1969

1969-1970 Southern Illinois University Bulletin Carbondale Campus (Vocational-Technical Institute Catalog)

Southern Illinois University Carbondale

Southern Illinois University

Bulletin

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Carbondale Campus

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OBJECTIVES OF SOUTHERN ILLINOIS UNIVERSITY

TO EXALT BEAUTY
In God,
in nature, and
in art;
Teaching how to love the best
but to keep the human touch;

TO ADVANCE LEARNING
In all lines of truth
wherever they may lead,
Showing how to think
rather than what to think,
Assisting the powers
of the mind
In their self-development;

TO FORWARD IDEAS AND IDEALS
In our democracy,
Inspiring respect for others
as for ourselves,
Ever promoting freedom
with responsibility;

TO BECOME A CENTER OF ORDER AND LIGHT
That knowledge may lead
to understanding
And understanding
to wisdom.

Southern Illinois University

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Carbondale Campus

SOUTHERN ILLINOIS UNIVERSITY BULLETIN / Vol. 11, No. 11, September, 1969. Second-class postage paid at Carbondale, Illinois 62901, and Edwardsville, Illinois 62025. Published by Southern Illinois University, Carbondale, Illinois 62901, monthly except March and April, when published semi-monthly.

This Issue . . . . . .

of the *Southern Illinois University Bulletin* covers in detail questions concerning the Vocational-Technical Institute and its associate degree programs. It supersedes Volume 9, Number 1.

THE FOLLOWING issues of the *Southern Illinois University Bulletin* may be obtained free from Central Publications, Southern Illinois University, Carbondale, Illinois 62901.

Vocational-Technical Institute Catalog.
Guidelines for Prospective Students (Carbondale or Edwardsville).
Schedule of Classes. Please specify *quarter* (fall, winter, spring, or summer) and *campus* (Carbondale or Edwardsville).
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. The catalog may be purchased at the University Bookstore for $1; mail orders should be sent to Central Publications and must include remittance payable to Southern Illinois University.
Graduate School Catalog (Carbondale or Edwardsville).

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Carbondale, Illinois

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Danville, Illinois

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University Calendar

FALL, 1969	New Student Week	Sunday–Tuesday, September 21–23
	Quarter Begins	Tuesday, September 23 *
	Thanksgiving Vacation	Tuesday, 10 P.M.– Monday, 8 A.M., November 25–December 1
	Final Examinations	Monday–Saturday, December 15–20
WINTER, 1970	Quarter Begins	Monday, January 5 *
	Final Examinations	Monday–Saturday, March 16–21
SPRING, 1970	Quarter Begins	Monday, March 30 *
	Memorial Day Holiday	Friday, May 29
	Final Examinations	Monday–Saturday, June 8–13
	Commencement (Carbondale)	Friday, June 12
	Commencement (Edwardsville)	Saturday, June 13
SUMMER, 1970	Quarter Begins	Monday, June 22 *
	Independence Day Holiday	Friday, July 3
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	Commencement (Edwardsville)	Friday, September 4
	Commencement (Carbondale)	Saturday, September 5
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	Quarter Begins	Tuesday, September 22 *
	Thanksgiving Vacation	Tuesday, 10 P.M.– Monday, 8 A.M., November 24–30
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SPRING, 1971	Quarter Begins	Monday, March 29 *
	Memorial Day Holiday	Monday, May 31
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* Classes begin with the evening classes after 5:30 P.M. on the Carbondale Campus and with the evening classes after 4:30 P.M. on the Edwardsville Campus.

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1 / The University and the Campus Organization

THE UNIVERSITY IN PERSPECTIVE

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

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

Though Southern Illinois University is a single university, it has two major campuses, the Carbondale Campus, with its Vocational-Technical Institute and Little Grassy Facilities, and the Edwardsville Campus which offers degrees at Alton, East St. Louis, and Edwardsville.

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

The University is fully accredited by the North Central Association of Colleges and Secondary Schools. The University and its various academic components carry the following accreditation on the baccalaureate and higher levels: North Central Association, National Council for Accreditation of Teacher Education, American Association of Collegiate Schools of Business, American Chemical Association, American Council on Education for Journalism, American Dietetics Association, American Psychological Association, American Speech and Hearing Association by American Board of Examiners in Speech and Hearing, Board of Vocational Education of the State of Illinois, National Association of Schools of Music, United States Office of Education, and State Board of Vocational Education for Vocational Home Economics.

Carbondale Campus

Immediately south of the city of Carbondale, the University campus, comprising more than four thousand acres, has developed a three-hundred-acre portion with woods and a lake as a site for its academic buildings

and residence halls. The buildings are located in wooded tracts along two circular shaped campus drives, named for Lincoln and Douglas. Features that are located near the center of the campus complex are a wooded tract, preserved in the tradition of the native forests of Southern Illinois, and several buildings surrounding Old Main which formed the original campus almost a century ago. Among the recent additions to the campus skyline are the high-rise residence halls, the Morris Library with more than a million volumes, a multi-media classroom building, and the dome shaped S.I.U. Arena, seating more than 10,000 people for academic and recreational events.

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

The campus is undergoing extensive expansion. Approximately seventy large permanent buildings and several hundred small temporary buildings now comprise the campus. Additional buildings now under construction or recently completed include:

Life Science Building
General Classroom Building
Physical Science Building
Communications Building–Stage II
Humanities Building
Advanced Physical Science
University Center Addition
Recreation Complex
Residence Units: University Park, Evergreen Terrace

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

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

Publications

A list of other issues of the *Southern Illinois University Bulletin* is given in this catalog immediately preceding the table of contents. For additional information write to the dean or director of the program or to Central Publications.

DIVISION OF TECHNICAL AND ADULT EDUCATION

In September, 1953, the Division of Technical and Adult Education was established by action of the Board of Trustees, with the appointment of a regularly constituted academic dean. From 1950 to 1953, some types of instruction had been given under different administrative responsibility.

The responsibilities of the division are two-fold:

1. To administer the Vocational-Technical Institute as an agency in advisement and instruction of students enrolling in vocational and technical credit courses leading toward the two-year Associate in Business, Associate in Art, or Associate in Technology degree.
2. To administer noncredit adult education courses taught by staff of the Vocational-Technical Institute, other academic units of the University, and qualified persons successfully active in industry, business, and the professions.

Both functions of the division have experienced rapid growth due to the offerings which have met particular occupational training needs in business, merchandising, technical, and semi-professional fields. The Vocational-Technical Institute's programs are carefully planned to meet changing demands in business and industry. Most of the adult education courses result from cooperative planning with local and association educational committees.

Vocational-Technical Institute

The Vocational-Technical Institute was established in September, 1952, to provide college-level programs of instruction of shorter duration than the usual four-year programs. The institute's programs qualify students for employment at the semi-professional and technical level in industry, the allied health occupations, and business. A combination of technical courses and general education courses is included in each curriculum to provide a comprehensive preparation for occupational competence.

Scientific and technical changes have increased the possibilities for employment at the technician's level. For every professional person, industry and business require two to seven properly trained technicians.

The Vocational-Technical Institute's campus (Southern Acres) is located about ten miles east of Carbondale and five miles west of Marion on old Route 13. Buildings in the administration area of the former Illinois Ordnance plant have been remodeled, and additional buildings have been added for instruction. See also Special Services, page 6.

Degrees and Certificates

The Vocational-Technical Institute offers two-year programs for high school graduates. Each program leads to one of the following three associate degrees:

Associate in Art
Associate in Business
Associate in Technology

Graduates of the Vocational-Technical Institute are trained to meet the continually increasing demands of industry and business for technicians in a variety of areas. While a technician is capable of performing

certain skilled tasks, he must also be capable of applying basic problem solving techniques. He must know how to read and comprehend technical material. He must be able to speak and write with clarity and understanding. He must know something of the world of business and economics. He must be able to understand and get along with people.

In order to qualify for the Associate in Technology degree, the Associate in Business degree, or the Associate in Art degree, a student must have a required amount of general instruction, which is provided by the General Studies program. Requirements for general courses vary from field to field. Each program prescribes its required courses. Any General Studies course may be taken as an elective. Each candidate for an associate degree must have a *C* average. This average is required for the credit made at the University as well as for the total record.

The institute's programs should not be confused with the first two years of any of the four-year programs offered by other academic units of the University. The extent to which credit earned in the various programs of the institute may be transferred to any of the four-year programs, or vice versa, will be determined by the Registrar in cooperation with the deans of the appropriate academic units. Transferable credits will be evaluated on the basis of the student's previous course of study in relation to the requirements of his desired new program.

Student Organizations and Activities

Students share in the government of the institute under the supervision of the administration. The Student Council sponsors activities and makes recommendations on school matters to the director. Student activity is supplemented by various student clubs with local and national affiliations. Each of these student organizations offers further development of character, professional ethics, leadership, and wholesome social recreation.

Recreational facilities are available at Southern Acres for indoor and outdoor activities. Crab Orchard Lake, which is less than a mile away, and Lake-on-the-Campus, at Carbondale, afford excellent facilities for swimming, fishing, boating, and picnicking.

Adult Education

Adult education has become not a "making up," but a "keeping up" and "going ahead" factor in American society. "All men by nature desire to know," wrote Aristotle, and to help meet this desire the Division of Technical and Adult Education offers a variety of noncredit courses.

In most cases, there are no minimum previous educational requirements for these adult courses, and admission to the University as a registered student is not required. However, certain registration procedures are observed. Persons planning to enroll in the adult program who do not already have a social security number should obtain one since it is used in registration.

The Division of Technical and Adult Education attempts to meet the fundamental needs of the adult in expanding communication skills, developing the willingness and ability to change in a changing world, improving human relations, increasing concern and participation in the responsibilities of citizenship, building personal growth, and creating new interests and more productive use of leisure time.

A number of courses are offered regularly on the Carbondale and Vocational-Technical Institute campuses and in cooperation with local secondary schools because of continuing interest by large numbers of people. Others of particular timeliness or specific interest are offered as often as and in locations where need is demonstrated. In general, any interested group may request assistance in the development of specific courses to meet its needs.

Adult education courses are developed and implemented in cooperation with representatives of business, industry, and the professions. Representatives of the Division of Technical and Adult Education meet with representatives of the group which desires a course to plan, organize, and activate the subjects to be offered, to select outstanding instructors, and to decide meeting time and place.

As the industrial community has grown in recent years, creating a need for more and better trained management personnel, the Division of Technical and Adult Education has developed an adult program in industrial management. Representative courses are Practical Psychology for Supervisors, Industrial Report Writing, Quality Control, Labor Management Relations, Dielectric Heating, and Metallurgy. Persons working toward the Certificate in Industrial Management complete five courses in a required core curriculum, plus three chosen from among a variety offered to allow application of the program to specific areas of interest. The program can be completed in two years with one or two evenings of study a week.

Adult classes meet one evening a week in most cases for a term of ten or 12 weeks. No correspondence courses are offered by the division. The teaching staff is drawn from business, industry, the professions, and the University's academic units. Tuition and supply fees are minimal. Persons successfully completing adult courses are awarded certificates, and a permanent record is kept by the University so that students may provide information on their adult courses to prospective employers if they wish.

The Division of Technical and Adult Education cooperates with an increasing number of associations representing business, industry, personal service, and public utilities in offering a wide variety of conferences, workshops, short courses, and seminars tailored to the specific needs of the group. Included in this type of program are:

Illinois Bankers School
Funeral Service Seminar
Public Librarians Workshop
School Bookkeepers Workshop
School of Advanced Cosmetology
School Custodians Workshop
School Lunch Workshop
Secretarial Seminar
Management Workshops for Nursing Home Administrators
Police Training Program
Hot Line Maintenance School for Electric Companies and Cooperatives
Management Seminars

Among typical courses offered on a continuing basis are languages, typing, shorthand, tailoring and sewing, oil painting, high school review, apprentice programs for the crafts, bookkeeping and calculating machines, and data processing.

A schedule of adult courses conducted on the Carbondale and VTI campuses is issued quarterly. Persons who wish to receive this schedule may be added to the mailing list by submitting their name, address, and social security number to the Office of Adult Education.

SPECIAL SERVICES

Students at the Vocational-Technical Institute enjoy the benefits and privileges available to other students of the University. Meals may be purchased at the cafeteria at the Vocational-Technical Institute and at the University Center at Carbondale. Regular facilities of the Health Service are supplemented by a local doctor, a nearby hospital, and a nurse whose headquarters are at the Vocational-Technical Institute. Textbooks are issued at the Vocational-Technical Institute at the beginning of each quarter through the Textbook Service and are returned at the end of the quarter. Supplies and supplemental educational materials may be purchased at the University Book Store. The Placement Service, which is in contact with industrial, business, and professional groups, arranges interviews for graduates and provides credentials to prospective employers. Assistance from the Placement Service is available at the Vocational-Technical Institute. A branch of the University Libraries operates at the institute, and the facilities of Morris Library at Carbondale are available. Hourly bus service between the Vocational-Technical Institute and Carbondale is free for students and faculty.

Housing

A student desiring University Housing at Carbondale or at the Vocational-Technical Institute should apply to Housing Business Services in Carbondale as early as possible because contracts are awarded in order of receipt of applications. Housing applications for an academic year are accepted anytime after September 1 of the preceding year. However, housing contracts are not awarded until admission requirements have been satisfied. In order to assure favorable housing conditions, students are advised to complete their admission processing early.

Student Work Program

The Student Work Program serves two major purposes: It provides financial assistance in the form of part-time employment; and it provides work experience which relates, if possible, to the student's academic program. Students employed on campus are expected to participate in training programs. The kind of training and length of the programs are determined by the employing unit in cooperation with the student work office.

The Student Work and Financial Assistance Office, which is the administrative office for the program is a referral agency and cannot promise jobs to students. However, every effort is made to place capable, needy students in either on-campus or off-campus jobs.

An application for student employment, or information about work possibilities, may be obtained by writing to the Student Work and Financial Assistance Office, Southern Illinois University, Carbondale, Illinois 62901.

Student Financial Assistance

The financial assistance program at Southern Illinois University has been

organized so that it may function as an integral part of the total educational experience of the student. Insofar as possible, an attempt is made not only to assist needy and deserving students with their financial obligations through the program but to contribute to their general development and learning experience.

The program of financial assistance includes scholarships, awards, prizes, grants-in-aid, and student loan funds. As a part of the award program, the Board of Trustees of the University has established tuition awards known as Southern Illinois University Scholarship and Activity awards. To apply for awards, entering freshmen are required to have ranked in the upper half of their graduating class and to have achieved a minimum comprehensive high school average of *C;* enrolled students are required to have a minimum average of *C* for all college work. For scholarships available to upperclassmen, a minimum average of *C* is required for all college work; for some scholarships higher averages are required.

The comparative limitations of such forms of assistance in terms of both number and amount available make it inadvisable for an undergraduate to expect to meet all university expenses from such sources. The family, including parents, friends, and relatives, is the primary resource for a student's college costs. The student himself normally supplies one-third to one-half of his finances through work during the summer or during school, and through his savings. The University assists in making up the difference between college costs and the student's sources through scholarships, awards, and loans.

Students desiring to apply for financial assistance must be officially admitted and should request an application for financial assistance from the Student Work and Financial Assistance Office. In general, students should apply for assistance between January 1 and March 15 prior to the September when assistance is needed.

ADVISORY COMMITTEES

In order that the Vocational-Technical Institute programs be kept up-to-date and responsive to the needs of business and industry, advisory committees have been formed to assist in the evaluation of these programs and to recommend improvements in curriculum, course content, and laboratories. Each committee meets at least once a year and when circumstances demand. The members are selected from national, state, and local levels on the basis of leadership in their fields and/or opportunities they have to observe the work of graduates of the Vocational-Technical Institute. In many cases, members serve as visiting lecturers and bring directly to the students the latest developments in their respective areas of specialization. They also forecast trends affecting employment and specific areas of training.

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2 / Academic Requirements and Procedures

Admission Policies, Requirements, and Procedures

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.

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 eligible for admission, effective with the 1969 summer quarter, a person must be either a graduate of a recognized high school (graduates of non-recognized high schools may be admitted by the Director of Admissions by examination), or must have passed the General Educational Development Test. A person seeking admission through the latter procedure will be considered only after his high school class would have graduated.

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

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

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

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

University entrance examination scores must be furnished by students prior to their being admitted to the University. Currently the ACT (American College Testing Program) is the required test.

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

A student entering the University as a freshman is enrolled in the General Studies Division unless he is being admitted to the Vocational-Technical Institute.

Admission of Transfer Students

For academic purposes an undergraduate applicant for admission to Southern Illinois University is considered to be a new freshman provided he presents fewer than twelve quarter hours of graded work for transfer consideration, otherwise he is considered to be a transfer student.

Effective with the 1969 summer quarter, students applying as undergraduate transfer students from four-year institutions are admissible to any quarter provided they had a 3.00 grade point average at the institution of last attendance. Students who do not have a 3.00 grade point average at the institution of last attendance but are eligible to continue at that institution will be considered for admission on probation for summer, winter, and spring quarters. Those who are not eligible to continue at their last institution will be considered for admission on probation for the summer and spring 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.

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. Twelve hours is considered as full-time for this purpose.

Students applying for admission from two-year institutions are subject to the same conditions specified above for transfer from four-year institutions. 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. This means an academic year or 48 quarter or 32 semester hours. Also, students who have graduated with an associate degree in a baccalaureate-oriented program from a two-year institution may enter Southern Illinois University any quarter without regard to their average provided they have not taken additional college-parallel work since their graduation. If they have, their admission will be considered from the same standpoint as a student transferring from a four-year institution.

Transfer students who have been suspended for any reason other than academic failure must be cleared by the Dean of Students office before admission will be granted by the Director of Admissions.

Transfer credit is evaluated for acceptance towards University and General Studies requirements by the Registrar's Office after the admission decision has been made. The evaluation toward satisfaction of specific curriculum requirements is done by the department or agency directing the specific curriculum.

The general principles which govern the acceptance of transfer work are as follows:

1. All transfer work is entered on the student's official record of academic work maintained in the Registrar's Office and continues to be applied to the student's total academic record.

2. Not more than one-fourth of the work accepted from each institution for application towards the number needed for graduation may be of *D* quality. Any *D* work not so accepted, however, may be used to satisfy general University, academic unit, or specific program course requirements when applicable.

3. Credit transferred on or after June 1, 1967, from an accredited two-year institution is limited only by the provision that the student must earn the last 48 quarter hours required for the degree at Southern Illinois University or at any other approved four-year institution, except that the student must meet the residence requirement for a degree from the University. These requirements can be found elsewhere in this catalog. Conditions governing the acceptance of credit from four-year higher educational institutions also apply to acceptance from two-year institutions.

Admission of International Students

In general, international students must meet the same academic standards for admission as those required of native students. As there is considerable variation between educational systems throughout the world, precise comparative standards are not always available. Therefore, international students are selected upon the basis of the excellence of their former academic work, personal recommendations of former teachers and colleagues, the judgment of the University as to whether it has academic programs of benefit to the student, and the student's financial arrangement for his support during the normal period of time required to reach the objectives of his study. Undergraduates who have had previous schooling in the United States are required to submit scores from the American College Testing Program examinations if they have accumulated less than one full year of college credit.

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

Admission of Former Students

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 student to initiate re-entrance clearance with the Admissions Office 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 System elsewhere in this bulletin for further information.)

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, are subject to late registration fees and 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, Carbondale, Illinois 62901, indicating a desire to apply and requesting admission materials. The materials that are sent contain the application and related forms that need to be completed along with procedural instructions. Information is also included relative to housing and financial assistance.

Documents Required for Admission

Among the items required by the University before 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 48 quarter hours (32 semester hours) of completed work must provide 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 48 quarter hours (32 semester hours) must have their official ACT scores sent to the University from the American College Testing Program, Box 451, Iowa City, Iowa 52240.
4. Physical examination form. Each new student admitted as a full-time undergraduate student is requested to have a physical examination performed by a private physician recorded on the form provided by the University. This must be done prior to registration in the University. The completed form is to be sent directly to the University Health Service. In case of a religious belief which is in conflict with the plan, special arrangements may be made with the director of the University Health Service.

Applications for housing and financial assistance are separate from the admission process and directions relating thereto are contained in the brochures on these subjects which the students receive when they request admission materials.

Orientation, Advisement, Registration

Through a carefully designed system of orientation, academic advisement, and registration the University attempts to assure entering students an efficient and effective introduction to the University prior to the time

they start class attendance. The more extensive program is provided for those students entering during the fall quarter while more abbreviated activities are in operation for the other quarters.

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

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

Starting in May and extending through June the University's Admission Office contacts new students admitted to arrange appointment dates for them to come to the campus. Through this process only the number of students that can be efficiently handled are involved each day. Students who cannot come to the campus during the summer or who delay applying for admission beyond the advance registration period may register at the start of the fall quarter but are required to come to campus a few days before those who have registered during the summer period. New students who have not been advised and registered by the time the student orientation period starts at the beginning of the fall quarter are considered to be late registrants and are subject to a late fee payment.

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

Academic Advisement

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

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

Registration

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

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

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

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

Withdrawal from the University

Withdrawal from the University is initiated by contacting the Counseling and Testing Center in the Dean of Students office. This should be done in person if a student withdraws after school has started and he is on campus. If he is unable to come to campus he may write the Dean of Students office asking that they process a withdrawal for him.

