; Howard Dye, Ph.D.; Jerome Hollenhorst, Ph.D. (Chairman); John W. Leonard, Ph.D.; Gilbert Ruiman, Ph.D.; Ann Schrier, Ph.D.

Associate Professors David Ash, Ph.D.; Ramel Hahnel, Ph.D.; Robert Kohn, Ph.D.; An-Yi Lin, Ph.D.; Dan Livingston, Ph.D.

Lecturer David Rosenberg, M.S.

9 / Faculty

Business Division

JOHN W. LEONARD, *Dean*

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Professors Vern Vincent, Ph.D., C.P.A.; Stuart White, J.D., C.P.A.
Associate Professors James Eaton, Ph.D., C.P.A.; Richard Milles, Ph.D., C.P.A.

Assistant Professor Burton Nissing, M.S., C.P.A.

Instructor Larry Dann, M.B.A., C.P.A.

Lecturers Anel Iwu, M.S.; Mason Richard, M.B.A.; Robert Van-Regenmorter, M.B.A.

Business Administration

Professors Walter Blackledge, Ph.D.; Marshall Burak, D.B.A.; Homer Cox, Ed.D.; Arthur Hoover, Ph.D.; S. Kumar Jain, Ph.D.; Ralston Scott, Ph.D.; Harold Schroder, Ph.D.; William Wait, Ph.D., L.L.B., (*Chairman*).

Associate Professors Melvin Hanson, Ph.D.; Hans Steffen, Ph.D.

Assistant Professors Gareth Gardiner, Ph.D.; Richard McKinney, Ph.D.; James Miller, Jr., M.S.; Edward Welch, L.L.B.

Instructors Morris Carr, M.S.Ed.; William Gardner, M.S.; Edward Harrick, M.B.A.; Luther Statler, M.S.

Business Education

Professors Vaughnie Lindsay, Ed.D.; Robert Schultheis, Ph.D. (*Chairman*).

Associate Professors E. Carl Hall, Ed.D.; Gene Houser, Ed.D.; Patricia Patsloff, Ed.D.

Instructors W. Max Hansel, M.A.; Mary Vaughn, M.S.

Economics

Professor Leo Cohen, Ph.D.; Louis Drake, Ph.D.; Howard Dye, Ph.D.; Jerome Hollenhorst, Ph.D. (*Chairman*); John W. Leonard, Ph.D.; Gilbert Rutman, Ph.D.; Ann Schwier, Ph.D.

Associate Professors David Ault, Ph.D.; Rasool Hashimi, Ph.D.; Robert Kohn, Ph.D.; An-Yhi Lin, Ph.D.; Don Livingston, Ph.D.; David Luan, Ph.D.

Lecturer Daniel Ikenberg, M.A.

Management Science

Professor John E. Megley, III, Ph.D.

Associate Professors Donald Fogarty, Ph.D., (*Chairman*); Robert Hoeke, Ph.D.; Lester Krone, D. Sc.; Boulton Miller, Ph.D.; David Werner, Ph.D.

Assistant Professors Donald Aucamp, Sc.D.; John Ingwersen, M.B.A.; Thomas Johnson, Ph.D.; John Phillips, Ph.D.; Glenn Wilson, Ph.D.

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Marketing

Professors James Gwin, Ph.D.; David Luck, Ph.D. (*Chairman*).

Associate Professor William Whitmore, Ph.D.

Assistant Professors Stephen Bass, Ph.D.; Daniel Bosse, Ph.D.

Instructor Everett Mauger, M.B.A.

Lecturers Odies Ferrell, M.B.A.; D. Stacey Halfhill, M.B.A.

Education Division

W. DEANE WILEY, *Dean*

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Elementary Education

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Lecturer Lula Lockett, M.S.

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Lecturers Rosemary Egan; Patricia Long.

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Assistant Professors Marion M. Cambon, Mus.A.D.; David M. Fergu-

Faculty

Fine Arts Division / 201

son, Ed.D.; Herbert H. Oberlag, M.M.; Richard K. Perry, M.M.; Joseph Pival, M.M.; Sarah Turner, M.M.
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Humanities Division

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Instructors David L. Butler, M.A.; Elizabeth M. Cook, A.M.; Clyde H. Fixmer, M.A.; Linda K. Funkhouser, M.A.; Kent E. Hedlund, M.A.; Ward D. Hobbie, M.F.A.; Helen H. Hollander, M.A.; Barbara J. Lawrence, M.A.; William C. Meyer, M.A.; William J. Meyer, M.A.; Jane C. Pennell, M.A.; Barbara Q. Schmidt, A.M.; Robert C. Sedlacek, M.A.; Norman J. Stafford, M.A.; Eleanor C. Stoppe, M.A.; Alvin D. Sullivan, M.A.; Philip E. Violette, A.B.
Lecturers Janet D. Collins, B.S.; William T. Weir, M.A.

Foreign Languages and Literature

Professors James H. Baltzell, Ph.D.; Paul F. Guenther, Ph.D.; Alfred G. Pellegrino, Ph.D.; Raymond J. Spahn, Ph.D.
Associate Professors Claude Francis, Ph.D.; Helen D. Goode, Ph.D.; Betty T. Osiek, Ph.D.; Dan Romani, M.A. (*Chairman*).

Assistant Professor Gertrude A. Marti, M.A.

Instructors Sonja M. Lind, M.A.; Veronique Zaytzeff, L. es L.

Philosophical Studies

Professors George W. Linden, Ph.D.; Gerald J. T. Runkle, Ph.D.

Associate Professors John A. Barker, Ph.D.; John A. Broyer, Ph.D.;

Charles A. Corr, Ph.D. (*Chairman*); William J. Emblom, Ph.D.;

Ronald J. Glossop, Ph.D.

Assistant Professors Kenneth Collier, Ph.D.; William S. Hamrick,

Ph.D.; Carol A. Keene, Ph.D.; Edwin G. Lawrence, M.A.; Robert

Murdoch, M.A.; Thomas D. Paxson, Jr., Ph.D.; Galen K. Pletcher,

Ph.D.; Sheila Rhodes, Ph.D.; Robert G. Wolf, Ph.D.

Instructors Edward W. Hudlin, B.A.; Thomas P. M. Solon, B.S.; Carol J. Tilley, M.A.

Lecturer Robert W. Murungi, Ph.D.

Visiting Professor Fritz Marti, Ph.D.

Science and Technology Division

LAURENCE R. MCANENY, *Dean*

Biological Sciences

Professors Ralph W. Axtell, Ph.D.; Harold E. Broadbooks, Ph.D.;

Donal G. Myer, Ph.D.; Arthur C. Zahalsky, Ph.D. (*Chairman*).

Associate Professors Annette Baich, Ph.D.; Norman S. Davis, Ph.D.;

Richard C. Keating, Ph.D.; Frank B. Kulfiniski, Ph.D.; Marion L.

Kumler, Ph.D.; Michael R. Levy, Ph.D.; Richard B. Parker, Ph.D.;