A student who advance registers, including the paying of fees, and who then finds that he cannot attend school must process an official withdrawal the same as do those who withdraw after school starts. In this case the process is the same as outlined in the paragraph above. A student who advance registers but does not clear his fees by the announced deadline date is automatically cancelled.

Refer to the section *Payment and Refunding of Fees* later in this chapter for information about the refunding of tuition and fees when withdrawing from the University.

Tuition and Fees

The types and amounts of tuition and fees charged students are established by the Board of Trustees and are subject to change whenever con-

ditions make changes necessary. Listed below are the tuition and fees that will be assessed a student per quarter effective with the 1969 fall quarter:

	Not more than 5 hrs.	More than 5, less than 11	11 or more
Tuition Fee—Illinois Resident	$22.00	$45.00	$67.00
Tuition Fee—Out of State Resident	(69.00)	(137.00)	(206.00)
Student Welfare and Recreation Building Trust Fund Fee	5.00	10.00	15.00
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
Athletic Fund Fee	3.00	6.50	10.00
Total—Illinois Resident	$41.50	$79.50	$115.50
Total—Out of State Resident	(88.50)	(171.50)	(254.50)

In addition to the above fees, a student is subject to certain other charges under the conditions listed below:

1. A late registration fee, which is $2.00 for the first day and which increases $1.00 each day to a maximum of $5.00 when a student registers after the regular registration period has ended.
2. A $2.00 program change charge whenever a student changes his program from the one for which he originally registered, unless the change is made for the convenience of the University.
3. A graduation fee of $17.00.

Students holding valid state scholarships are exempt from the above tuition and fees to the extent provided by the terms of the specific scholarship held. An Illinois State Scholarship, unless an honorary one, covers all of the charges except the late registration and program change fees. An Illinois State Teacher Education Scholarship, an Illinois Military Scholarship, an Illinois General Assembly Scholarship, or an Illinois County Scholarship exempts the student from the paying of tuition, the student activity fee, and the graduation fee.

The student activity fee includes the fees for limited hospitalization, entertainment, athletics, student publications, and other privileges.

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 $6.00 per hour plus a $1.05 book rental fee per course.

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

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 courses on an audit basis pays the same tuition and fees as though he were registering for the courses for credit.

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

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

Refunding of fees is possible only if a student has withdrawn from school, officially, within the first two weeks of a quarter and only if the application for a refund is received in the Registrar's Office within two weeks following the last regular registration day. This means that for quarters starting on a Monday the withdrawal from school must have been officially made within the first two calendar weeks of the quarter and the refund application received by Monday of the third week. No refunding of fees is made for a withdrawal occurring after the first two weeks. The specific deadline dates for each quarter appears in that quarter's Schedule of Classes.

A student who processes a program change which places him in a different tuition and fee category than the one for which he originally registered will be assessed additional tuition and fees when appropriate. If the change places him in a lower tuition and fee category he may apply for the appropriate tuition and fee refund provided the reduction in program is made officially by a program change during the same period at the start of a quarter in which students withdrawing from the University are eligible for a refund. This is during the first two weeks of a quarter. Application for a refund in this case is made at the Registrar's Office.

Student Residency Regulations

Regulations defining the residence of students for purposes of registration in Southern Illinois University are as follows:

1. Evidence showing the residence of every applicant for admission to the University must be submitted to the Registrar at the time of application for admission, and resident or nonresident fees shall be assessed on the basis of evidence appearing in the Registrar's records.

2. In all cases where the records indicate that the student's home is outside the state of Illinois, the nonresident fee shall be assessed. A student who takes exception to the ruling may file a claim for a refund, but this must be submitted to the Registrar within 10 days of the opening date of the quarter for which the charge was made.

3. In the case of a student who is a minor, the residence of the parent, or if the student has no parent, the guardian of this person, shall govern unless there is proven to have been complete emancipation of the minor from his parents or guardian and he has established residence in the state of Illinois.

4. Any student, adult or minor, whose parents have established a bona fide residence in the state of Illinois will be regarded as a resident for registration purposes; except that an adult student who has established a residence on his own account outside of the state must conform to the terms set forth in regulation 6 to be classified as a resident.

5. A wife is classified as a resident for registration purposes if her hus-

band is a bona fide resident of the state of Illinois preceding and at the time of her registration.

6. An adult student, whose parents are deceased or whose parents reside outside the state, to be considered a resident of Illinois for purposes of registration must be a bona fide resident of the state for three months preceding the beginning of any quarter for which he registers at the University and must present evidence that he is self-sustaining and not under parental control.

7. An adult alien who holds valid immigration papers and is in the United States under an immigrant-type visa may qualify as a resident of the state for purposes of registration in the University if he has lived within the state for at least a period of twelve months next preceding the beginning of any quarter for which he registers at the University, subject to the provisions of rules 4 and 6.

8. Several factors will be considered in the determination of each individual case. Among the factors to be considered will be (a) location of draft board registration, (b) voting address, if any, (c) the degree of self-support of the student, (d) location of summer or vacation employment.

9. All cases of appeal shall first be referred to the Legal Counsel of the University. An appeal from the Legal Counsel shall be in accordance with University Statutes.

Note: In the above regulations an adult student is considered to be a male at least 21 years of age or a female at least 18 years of age.

Grading System

Grades are expressed in letters as follows:

	GRADE POINTS PER HOUR
A, Excellent	5
B, Good	4
C, Satisfactory (this is intended to be the average grade)	3
D, Poor, but passing	2
E, Failure	1

P, Pass. Hours earned apply towards graduation but do not affect student grade point averages.

F, Fail. Hours do not apply towards graduation and do not affect student grade point averages.

W, Authorized withdrawal with no basis for evaluation established. Work may not be completed. Approved grading symbol only on graduate level except for unusual circumstances where an academic unit dean recommends a change in grade from *ABS* to *W*.

WP, Authorized withdrawal with passing grade.

WE, Authorized withdrawal with failing grade.

WF, Withdrawal with failing grade. Does not affect student's grade point averages.

ABS, Unauthorized withdrawal. Same as *E* for academic retention purposes.

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.
S, Satisfactory. Used only for noncredit courses.
U, Unsatisfactory. Used only for noncredit courses.
AU, Audit. No grade or credit earned.

A grade given at the end of a course is final and may not be raised by additional work.

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

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

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

The grades of *S* and *U* are used to indicate satisfactory or unsatisfactory completion of a noncredit course.

A student registering for a course on an *audit* basis receives no letter grade and no credit. 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.

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 *INC* and is not included in grade point computation.

Courses in which *D's* or *E's* were received may be repeated and the last grade will be used in computing the student's grade point average. The repeating of a course does not remove the previous grade from the student's official academic record card. In following this system, the University is not committed to continue courses in effect in order that students may always repeat courses.

Special Grading System

Effective with the 1968 fall quarter and for a two-year experimental period

thereafter, the various undergraduate academic units at their discretion may permit their students to take a limited amount of course work on a Pass-Fail basis rather than on the regular letter grade basis. The experiences of the two-year period will determine whether this system will be continued beyond the 1970 spring quarter.

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

The present Pass-Fail grading system is governed by the following conditions:

1. A student with a 3.25 overall grade point average may participate with the permission of the dean.
2. A student may apply a maximum of 8 quarter hours of Pass credit towards graduation.
3. The Pass-Fail option is applicable only for elective courses in a student's program. He may not use it for courses satisfying General Studies, or concentration requirements. Should he later change his concentration, work previously taken on a Pass-Fail basis may, with concurrence of the department, be used in fulfillment of the requirements in the newly selected concentration.
4. Hours earned in Pass work will be added to a student's total hours passed but will have no effect on his grade point average. Unsuccessful completion of a course taken on the Pass-Fail basis will result in an *F* grade being recorded on the student's academic record card but will have no effect on his grade point average.
5. A student may change his course registration status from a Pass-Fail to a regular grading point and vice-versa during the first four weeks of a quarter only.
6. Each academic unit participating in the Pass-Fail system has a listing of courses in which registration is permitted on a Pass-Fail basis.

Scholastic Standing

The matter of scholastic standing is quite often of importance to a student both while in school and later when he presents a transcript of his educational record in suport of his application for employment or additional schooling.

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

The University computes the student's over-all grade point average for all work taken whether at Southern Illinois University or elsewhere. A student who takes all of his collegiate work at Southern Illinois University will have only one over-all grade point average. A transfer student however will have a University grade point average and an over-all grade point average. These will, in most cases, be different.

The significance of the above can better be understood when studying the general baccalaureate degree requirements. A. 3.00 (*C*) average is re-

quired for both the work taken at the University and for the over-all collegiate work, as well as for work in the student's area of concentration. Similarly, a student may be placed on scholastic probation or may be scholastically suspended either because of his record at the University or his over-all record.

In computing a student's grade point average all grades of *A, B, C, D, E, WE,* and *ABS* are included in determining the number of *calculated* hours. Corresponding grading symbols from other institutions are included in the same way. Each hour of these grades (1 hour of *A* is worth 5 grade points) is given its numerical grade points, and the total number of calculated hours is then divided into the total number of grade points to determine the student's grade point average. In the case of repeated courses only the hours of the last course and its grade are used except in those rare cases when the number of hours of a repeated course has been reduced since it was originally taken. In that case the repeated work affects only that number of hours of the originally taken work. For example, a student might take a four hour course and receive an *E*. He would then repeat the course but before he does the course might be reduced to a three hour course. If he then received a *C*, this would remove the effect of only 3 hours of the previous *E* work. The 1 hour of *E* would continue to affect the student's grade point average.

For academic classification purposes, a freshman is a student who has completed fewer than 48 hours; a sophomore, from 48 through 95; a junior, 96 or more.

Class Standing

Southern Illinois University requires a student to earn 192 quarter hours of acceptable credit in order to receive a baccalaureate degree. For academic classification purposes a freshman is a student who has completed fewer than 48 hours; a sophomore, from 48 through 95; a junior, from 96 through 143; and a senior, 144 or more.

University Recognition of High Scholastic Achievement

In recognition of high scholarship, a Scholastic Honors Day convocation is held each spring. A VTI student is eligible if he has a 4.50 grade point average and is attending full time. 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 possessing high scholastic averages are so recognized at commencement time by being graduated with honors. Students with 4.90 or higher averages receive highest honors; those with 4.75–4.89 averages receive high honors, and, those with 4.50–4.74 graduate with honors. This is recorded on the commencement program, on the student's academic record card, and on his diploma.

Scholastic Program Flexibility for the Student

Through various methods the University permits a student to develop flexibility in his college education so that he might follow a pattern different from that pursued by other students. It is possible for a student to by-pass some of the introductory General Studies courses through a combination of high school subjects and University entrance examination

scores. He may also receive credit for courses without having to take the high school course itself. Or the student who must interrupt his attendance on campus may find it possible to continue his educational training through extension or correspondence work.

High School Advanced Placement Program

Through the High School Advanced Placement Program 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. To receive credit, a person must earn the grade of 3, 4, or 5. Any interested high school student should write to the University's Admissions Office to learn the current listing of courses for which credit may be earned through this program.

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

Proficiency Examinations

Through its proficiency examination program the University recognizes the importance of providing encouragement for academically talented students. Such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Applications are made at the Registrar's Office.

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

1. Any student who feels qualified to take a proficiency examination is eligible to do so; students scoring in the top ten percent of ACT are particularly encouraged to avail themselves of this opportunity.

2. Credit not to exceed 28 hours toward an associate degree, including credit through the College Entrance Examination Board, Advanced Placement Program, may be earned through proficiency examinations. Credit will be nonresident.

3. Upon passing a proficiency examination in a course with a grade of *A* or *B* a student is granted course credit with grades and grade points appropriately recorded. His record will show the name of the course, the hours of credit granted, the grade earned, and a notation "credit granted by proficiency examination." The grade earned will count in the student's grade point average. Passing with a grade of *C* results in the student earning credit. His record will show the name of the course, the hours of credit granted, and a notation, "credit granted by proficiency examination." The grade earned will not be recorded and will not count in the student's grade point average. A grade of *D* or *E* on a proficiency examination results in no penalty to the student. He will not receive credit and his record will show nothing regarding the proficiency examination. However, the proficiency examination grade report form will be filed in the student's folder for reference purposes.

4. A student may not take a proficiency examination for the same course more than one time. Neither may he take a proficiency examination in a course in which he has previously received a grade.

5. No credit granted by proficiency examinations will be recorded until the student has earned at least 16 hours of credit of *C* grade or above in residence at Southern Illinois University.

Extension and Correspondence Credit

The University accepts credit earned through extension or correspondence programs towards an associate degree. A maximum of 48 quarter hours may be so earned. Of the total, not more than 24 quarter hours may be taken in correspondence work.

Southern Illinois University does offer a sizeable number of courses through its Extension Services. It does not operate a correspondence program. Correspondence work is accepted when taken from institutions which are regionally accredited if the grade is of *C* quality or better.

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

In general, extension courses meet one night a week with three-hour courses meeting 2.5 hours per session for 12 weeks, and four-hour courses meeting 16 weeks. Occasionally, four-hour courses will meet 12 weeks with four extra meetings being arranged for during the 12-week period.

Registration in extension courses is permitted during the first and second class meetings. Thereafter registration is permitted only with the approval of the dean of University Extension Services. A late registration fee of $5 is also charged.

Students must have their social security numbers with them in order to complete their registration and must also be prepared to pay their tuition and fees. Tuition is $6 per quarter hour of credit, and undergraduate students pay a $1.05 textbook rental fee for each course taken by extension. Graduate students must buy their books or make other arrangements. The instructor may require the purchase of additional books or other materials. Students having valid scholarships issued through the state of Illinois do not pay the tuition charge but must pay the textbook fee. Illinois Military Scholarship holders must pay both the tuition and textbook rental fee.

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

Credit for Military Experience

Students who have served one year or more of active duty and who have received an honorable discharge may receive up to 6 hours of aerospace credit at Carbondale; service of six months to one year may result in 3 hours of freshman aerospace credit; less than six months of active service does not allow any college credit.

Credit will be accepted for USAF courses within the limitations enforced for extension and correspondence work. No credit is allowed for college-level G.E.D. tests. In evaluating credit possibilities based upon

formal service-school training programs, the recommendations of the American Council on Education as set forth in the U.S. Government bulletin, *Guide to the Evaluation of Educational Experiences in the Armed Forces,* are followed.

In order to receive credit for military service a veteran must present a copy of his discharge or separation papers to the Registrar's Office.

Scholastic Probation and Suspension System

A student who fails to maintain a satisfactory grade point average will be placed in categories other than Good Standing and may be required to discontinue attendance at the University for a period of time.

For a transfer student, the following scholastic standards apply *both to his academic record compiled only at this University and to his overall academic record.*

Scholastic Warning

A student who is in Good Standing will be placed in Good Standing–Scholastic Warning at the end of a quarter in which he fails to make a 3.00 grade point average provided he has calculated hours and an accumulative grade point average as follows:

1. Fewer than 96 calculated hours and less than a 3.00 grade point average.
2. 96 but fewer than 144 calculated hours and less than a 3.10 grade point average.
3. 144 or more calculated hours and less than 3.15 grade point average.

He is returned to Good Standing at the end of a quarter in which he makes a 3.00 grade point average (or better) while on Good Standing–Scholastic Warning.

Scholastic Probation and Suspension

When a student on Good Standing–Scholastic Warning fails to make a 3.00 grade point average for a quarter, he is placed on Scholastic Probation and may be subject to suspension from the University for scholastic reasons at the end of any quarter in which he fails to earn a 3.00 grade point average while on Scholastic Probation.

To ensure that a student is making progress toward the 3.00 grade point average required for graduation he must maintain a progressively improving accumulative grade point average. At the end of each spring quarter a student who has accumulated the number of calculated hours listed below must also have obtained the corresponding accumulative grade point average:

Quarter hours	*Required average*
48– 95.5	2.60
96–119.5	2.70
120–143.5	2.80
144–159.5	2.90
160–	2.95

Otherwise he will be suspended from the University for scholastic reasons. He may seek reinstatement after a minimum of two quarters interruption but must furnish tangible evidence that additional education can be successfully undertaken.

Graduation Procedures

Presented here are the procedures that a student expecting to graduate must follow.

Every degree candidate *should* signify his intention to graduate by making application for graduation no later than the first week of his last quarter in attendance before the desired graduation date. Therefore, a person desiring to graduate in the June commencemnt who will be in school during the spring quarter should make application for graduation during the first week of the spring quarter. If he finishes his work during the preceding winter quarter, he should apply during the first week of the winter quarter. Similar arrangements should be followed by students completing their work during the fall quarter. The application forms are available in the Registrar's Office.

Every candidate for a degree *must* file written application with the Registrar's office not less than five weeks before the date on which the degree is to be granted. The application process includes the clearance of the graduation fee at the Bursar's Office prior to its filing with the Registrar's Office. He must order his cap and gown through the University Bookstore and should register with the Placement Service. A student must have a 3.00 grade point average before his application for graduation may be accepted.

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

Graduation exercises are held each year at the end of the spring and summer quarters. A student must attend commencement to graduate, unless he has obtained permission to be graduated *in absentia*. A student can request the latter either through the Registrar's Office or through his dean with the latter official making the decision.

The diploma is mailed to a student shortly after the commencement date. A student who has not met all academic requirements or who has a financial obligation will not be graduated even though he participates in the commencement exercises.

The University has a Graduation Appeals Committee whose function it is to hear a student's petition to be permitted to graduate even though he has not satified all University graduation requirements. The committee hears only those cases involving University requirement. Appeal relative to a concentration or academic unit requirement is through the appropriate administrative official.

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

Related Academic Information

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.

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. In no case may a student carry, or be credited with, more than 21 hours in any quarter.

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

The question of what constitutes full-time attendance is one that is often asked but for which there is no single over-all answer. For enrollment reporting purposes, 12 or more quarter hours distinguishes between full- and part-time attendance. However, a number of situations call for different hourly classifications. For example, a student registered for 11 hours pays full tuition and fees. Also, a student attending the University under a scholarship loan, or other type of program requiring full-time enrollment should check with the office administering the program to make certain that he is meeting the requirements of his specific program. For example, Public Law 358 (the new GI Bill) requires 14 hours on the undergraduate level for full time, 10 to 13 is considered three-quarter load, and 7 to 9 hours, half load. 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 both Public Law 358 and Selective Service is available in the Registrar's Office.

3 / Academic Programs

GENERAL STUDIES REQUIREMENTS

General Studies courses augment the sophisticated technical courses offered within each of the programs. The General Studies courses help prepare the student to think logically and maturely, not only in his chosen vocation but also in any problem-solving situation. The art of communication is provided by English composition, business correspondence, technical report writing, and speech. The physical sciences include courses in physics, chemistry, and mathematics. The social sciences are represented by economics, government, and psychology, and the life sciences by biology, microbiology, and physiology.

Each program at the Vocational-Technical Institute is designed so that the graduate may gain not only technical skills but also those attributes which will help him fulfill a constructive role in our increasingly complex technological society.

ASSOCIATE IN ART DEGREE PROGRAMS

The Vocational-Technical Institute offers the Associate in Art degree in the following fields of specialization:

Commercial Art
Corrections and Law Enforcement
Dental Hygiene
Library and Audio-Visual Technical Assistants
Physical Therapy Assistants

Candidates for the Associate in Art degree must complete the prescribed course of study with an overall grade point average of 3.00.

Commercial Art

This program in commercial art will enable the serious, career-minded student to meet the exacting demands of today's advertising field and industry. Only professional methods are taught in a professional atmosphere by practicing professional artists. Student laboratories, problem assignments, and work standards closely parallel those in the field in which the student, upon graduation, will be engaged.

Successful completion of this course of study culminates with the preparation of a portfolio of professionally acceptable samples which will enable the student to compete for the initial position, not only in his chosen field, but in most phases of commercial art.

Each student is required to purchase a small amount of basic equipment and supplies.

Candidates for the Associate in Art degree must complete the prescribed course of study with a minimum of 98 hours of credit.

FIRST QUARTER		Cr.	Lec.	Lab.
Art Analysis	CA 101–3	3	0	
Techniques—Theory and Practice	CA 125–10	0	17	
English Composition	GSD 101–3	3	0	

SECOND QUARTER				
Advertising Design and Production	CA 130–10	0	20	
Behavior and Society	GSB 201c–4	4	0	
English Composition	GSD 102–3	3	0	

THIRD QUARTER				
Introductory Advertising and Story Illustration	CA 140–10	0	20	
Political Economy	GSB 211b–4	4	0	
Oral Communication of Ideas	GSD 103–3	4	0	

FOURTH QUARTER				
Advertising and Story Illustration Theory and Practice	CA 210a–8	0	12	
Technical Illustration Theory and Practice	CA 230a–7	0	8	
Technical Writing	GEN 102–3	3	0	

FIFTH QUARTER				
Advertising and Story Illustration Theory and Practice	CA 210b–8	0	12	
Technical Illustration Theory and Practice	CA 230b–7	0	8	
Printing Theory and Practice	PT 235–2	0	4	

SIXTH QUARTER				
Advertising and Story Illustration Theory and Practice	CA 210c–7	0	12	
Technical Illustration Theory and Practice	CA 230c–6	0	8	

RECOMMENDED ELECTIVES				
Business and Technical Mathematics	GEN 105a–3	3	0	
Introduction to Physical Science	GSA 101a–4	4	0	

Corrections and Law Enforcement

The curriculum in corrections and law enforcement is designed to provide overall understanding and appreciation of the problems involved in corrections, community service, and law enforcement and the means which society employs to deal with them. Particular attention is given to corrections and law enforcement functions, not only as they relate to crime and criminals but also as they relate to social order and justice.

Three options are offered: law enforcement, institutional service, and community services.

A minimum of 97 hours of credit must be completed for graduation.

Law Enforcement (option)

FIRST QUARTER		Cr.	Lec.	Lab.
Man and His World	GSB 102a–4	4	0	
Political Economy	GSB 211a–4	4	0	
English Composition	GSD 101–3	3	0	
Introduction to Crime Control	CLE 103–4	4	0	

SECOND QUARTER				
Behavior and Society	GSB 201b–4	4	0	
Political Economy	GSB 211b–4	4	0	
English Composition	GSD 102–3	3	0	
Criminal Behavior	GLE 105–4	4	0	

Law Enforcement and Community Problems	CLE 107–3	3	0

THIRD QUARTER

Behavior and Society	GSB 201c–4	4	0
Oral Communication of Ideas	GSD 103–3	4	0
Corrections and the Community	CLE 113–3	3	0
Interpersonal Relations	CLE 115c–3	3	0
Elective	3 to 4		

FOURTH QUARTER

Criminology	SOC 372–4	4	0
Public Administration	GOVT 360–5	5	0
Technical Writing	GEN 102–3	3	0
Principles of Investigation	CLE 205–4	4	0

FIFTH QUARTER

Assessment in Criminology	CLE 207–3	3	0
Social Control	SOC 306–4	4	0
Law and Police Work	CLE 211–3	3	0
Electives	6 to 7		

SIXTH QUARTER

Specialized problems in Crime Control	CLE 213–3	3	0
Supervised Practice in Criminology	CLE 215–9		
Police Administration	CLE 221–3	3	0

Institutional Service (option)

FIRST QUARTER		Cr.	Lec.	Lab.
Man and His World	GSB 102a–4	4	0	
Political Economy	GSB 211a–4	4	0	
English Composition	GSD 101–3	3	0	
Introduction to Crime Control	CLE 103–4	4	0	

SECOND QUARTER

Behavior and Society	GSB 201b–4	4	0
Political Economy	GSB 211b–4	4	0
English Composition	GSD 102–3	3	0
Criminal Behavior	CLE 105–4	4	0
Correctional Institution as a Social System	CLE 109–3	3	0

THIRD QUARTER

Behavior and Society	GSB 201c–4	4	0
Oral Communication of Ideas	GSD 103–3	4	0
Corrections and the Community	CLE 113–3	3	0
Interpersonal Relations	CLE 115a–3	3	0
Elective	3 to 4		

FOURTH QUARTER

Criminology	SOC 372–4	4	0
Public Administration	GOVT 360–5	4	0
Technical Writing	GEN 102–3	3	0
Group Work Techniques	CLE 203–4	4	0

FIFTH QUARTER

Assessment in Criminology	CLE 207–3	3	0
Social Control	SOC 306–4	4	0
Law and Corrections	CLE 209–3	3	0
Elective	6 to 7		

SIXTH QUARTER

Specialized Problems in Crime Control	CLE 213–3	3	0
Supervised Practice in Criminology	CLE 215–9		
Correctional Administration	CLE 217–3	3	0

Community Services (option)

FIRST QUARTER		Cr.	Lec.	Lab.
Man and His World	GSB 102a–4	4	0	
Political Economy	GSB 211a–4	4	0	
English Composition	GSD 101–3	3	0	
Introduction to Crime Control	CLE 103–4	4	0	
SECOND QUARTER				
Behavior and Society	GSB 201b–4	4	0	
Political Economy	GSB 211b–4	4	0	
English Composition	GSD 102–3	3	0	
Criminal Behavior	CLE 105–4	4	0	
Community Organization and the Offender	CLE 111–3	3	0	
THIRD QUARTER				
Behavior and Society	GSB 201c–4	4	0	
Oral Communication of Ideas	GSD 103–3	4	0	
Corrections and the Community	CLE 113–3	3	0	
Interpersonal Relations	CLE 115b–3	3	0	
Elective	3 to 4			
FOURTH QUARTER				
Criminology	SOC 372–4	4	0	
Public Administration	GOVT 360–5	4	0	
Technical Writing	GEN 102–3	3	0	
Group Work Techniques	CLE 203–4	4	0	
FIFTH QUARTER				
Assessment in Criminology	CLE 207–3	3	0	
Social Control	SOC 306–4	4	0	
Law and Corrections	CLE 209–3	3	0	
Electives	6 to 7			
SIXTH QUARTER				
Specialized Problems in Crime Control	CLE 213–3	3	0	
Supervised Practice in Criminology	CLE 215–9			
Administering Community Service	CLE 219–3	3	0	

Dental Hygiene

The dental hygienist is the only one of the auxiliary dental health team who works directly in the mouth like the licensed dentist, and, like the dental practitioner, she must obtain a license from the state in which she expects to practice. She is required to complete successfully a comprehensive practical and written examination given under the direction of the state board of dental examiners. Each student is required to provide her own uniform, caps, and equipment and to be responsible for instruments used. She should set aside about $200 for these items, for they are not covered by the fees paid to the University.

The hygienist's area of service includes prophylaxis (scaling and polishing of the teeth), dental health education, X-ray examinations, serving as receptionist, administrative procedures, chairside assisting, and some laboratory techniques. All her work is done under supervision of a licensed dentist.

This program in dental hygiene is fully approved by the Council of Dental Education of the American Dental Association. Each applicant must take the Dental Hygiene Aptitude Test, which is offered three times yearly on the campus under the auspices of the Student Counseling and Testing Center. This is a prerequisite for admission to the program. Seven

quarters of residence in sequence are required to complete the program.

Each student must accept and abide by the official "Rules and Regulations" of the program as approved and published by the Vocational-Technical Institute. After graduation and licensing, she is eligible to become a member of the American Dental Hygienists' Association which is closely associated with the American Dental Association.

A minimum of 114 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Orientation to Dental Hygiene	DH 130–2	2	0	
Head and Neck Anatomy	DH 132a–4	5	0	
Oral Basic Science (Histology)	DH 135a–4	4	0	
Introduction to Chemistry (Inorganic)	GEN 115a–4	3	3	
English Composition	GSD 101–3	3	0	

SECOND QUARTER				
Head and Neck Anatomy (Dental Anatomy)	DH 132b–4	3	6	
Oral Basic Science (Microbiology)	DH 135b–4	4	2	
Preclinical Dental Hygiene	DH 137a–4	2	4	
Introduction to Chemistry (Organic)	GEN 115b–4	4	0	

THIRD QUARTER				
Oral Basic Science (Pathology)	DH 135c–3	3	0	
Preclinical Dental Hygiene	DH 137b–4	2	4	
Dental Nutrition	DH 139–3	3	0	
Principles of Physiology	GSA 301–4	3	2	
English Composition	GSD 102–3	3	0	

FOURTH QUARTER				
Dental Hygiene Clinic	DH 209–5	1	12	
Clinical Dental Roentgenology	DH 218a–2	2	0	
Dental Pharmacology	DH 140–2	2	0	
Science of Dental Materials (Restorative)	DT 113b–3	3	0	
Behavior and Society	GSB 201c–4	4	0	

FIFTH QUARTER		Cr.	Lec.	Lab.
Clinical Dental Hygiene	DH 210a–5	1	12	
Dental Assisting	DH 213a–3	3	0	
Dental Health Education	DH 217–2	2	0	
Clinical Dental Roentgenology	DH 218b–2	2	0	
Oral Communication of Ideas	GSD 103–3	4	0	

SIXTH QUARTER				
Clinical Dental Hygiene	DH 210b–5	1	12	
Dental Public Health	DH 220–3	3	0	
Clinical Dental Roentgenology	DH 218c–2	2	0	
Behavior and Society	GSB 201b–4	4	0	
Elective	3			

SEVENTH QUARTER				
Clinical Dental Hygiene	DH 210c–5	1	12	
Dental Assisting	DH 213b–3	3	0	
Dental Administration and Practice (Ethics)	DH 216a–2	2	0	
First Aid	H ED 334S–4	4	0	
Dental Administration and Practice	DH 216b–2	2	0	

RECOMMENDED ELECTIVES				
Communicable Disease	H ED 300–3	3	0	
Technical Writing	GEN 102–3	3	0	
Typewriting	SCR 101a–3	1	4	

Library and Audio-Visual Technical Assistants

This program trains supporting staff for librarians to perform duties such as book processing, book repair and binding, interlibrary loan and acquisitions work, helping readers use catalogs, locating simple bibliographic information, answering directional questions, being in charge of departments (such as circulation or reserve collections), use and maintenance of audio-visual equipment, and preparation and use of instructional materials.

The technical assistant uses independent judgement and makes decisions within guidelines, but he consults with the librarian on unusual problems and works under general supervision of the librarian. In many positions, the library and audio-visual technical assistant supervises other employees. The degree of authority adheres to established library policies.

A minimum of 98 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
World Literature for Composition	GSC 103 [1]–3	3	0	
English Composition	GSD 101–3	3	0	
Library Technical Services (Order)	LAV 101–4	4	1	
Library Technical and Public Service	LAV 103–3	3	0	
Introduction to Technology	LAV 105–2	2	0	
SECOND QUARTER				
Behavior and Society	GSB 201–4	3	0	
English Composition	GSD 102–3	3	0	
General Reference	LAV 107–4	4	0	
Organization of Library Materials	LAV 109–3	3	0	
Automatic Data Processing Concepts	DP 107–3	3	0	
THIRD QUARTER				
Political Economy	GSB 211b–4	4	0	
An introduction to Western Humanities	GSC 110a–3	3	0	
Oral Communication of Ideas	GSD 103–3	4	0	
Library Public Service (Circulation Systems)	LAV 113–3	3	0	
Cataloging of Non-Book Materials	LAV 111–4	4	0	
FOURTH QUARTER				
Behavior and Society	GSB 201c–4	4	0	
Binding, Repair, and Mending of Library Material	LAV 201–4	3	6	
Preparation of Graphic Materials	LAV 203–3	1	6	
Library Internship	LAV 209a–4	0	10	
Elective [2]		3		
FIFTH QUARTER				
Library Internship	LAV 209b–4	0	10	
Library Technical Services (Serials)	LAV 211–4	4	0	
Elements of Photography	LAV 213–3	1	6	
Elective [2]		3		
SIXTH QUARTER				
Multimedia Techniques	LAV 215–3	2	2	
Library Internship	LAV 209c–4	0	10	
Seminar and Problems	LAV 217–3	3	0	
Labor Management Relations Problems	GEN 232–4	4	0	
Elective [2]		3		

[1] Prerequisite: GSD 102–3 or appropriate ACT score.
[2] Students not passing the typewriting proficiency test are required to take a typewriting course.

Physical Therapy Assistants

This program provides training for physical therapy assistants, who will work in health service agencies. It enables students to gain knowledge and skill relating to physical therapy in classroom; laboratory, and clinical settings. The graduate, under the supervision of the registered physical therapist, will be able to administer such physical-therapy techniques as infra-red light, whirlpool baths, hot moist packs, diathermy, ultra-sound, paraffin baths, ultra-violet light, massage therapeutic exercise, gait training, activities of daily living, and hydrotherapy baths and to assist in record keeping and general physical-therapy housekeeping.

A minimum of 112 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Introduction to Physical Science	GSA 101a–4	4	0	
Behavior and Society	GSB 201b–4	4	0	
Music Understanding	GSC 100–3	3	0	
(*or* Art Appreciation	GSC 101–3	3	0)	
English Composition	GSD 101–3	3	0	
Methods of Teaching Exercise	PEM 100f–1	3	0	
Physical Therapy Orientation	PTH 100a–1	3	0	

SECOND QUARTER				
Introduction to Physical Science	GSA 101b–4	4	0	
Behavior and Society	GSB 201c–4	4	0	
English Composition	GSD 102–3	3	0	
Swimming	GSE 101–1	0	2	
College Algebra	MATH 111a–5	5	0	
Physical Therapy Orientation	PTH 100b–1	3	0	

THIRD QUARTER				
Introductory Biology	GSA 201a–4	3	2	
Oral Communication of Ideas	GSD 103–3	4	0	
Restricted Physical Education	GSE 100–1	1	0	
College Algebra and Trigonometry	MATH 111b–5	5	0	
Child Psychology	PSYC 301–4	4	0	
Physical Therapy Orientation	PTH 100c–1	3	0	

FOURTH QUARTER				
Introductory Biology	GSA 201b–4	3	3	
Principles of Physiology	GSA 301–4	4	0	
Human Anatomy	PHSL 300–4	4	0	
Physical Therapy Science Practicum	PTH 200–3	2	3	
Psychology of the Aged	PTH 201–2	2	0	

FIFTH QUARTER				
Kinesiology	PE 303–5	5	0	
Diversified Crafts for Teachers and Recreational Leaders	TIED 303–4			
Pathology	PTH 203–2	2	0	
Physical Therapy Science	PTH 205–3	3	0	
Medical Records	PTH 206–1	1	0	
Elective		3		

SIXTH QUARTER				
Massage	PTH 207–2	1	3	
Therapeutic Exercise I	PTH 209–3	1	6	
Physical Rehabilitative Techniques	PTH 211–3	2	3	
Therapeutic Modalities	PTH 213–3	2	5	
Pharmacology	PTH 215–3	2	2	
Elective		3		

SEVENTH QUARTER

Clinical Internship	PTH 221–6		
Clinical Seminar	PTH 222–2	2	0

RECOMMENDED ELECTIVES

Drama	GSC 203 or 201–3	3	0
Modern Literature: Form and Idea	GSC 209–4	4	0
Introduction to Fiction	GSC 210–3	3	0
Technical Writing	GEN 102–3	3	0
Chemistry	CHEM 115–5	4	4

ASSOCIATE IN BUSINESS DEGREE PROGRAMS

TWO-YEAR PROGRAMS in various phases of business leading to the Associate in Business degree are designed to train young men and women for their initial jobs in accounting, business data processing, or retailing or as an executive, legal, or medical secretary. In addition to skill training, related courses are required which give the student background information as a basis for occupational competency and future advancement.

Each candidate for the Associate in Business degree must complete the minimum number of hours of approved courses, plus any deficiency requirements in the chosen field of specialization which are apparent when the adviser prepares the student's program. The total hours required for completion of a program varies with each particular field of study.

For those programs requiring typewriting and shorthand, placement tests are given to students who have had typing and shorthand in high school. Evidence of proficiency, as shown by the placement tests, will permit a student to take electives in lieu of certain required courses.

Candidates for the Associate in Business degree must complete the prescribed courses with a minimum overall grade point average of 3.00.

Accounting

These courses offer thorough and practical training for a position as bookkeeper, payroll clerk, junior accountant, or assistant to an accountant or auditor. Positions with governmental agencies and in public accounting are also filled by graduates.

A minimum of 96 hours must be completed for graduation.

FIRST QUARTER

		Cr.	Lec.	Lab.
Accounting I	ACC 101a–4	4	1	
Typewriting	SCR 101a–3	1	4	
Business and Technical Mathematics	GEN 105a–3	3	0	
English Composition	GSD 101–3	3	0	
Elective		3		

SECOND QUARTER

Accounting II	ACC 101b–4	4	1	
Calculating Machines	ACC 109a–3	1	4	
Political Economy	GSB 211a–4	4	0	
English Composition	GSD 102–3	3	0	
Oral Communication of Ideas	GSD 103–3	4	0	

THIRD QUARTER

Accounting III	ACC 101c–4	4	1	
Business Law I	ACC 226a–4	4	0	
Automatic Data Processing Machines	DP 101a–5	5	5	
Political Economy	GSB 211b–4	4	0	

FOURTH QUARTER

Accounting IV	ACC 201a–4	4	1
Cost Accounting	ACC 204a–4	4	1
Business Law II	ACC 226b–4	4	0
Office Administration and Supervision	ACC 227–4	4	0

FIFTH QUARTER

Cost Accounting	ACC 204b–4	4	1
Federal Taxes	ACC 233–4	4	0
Business Statistics	ACC 235–4	4	0
Job Orientation	GEN 201–2	2	0

SIXTH QUARTER

Accounting V	ACC 201b–4	4	0
Auditing	ACC 230–4	4	0
Credits and Collections	ACC 275–4	4	0
Elective	4		

RECOMMENDED ELECTIVES

Calculating Machines	ACC 101b–3	1	4
Punched Card Preparation	DP 109–3	2	3
Personnel Management	RET 227–3	3	0
Filing and Duplicating	SCR 107–3	2	2
Labor Management Relations Problems	GEN 232–4	4	0
Business Correspondence	GEN 101–3	3	0

Cooperative Retailing

Cooperative retailing is a merchandising program consisting of eight quarters. There are six quarters of classroom instruction and two quarters of college-credit work experience. The students must work in geographic areas that employ sufficient numbers to warrant efficient follow-up.

The program offers an opportunity for training in the areas of apparel, hard-line, food, or other specialty lines.

One of the unique features of this program is the learning that results from two quarters of on-the-job work experience.

The merchandising organizations that cooperate with the University provide job experience and other educational opportunities. The on-the-job training helps to assure the learner of up-to-date merchandising information and skills.

In order for an organization to qualify as a participant in cooperative retailing, it must agree to furnish the type of training that will meet established standards set by the school and approved by representatives of the merchants served.

Students that have satisfactorily completed, with a *C* or better average, the first three quarters are eligible for placement. Placement is a joint responsibility of the student and the school. Students will enroll, submit weekly reports, participate in seminars, and complete assigned term papers before receiving college credit for cooperative work experience.

Students may enter in the fall, winter, or summer quarter. The program requires 113 quarter hours to complete and takes two calendar years.

FIRST QUARTER		Cr.	Lec.	Lab.
Introduction to Retailing	RET 124–4	4	0	
Product Analysis	RET 176–3	3	0	
Product Information Laboratory	RET 177a–5	5	5	
English Composition	GSD 101–3	3	0	
Job Orientation	GEN 201–2	2	0	

SECOND QUARTER

Product Information Laboratory	RET 177b–5	5	0

Sales Promotion	RET 207b–2	2	3
Political Economy	GSB 211a–4	4	0
English Composition	GSD 102–3	3	0
Oral Communication of Ideas	GSD 103–3	4	0

THIRD QUARTER

Salesmanship	RET 127–3	3	0
Retail Mathematics	RET 179–5	5	0
Behavior and Society	GSB 201c–4	4	0
Calculating Machines	ACC 109a–3	1	4

FOURTH QUARTER

Cooperative Work Experience	RET 201–8	0	36

FIFTH QUARTER

Cooperative Work Experience	RET 201–8	0	36

SIXTH QUARTER

Record and Statistics	RET 206–5	5	0
Personnel Management	RET 227–3	3	0
Behavior and Society	GSB 201b–4	4	0
Labor Management Relations Problems	GEN 232–4	4	0

SEVENTH QUARTER

Sales Promotion	RET 207a–4	4	0
Merchandising Principles	RET 205–4	4	0
Fashion Merchandising	RET 208b–2	2	0
Retail Store Organization and Management	RET 224–4	4	0
Technical Writing	GEN 102–3	3	0

EIGHTH QUARTER

Fashion Merchandising	RET 208a–4	4	0
Marketing Problems	RET 215–4	4	0
Retail Credits and Collections	RET 280–3	3	0
Business Law	ACC 226a–4	4	0

RECOMMENDED ELECTIVES

Fundamentals of Business	ACC 126–3	3	0
Office Administration and Supervision	ACC 227–4	4	0
Salesmanship	RET 127a–3	3	0
Salesmanship	RET 127b–3	3	0
Typewriting	SCR 101a–3	1	4
All General Studies courses			

Electronic Data Processing (Business Option)

Punched card preparation, electromechanical machines operation, and electronic computers are processes and equipment used by the student who aspires to become a programmer. Courses in the theory of accounting, cost accounting, and related fields in business are required to complete this two-year program. Upon successful completion of this program, the student will be sufficiently trained to work in data processing and computer centers where the knowledge of programming is a prerequisite for working with electronic computers and related machines.

A minimum of 97 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Automatic Data Processing Machines	DP 101a–5	5	5	
Business and Technical Mathematics	GEN 105a [1]–3	3	0	
Accounting	ACC 101a–4	4	1	

English Composition	GSD 101–3	3	0

SECOND QUARTER

Computer Programming	DP 103a–5	5	5
Accounting	ACC 101b–4	4	1
Business and Technical Mathematics	GEN 105b–3	3	0
Political Economy	GSB 211b–4	4	0

THIRD QUARTER

Program Operating Systems	DP 206a–5	5	2
Data Processing Applications	DP 104–5	5	2
Accounting	ACC 101c–4	4	1
English Composition	GSD 102–3	3	0

FOURTH QUARTER

Business Computer Programming	DP 203a–5	5	5
Systems Design and Development	DP 205–5	5	0
Cost Accounting	ACC 204a–4	4	1
Technical Writing	GEN 102–3	3	0

FIFTH QUARTER

Business Computer Programming	DP 203b–5	5	5
Program Operating Systems	DP 206b–5	5	2
Office Administration and Supervision	ACC 227–4	4	0
Business Statistics	ACC 235–4	4	0

SIXTH QUARTER

Business Computer Programming	DP 203c–5	5	5
Data Processing Field Project	DP 207–5	1	9
Behavior and Society	GSB 201c–4	4	0

RECOMMENDED ELECTIVES

Business Law	ACC 226–4	4	0
Labor Management Relations Problems	GEN 232–4	4	0
Political Economy	GSB 211a–4	4	0
Oral Communication of Ideas	GSD 103–3	4	0

Executive Secretarial

Students who wish to prepare for positions as professional secretaries in business, industrial, and governmental offices should follow this course of study.