Kermit O. Ratzlaff, Ph.D.; Jamie E. Thomerson, Ph.D.; Gertraude

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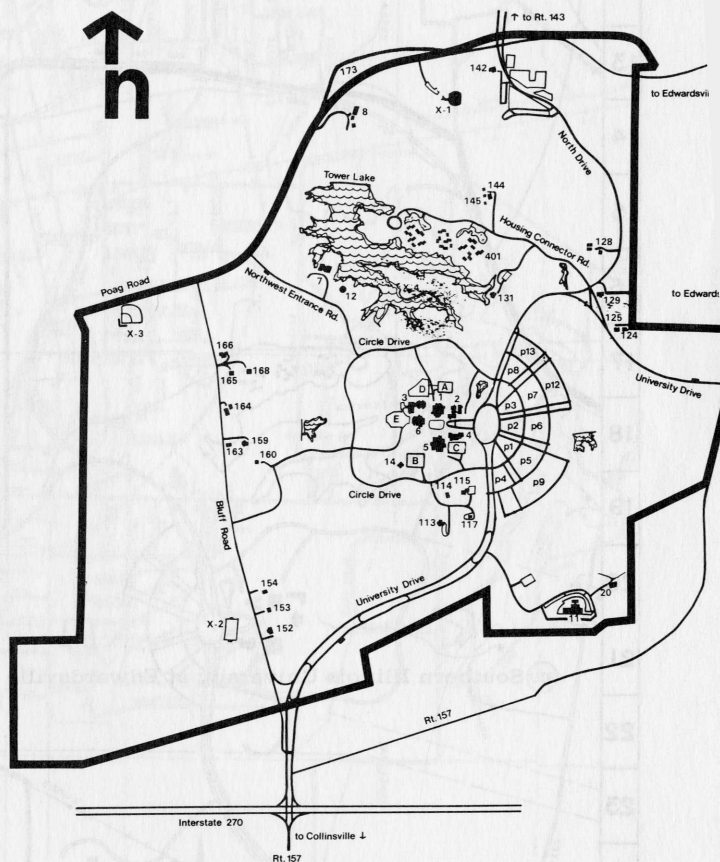
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