The designated courses offer a combination of general education and skill-building courses which provide a high degree of occupational competence, as well as a general knowledge for the responsible execution of secretarial duties.

A minimum of 99 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Typewriting	SCR 101a–3	1	4	
Shorthand	SCR 104a–6	5	5	
Filing and Duplicating	SCR 107–3	2	2	
English Composition	GSD 101–3	3	0	

SECOND QUARTER

Typewriting	SCR 101b–3	1	4
Shorthand	SCR 104b–6	5	5
Fundamentals of Business	ACC 126–3	3	0
Calculating Machines	ACC 109a–3	1	4
English Composition	GSD 102–3	3	0

THIRD QUARTER

Typewriting	SCR 101c–3	1	4
Shorthand	SCR 104c–6	5	5

Business Correspondence	GEN 101–3	3	0
Behavior and Society	GSB 201c–4	4	0

FOURTH QUARTER

Typewriting	SCR 205a–3	1	4
Shorthand	SCR 209a–6	5	5
Business Law	ACC 226a–4	4	0
Business and Technical Mathematics	GEN 105a–3	3	0

FIFTH QUARTER

Legal Shorthand	SCR 224–6	5	5
Secretarial Accounting	ACC 104–5	4	1
Job Orientation	GEN 201–2	2	0
Political Economy	GSB 211b–4	4	0

SIXTH QUARTER

Typewriting	SCR 205b–3	1	4
Shorthand	SCR 209b–6	5	5
Secretarial Office Procedures	SCR 223–5	1	4
Oral Communication of Ideas	GSD 103–3	4	0

RECOMMENDED ELECTIVES

Medical Shorthand	SCR 225a–6	5	5
Accounting	ACC 101a–4	4	1
Office Administration and Supervision	ACC 227–4	4	0
Calculating Machines	ACC 109b–3	1	4
Business Law	ACC 226b–4	4	0
Cooperative Secretarial Experience	SCR 214–2 to 5		

Legal Secretarial

The courses provide, in addition to the secretarial skill, specialized courses in law-office routines and legal knowledge. Graduates may secure positions as legal secretaries with attorneys, judges, or legal departments; or they may continue their studies in order to become conference or court reporters.

A minimum of 99 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Typewriting	SCR 101a–3		1	4
Shorthand *or* Machine Shorthand	SCR 104a or 120a–6		5	5
Calculating Machines	ACC 109a–3		1	4
English Composition	GSD 101–3		3	0

SECOND QUARTER

Typewriting	SCR 101b–3	1	4
Shorthand *or* Machine Shorthand	SCR 104b or 120b–6	5	5
Filing and Duplicating	SCR 107–3	2	2
Business Correspondence	GEN 101–3	3	0

THIRD QUARTER

Typewriting	SCR 101c–3	1	4
Shorthand *or* Machine Shorthand	SCR 104c or 120c–6	5	5
Secretarial Accounting	ACC 104–5	4	1
English Composition	GSD 102–3	3	0

FOURTH QUARTER

Typewriting	SCR 205a–3	1	4
Medical Shorthand	SCR 225a–6	5	5
Secretarial Office Procedures	SCR 223–5	5	0
Business Law	ACC 226a–4	4	0

FIFTH QUARTER

Legal Shorthand	SCR 224–6	5	5
Business Law	ACC 226b–4	4	0
Behavior and Society	GSB 201c–4	4	0
Political Economy	GSB 211b–4	4	0

SIXTH QUARTER

Typewriting	SCR 205b–3	1	4
Jury Charge	SCR 112–4	3	2
Two-Voice Testimony	SCR 210–4	3	2
Job Orientation	GEN 201–2	2	0
Oral Communication of Ideas	GSD 103–3	4	0

RECOMMENDED ELECTIVES

Accounting	ACC 101a–4	4	1
Office Administration and Supervision	ACC 227–4	4	0
Automatic Data Processing Machines	DP 101a–5	5	5
Business and Technical Mathematics	GEN 105a–3	3	0
Cooperative Secretarial Experience	SCR 214–2 to 5		

Medical Secretarial

These courses are for students who wish to prepare for positions as professional medical secretaries in doctors' offices, dentists' offices, hospitals, clinics, public health departments, research foundations, chemical companies, drug companies, institutions, publishing companies, and insurance companies. A combination of general education, technical training, and skill-building courses provides a high degree of occupational competence.

A minimum of 100 hours of credit must be completed for graduation.

FIRST QUARTER

		Cr.	Lec.	Lab.
Typewriting	SCR 101a–3	1	4	
Shorthand	SCR 104a–6	5	5	
Secretarial Accounting	ACC 104–5	4	1	
English Composition	GSD 101–3	3	0	

SECOND QUARTER

Typewriting	SCR 101b–3	1	4	
Shorthand	SCR 104b–6	5	5	
Business Correspondence	GEN 101–3	3	0	
Oral Communication of Ideas	GSD 103–3	4	0	

THIRD QUARTER

Typewriting	SCR 101c–3	1	4	
Shorthand	SCR 104c–6	5	5	
Filing and Duplicating	SCR 107–3	2	2	
Fundamentals of Business	ACC 126–3	3	0	
English Composition	GSD 102–3	3	0	

FOURTH QUARTER

Typewriting	SCR 205a–3	1	4	
Shorthand	SCR 209a–6	5	5	
Calculating Machines	ACC 109a–3	1	4	
Behavior and Society	GSB 201c–4	4	0	

FIFTH QUARTER

Medical Shorthand	SCR 225a–6	5	5	
Business Law	ACC 226a–4	4	0	
Introduction to Physiology	GEN 141–5	5	0	
Job Orientation	GEN 201–2	2	0	

SIXTH QUARTER

Medical Shorthand	SCR 225b–5	5	5	
Typewriting	SCR 205b–3	1	4	
Secretarial Office Procedures	SCR 223–5	5	5	
Political Economy	GSB 211b–4	4	0	

RECOMMENDED ELECTIVES

Accounting	ACC 101a–6	5	5	
Office Administration and Supervision	ACC 227–4	4	0	
Cooperative Secretarial Experience	SCR 214–2 to 5			
Automatic Data Processing Machines	DP 101a–5	5	5	
Business and Technical Mathematics	GEN 105a–3	3	0	

ASSOCIATE IN TECHNOLOGY DEGREE PROGRAMS

THE PURPOSE of the Associate in Technology degree programs is to give the student a broad foundation in special subjects in the technical field, together with sufficient knowledge of theoretical principles to prepare him for successful participation in the industrial world.

The programs also include courses in general education to help the student understand problems encountered in living and working within his community. These programs are six quarters or more in length and require a minimum of 96 to 124 quarter hours.

Graduates are qualified for positions as estimators, technical assistants, draftsmen, engineering aids, commercial artists, factory representatives, and technicians in the fields of architecture, automotive, aviation, building construction, dental laboratory, electronics, highway and civil technology, forest products, machine drafting and design, tool and manufacturing, mortuary science and funeral service, data processing, and printing.

The technology programs also provide background courses for further study and training for students who intend to become vocational education teachers.

Each program described on the following pages is arranged by quarter. The arrangement, however, may be modified from time to time to meet the continually increasing demands of industry and business for technicians in a variety of areas.

Candidates for the Associate in Technology degree must complete the prescribed course of study with an overall grade point average of at least 3.00.

Architectural Technology

This program provides training in various aspects of the architectural profession. It offers courses of a technical and technically related nature, which provide the basic knowledge required for employment in the field of architecture, generally beginning as a draftsman and affording an opportunity for advancement in such areas as projects coordination, specifications writing, architectural design, structural and mechanical engineering, and architectural supervision.

Several field trips to near-by cities to study historical and contemporary architecture are made each year. Allowance should be made in the student's budget to cover the expense of these trips and for the purchase of small amounts of equipment and supplies.

A minimum of 105 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Architectural Drafting	AD 110a–5	2		9
Freehand Architectural Graphics	AD 146a–3	1		5
History of Architecture	AD 147–3	3		0
Business and Technical Mathematics	GEN 105b [1]–3	3		0
Political Economy	GSB 211b–4	4		0

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking Math 111a–5.

SECOND QUARTER

		Cr.	Lec.	Lab.
Architectural Drafting	AD 110b–3	2	4	
Architectural Design	AD 121a–2	1	3	
Freehand Architectural Graphics	AD 146b–3	1	5	
College Algebra	Math 111a–5	5	0	
Introduction to Physical Science	GSA 101a–4	4	0	

THIRD QUARTER

		Cr.	Lec.	Lab.
Architectural Design	AD 121b–4	3	6	
Materials and Methods of Construction	AD 151–4	3	6	
Mechanics and Strength of Materials	AD 153–4	4	0	
Site Engineering	AD 152–2	1	3	
Basic Materials of Construction	AD 150–3	3	0	

FOURTH QUARTER

		Cr.	Lec.	Lab.
Architectural Design	AD 221a–4	3	6	
Materials and Methods of Construction	AD 250a–4	3	6	
Structural Elements	BC 258–4	4	0	
Job Orientation	GEN 201–2	2	0	
Behavior and Society	GSB 201c–4	4	0	

FIFTH QUARTER

		Cr.	Lec.	Lab.
Architectural Design	AD 221b–4	3	6	
Materials and Methods of Construction	AD 250b–4	3	6	
Construction Cost Estimating	AD 283–3	3	0	
Theory of Structures	AD 290a–3	3	0	
English Composition	GSD 101–3	3	0	

SIXTH QUARTER

		Cr.	Lec.	Lab.
Architectural Design	AD 221c–4	3	6	
Materials and Methods of Construction	AD 250c–4	3	6	
Mechanical Equipment of Buildings	AD 254–4	4	0	
Theory of Structures	AD 290b–3	3	0	
English Composition	GSD 102–3	3	0	

RECOMMENDED ELECTIVES

		Cr.	Lec.	Lab.
Architectural Rendering	AD 246–3	2	3	
Fundamentals of Business	ACC 126–3	3	0	
Business Law	ACC 226–4	4	0	
Business Correspondence	GEN 101–3	3	0	
Labor Management Relations Problems	GEN 232–4	4	0	
Typewriting	SCR 101–3	1	4	
Behavior and Society	GSB 201b–4	4	0	

Automotive Technology

A very low percentage of those employed in automotive service have had formal technical training in their chosen vocation. For the ambitious graduate who has the ability and adequate technical training, automotive service offers unlimited challenge and opportunity for advancement.

This program offers specialized training in areas such as: steering geometry, wheel balancing, hydraulic and electrical circuitry, automatic transmissions, drive trains, rework and machining of automotive parts, and the use of modern electronic diagnostic equipment for determining carburetion and electrical malfunctions. After instruction on laboratory-type engines, chassis, etc., each student is assigned to "live" vehicle diagnosis and repair. This allows for the attainment for maximum competency on the part of each trainee.

A minimum of 100 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Automotive Laboratory (Engines)	AUT 101a–5		0	15
Automotive Theory (Engines)	AUT 125a–5		5	0
Technical Drawing	MT 175a–3		3	2
Business and Technical Mathematics	GEN 105b [1]–3		3	0
SECOND QUARTER				
Automotive Laboratory (Chassis and Brakes)	AUT 101b–5		0	15
Automotive Theory (Chassis and Brakes)	AUT 125b–5		5	0
Introduction to Physical Science	GSA 101a–4		4	0
English Composition	GSD 101–3		3	0
THIRD QUARTER				
Automotive Laboratory (Ignition and Carburetion)	AUT 101c–5		0	15
Automotive Theory (Ignition and Carburetion)	AUT 125c–5		5	0
Oral Communication of Ideas	GSD 103–3		4	0
Basic Applied Physics	GEN 120–4		3	3
FOURTH QUARTER				
Automotive Laboratory (Power Options)	AUT 201a–5		0	15
Automotive Theory (Power Options)	AUT 220a–5		5	0
Technical Writing	GEN 102–3		3	0
Elective		3		
FIFTH QUARTER				
Automotive Laboratory (Transmission Power Systems)	AUT 201b–5		0	15
Automotive Theory (Transmission Power Systems)	AUT 220b–5		5	0
Political Economy	GSB 211b–4		4	0
Elective		3		
SIXTH QUARTER				
Automotive Laboratory (Diagnosis)	AUT 201c–5		0	15
Automotive Theory (Diagnosis)	AUT 220c–5		5	0
Behavior and Society	GSB 201c–4		4	0
Elective		3		
RECOMMENDED ELECTIVES				
Metallurgy	TT 275b [2]–3		2	3
Oxy-Acetylene and Arc Welding	WEL 175 [2]–3		1	4
Basic Machine Shop Practice	TT 175 [2]–3		1	4
Manufacturing Processes	TT 176b [2]–3		3	0
College Algebra	Math 111a–5		5	0
Introduction to Physical Science	GSA 101b–4		4	0
Labor Management Relations Problems	GEN 232–4		4	0
Typewriting	SCR 101a–3		1	4
Electrical, Hydraulic, and Pneumatic Controls	MT 127–3		3	0

Aviation Technology

The airlines and general aviation constitute an industry that requires large organizations staffed by highly skilled technicians. The industry has grown at such an unprecedented rate in the last decade that it is now faced with a serious shortage of properly trained aviation technicians. Men are needed who possess a wide range of knowledge and ability provided by general education as well as special technical training.

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking GEN 105b–3.

[2] At least one elective must be taken from this group of recommended electives.

The aviation technology program covers the essential elements that are involved in this highly specialized industry. Students are trained for the field of aviation maintenance and operations, aviation electronics, and air carrier operations.

Upon graduation, the student receives the Associate in Technology degree, and depending on his area of concentration, is qualified to obtain the Federal Aviation Agency (FAA) Airman Airframe and Powerplant certificate as an A & P maintenance technician, or commercial pilot, and is eligible for the instrument flight rating or the flight engineer written examination.

Aviation technology facilities are located at the Southern Illinois Airport, three miles NNW of the Carbondale Campus and three miles ENE of Murphysboro, Illinois.

Students entering the aviation technology program for the first time must purchase a basic tool kit which costs approximately $90.

Students choosing the aviation technology curriculum with flight training will pay, in addition to the regular tuition and fees, a flight charge of approximately $600 for the Private Pilot Course.

A minimum of 108 quarter hours must be completed for graduation.

Maintenance Technician (option)

Although the Private Pilot Course (Aviation Technology 230–3) is approved by the Federal Aviation Agency (FAA) and should be an integral part of the maintenance technician option, students may exclude it.

FIRST QUARTER		Cr.	Lec.	Lab.
Aircraft Reciprocating Powerplant	AT 101–6	3	9	
Carburetion and Lubrication Systems	AT 102–6	3	8	
Business and Technical Mathematics	GEN 105b [1]–3	3	0	
English Composition	GSD 101–3	3	0	
SECOND QUARTER				
Aircraft Electricity, Generator-Alternator	AT 103–6	5	6	
Propellers	AT 104–5	3	6	
Aircraft Instruments	AT 105–4	3	4	
Technical Drawing	MT 175–3	1	4	
THIRD QUARTER				
Aircraft Ignition-Starting Systems	AT 106–5	3	6	
Jet Propulsion Powerplant	AT 108–6	4	6	
Powerplant Testing	AT 109–4	2	6	
Technical Writing	GEN 102–3	3	0	
FOURTH QUARTER				
Fabric-Wood-Doping	AT 107–4	3	6	
Aerodynamics	AT 203–5	3	4	
Aircraft Structure and Repair	AT 110–3	3	0	
Oxy-Acetylene and Electric Arc Welding	WEL 175–3	1	4	
Oral Communication of Ideas	GSD 103–3	3	0	
FIFTH QUARTER				
Weight & Balance and Inspection	AT 209–6	5	4	
Pressurization, Air-Conditioning Systems	AT 205–3	2	2	

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking 105b–3.

Metal and Processing	AT 206–4	2	6
Radio Operation and Installation	AT 217–1	1	2
Behavior and Society	GSB 201c–4	4	0
Jet Transport Aircraft Systems	AT 220–3	3	2
Labor Management Relations Problems	GEN 232–4	4	0
Political Economy	GSB 211b–4	4	0

SIXTH QUARTER

Aircraft Hydraulics	AT 204–5	3	6
Aircraft Fuel Systems	AT 208–2	1	2

RECOMMENDED ELECTIVES

Private Pilot	AT 230b–1	0	3.3
Business Law	ACC 226a–4	4	0
Record Keeping	ACC 229–2	1	5
Salesmanship	RET 127–3	3	0

Professional Pilot (option)

This option is fully approved by the Federal Aviation Agency (FAA) under Approval No. 4624 as an Airframe and Powerplant Technician School, and under Approval No. C–19–21 as a Flight School. It combines the Aviation Maintenance Option with commercial pilot flight training, instrument flight, and general education. Upon completion of the program, the student is also qualified to obtain the Federal Aviation Agency (FAA) Airman A & P Certificate as a maintenance technician or commercial pilot and is eligible for the instrument flight rating or the flight engineer written examination.

Flight courses are divided into basically 40-hour increments and require the following total payments:

Course No.	*Course Title*	*Flight Hours*	*Discussion Time*	*Flight Tuition*
AT 230	Private Pilot	40:00	35:00	$600.00
AT 231	Basic	40:00	12:00	600.00
AT 232	Intermediate	40:00	12:00	600.00
AT 233	Advanced	40:00	12:00	600.00
AT 234	Instrument Flight	30:00	30:00	600.00

One hour of simulator time is given in each phase of the private and commercial courses. The cost of each course includes supplies such as computers, log books, textbooks, etc.

Payment for each course is due at the beginning of the quarter for which the student is enrolled. If delayed payment of the flight course cost is required, the following will be acceptable:

$300 shall be due upon enrollment and before flight instruction can begin and the balance for each course as outlined above shall be due six weeks following the first payment.

In no event will a student be allowed fly with an outstanding debit balance in his account.

Policy of refund of deposit on course not completed: The time flown will be charged at full rate. Cost of books plus a $10 processing charge will also be deducted from the amount of deposit.

A minimum of 124 quarter hours must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Aircraft Reciprocating Powerplant	AT 101–6	3		9
Carburetion and Lubrication Systems	AT 102–6	3		8
Private Pilot Course	AT 230–3	1		4
English Composition	GSD 101–3	3		0

SECOND QUARTER

Aircraft Electricity, Generator-Alternator	AT 103–6	5	6
Propellers	AT 104–5	3	6
Aircraft Instruments	AT 105–4	3	4
Business and Technical Mathematics	GEN 105b–3	3	0

THIRD QUARTER

Aircraft Ignition-Starting Systems	AT 106–5	3	6
Jet Propulsion Powerplant	AT 108–6	4	6
Powerplant Testing	AT 109–4	2	6
Basic Flight	AT 231–3	1	4

FOURTH QUARTER

Intermediate Flight	AT 232–3	1	4
Technical Writing	GEN 102–3	3	0
Technical Drawing	MT 175–3	1	4
Welding	WEL 125a–5	5	0
Oral Communication of Ideas	GSD 103–3	3	0

FIFTH QUARTER

Fabric-Wood-Doping	AT 107–4	3	6
Aerodynamics	AT 203–5	3	4
Advanced Flight	AT 233–3	1	4
Political Economy	GSB 211b–4	4	0

SIXTH QUARTER

Aircraft Hydraulics	AT 204–5	3	6
Pressurization, Air-Conditioning Systems	AT 205–3	2	2
Metal and Processing	AT 206–4	2	6
Instrument Flight	AT 234–3	1	4
Behavior and Society	GSB 201c–4	4	0

SEVENTH QUARTER

Weight & Balance and Inspection	AT 209–6	5	4
Aircraft Fuel Systems	AT 208–2	1	2
Jet Transport Aircraft Systems	AT 220–3	3	2
Labor Management Relations Problems	GEN 232–4	4	0
Elective	3		

RECOMMENDED ELECTIVES

Behavior and Society	GSB 201a–4	4	0
Behavior and Society	GSB 201b–4	4	0
Political Economy	GSB 211a–4	4	0
Business Law	ACC 226–4	4	0
Political Economy	GSB 211b–4	4	0
Salesmanship	RET 127–3	3	0

Aviation Electronics (option)

This two-year option provides the student with the necessary knowledge and skills for employment in many areas of the aviation industry.

Emphasis is on the fundamental theories, principles, and mathematics and their applications in the field of electronics. It is recommended that students have a strong background in high school mathematics and science.

Workbooks must be purchased from time to time for laboratory courses, with approximate cost of $10.

The first four quarters are offered at Southern Acres, and the last two quarters (fifth and sixth) are offered in the aviation technology building at the Southern Illinois Airport.

A minimum of 99 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Basic Electronic Applications and Systems (AC, DC)	ELT 101a–4	0		10
Basic Electronic Theory (AC, DC)	ELT 125a–5	5		0
Basic Technological Concepts	ELT 127–3	3		0
Business and Technical Mathematics	GEN 105b [1]–3	3		0
English Composition	GSD 101–3	3		0

SECOND QUARTER				
Basic Electronic Applications and Systems (Vacuum Tube & Transistor)	ELT 101b–4	0		10
Basic Electronic Theory (Vacuum Tube & Transistor)	ELT 125b–5	5		0
Electrical Circuits	ELT 129–3	3		0
Introduction to Physical Science	GSA 101a–4	4		0

THIRD QUARTER				
Basic Electronic Applications and Systems (Transmitter & Receiver)	ELT 101c–4	0		10
Electronic Theory (Transmitter & Receiver)	ELT 125c–5	5		0
Diagnostic Analysis	ELT 131–3	3		0
Political Economy	GSB 211b–4	4		0

FOURTH QUARTER				
Advanced Electronic Applications	ELT 201a–4	0		10
Advanced Industrial Systems Theory	ELT 225a–5	5		0
F.C.C. License	ELT 228–3	3		0
Introduction to Physical Science	GSA 101b–4	4		0

FIFTH QUARTER				
Aircraft Communications and Navigation Systems	AT 251a–3	3		0
Avionics Laboratory I	AT 251b–9	0		18
Aircraft Integrated Flight Systems	AT 252a–3	3		0
Avionics Laboratory II	AT 252b–3	0		6

SIXTH QUARTER				
Aircraft Flight Controls and Instrumentation Systems	AT 253a–3	3		0
Avionics Laboratory III	AT 253b–3	0		8
Airborne Radar Systems	AT 254a–3	3		0
Avionics Laboratory IV	AT 254b–3	0		6
Technical Writing	GEN 102–3	3		0

Building Construction Technology

These courses provide training which will enable the individual to qualify for positions of greater opportunity and responsibility after relatively short periods of apprenticeship or trade experience in the fields of construction supervision, cost estimating, management, and building construction.

Field trips to nearby cities to study and observe various types of construction are made each school year. Allowance should be made for the purchase of small amounts of equipment and supplies.

A minimum of 106 hours of credit must be completed for graduation.

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking either 105b–3 or Math 111a–5.

FIRST QUARTER		Cr.	Lec.	Lab.
Production Woodworking Laboratory (Machines)	FP 101a–5	0		15
Wood Technology	FP 128–4	4		0
Architectural Drafting	AD 110a–5	2		9
Business and Technical Mathematics	GEN 105b–3	3		0

SECOND QUARTER				
Production Woodworking Laboratory (Cabinet and Millwork)	FP 101b–5	0		15
College Algebra	Math 111a–5	5		0
Introduction to Physical Science	GSA 101a–4	4		0
Behavior and Society	GSB 201c–4	4		0

THIRD QUARTER				
Materials and Methods of Construction	AD 151–4	3		6
Basic Materials of Construction	AD 150–3	3		0
Mechanics and Strength of Materials	AD 153–4	4		0
Mechanical Equipment of Buildings	AD 254–4	4		0
Job Orientation	GEN 201–2	2		0

FOURTH QUARTER				
Site Engineering	AD 152–2	4		3
Materials and Methods of Construction	AD 250a–4	3		6
Structural Elements	AD 258–4	4		0
Production Woodworking Laboratory (Light Frame)	FP 201a–5	0		15
Wood Finishing	FP 129–3	3		0

FIFTH QUARTER				
Construction	BC 210a–3	3		0
Materials and Methods of Construction	AD 250b–4	3		6
Construction Cost Estimating	AD 283–3	3		0
Theory of Structures	AD 290a–3	3		0
Production Woodworking Laboratory (Prefabrication)	FP 201b–5	0		15

SIXTH QUARTER				
Construction	BC 210b–3	3		0
Business Law	ACC 226a–4	4		0
Labor Management Relations Problems	GEN 232–4	4		0
Political Economy	GSB 211b–4	4		0
English Composition	GSD 101–3	3		0

Dental Laboratory Technology

A dental technician is an individual trained and educated to perform those phases of the dental laboratory procedures required in the fabrication of dental prosthetic appliances. He may work in a licensed dentist's office, or he may find employment in an approved dental laboratory. Each student must purchase a kit of instruments, which costs approximately $100. This is in addition to regular university fees.

This program has been designed to meet the standards established by the Council on Dental Education and the Council on Dental Trades and Laboratories of the American Dental Association. It has been fully approved by the accrediting agency of the Association. Applicants must take a Dental Technology Aptitude Test during registration week of the fall or winter quarter at the Vocational-Technical Institute's Dental Technology Laboratory.

A minimum of 103 quarter hours must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Dental Prosthetics Laboratory (Tooth Form)	DT 101a–6	0		18
Dental Prosthetics Theory (Tooth Form)	DT 125a–3	3		0
Business and Technical Mathematics	GEN 105a [1]–3	3		0
English Composition	GSD 101–3	3		0

SECOND QUARTER				
Dental Prosthetics Laboratory (Partial Dentures)	DT 101b–6	0		18
Dental Prosthetics Theory (Partial Dentures)	DT 125b–3	3		0
Science of Dental Materials	DT 113a–3	3		0
Oral Anatomy	DT 128–2	2		0
Introduction to Physical Science	GSA 101a–4	4		0

THIRD QUARTER				
Dental Prosthetics Laboratory (Complete Dentures)	DT 101c–6	0		18
Dental Prosthetics Theory (Complete Dentures)	DT 125c–3	3		0
Introduction to Physiology	GEN 141–5	5		0
Introduction to Chemistry	GEN 115a–4	4		0

FOURTH QUARTER				
Crown and Bridgework Laboratory (Individual Cast Restorations)	DT 201a–6	0		18
Crown and Bridgework Theory (Individual Cast Restorations)	DT 225a–3	3		0
Metallurgy	TT 275–3	4		1
Behavior and Society	GSB 201c–4	4		0

FIFTH QUARTER				
Crown and Bridgework Laboratory	DT 201b–6	0		18
Crown and Bridgework Theory	DT 225b–3	3		0
Fundamentals of Business	ACC 126–3	3		0
Technical Writing	GEN 102–3	3		0
Salesmanship	RET 127–3	3		0

SIXTH QUARTER				
Crown and Bridgework Laboratory (Ceramics and Precision Attachments)	DT 201c–6	0		18
Crown and Bridgework Theory (Ceramics and Precision Attachments)	DT 225c–3	3		0
Professional Ethics	DT 202–2	2		0
Political Economy	GSB 211b–4	4		0
Oral Communication of Ideas	GSD 103–3	4		0

RECOMMENDED ELECTIVES				
Record Keeping	ACC 229–2	1		4
Calculating Machines	ACC 109–6	5		5
Typewriting	SCR 101–3	1		4
Introduction to Physical Science	GSA 101b–4	4		0
Trigonometry	Math 111b–5	5		0
Welding Theory (Oxy-Acetylene)	WEL 125a–5	5		0

Electronic Data Processing (Industrial Option)

This program provides training in the technical skills underlying the operation and programming of data acquisition and computing equipment as applied to industrial purposes. Punched card preparation, electro-

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking GEN 105a–3.

mechanical machines operation, and electronic computers are processes and equipment used by the student who aspires to become a programmer.

A minimum of 99 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Automatic Data Processing Machines	DP 101a–5	5	5	
Fundamentals of Business	ACC 126–3	3	0	
Manufacturing Processes	TT 176a–3	3	0	
Business and Technical Mathematics	GEN 105b [1]–3	3	0	
Introduction to Physical Science	GSA 101a–4	4	0	

SECOND QUARTER				
Computer Programming	DP 103a–5	5	5	
College Algebra	MATH 111a–5	5	0	
Manufacturing Processes	TT 176b–3	3	0	
Basic Applied Physics	GEN 120–4	2	4	

THIRD QUARTER				
Program Operating Systems	DP 206a–5	5	2	
Data Processing Applications	DP 104–5	5	2	
Applied Calculus	GEN 118–4	4	0	
English Composition	GSD 101–3	3	0	

FOURTH QUARTER				
Industrial Computer Programming	DP 202a–5	5	5	
Systems Design and Development	DP 205–5	5	0	
Technical Drawing	MT 175a–3	3	2	
Kinematics	MT 225–3	3	0	

FIFTH QUARTER				
Business Statistics	ACC 235–4	4	0	
Industrial Computer Programming	DP 202b–5	5	5	
Program Operating Systems	DP 206b–5	5	2	
Technical Writing	GEN 102–3	3	0	

SIXTH QUARTER				
Data Processing Field Project	DP 207–5	1	9	
Business Computer Programming	DP 203c–5	5	0	
Behavior and Society	GSB 201c–4	4	0	

RECOMMENDED ELECTIVES				
Accounting	ACC 101–4	4	1	
Business Law	ACC 226–4	4	0	
Office Administration and Supervision	ACC 227–4	4	0	

Electronics Technology

Objectives of this program are to educate a semi-professional electronics technician capable of taking his place in industry in both indirect and direct support to the electronics engineer. The indirect supporting technician is being trained in test measurements, data acquisition, etc. The direct supporting technician is educated to be more mathematically oriented so he can communicate with the engineer. He would work on matters of routine design and other problems.

Graduates are employed by such concerns as General Electric, Bell Labs, Argonne Labs, I.B.M., Univac, and Los Alamos Labs. About eighty

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking GEN 105b–3.

percent of these graduates work in indirect support positions and the remaining twenty percent in direct support positions.

During the early stages of the program, most instruction is directed toward basic principles of electricity and electronics. This is followed by communication systems, digital circuits, and industrial systems. These applications are based on both vacuum tubes and transistor circuitry.

Workbooks required for laboratory courses cost approximately $10.

A minimum of 99 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Basic Electronic Applications and Systems (AC, DC)	ELT 101a–4	0		10
Basic Electronic Theory (AC, DC)	ELT 125a–5	5		0
Basic Technological Concepts	ELT 127–3	3		0
College Algebra	Math 111a [1]–5	5		0

SECOND QUARTER				
Basic Electronic Applications and Systems (Vacuum Tube and Transistor)	ELT 101b–4	0		10
Basic Electronic Theory (Vacuum Tube and Transistor)	ELT 125b–5	5		0
Electrical Circuits	ELT 129–3	3		0
Applied Calculus	GEN 118–4	4		0

THIRD QUARTER				
Basic Electronic Applications and Systems (Transmitter and Receiver)	ELT 101c–4	0		10
Basic Electronic Theory (Transmitter and Receiver)	ELT 125c–5	5		0
Diagnostic Analysis	ELT 131–3	3		0
Introduction to Physical Science	GSA 101a–4	4		0

FOURTH QUARTER		Cr.	Lec.	Lab.
Advanced Electronic Applications	ELT 201a–4	0		10
Advanced Industrial Systems Theory	ELT 225a–5	5		0
Introduction to Physical Science	GSA 101b–4	4		0
(*or* Basic Applied Physics	GEN 120–4	4		0)
English Composition	GSD 101–3	3		0

FIFTH QUARTER				
Advanced Electronic Applications	ELT 201b–5	0		10
Advanced Industrial Systems Theory	ELT 225b–5	5		0
Technical Writing	GEN 102–3	3		0
Behavior and Society	GSB 201c–4	4		0

SIXTH QUARTER				
Advanced Electronic Applications	ELT 201c–5	0		10
Advanced Industrial Systems Theory	ELT 225c–5	5		0
F.C.C. License	ELT 228–3	3		0
Political Economy	GSB 211b–4	4		0

RECOMMENDED ELECTIVES				
Technical Drawing	MT 175–3	1		4
Labor Management Relations Problems	GEN 232–4	4		0
Salesmanship	RET 127–3	3		0
Typewriting	SCR 101–3	1		4
Oral Communication of Ideas	GSD 103–3	3		0

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking Math 111a–5.

Electrical Power Transmission Option

FIRST QUARTER		Cr.	Lec.	Lab.
Basic Electronic Applications & Systems	ELT 101a–4	0	10	
Basic Electronic Theory	ELT 125a–5	5	0	
Basic Technological Concepts	ELT 127–3	3	0	
Technical Mathematics	GEN 105b [1]–3	3	0	

SECOND QUARTER				
Basic Electronic Applications & Systems	ELT 101b–4	0	10	
Basic Electronic Theory	ELT 125b–5	5	0	
Electrical Circuits	ELT 129–3	3	0	
English Composition	GSD 101–3	3	0	
Technical Drawing	MT 175a–3	0	5	

THIRD QUARTER				
Basic Electronic Theory	ELT 125c–5	5	0	
Electrical Distribution I	ELT 141–5	2	9	
Basic Electronic Applications & Systems	ELT 101c–4	0	10	
Introduction to Physical Science	GSA 101a–4	4	0	

FOURTH QUARTER				
Electrical Field Work I	ELT 145–12			

FIFTH QUARTER		Cr.	Lec.	Lab.
Electrical Field Work II	ELT 243–6			
Electrical Distribution II	ELT 241–5	2	9	
Federal Communications Commission License	ELT 228–3	3	0	
Political Economy	GSB 211b–4	4	0	

SIXTH QUARTER				
Advanced Industrial Systems Theory	ELT 225b–5	5	0	
Advanced Electronic Applications	ELT 201b–4	0	10	
Electro-Mechanical	ELT 245–5	2	9	
Behavior and Society	GSB 201c–4	4	0	

SEVENTH QUARTER				
Technical Writing	GEN 102–3	3	0	
Labor Management Relations Problems	GEN 232–4	4	0	
Electrical Systems Controls	ELT 247–5	2	9	
Electrical Industry Practice	ELT 249–3	3	0	
Elective		3		

RECOMMENDED ELECTIVE				
Oral Communication of Ideas	GSD 103–3	3	0	

Forest Products Technology

This course of study provides training for technical and supervisory positions in the forest products industries. New developments in wood utilization, prefabricated construction, manufacturing, and wood research provide increasing career opportunities. Graduates find employment as specialists in production, seasoning, laminating, and quality control in furniture, millwork, and structural components plants. In wood laboratories they perform as research technicians conducting experiments, col-

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking GEN 105b–3.

lecting data, and assisting in analysis and evaluation of test results.

Students participate in a number of field trips for which they pay their own expenses.

A minimum of 100 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Production Woodworking Laboratory (Machines)	FP 101a–5	0		15
Production Woodworking Theory (Machines)	FP 125a–3	3		0
Wood Technology	FP 128–4	2		4
Wood Finishing	FP 129–3	3		0
English Composition	GSD 101–3	3		0

SECOND QUARTER				
Production Woodworking Laboratory (Cabinet and Millwork)	FP 101b–5	0		15
Production Woodworking Theory (Cabinet and Millwork)	FP 125b–3	3		0
Basic Woodworking Drafting	FP 178–3	1		4
Basic Materials of Construction	AD 150–3	3		0
Business and Technical Mathematics	GEN 105b [1]–3	3		0

THIRD QUARTER				
Production Woodworking Laboratory (Furniture Construction)	FP 101c–5	0		15
Production Woodworking Theory (Furniture Construction)	FP 125c–3	3		0
Lumber Grading	FP 131–2	2		1
Furniture Drafting and Design	FP 179–3	1		4
Introduction to Physical Science	GSA 101a–4	4		0

FOURTH QUARTER		Cr.	Lec.	Lab.
Production Woodworking Laboratory (Light Frame)	FP 201a–5	0		15
Production Woodworking Theory (Light Frame)	FP 225a–3	3		0
Wood Preservation	FP 232–2	2		0
Technical Writing	GEN 102–3	3		0
Behavior and Society	GSB 201c–4	4		0

FIFTH QUARTER				
Production Woodworking Laboratory (Prefabrication)	FP 201b–5	0		15
Production Woodworking Theory (Prefabrication)	FP 225b–3	3		0
Lumber Seasoning	FP 130–3	3		0
College Algebra	MATH 111a–5	5		0

SIXTH QUARTER				
Production Woodworking Laboratory (Manufacturing Processes)	FP 201c–5	0		15
Production Woodworking Theory (Manufacturing Processes)	FP 225c–3	3		0
Plant Organization and Operation	FP 250–3	3		0
Political Economy	GSB 211–4	4		0

RECOMMENDED ELECTIVES				
Record Keeping	ACC 229–2	1		3
Business Correspondence	GEN 101–3	3		0
Labor Management Relations Problems	GEN 232–3	3		0
Calculating Machines	ACC 109a–3	1		4
Typewriting	SCR 101–3	1		4

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking GEN 105b–3.

Highway and Civil Technology

This program provides comprehensive and well balanced instruction in applied highway civil technology and related science.

The curriculum consists of the following four subject-matter divisions plus 18 weeks of cooperative work experience: (1) specialized technical courses in the technology, (2) auxiliary or supporting technical courses, (3) mathematics and science courses, and 18 weeks of cooperative work experience after completion of the first three quarters of formal classroom and laboratory training, and (4) General Studies courses.

A minimum of 110 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Architectural Drafting	AD 110a–5	3	9	
Surveying	HCT 101a–5	3	9	
Introduction to Physical Science	GSA 101a–4	4	0	
Business and Technical Mathematics	GEN 105–3	0	3	
SECOND QUARTER				
Structural Drafting	HCT 105a–3	1	5	
Surveying	HCT 101b–3	2	4	
Basic Materials	HCT 103–3	2	3	
College Algebra	MATH 111a [1]–5	5	0	
Introduction to Physical Science	GSA 101b–4	4	0	
THIRD QUARTER				
Structural Drafting	HCT 105b–3	1	5	
Surveying	HCT 101c–5	3	9	
Mechanics and Strength of Materials	AD 153a–4	4	0	
English Composition	GSD 101–3	3	0	
Soils	HCT 107–3	2	3	
FOURTH QUARTER (SUMMER)				
Cooperative Work Experience	HCT 202a–8			
FIFTH QUARTER				
Cooperative Work Experience (6 weeks)	HCT 202b–4			
Hydraulics and Drainage	HCT 203–5	4	4	
Mechanics and Strength of Materials	AD 153b–4	3	3	
SIXTH QUARTER				
Bituminous Materials	HCT 205–2	1	2	
Civil Construction	HCT 207a–5	5	0	
Applied Calculus	GEN 118–4	4	0	
Behavior and Society	GSB 201c–4	4	0	
Technical Writing	GEN 102–3	3	0	
SEVENTH QUARTER				
Route Surveying	HCT 209–5	2	8	
Roadway Design and Construction	HCT 213–5	4	4	
Civil Construction	HCT 207b–3	3	0	
Labor Management Relations Problems	GEN 232–4	4	0	

Machine Drafting and Design Technology

This program prepares students for jobs in industry which require knowledge and abilities in drafting and design of a mechanical nature. Gradu-

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking GEN 105–3.

ates work as draftsmen, jig and fixture designers, laboratory technicians, research and development engineering aides, and technical supervisors. With additional experience, they may advance to positions as machine and tool designers, industrial supervisors, tool buyers, production expediters, cost estimators, and field service representatives.

In the major course, emphasis is placed on graphical communication and problem solving techniques, product and tool design principles and practices, engineering standards, manufacturers' standards, and the selection of methods for efficient and economical production. Other courses in the curriculum are intended to improve the student's ability to communicate in words, to acquaint him with materials and processes of industry, to impart the mathematical skills and scientific knowledge essential for the designer, and to develop understandings of the human relations aspects of our American industrial life.

A minimum of 97 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Graphics	MT 101a–7	3		12
Manufacturing Processes	TT 176a–3	3		0
Business and Technical Mathematics	GEN 105b [1]–3	3		0
Introduction to Physical Science	GSA 101a–4	4		0
SECOND QUARTER				
Graphics	MT 101b–7	3		12
Manufacturing Processes	TT 176b–3	3		0
College Algebra	MATH 111a–5	5		0
English Composition	GSD 101–3	3		0
THIRD QUARTER				
Graphics	MT 101c–7	3		12
Basic Applied Physics (*or* Introduction to Physical Science	GEN 120–4 GSA 101b–4	3		3 0)
Behavior and Society	GSB 201c–4	4		0
FOURTH QUARTER				
Machine Drafting and Design	MT 201a–5	0		15
Statics and Strength of Materials	MT 226a–2	2		0
Kinematics	MT 225–3	3		0
Metallurgy	TT 275b–3	2		3
Elective		3		
FIFTH QUARTER				
Machine Drafting and Design	MT 201b–5	0		15
Statics and Strength of Materials	MT 226b–3	3		0
Electrical, Hydraulic, and Pneumatic Controls	MT 127–3	3		0
Political Economy	GSB 211b–4	4		0
SIXTH QUARTER				
Machine Drafting and Design	MT 201c–7	2		13
Tool Design	MT 227–3	3		0
Metallurgy	TT 275c–3	2		3
Oral Communication of Ideas	GSD 103–3	4		0
or Technical Writing	(GEN 102–3	3		0)
RECOMMENDED ELECTIVES				
Labor Management Relations Problems	GEN 232–4	4		0
Machine Tool Theory (Engine, Lathe, and Bench)	TT 125–3	3		0
Machine Tool Theory (Precision Measurement)	TT 125–3	3		0

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking GEN 105–3.