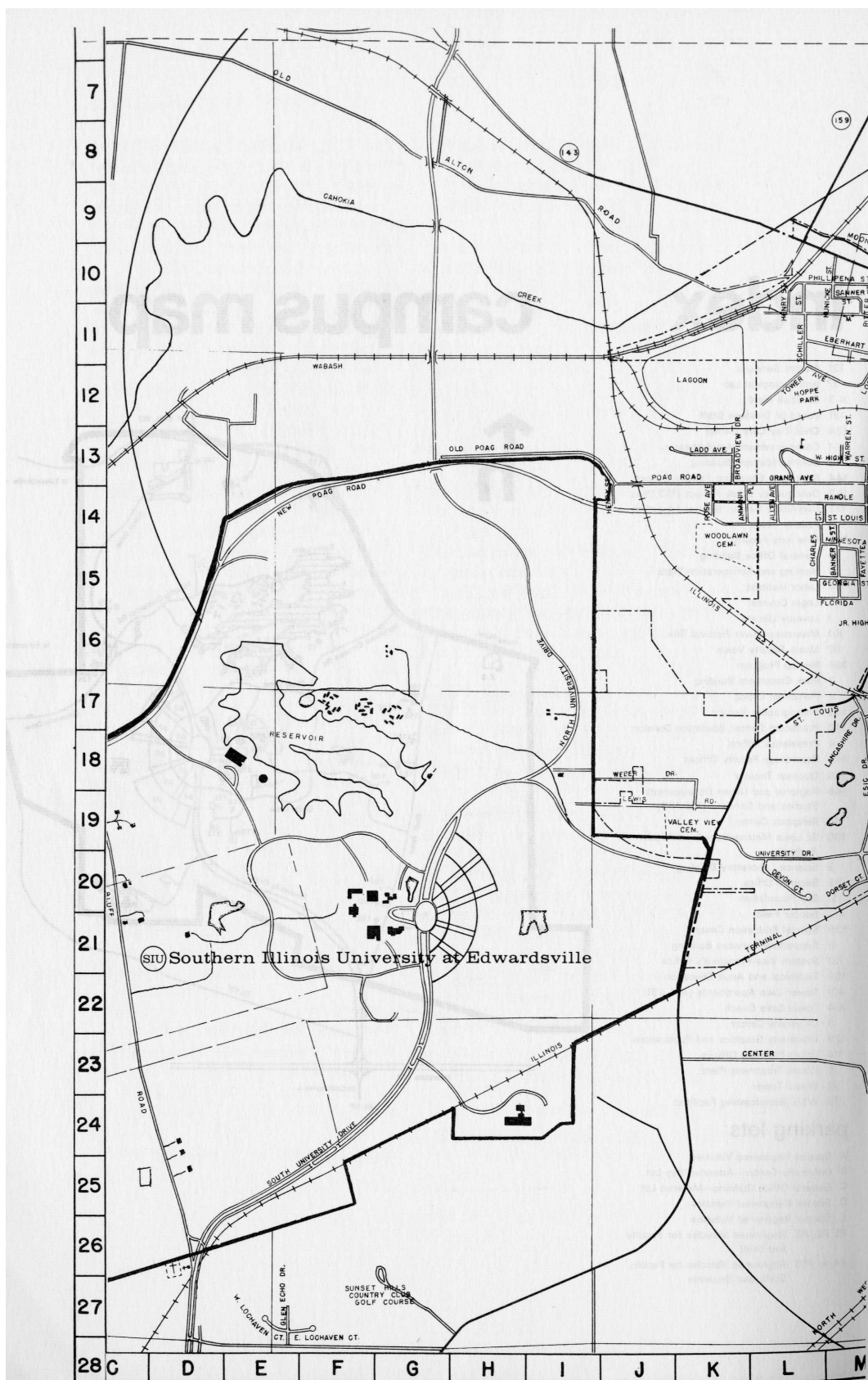
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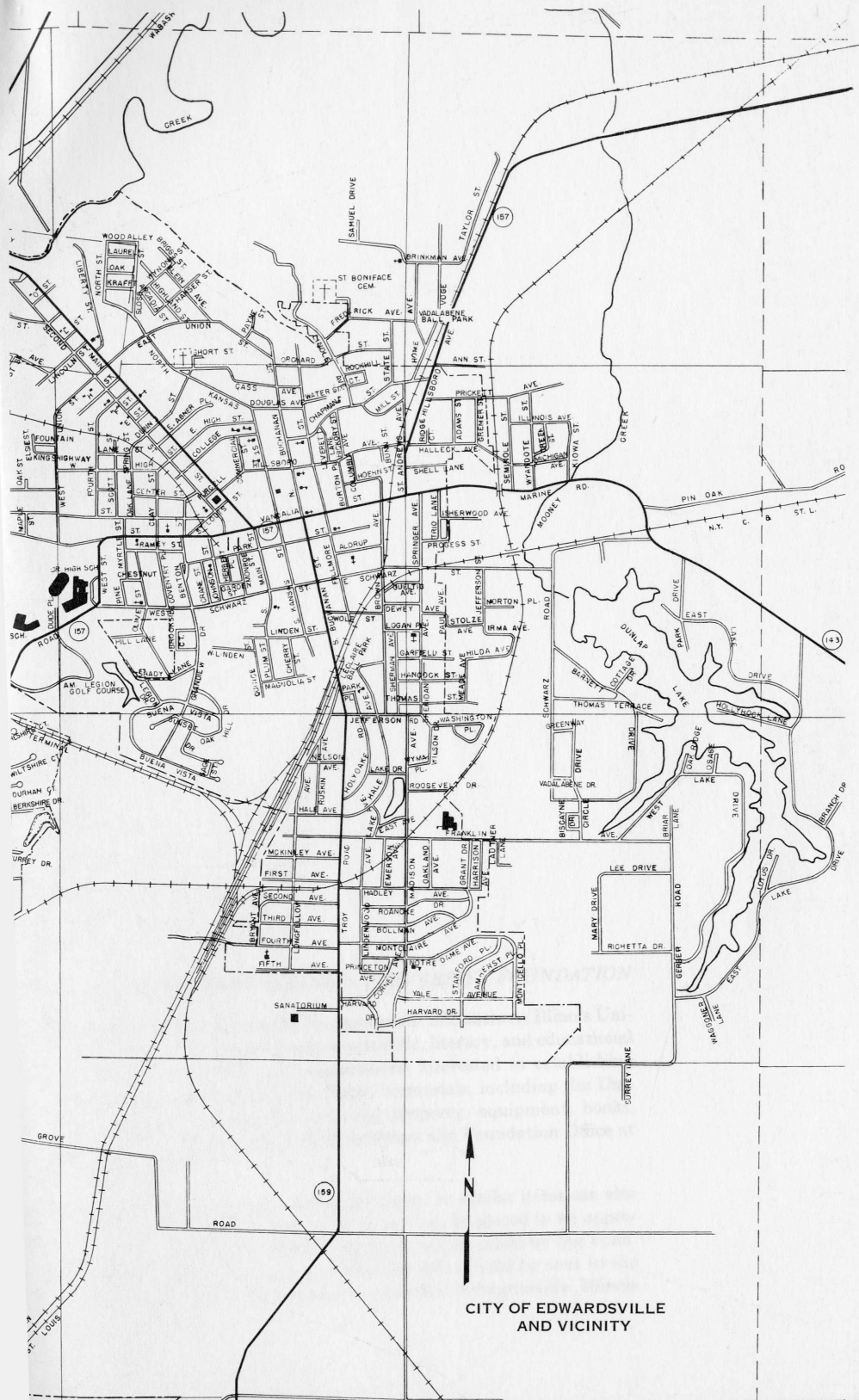
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