Political Economy	GSB 211a–4	4	0
Machine Tool Laboratory Engine, Lathe, and Bench	TT 101–5	0	15
Advanced Machine Tool Theory (Milling Machines)	TT 225–3	3	0
Advanced Machine Tool Laboratory (Milling Machines)	TT 201–3	0	10
Welding Laboratory (Oxy-Acetylene)	WEL 101–5	0	15
English Composition	GSD 102–3	3	0
Applied Calculus	GEN 118–4	4	0

Mortuary Science and Funeral Service

This program is fully accredited by the American Board of Funeral Service Education.

These courses offer thorough and practical training for the profession of funeral directing and mortuary science. Graduates of this program are prepared to take the State examination for licensing. Those who expect to practice in a state other than Illinois should make early contact with the appropriate licensing board of that state.

A minimum of 124 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
The Funeral—History and Customs	MS 101a–3	3	0	
Introduction to Chemistry	GEN 115a–4	3	3	
Behavior and Society	GSB 201b–4	4	0	
Political Economy	GSB 211a–4	4	0	
English Composition	GSD 101–3	3	0	
SECOND QUARTER				
The Funeral—History and Customs	MS 101b–3	3	0	
Embalming Chemistry	MS 110–4	3	3	
Psychology of Funeral Services	MS 210a–3	3	0	
Political Economy	GSB 211b–4	4	0	
English Composition	GSD 102–3	3	0	
THIRD QUARTER				
Accounting	ACC 101a–4	4	1	
Business Law	ACC 226a–4	4	0	
Behavior and Society	GSB 201c–4	4	0	
Public Health, Laws and Regulations	MS 208–2	2	0	
Communicable Disease	HED 300–3	3	0	
FOURTH QUARTER				
Principles of Physiology	GSA 301–4	3	3	
Oral Communication of Ideas	GSD 103–3	4	0	
Psychology of Personality	PSYC 305–4	4	0	
FIFTH QUARTER				
Restorative Art	MS 202a–3	2	3	
Introduction to Embalming	MS 203–3	3	0	
Pathology	MS 205a–3	3	0	
Emotional Health	HED 312–4	4	0	
Elective		3		
SIXTH QUARTER				
Restorative Art	MS 202b–3	2	3	
Pathology	MS 205b–3	3	0	
Embalming Theory and Practice	MS 225a–5	3	6	
Introductory Microbiology	MS 206–5	4	3	
SEVENTH QUARTER				
Psychology of Funeral Services	MS 210b–3	3	0	
Embalming Theory and Practice	MS 225b–5	3	6	
Mortuary Management	MS 250–5	5	0	

Human Anatomy	PHSL 300–4	4	4

EIGHTH QUARTER

Funeral Service Internship	MS 275–10	2	38
Funeral Service Seminar	MS 280–2	1	3

Printing Technology

This program provides training for the rapidly changing printing industry. Employment opportunities have never been greater than they are at the present time for technically trained personnel in the graphic arts industry.

Emphasis is placed on production in both the offset and the letterpress printing fields. Graduates of this program are prepared to enter the graphic arts industry, composed of printing, publishing, and allied businesses.

A minimum of 99 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Presswork Laboratory (Automatic Platen)	PT 101a–6		0	15
Presswork Theory (Automatic Platen)	PT 125a–3	3	0	
Layout and Color Theory	CA 135–2	2	0	
Business and Technical Mathematics	GEN 105a [1]–3	3	0	
English Composition	GSD 101–3	3	0	

SECOND QUARTER

Presswork Laboratory (Camera and Offset)	PT 101b–6	0	15
Presswork Theory (Camera and Offset)	PT 125b–3	3	0
Printing Layout and Design	PT 153–3	3	0
English Composition	GSD 102–3	3	0
Elective	3		

THIRD QUARTER

Presswork Laboratory (Offset and Camera)	PT 101c–6	0	15
Presswork Theory (Offset and Camera)	PT 125c–3	3	0
Technical Writing	GEN 102–3	3	0
Behavior and Society	GSB 201c–4	4	0

FOURTH QUARTER

Composition Laboratory (Linotype, Intertype)	PT 201a–6	0	15
Composition Theory (Linotype, Intertype)	PT 225a–3	3	0
Labor Management Relations Problems	GEN 232–4	4	0
Oral Communication of Ideas	GSD 103–3	4	0

FIFTH QUARTER

Composition Laboratory (Linotype, Ludlow)	PT 201b–6	0	15
Composition Theory (Linotype, Ludlow)	PT 225b–3	3	0
Political Economy	GSB 211b–4	4	0
Elective			

SIXTH QUARTER

Composition Laboratory (Letterpress and Offset Production)	PT 201c–6	0	15

[1] Students who score below a satisfactory level on the mathematics part of the ACT examination must take GEN 103–0 prior to taking GEN 105a–3.

Composition Theory (Letterpress and Offset Production)	PT 225c–3	3	0
Estimating and Cost in Printing	PT 251–3	3	0
Business Law	ACC 226a–4	4	0

RECOMMENDED ELECTIVES

Business Correspondence	GEN 101–3	3	0
Salesmanship	RET 127–3	3	0
Typewriting	SCR 101–3	1	4
Political Economy	GSB 211a–4	4	0

Tool and Manufacturing Technology

This program provides knowledge and abilities for industries requiring engineering technicians. Graduates accept jobs as part programmers of numerical control machines, laboratory technicians, planners, methods and quality control technicians, expediters, tool and die technicians, tool room technicians, and tool room supervisors.

Emphasis is on modern machine tools and accessories, numerical control machines, production set-ups and tooling, jigs and fixtures, dies, and methods for efficient and economical production and manufacture of industrial products and machines.

Also included are courses dealing with the properties and heat treatment of metals, mathematics, technical drawing, technical writing, oral communications, and the human relations aspects of our American industrial life.

A minimum of 96 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Machine Tool Laboratory (Drill Press, Benchwork, Engine Lathe)	TT 101a–5	0		15
Machine Tool Theory (Introduction to Machine Tools)	TT 125a–3	3		0
Technical Drawing	MT 175a–3	2		3
Business and Technical Mathematics	GEN 105b [1]–3	3		0
Introduction to Physical Science	GSA 101a–4	4		0

SECOND QUARTER

Machine Tool Laboratory (Advanced Engine Lathe, Shaper, Vertical Mill)	TT 101b–5	0	15
Machine Tool Theory (Machinability of Metals)	TT 125b–3	3	0
Technical Drawing	MT 175b–3	1	4
College Algebra	MATH 111a–5	5	0

THIRD QUARTER

Machine Tool Laboratory (Milling Machine and Grinder)	TT 101c–5	0	15
Machine Tool Theory (Mill Set-Ups and Grinding Wheel Safety and Selection)	TT 125c–3	3	0
Technical Drawing	MT 175c–4	1	4
English Composition	GSD 101–3	3	0

FOURTH QUARTER

Advanced Machine Tool Laboratory (Tool and Die)	TT 201a–3	0	10
Advanced Machine Tool Theory (Quality Control and Inspection Practices)	TT 225a–3	3	0
Manufacturing Processes	TT 176b–3	3	0
Statics	MT 226a–2	2	0
Basic Applied Physics	GEN 120–4	3	3

[1] Prerequisite: 103 or satisfactory ACT mathematics score.

or Introduction to Physical Science	(GSA 101b–4	4	0)

FIFTH QUARTER

Advanced Machine Tool Laboratory (Production Machines)	TT 201b–3	0	10
Advanced Machine Tool Theory (Process Planning)	TT 225b–3	3	0
Metallurgy	TT 275b–3	2	3
Strength of Materials	MT 226b–3	3	0
Behavior and Society	GSB 201c–4	4	0

SIXTH QUARTER

Advanced Machine Tool Laboratory (Production Machines and Numerical Control)	TT 201c–3	0	10
Advanced Machine Tool Theory (Cost Estimating and Production Scheduling)	TT 225c–3	3	0
Political Economy	GSB 211–4	4	0
Oral Communication of Ideas	GSD 103–3	4	0
or Technical Writing	(GEN 102–3	3	0)
Elective			

RECOMMENDED ELECTIVES

Graphics	MT 101–7	3	12
Welding Laboratory	WEL 101–5	0	15
Applied Calculus	GEN 118–4	4	0
Machine Drafting and Design	MT 201–5	0	15
English Composition	GSD 102–3	3	0
Metallurgy	TT 275c–3	2	3

Water Resources Technology

The objective of the program is to provide comprehensive and well-balanced instruction in water resources technology and related science. Training in this program should equip the graduate to take an entry job in which he will be productive; it should enable him to advance to positions of increasing responsibility after a reasonable amount of experience; and it should provide a comprehensive foundation to support further study in the graduate's field of technology.

The graduate of this curriculum will have a knowledge of laboratory procedures and skill in performing many types of tests on liquid wastes, solid wastes, and water to determine bacteriological and chemical characteristics. He will be qualified for entry either into a variety of positions such as public health engineering aide, sanitation aide, water and waste water treatment plant operator, stream sanitation technician, industrial waste technician, water plant operators, into technical sales and services of equipment and chemicals, or into positions with federal, state, and local governments and municipalities, with consulting engineers, and in wet-process industries.

A minimum of 122 hours of credit must be completed for graduation.

FIRST QUARTER		Cr.	Lec.	Lab.
Water Resources Technology, Introduction	WRT 101–2	1		3
Technical Drawing	MT 175a–3	3		1
College Algebra	MATH 111a–5	5		0
Introduction to Chemistry	GEN 115a–4	4		3
English Composition	GSD 101–3	3		0

SECOND QUARTER

Analysis of Water & Wastewater I	WRT 103a–3	1	6
Structural Drafting	HCT 105a–3	1	5

Trigonometry	Math 111b–5	5	0
Introduction to Physical Science	GSA 101a–4	4	0
Oral Communication of Ideas	GSD 103–3	4	0

THIRD QUARTER

Hydraulics	WRT 105–3	2	4
Applied Microbiology	WRT 107–3	2	4
Analysis of Water & Wastewater II	WRT 103b–3	1	6
Applied Calculus	GEN 118–5	5	0
Introduction to Physical Science	GSA 101b–4	4	0

FOURTH QUARTER

Supervised Work Experience	WRT 109a–8		

FIFTH QUARTER

Surveying	WRT 203–4	2	6
Applied Electricity	WRT 205–4	4	0
Hydraulics and Drainage	HCT 203–5	3	6
Elective	4		

SIXTH QUARTER

Supervised Work Experience	WRT 109b–8		

SEVENTH QUARTER

Legal Aspects	WRT 207–3	3	0
Unit Operations I	WRT 209a–4	2	8
Water Systems	WRT 211–4	3	4
Technical Writing	GEN 102–3	3	0
Elective	4		

EIGHTH QUARTER

Stream Sanitation	WRT 213–3	2	3
Unit Operations II	WRT 209b–4	2	8
Wastewater Systems	WRT 215–4	3	4
Industrial Wastes	WRT 217–3	2	3
Elective	4		

RECOMMENDED ELECTIVES

Labor Management Relations Problems	GEN 232–4	4	0
Behavior and Society	GSB 201c–4	4	0
Political Economy	GSB 211b–4	4	0
Other GSA, B, or C courses			

COURSE DESCRIPTIONS

Here are described all of the courses offered by Southern Illinois University at Carbondale for credit toward an associate degree. (Courses for other degrees are described in the Undergraduate Catalog.) Courses are listed numerically within each subject-matter area. Areas are listed below in the order of their appearance on the following pages.

Vocational-Technical Institute Courses

Accounting (ACC)
Architectural Drafting (AD)
Automotive Technology (AUT)
Aviation Technology (AT)
Building Construction (BC)
Commercial Art (CA)
Cooperative Retailing (RET)
Corrections and Law Enforcement (CLE)
Data Processing (DP)
Dental Hygiene (DH)
Dental Laboratory Technology (DT)
Electronics Technology (ELT)
Forest Products Technology (FP)
General (GEN)
Highway and Civil Technology (HCT)
Library and Audio-Visual Technology (LAV)
Machine Drafting and Design Technology (MT)
Mortuary Science (MS)
Physical Therapy (PTH)
Printing Technology (PT)
Secretarial (SCR)
Tool and Manufacturing Technology (TT)
Water Resources Technology (WRT)
Welding (WEL)

Other Courses Included in VTI Programs

Man's Physical Environment and Biological Inheritance (GSA)
Man's Social Inheritance and Social Responsibilities (GSB)
Man's Insights and Appreciations (GSC)
Organization and Communication of Ideas (GSD)
Health and Physical Development
Chemistry (CHEM)
Government (GOVT)
Health Education (H ED)
Mathematics (MATH)
Physical Education for Men (PEM)
Physiology (PHSL)
Psychology (PSYC)
Sociology (SOC)
Technical and Industrial Education

Accounting (ACC)

101–12 (4,4,4) Accounting. (a) Basic structure of accounting-ledger, journal posting, trial balance, accounting cycles, sales and cash receipts, purchase and cash payments, notes, deferrals, and accruals. **(b)** Accounts receivable, inventory and plant assets, accounting systems, concepts and control. Payroll and sales taxes, partnership, corporation (nature and formation), capital stock, earning and dividend. **(c)** Departments and branch, manufacturing analysis and interpretation of financial statements. Control accounting-manufacturing and process cost, job order, budgetary control standard costs, income taxes, cost relationship for management, special analysis and internal reports and other reports. Must be taken in a,b,c sequence.

104–2 to 5 Secretarial Accounting. Basic principles of accounting from the viewpoint of the secretary. The accounts of private individuals, professional men, institutions, and small business firms of various types are studied.

109–9 (3,3,3) Calculating Machines. (a) Development of operational skill on the key-driven calculator, ten-key adding machine, full-key adding machine, rotary calculator, and accounting machines. Production standards are used to measure skill proficiency. **(b)** Further development of skill. **(c)** Office practice sets and skill-developing production timings are used to accomplish occupational competency on the calculating machines to be used in the students' chosen major fields. Must be taken in a,b,c sequence.

126–3 Fundamentals of Business. This survey of business services provides a general knowledge of the modern business world and a basis for determining occupational possibilities and requirements.

201–8 (4,4) Accounting. An advanced study of: (a) Accounting record, merchandising and manufacturing accounts, end-of-year procedures, corrections of profit of prior periods, accounting statements, current assets and long-term investments. (b) Tangible and intangible fixed assets, liabilities, reserves, statement of application of funds, analysis of working capital, analytical and comparative percents and ratios. Must be taken in a,b sequence. Prerequisite: 101c.
204–8 (4,4) Cost Accounting. Relates cost accounting to management for control; general principles involved in construction of a cost system; distribution of cost materials, labor and burden; cost record; operating reports; joint and by products costs and budgetary control. Prerequisite: 101c.
226–8 (4,4) Business Law. (a) Introduction to the history and philosophy of law, contract law, and agency law. (b) Negotiable instruments law, sales law, suretyship law. Must be taken in a,b sequence.
227–4 Office Administration and Supervision. Principles of management as applied to office work. Emphasis on the role of the office in business management; office organization; physical facilities of the office; office services, procedures, standards, and controls; and records management. Prerequisite: 126.
229–2 Record Keeping. The complete cycle of records necessary in running a business in buying, selling, inventories, payroll, and stock control.
230–4 Auditing. Auditing principles, standards, and procedures and the short-form report of independent auditors are emphasized. Audit programs and relationship to internal control. Aim to develop perspective and techniques of auditors. Consideration given to authoritative pronouncements of the American Institute of Certified Public Accountants and the Securities Exchange Commission. Prerequisite: 204–8.
233–4 Federal Taxes. A study of current income tax laws and regulations as they relate primarily to individuals (and, incidentally, to partnerships and corporations). Preparation of tax returns and laboratory problems emphasizing the individual taxpayer. Prerequisite: 101c.
235–4 Business Statistics. Collection, tabulation, and graphic presentation of data, averages and index numbers, economic trends, cycles, correlation, and application. Prerequisite: 126.
275–4 Credits and Collections. Organization and operation of the credit department including sources and analysis of credit information, collection methods, and correspondence. Credit management emphasized. Prerequisite: 101c.

Architectural Drafting (AD)

110–8 (5,3) Architectural Drafting. (a) Freehand lettering, use of drafting instruments, geometric construction, orthographic projections, intersection of surfaces, and isometric drawing. (b) Shades and shadows, perspective construction, and the application of techniques to presentation drawings. Lecture and laboratory. Must be taken in a,b sequence.
121–6 (2,4) Architectural Design. A study of the principles of architectural planning, design, composition, and presentation as applied to structures of a simple nature. (a) Composition design principles. (b) Principles of planning and design. Lecture and laboratory. Prerequisites: 110a, 146a, or consent of adviser.
146–6 (3,3) Freehand Architectural Graphics. Freehand drawing from life; sketching and presentation techniques. (a) Pencil techniques. (b) Theory of color and techniques in various color media. Lecture and laboratory. Must be taken in a,b sequence.
147–3 History of Architecture. Analysis of the development of architecture from the ancient to the present time as it is related to the environmental and cultural setting of man.
150–3 Basic Materials of Construction. Introduction to materials of construction with emphasis upon those materials not specifically regarded as structural, such as floor covering, wall covering, paints and finishes, lighting, etc.
151–4 Materials and Methods of Construction. A comphehensive study of light frame construction including foundations, manufacture and performance characteristics of materials, framing systems, finish materials, development of construction details and working drawings. Lecture and laboratory. Prerequisite: 110a or consent of adviser.

152–2 Site Engineering. Site selection considerations, land surveys, survey computations, contours, uses of contours, leveling, computations of cut and fill, drainage and grading, laying out of buildings and roads, and check list for site plans. Lecture and laboratory. Prerequisites: 110–8 and Mathematics 111b, or consent of adviser.
153–8 (4,4) Mechanics and Strength of Materials. Elementary technical study of force systems; centroids and moments of inertia of areas, deformation and stress, flexure and deformation of beams, combined stresses in short blocks, columns. Prerequisite: Mathematics 111a concurrently, or consent of adviser.
221–12 (4,4,4) Architectural Design. Study of architectural planning, design, composition, and presentation. (a) Small commercial and residential structures. (b) Complex low-rise structures and building groups. (c) Continuation of b with selected problems in architectural design of high-rise buildings and building groups. Lecture and laboratory. Must be taken in a,b,c sequence. Prerequisite: 121b or consent of adviser.
246–3 Architectural Rendering. Pencil drawing and water color from still life and landscape. Lecture and laboratory. Prerequisite: 146 or consent of adviser.
250–12 (4,4,4) Materials and Methods of Construction. A comprehensive study of materials and methods of construction including foundations, manufacture and performance characteristics of materials, framing systems, finish materials, development of construction details and working drawings. (a) Semi-fire-proof construction. (b) Fire-proof construction. (c) Long-span steel joists and steel detailing. Lecture and laboratory. Must be taken in a,b,c sequence. Prerequisite: 151 or consent of adviser.
254–4 Mechanical Equipment of Buildings. Code requirement and specifications affecting mechanical equipment; design and installation of plumbing; heating, ventilating, and air-conditioning equipment; electrical wiring; illumination and vertical transportation. Prerequisite: fourth-quarter status in concentration or consent of adviser.
258–4 Structural Elements. Analysis of building loads, theories of shear, flexure, and deflection as they pertain to the design of steel and timber structural members. Prerequisite: 153 or consent of adviser.
283–3 Construction Cost Estimating. A study in methods of preliminary estimates, labor costs, quantity surveying, materials lists, construction schedules, preparation of working estimates. Prerequisite: 250a or consent of adviser.
285–3 Office Practice.
290–6 (3,3) Theory of Structures. Theory of structural design and use of the handbooks. (a) Reinforced concrete design. (b) Graphic analysis of force systems, structural members, and trusses of wood and steel. Must be taken in a,b sequence. Prerequisite: 258 or consent of adviser.

Automotive Technology (AUT)

101–15 (5,5,5) Automotive Laboratory. (a) Automotive engines. Disassembly and assembly procedures on laboratory units. (b) Principles of brakes and steering learned in 125b are applied on laboratory units and later on live vehicles. (c) Ignition and carburetion. The repair and testing of electrical and fuel units. Must be taken in a,b,c, b,a,c, or a,c,b sequence, concurrently with a corresponding section of 125.
125–15 (5,5,5) Automotive Theory. (a) Internal combustion engine theory. (b) Chassis and brake systems, covering brake theory and factors of steering geometry. (c) Ignition and carburetion. Must be taken in a,b,c, b,a,c, or a,c,b sequence, concurrently with a corresponding section of 101.
201–15 (5,5,5) Automotive Laboratory. (a) Power options. (b) Transmission power systems. (c) Diagnosis.
220–15 (5,5,5) Automotive Theory. (a) Power options. (b) Transmission power systems. (c) Diagnosis.

Aviation Technology (AT)

101–6 Aircraft Reciprocating Powerplant. Theory of aircraft powerplants, construction, operation, and overhaul. Computation of horsepower, types of cooling, timing, and materials used in construction. Shop practices in disassembly,

cleaning, inspection, and measurement to include study of applicable FAA regulations.

102–6 Carburetion and Lubrication Systems. Theory of carburetion, induction, and lubrication systems. Principles of operation of various carburetors. Type, composition, and characteristics of fuel and jet fuel. Overhaul and inspection, maintenance, and adjustment of carburetors, pumps, valves, fuel injection systems, and accessories. Repair and inspection of oil regulating systems.

103–6 Aircraft Electricity, Generator-Alternator. A study of basic electricity, batteries, electrical components, lighting systems. Solution of DC and AC problems. Studies of alternating current, frequency, cycle, inductance, reactance, and impedance. Operation and repair of alternators, rectifiers, inverters; theory and application of transformers.

104–5 Propellers. Theory and operation of propellers and governors. Including inspection, overhaul, and serving of propellers, both hydraulic and electrical. Operation of propeller deicing systems and turbo-prop propellers.

105–4 Aircraft Instruments. Theory of operation, installation, marking, and interpretation of aircraft instruments. Precautions and method of correct installation. Minor field adjustment and calibration.

106–5 Aircraft Ignition-Starting Systems. A study of electro-magnetism and principles of induction covering operation of magnetos, high and low tension systems, boosters, solenoids, relays, and cranking motors. Selection and construction of spark plugs. Overhaul of ignition and starting components. Proper care and use of testing equipment.

107–4 Fabric-Wood-Doping. Specification of material, such as fabric, wood, dope, thinner, paint, sewing threads. Safety precautions in doping area. Performing wood structure repairs. Recovering aircraft assemblies. Care and use of spray equipment.

108–6 Jet Propulsion Powerplant. History of and intrroduction to pulse jets, ram jets, rockets, turbo-jet and turbo-prop engines. Theory of operation of turbine engines. Jet engine aerodynamics, thermoefficiency, component functional operation and performance. Jet engine requirements and care. Computation of thrust and analysis of factors affecting thrust. Inspection, repair, and reassembly of a jet engine.

109–4 Powerplant Testing. Installation of engines; methods, procedures and precautions to be observed. Inspection and trouble shooting of reciprocating and jet engines. Interpretation of instrument readings. Trimming jet engines, fuel management, and cruise control.

110–3 Aircraft Structure and Repair. A study of Federal Aviation Agency Regulations AC 43.13–1 on welded steel structures. Identification, selection, and inspection of weldable and non-weldable materials. Flutter precautions when welding repairs are made on high performance airplanes. Principles of oxy-acetylene and arc welding. Study of heat treatment methods and the processes employed in the analysis, evaluation, and testing of aircraft materials.

203–5 Aerodynamics. Theory of flight and factors affecting aircraft in flight. Design and stress consideration. Problems of lift, drag, velocity, Vmin, thrust coefficient, wing loading, etc. Comparable analysis of design feature in subsonic, transonic and supersonic aircraft. General helicopter aerodynamics. Practical instruction in assembly and rigging of aircraft wing flaps and control system. Analysis of faulty flight characteristics.

204–5 Aircraft Hydraulics. Fuild theory and applied physics. Theory of operation, maintenance, and adjustment of hydraulic system and component units. Overhaul of hydraulic components. Testing, servicing, and adjustment of system. Performing retraction test, trouble shooting, and periodic inspection.

205–3 Pressurization, Air-Conditioning Systems. Acquaints the students with altitude aircraft used by the airlines. Lecture and demonstration on pneumatic system, anti-icing, cabin pressurization, and air-conditioning systems. Lecture and laboratory.

206–4 Metal and Processing. A study of aircraft aluminum alloys and their physical properties and heat treatment. FAA method of repairs. General study on design, strength, stress, and other related processes of aluminum and its alloys. Perform sheet metal repair in accordance with FAA methods.

208–2 Aircraft Fuel Systems. Study of fuel management and flow configuration. Trace fuel systems, and replacement of component units. Lecture and laboratory.

209–6 Weight & Balance and Inspection. FAA regulations covering mainte-

nance, inspection, and repair of aircraft. Study of aircraft loading and its effect on balance. Solving load and balance problems. Conduct proper method of ground handling, jacking, and weighing aircraft. Perform inspections: 100 hours, periodic, and progressive. Lecture.

217–1 Radio Operation and Installation. Type of communication and navigation radio equipment. Installation procedure and field trouble shooting. Lecture and laboratory.

220–3 Jet Transport Aircraft Systems. Comparison of systems on various current jet airliners. Field trips to major airlines. Lecture and laboratory.

230–3 (2,1) Private Pilot Course. (a) Ground instruction in navigation, radio navigation, meteorology, and flight planning. (b) Dual and solo flight instruction in single engine aircraft for an FAA Private Pilot License.

231–3 Basic Flight. Forty total flight hours: fifteen dual and twenty-seven solo. Dual includes advanced flight maneuvers, instrument training, and transition from 2- to 4-place aircraft. Solo flight hours include ten hours of cross-country in the Cessna 150 and two hours of flight maneuvers in the Cessna 172. Prerequisite: 230–3.

232–3 Intermediate Flight. Forty flight hours: thirteen dual and twenty-seven solo. Dual hours include two hours dual cross-country and two hours night cross-country. This, in addition to the local night dual and solo, completes the night requirement for the commercial license. The solo hours include fifteen hours of advanced cross-country. Also, forty hours of classroom work in weather analysis, advanced navigation, computer practice, and aircraft performance. Prerequisite: 231.

233–3 Advanced Flight. Forty flight hours: fourteen dual and twenty-six solo. This completes the student's proficiency for a commercial certificate. Includes transition to a more advanced, complex aircraft, including constant-speed prop, and other advanced flight controls. The student completes various advanced flight maneuvers and has opportunity to make observer and copilot flights on multiengine equipment up through DC–3 type aircraft. Prerequisite: 232.

234–3 Instrument Flight. Both full- and partial-panel flight is emphasized using Cessna 150 and 172 aircraft. Thirty-five hours dual in basic instrument and radio navigation. The radio portion emphasizes VOR and ADF navigation approaches. Prerequisite: 233.

251–12 (3,9) Aircraft Communications and Navigation Systems, and Avionics Laboratory I. (a) Principles of aircraft communication systems, VHF transmitter, transceivers and controls. (b) Operation of VHF AMNIRANCE, VOR systems, marker beacons, localizer circuitry, glide-slope and antennas, ADF circuitry and antennas, maintenance, inspection, repairing and trouble shooting transceivers, VHF transmitters, VOR equipment, ILS receiving equipment and ADF sets, flight check procedure and calibration. Must be taken concurrently. Prerequisite: Electronics Technology 225a.

252–6 (3,3) Aircraft Integrated Flight System, and Avionics Laboratory II. (a) A study of flux gate compass and transmitter, amplifier and repeaters, polarpath compass, RMI repeaters, gyrosyn direction indicator, system schematic, flight director computer, and various integrated systems such as Sperry, Bendix, Collins, and Kollsman. Trouble shooting test and calibration equipment. (b) Federal Aviation Agency accepted methods of installation and layouts of airborne radio equipment, communications, and navigation. Proper execution of FAA form 337 and applicable FAR. Weight and balance of aircraft as a result of avionics equipment installations. Prerequisite: Electronics Technology 225a.

253–6 (3,3) Aircraft Flight Controls and Instrumentation Systems, and Avionics Laboratory III. (a) Basic principles of flight instrumentation, and automatic flight controls. Investigation and testing of Lear, Federal, Factair, Mitchell, Glove, Javelin, Sperry, and Bendix and Collins autopilot systems. Trouble shooting systems. (b) Systems installations, FAA forms, specifications, service bulletins, FAA-STC and weight and balance control. Must be taken concurrently. Prerequisite: Electronics Technology 225a.

254–6 (3,3) Airborne Radar Systems, and Avionics Laboratory IV. (a) Pulse circuit and microwave theory. Receiver band width and sensitivity, image response, decoder, reply frequency, pulse characteristics and echo suppression. (b) Principles of distance-measuring equipment (DME), radar beacon transponders and airborne weather radar. System installation and servicing. Must be taken concurrently. Prerequisite: 251–12.

Building Construction (BC)

210–9 (3,3,3) Construction. A technical study of masonry, concrete, metal, wood, and synthetics used in home construction. Development of skills limited to the very basic processes and tools. **(a)** Rough framing in wood construction. **(b)** Cabinet making, bench wood-working, and finished carpentry. **(c)** Continuation of **b** with the addition of finishing and preservation application. Lecture and laboratory. Prerequisite: Architectural Drafting 250a or consent of adviser.

Commercial Art (CA)

101–3 Art Analysis. Primarily a general art history background. Analytical discourse of the aims, techniques, methods, materials, and media of classical and contemporary artists and their influence on today's commercial art.
125–10 Techniques—Theory and Practice. A basic, well-disciplined, practical background in using the most suitable materials. Stresses versatility in using all media acceptable in commercial art today. Also, the preparation of art work for reproduction.
130–10 Advertising Design and Production. Production of practical, attractive, original, effective, and aesthetically pleasing art in all advertising media, with emphasis on lettering, typography, and practicality of reproduction. Prerequisite: 125–10.
135–2 Layout and Color Theory. Modern advertising layout for printing technology students, with emphasis on the theory and use of color as applied to the printing field today.
140–10 Introductory Advertising and Story Illustration. Execution of problems typical of those which confront the advertising illustrator, in various media, with emphasis on excellence, individuality of concept and technical treatment, and creative development. Prerequisite: 130–10.
210–23 (8,8,7) Advertising and Story Illustration Theory and Practice. (a) Execution of various problems typical of those which confront the story illustrator, with emphasis on subject analysis, research, drawing, composition and preparation of the finished piece. From concept to completion, the student employs creative organization of pictorial material at a professional level. **(b)** Complex and comprehensive assignments, with emphasis on layout design and advanced rendering techniques. **(c)** Design and development of three-dimensional point-of-purchase displays and practical application of color separation overlays. Must be taken in a,b,c sequence, concurrently with a corresponding part of 230. Prerequisite: 140–10.
230–20 (7,7,6) Technical Illustration Theory and Practice. Based on the exacting requirements of the armed forces and industry. **(a)** Preparation and rendering of aircraft, automotive, and machine parts in various media from blueprints for operation and maintenance manuals. **(b)** Emphasis on rendering and reproduction suitability. **(c)** Emphasis on advanced air-brush rendering, and technical manual publication. Must be taken in a,b,c sequence, concurrently with a corresponding part of 210. Prerequisite: 140–10.

Cooperative Retailing (RET)

124–4 Introduction to Retailing. Duties and responsibilities in the store, distribution functions, modern store organization, history and background of modern retailing, and the basic responsibilities of the student in the cooperative retailing program.
127–6 (3,3) Salesmanship. Principles and techniques of selling. **(a)** Basic principles of salesmanship. Personality requirements, techniques of making sales in the retail stores, retail sales problems and ways to solve them. **(b)** Analysis of the techniques of prospecting used in specialized selling; determining customer needs, presenting merchandise, meeting objections, and professionally assisting customers. May be taken in a,b or b,a sequence.
176–3 Product Analysis. Background in basic theories and principles of analyzing merchandise.

177–10 (5,5) Product Information Laboratory. Application of the principles of analyzing merchandise and the study of how this information is used. (a) Textile merchandise. (b) Nontextile merchandise. Prerequisite: 176 or concurrently. May be taken in a,b or b,a sequence.
179–5 Retail Mathematics. Analysis and calculations encountered daily in the merchandising field: mark-up, mark-down, stock records, profits, expenses, discounts, and invoices.
201–16 (8,8) Cooperative Work Experience. Full-time training in a University approved merchandising establishment. Includes preparation of weekly reports, participation in periodic discussions with other trainees led by the coordinator, and completion of a written project. Opportunity to learn the functional organization of the company, to become acquainted with the store system and policies, and to perform the duties of a position which offers the potential for learning and experience; opportunity to survey and participate in a department's merchandising (planning) efforts. Prerequisite: the first three quarters; C or better average in major.
205–4 Merchandising Principles. Duties of the buyer and department manager. Organization for buying. Includes buying functions, management and activities, single and multi-unit stores, resident buying and services, techniques and problems of merchandise selection.
206–5 Records and Statistics. A survey and interpretation of record-keeping systems used in a retail establishment. Analyzing merchandise and expense-control data.
207–6 (4,2) Sales Promotion. Fundamentals of sales promotion; its relationship to the advertising, display, and merchandising divisions of a store. (a) The fundamentals of sales promotion and its relationship to all forms of publicity. Principles and techniques of retail advertising. (b) Principles and techniques of the physical presentation of merchandise. May be taken in a,b or b,a sequence.
208–6 (4,2) Fashion Merchandising. Fashion, its influence and application to all phases of merchandising. (a) Fashion as it applies to buying and selling and its influence on customer demand; basic principles of color, line, and design; interpretation of factors that influence fashion. (b) Prediction fashion from an analysis of fashion literature. May be taken in a,b or b,a sequence.
215–4 Marketing Problems. Problems in the retail merchandising and management areas. Includes current readings, analysis and discussions of problems and cases provided by the store and/or the instructor.
224–4 Retail Store Organization and Management. Organization and operation of a retail business. Forms of ownership, financing a new business, location, building and layout, insurance, and store policies.
227–3 Personnel Management. Retail personnel management, employee relations, policies, methods of recruitment, selection, placement, and training. Emphasis on relationship to the merchandising division of the store.
280–3 Retail Credits and Collections. Principles and practices of a retail credit department: credit sales practices, human relations, Credit Bureau, credit letters, and collection procedures.

Corrections and Law Enforcement (CLE)

103–4 Introduction to Crime Control. Review of the historical and idealogical foundations of law enforcement and corrections; delineation of major patterns of practice and organizational structure; and description of major programs and their inter-relationships.
105–4 Criminal Behavior. Introduction to personality theories and their application to causes of crime with primary emphasis on individual-oriented theories; consideration of the offender and his community context as problems for rehabilitation efforts; criticism of typical treatment programs.
107–3 Law Enforcement and Community Problems. Examination of the functions of police agency as a part of the social system of the community; analysis of the impact of community problems on police activities and responsibilities; traffic control, patterns, civil disturbance, use of suppressive tactics to deal with vice, and so on.
109–3 Correctional Institution as a Social System. Evaluation of the correctional institution as a sociocultural environment with social interaction struc-

tured by systems of roles, statuses, and norms to achieve goals set by the administration, employees, and inmates.

111–3 Community Organization and the Offender. Study of the community as a social psychological phenomenon and as a network of social institutions with special reference to the problems of promoting the integration of the offender as a participant and client for services.

113–3 Corrections and the Community. Study of the problems of the released prisoner; inter-relationship between institutional programs and his subsequent experiences; and the place and function of parole, pre-release centers, and halfway houses.

115–9 (3,3,3) Interpersonal Relations. (a) Delineation of the major patterns characteristic of relationships between prisoners and employees at the lowest level of staff; analysis of social and psychological techniques for making such relationships a means for positive behavior change of inmates. (b) Delineation of the major patterns characteristic of relationships between pre-delinquents or offenders and staff of community-based programs; analysis of means of encouraging the development of internalized controls by offenders within the relatively free environment of the average community. (c) Analysis of the fundamental problems of police relationships when situations call for persuasive techniques; discussion of principles pertinent to motivating law observance without coercion; study of the techniques of suspect interrogation, consideration of creating favorable public image of policemen.

203–4 Group Work Techniques. Exploration of the theories and procedures of enlisting group influence to modify attitudes and behavior.

205–4 Principles of Investigation. Study of major phases of criminal investigation: gathering and preservation of evidence, identification of offenders, apprehension, recovery of stolen property, and presentation of evidence; survey of criminalistics.

207–3 Assessment in Criminology. Introduction to the problems of differentiating offenders from non-offenders and of differentiating the various classes of offenders; utilization of scientific techniques for such purposes; study of principles for organizing and writing case studies to make individualized reports available for effective disposition of offender cases.

209–3 Law and Corrections. Applications of legal principles to procedures characteristic of correctional institutions and extramural treatment programs; laws associated with arrangement, appeal, habeas corpus, detainers, parole, loss of civil rights, pardon, conditions of release in community short of imprisonment, and similar matters.

211–3 Law and Police Work. Consideration of legal aspects of police work: Law of arrest, search and seizure, entrapment and informers, civil rights of suspect, wire-tapping, interrogation, evidence; examination of court procedures with special reference to implications for policemen.

213–3 Specialized Problems in Crime Control. Intensive probing of selected problems areas through employment of concepts learned in previous courses as a means of deepening understanding. The instructor will select topics such as prison industries; drain or asset on rehabilitation programs, the alcoholic as a parolee, the functions of the prison chaplain, conflicting role demands of police work, etc.

215–9 Supervised Practice in Criminology. Exposure of the student to an unfamiliar role in a correctional agency to give him the opportunity to test his classroom learning in an empirical setting under competent supervision.

217–3 Correctional Administration. Introduction to the management functions and recurrent problems of correctional administration; consideration of the means of balancing organizational change and stability; study of major aspects of management such as personnel, budgeting, inter-agency coordination, leadership, program-planning, and decision-making.

219–3 Administering Community Service. Examination of problems and techniques associated with operating extramural treatment programs; inter-agency coordination, consensus among specialists in an inter-disciplinary approach, problems of referral. "Reaching the unreached," citizen participation, community development, and balancing flexibility and organizational consistency.

221–3 Police Administration. Study of organizational patterns and management problems, recruitment, training, discipline, allocation of functions, and budget; assessment of affects of localization of government, restriction of police power, and political factors.

Data Processing (DP)

101–10 (5,5) Automatic Data Processing Machines. The development of data processing systems covering the history of, need for, and function of automatic data processing equipment. **(a)** Basic machine operation, functional wiring principles, and computer programming concepts. **(b)** Advanced control-panel wiring problems (not required for DP majors). Must be taken in a,b sequence.
103–10 (5,5) Computer Programming. Technical experience in using a stored program computer. **(a)** Emphasis on the machine, its components and logical function. Programming problems and exercises in 1401 Autocodes. **(b)** Magnetic Disk problems using IOCS. Prerequisite: 101a.
104–5 Data Processing Applications. A study of typical business data processing applications. Authentic case studies show how machines are used as a system in processing data. Topics include billing, accounts receivable, accounts payable, inventory control, and payroll. Prerequisite: 101a.
107–3 Automatic Data Processing Concepts. Function and operation of basic data processing machines, their application to business problems, and elements of computer programming (not for DP majors).
109–3 Punched Card Preparation. The functions and operations of punched card equipment. Card punching and verifying.
202–10 (5,5) Industrial Computer Programming. Industrial computer applications using **(a)** FORTRAN IV for 360/40 DOS and **(b)** APT/ADPT, a numerical control language. A field trip is normally taken during part **b.** Prerequisites: 103a, Mathematics 111a.
203–15 (5,5,5) Business Computer Programming. Business computer programming problems involving magnetic tape and disk records using the IBM System 360 Model 40 Disk Operation System. Provides a workable knowledge of the capabilities, programming procedures, and coding techniques for the following languages: **(a)** 360 Assembler Language; **(b)** 360 COBOL; **(c)** 360 PI/I, APL, and other advanced level languages. Must be taken in a,b,c sequence. Prerequisites: 103a, 206a.
205–5 Systems Design and Development. The three phases in the evolution of a system, analysis of present data flow, system specifications and equipment selection, and implementation and documentation. Case studies from single applications to the total information system of a large, complex business. Prerequisite: 104.
206–10 (5,5) Program Operating Systems. Provides a working knowledge of current operating systems so that one may use any specific system with a minimum of instruction. Operating systems are analyzed to determine their capabilities and function with emphasis on the Disk Operating System. **(a)** An introduction to System 360 and a working knowledge of the associated R.P.G. (Report Program Generator). **(b)** An advanced system course with emphasis on DOS utility programs, system generation, and system maintenance. Must be taken in a,b sequence. Prerequisite: 103a.
207–5 Data Processing Field Project. Each student selects a suitable project in the University's Data Processing and Computing Center, or other approved facility, during his last quarter. Coordination of his activity is by an appropriate member of the Data Processing faculty; evaluation of his performance is by the manager of the cooperating center in conjunction with the academic adviser. Prerequisite: 206–10.

Dental Hygiene (DH)

130–2 Orientation to Dental Hygiene. Survey of dental hygiene from anatomy through dental caries, oral diseases, public health, dental health education, and the history of dental hygiene.
132–8 (4,4) Head and Neck Anatomy. (a) Structures of the oral cavity with particular emphasis on gross anatomic features, such as skull, muscles, vessels, nerves, and specialized groups of structures, with a view to their pertinence to dental hygiene. (b) Close study of all teeth and reproduction in wax, natural size. Demonstrations and lectures on the normal and abnormal gingiva and perio-dental attachment. Must be taken in a,b sequence.

135–11 (4,4,3) Oral Basic Science. The microscopic structure of oral tissues, the normal and abnormal microbial flora of the oral cavity, and the appearance and symptonatology of the oral tissues and organs during disease processes. (a) The microscopic structure of the cells and tissues of the oral region. Illustrated lectures. (b) Basic microbiology with emphasis on the micro-organisms found in the oral cavity in health and disease. Lecture and laboratory. (c) Basic symptoms of inflammation in body tissues, and the appearance of disease entities and developmental disturbances in the oral tissues and structures. Lecture and laboratory. Must be taken in a,b,c sequence.
137–8 (4,4) Preclinical Dental Hygiene. Introduction to clinical practice. (a) A study of the instruments used in prophylaxis, scaling techniques, and familiarization with clinical routine. (b) Manikin practice in scaling, porte-polishing, and tooth-brushing techniques, followed by practice scaling and polishing on a student-partnership basis. Must be taken in a,b sequence.
139–3 Dental Nutrition. A study of the nutritional needs, dietary patterns, selection and preparation of healthful foods, and their relation to general and oral health.
140–2 Dental Pharmacology. Introduction to classes and types of drugs, action on body tissues and organs, specific dental remedies and formulae, and first-aid procedure for poisons. Must be taken concurrently with 139. Prerequisite: General Studies 115–8.
209–5 Dental Hygiene Clinic. Dental hygiene clinical practice, with particular emphasis on children, including the mentally and physically handicapped and selected adult patients. Prerequisite: sophomore status in the dental hygiene concentration.
210–15 (5,5,5) Clinical Dental Hygiene. Clinical practice on patients with additional lecture and seminar periods. (a) Introduction to clinical dental hygiene practice. (b) Clinical practice for adults and children. (c) Clinical practice and preparation for State and National Board Examinations. Must be taken in a,b,c sequence. Prerequisites: 132, 137, 139, 140, GSA 301, and sophomore standing in dental hygiene.
213–6 (3,3) Dental Assisting. Principles of chair-side assisting, the science of dental materials, and basic dental laboratory procedures. (a) Assisting the dentist at the chair and manipulation of restorative materials. (b) Assisting the dentist in the laboratory with study and use of laboratory materials. Must be taken in a,b sequence. Prerequisites: General Studies 115–8, sophomore standing in dental hygiene.
216–4 (2,2) Dental Administration and Practice. (a) Dental ethics, office administration, and general dental practice. (b) The role of the hygienist in special practices, the history of dentistry, specialties of dentistry, state regulations, and preparation for licensing examinations. Guest lecturers are utilized in specialty areas. Must be taken in a,b sequence.
217–2 Dental Health Education. Each student presents talks and demonstrations, leads discussions and seminars, and gives visual presentations of the basic principles of dental health. Visits to selected schools, area health clinics, and suitable dental meetings. Prerequisites: GSB 201c, GSD 101, 102, sophomore standing in dental hygiene.
218–6 (2,2,2) Clinical Dental Roentgenology. Instruction in the production, use, and protection of X-radiation. (a) Theory and production of X-rays; radiation dosage and protection. (b) Technics of angulation, exposure, processing, and mounting of bite-wing X-ray films. (c) Technic of full-mouth surveys, longcone exposure technic, and extra-oral exposures. Must be taken in a,b,c sequence. Prerequisites: 132, 137, General Studies 115–8, GSA 301, sophomore standing in dental hygiene.
220–3 Dental Public Health. Introduction to public health organization. Detailed study of public health dentistry and dental public health administration, practice, and research. Emphasis upon the relationship of dentistry and dental hygiene practice to the community.

Dental Laboratory Technology (DT)

101–18 (6,6,6) Dental Prosthetics Laboratory. (a) Reproduction of tooth forms by drawings, and carvings in plaster and wax. (b) Removable denture construction including wire bending, soldering, surveying, and casting. (c) Com-

plete denture construction including bite blocks, recording mandibular movements, setting up full dentures in bilateral balance, carving and festooning, processing of acrylic resins and metal bases, tooth selection. Must be taken in a,b,c sequence, concurrently with corresponding section 125.

113–6 (3,3) Science of Dental Materials. (a) Principles of physical science with emphasis on structures and behavior of materials used in dentistry. (b) Lectures and demonstrations on the techniques of preparing restorative materials for the dentist. Includes training for temporary or emergency duty as a chair assistant and in the preparation of amalgam, silicate cement, zinc phosphate cement, self curing acrylic resins, and temporary restorative materials. May be taken in a,b or b,a sequence. Prerequisite: (b) General Studies 115a, dental hygiene student.

125–9 (3,3,3) Dental Prosthetics Theory. (a) A detailed study of individual tooth form and surface anatomy with emphasis on the relationship of form to function and on nomenclature, introduction to the theory of occlusion. (b) Partial denture design including wire and cast construction, the use of the surveyor, and casting techniques. (c) Study of articulation, set up and balance of dentures, artificial tooth form and selection, acrylic resins, and metal bases. Must be taken in a,b,c sequence, concurrently with a corresponding section of 101.

128–2 Oral Anatomy. Detailed study of the parts and functions of the temporomandibular articulation: surface oral tissues and the underlying supporting tissues; and supporting structures for bridge abutments.

201–18 (6,6,6) Crown and Bridgework Laboratory. (a) The practice of gold inlays, crowns, veneers, pontics, and small bridges, carving, investment casting, soldering, and polishing. (b) Practice of advanced types of crown and bridgework and mouth rehabilitation as it involves laboratory procedures. (c) Dental ceramics, precision attachments, dental porcelains, platinum matrices, shadings, staining and glazing, precision attachments used in removable bridgework. Must be taken in a,b,c sequence, concurrently with a corresponding section of 225.

202–2 Professional Ethics. Required of the technician within his own craft organization. The ethics necessary in dealing and cooperation with the dental profession. Legal requirements of the technician and the dental laboratory.

225–9 (3,3,3) Crown and Bridgework Theory. (a) Introduction to crown and bridgework, carving, investing, casting, soldering, and polishing. (b) A study of advanced crown and bridgework and mouth rehabilitation. (c) A study of ceramics, precision attachments, and porcelain jacket crowns. Must be taken in a,b,c sequence, concurrently with a corresponding section of 201.

Electronics Technology (ELT)

101–12 (4,4,4) Basic Electronic Applications and Systems. Combination lecture, demonstration, and laboratory. (a) AC, DC. (b) Vacuum tube and transistor. (c) Transmitter and receiver. Must be taken in a,b,c sequence, concurrently with a corresponding section of 125.

125–15 (5,5,5) Basic Electronic Theory. A lecture course. (a) AC, DC. (b) Vacuum tube and transistor. (c) Transmitter and receiver. Must be taken in a,b,c sequence, concurrently with a corresponding section of 101.

127–3 Basic Technological Concepts. An introduction to the technological concepts which are basic to the study of electronics: primary and secondary standards, instrument calibration, estimates of error, manuals, blue print reading, drawing, the standard department-wide data sheet and laboratory report format, use of the technical library, term paper, use of laboratory instruments, slide rule use, how to present data in tables, graphs and nomographs, empirical equations, orientation to industrial practices, specifications, ratings, derating, evaluation testing. Must be taken concurrently with 101a.

129–3 Electrical Circuits. Graphical and vector representation of AC wave, vector algebra, resonance, Q and band width, filters, electrical power plant, alternators, generators, power transmission, transformers, AC-DC motors, AC to DC and DC to AC power conversion. Must be taken concurrently with 101b.

131–3 Diagnostic Analysis. Blue print (diagram) reading of electronic systems, block diagram analysis of systems, effects on the systems caused by defective components, diagnostic problem solving. Must be taken concurrently with 101c.

139–3 Computer Systems Application. Provides the content essential for developing a working knowledge of digital computers, logic circuits, and system components. Special emphasis on applying computer circuitry to individual applications. Prerequisite: 225b.
141–5 Electrical Distribution I. Electric presentation; nomenclature and use of pole line hardware; practice in climbing, in handling ropes, slings, and riggings; wood pole study, pole stress strains, pole handling, pole hole digging, pole setting, aligning, tamping, framing crossarms, insulation; and wire studies. Prerequisites: 125a,b, 129.
145–12 Electrical Field Work I. Field work provides meaningful experiences similar to those in this line of work. Reports are made. Prerequisites: 141 and a C average.
201–12 (4,4,4) Advanced Electronic Applications. Combination lecture and demonstration on microwave circuits. **(a)** Transistor circuits. **(b)** Pulse and microwave circuits. **(c)** Voltage regulators, industrial amplifiers, bridges, photocell motor controls, and synchro servo systems. Must be taken in a,b,c sequence, concurrently with a corresponding section of 225.
225–15 (5,5,5) Advanced Industrial Systems Theory. (a) Transistor circuits. **(b)** Pulse and microwaves circuits. **(c)** Voltage regulators, industrial amplifiers, bridges, photocell, motor controls, and synchro servo systems. Must be taken in a,b,c sequence, concurrently with a corresponding section of 201.
228–3 Federal Communications Commission License. A theory course for summarizing work in electronics and for preparation to take the second-class FCC license test. Examination is not required to be taken at an FCC examining point. Prerequisites: 101c, 125c.
229–3 Color Television.
232–3 Industrial Circuits.
241–5 Electrical Distribution II. Theory and practice of line layout and connecting, control of sagging and vibration, equipment grounding, energizing and de-energizing lines, anchoring, guying, safety devices and practice, nomenclature, and use of hot line tools. Prerequisite: 141.
243–6 Electrical Field Work II. Field work provides meaningful experiences similar to those in this line of work. Reports are made. Prerequisite: 145.
245–5 Electro-Mechanical. Theory and practice with electromechanical tools and simple controls, instrumentation, and systems controls. Prerequisite: 241.
247–5 Electrical Systems Controls. Theory and practice with protective devices, voltage regulators, transformers, and controls, voltage and current calculations, systems study with emphasis on automatic controls. Prerequisite: 245.
249–3 Electrical Industry Practice. Includes the necessary safety practices and orients the student for his job in the electrical industry. Prerequisite: 245.

Forest Products Technology (FP)

101–15 (5,5,5) Production Woodworking Laboratory. Practical experience in production woodworking including machine operation, cabinet making, millwork, and furniture construction. **(a)** Machines. **(b)** Cabinet and millwork. **(c)** Furniture. Must be taken in a,b,c sequence, or consent of adviser.
125–9 (3,3,3) Production Woodworking Theory. Fundamentals of production woodworking, machine characteristics, millwork procedure, furniture construction, safety, estimating, scheduling. Lecture and field trips. **(a)** Machines. **(b)** Millwork. **(c)** Furniture. Must be taken in a,b,c sequence, or consent of adviser.
128–4 Wood Technology. Study of the structure, identification, and physical properties of wood.
129–3 Wood Finishing. Principles of wood finishing systems and materials.
130–3 Lumber Seasoning. Wood-moisture relations, air drying, and kiln drying theory and practice. A full size kiln at the Wood Products Pilot Plant is available for practical seasoning work.
131–2 Lumber Grading. Study and practice of the National Hardwood, Southern Pines, and West Coast rules. Tally methods and grading for special products.
178–3 Basic Woodworking Drafting. Conveying ideas by means of freehand sketches, orthographic projections including auxiliary, isometric, and oblique projections, dimensioning, as applied to detail and assembly working drawings in the woodworking industries.

179–3 Furniture Drafting and Design. A study of furniture design and the development of working drawings and blueprints as applied to furniture construction.
201–15 (5,5,5) Production Woodworking Laboratory. Practical experience in light frame construction, prefabrication, laminating, foremanship, production processes. (a) Light frame. (b) Prefabrication. (c) Production processes. Prerequisite: 101a. Must be taken in a,b,c sequence, or consent of adviser.
225–9 (3,3,3) Production Woodworking Theory. Advance machine operating problems, light frame construction, prefabrication adhesives, estimating, scheduling, job analysis, safety, leadership problems. Lecture and field trips. (a) Light frame. (b) Prefabrication. (c) Processes. Must be taken in a,b,c sequence, or consent of adviser. Prerequisite: 125a.
232–2 Wood Preservation. Wood preservatives: their use, limitations, and methods of application.
250–3 Plant Organization and Operation. Study of the organization and layout of woodworking plants; materials handling methods; safety programs; organization and management of personnel; motion and time studies, quality control, purchasing, inventory, industrial costs. Prerequisite: 101–15 and 201–15 or consent of adviser.

General (GEN)

101–3 Business Correspondence. A brief review of fundamentals and a complete study of letter forms and letter mechanics. Various types of business letters and report writing with adequate practice in writing application, sales, adjustment, inquiry, and credit letters. Prerequisite: GSD 101.
102–3 Technical Writing. Development of an understanding of basic principles and proficiency in the skills involved in writing the technical report.
103–0 Elementary Mathematics. A refresher or remedial course, which includes a review of the mathematical foundations necessary to take college-level mathematics courses.
105–6 (3,3) Business and Technical Mathematics. (a) The use of mathematics in modern business as involved in calculation such as: interest rates, amortization schedules, discounts, mark-up, payroll computations. (b) A study of mathematics with specific emphasis on the technical needs of the students. Includes logarithms, slide rule, algebra. Prerequisite: satisfactory ACT mathematics score or 103. May be taken in a,b or b,a sequence.
115–8 (4,4) Introduction to Chemistry. (a) A study of the structure of matter including a survey of the common elements and compounds and the changes during chemical reactions. Also a study of inorganic acids, bases, salts, solutions, the periodic tables, equation balancing, and the metric system. (b) A study of the chemistry of organic compounds, carbohydrates, proteins, and lipids relating them specifically to body functions. Also the chemistry of digestion, metabolism, respiration, blood enzymes, hormones, and vitamins. Must be taken in a,b sequence. Prerequisite: consent of adviser.
118–4 Applied Calculus. A study of calculus specifically oriented towards the needs of the technician. Includes a study of the functions, graphical methods of the calculus, the derivative and its applications, and the integral and its applications. Prerequisite: Mathematics 111a.
120–4 Basic Applied Physics. A study of those phases of physics dealing with heat, magnetism, and electricity. Lecture and laboratory. Prerequisites: 105b, GSA 101a.
136–5 Introductory Sociology. Interrelationships of personality, social organization, and culture; major social processes; structure and organization of social groups.
141–5 Introduction to Physiology. A survey of the functions of the human body for students desiring basic but comprehensive knowledge of human physiology.
201–2 Job Orientation. Special instructional sessions offered on personality, clothing, job application, and professional ethics. Preparation of a portfolio consisting of a personal data sheet, an analysis of prospective employing firms, sample letters of application, and an acceptance or refusal. Practice in being interviewed by representatives of business and industry.
232–4 Labor Management Relations Problems. Personnel policies, selection and employment, employee benefits, labor organizations and governmental activ-

ities, employee-employer relations, grievance procedure, wage and salary standards, and use of practical industrial psychology.

Highway and Civil Technology (HCT)

101–13 (5,3,5) Surveying. (a) Principles of surveying, operation and care of surveying instruments and equipment, field notes, measurement of distance, the transit, traverses and elementary triangulation, leveling, stadia, elementary map surveys, adjustments of transit and level. (b) Introduction to control and distribution of errors, computation of areas and volumes from field notes, reduction and plotting of field notes, U.S. public land surveys, city surveys. (c) Horizontal and vertical curves, construction surveying, advanced surveying instruments, celestial observations. Must be taken in a,b,c sequence.
103–3 Basic Materials. Physical properties and uses of materials commonly encountered in heavy and highway construction. Examples are ferrous and nonferrous metals and products, wood, stone, brick, plastics, cements.
105–6 (3,3) Structural Drafting. (a) Application of drafting techniques to the preparation of working drawings for structural steel construction. The relationship between engineering, shop, and erection drawings is studied. Laboratory work consists of the preparation of drawings from given design data. (b) Preparation of reinforced concrete working drawings. Engineering, detailing, and placing drawings are prepared from given design data. Prerequisite: AD 110a.
107–3 Soils. Types of soils, exploration and sampling methods, laboratory tests to determine characteristics and classification. Test procedures are based on ASTM and AASHO recommendations. Examples of tests are sieve analysis, hydrometer analysis, Atterburg limits, specific gravity determination, moisture-density relationships.
109–3 Portland Cement Concrete. Aggregate, materials sampling and testing, concrete mix design, material handling and storage. Examples of tests are aggregate, slum, unit weight determination, air content, flexural and compressive strength.
202–12 (8,4) Cooperative Work Experience. Full-time training in the University approved organization engaged in work directly related to civil technology. Examples are state and county highway departments, contractors, engineers, material suppliers, and testing laboratories. Weekly reports and a term report are required. Periodic discussions are led by the coordinator and attended by other students. Training includes work commensurate with ability learned in school and wider experience obtained from actual association with a civil construction project. Prerequisite: first three quarters in program.
203–5 Hydraulics and Drainage. Static and pressures; flow in pressure conduits, flow in open channels, run-off collection systems, materials and methods of sanitary and drainage construction. Prerequisite: Mathematics 111–10.
205–2 Bituminous Materials. Aggregates, bituminous materials, bituminous concrete, paving, construction methods and equipment. Laboratory tests.
207–8 (5,3) Civil Construction. (a) Construction methods and equipment, field organization, planning methods, estimating, development of unit costs, proposal preparation, contracts and specifications. (b) Continuation of a, special emphasis on reinforced concrete and structural steel. Must be taken in a,b sequence.
209–5 Route Surveying. Basic principles governing the design and location of transportation systems with particular attention to highways; circular, compound, and reverse curves; spirals, parabolic curves; earthwork; ground and aerial survey methods. Prerequisite: 101–13.
213–5 Roadway Design and Construction. Elements of roadways, subgrade, base course, pavements, drainage, design, construction, and maintenance. Laboratory work consists of design of a section of roadway with drawings, calculations, estimate sheets, and other pertinent items.

Library and Audio-Visual Technology (LAV)

101–4 Library Technical Services (Order). The preparation of orders for books and non-book materials: the necessary files, equipment, and simple bookkeeping procedures.

103–3 Library Technical and Public Services. Introduction to the broad field of library work, with basic information about the principal fields of library service and types of libraries. Study of current trends in libraries and opportunities in the field at the sub-professional level.
105–2 Introduction to Technology. An overview, to increase awareness of the role and functions of technology in contemporary life. Basic introduction to technical aspects of the media field.
107–4 General Reference. Evaluation, selection, and use of reference sources. Principles and methods of reference service. Prerequisites: 101, 103, 105.
109–3 Organization of Library Materials. System and function of a library based on component parts and devices. Organization of function and services for utmost efficiency. Prerequisites: 101, 103, 105.
111–4 Cataloging of Non-Book Materials. The classification, cataloging, preparation, and circulation of all types of non-book materials such as films, film strips, slides, etc. Prerequisites: 107, 109.
113–3 Library Public Service (Circulation Systems). The charging and discharging of books and other library materials, receiving of application forms, the keeping of library statistics, and contacts with borrowers. Prereq.: 107, 109.
201–4 Binding, Repair, and Mending of Library Material. The preparation of books and periodicals for the bindery and the proper mending and care that can be done without commercial help. Prerequisites: 111, 113.
203–3 Preparation of Graphic Materials. Provides basic skills in the preparation of graphic materials. Prerequisites: 111, 113.
209–12 (4,4,4) Library Internship. Ten hours per week of supervised training and work experience in an approved library and audio-visual aid department and resource center. Prerequisite: first three quarters.
211–4 Library Technical Services (Serials). Introduction to the duties connected with ordering, bookkeeping, check-in, claiming, preparation for binding, file organization of serial publication. Prerequisites: 201, 203.
213–3 Elements of Photography. Develops understanding of photography as a tool of communication and develops the necessary skills to use photography to further this understanding. Prerequisite: 203.
215–3 Multimedia Techniques. A study of the technical aspects and use and operation of multimedia equipment, with attention given to maintenance, distribution, and sources. Prerequisite: 213.
217–3 Seminar and Problems. Seminar integrates the library courses and intern practice of the preceding quarters. Special problems are assigned for investigation, reporting, and group discussion. Prerequisite: 209–12.

Machine Drafting and Design Technology (MT)

101–21 (7,7,7) Graphics. (a) Multiview and pictorial drawing and sketching involving sections, single auxiliaries, dimensions, fasteners, and assemblies. (b) Descriptive geometry and welding specifications with applications to working drawings. Inking. (c) Principles and practices in making, changing, and reproducing complete sets of drawings for both unit and mass production. Lecture and laboratory. Must be taken in a,b,c sequence.
127–3 Electrical, Hydraulic, and Pneumatic Controls. A study of A.S.A. and A.I.E.E. standard electrical symbols; J.I.C. electrical, hydraulic, and pneumatic standards and nomenclature, the basic principles of machines. Practical application achieved by the preparation of electrical and hydraulic drawings including layouts and schematic and single line drawings. Laboratory and lecture. Prerequisites: 101a, General Studies 105, or consent of adviser.
175–10 (3,3,4) Technical Drawing. (a) Principles of orthographic projections, conventional representations and symbols, dimensioning, and sketching. (b) The use of instruments for working drawings including sectional and auxiliary views, threads and fasteners, details and assemblies, welding, and precision dimensioning. (c) The drawings of jigs, fixtures, and special tools. Must be taken in a,b,c sequence.
201–17 (5,5,7) Machine Drafting and Design. (a) Assigned problems involving the analysis of motions required and the selection of suitable mechanisms. (b) Determination of forces and the selection of materials and proportions to withstand the forces applied. (c) Designing of tools, dies, jigs, and fixtures. Outside work and preparation are necessary. Prerequisite: (a) 101–21, 225 and

Mathematics 111–10 concurrently or consent of adviser. **(b)** 127 and 226a concurrently, or consent of adviser. **(c)** 227 concurrently, or consent of adviser.
225–3 Kinematics. A study of the motions required in various machines and the mechanisms which may be used to produce the desired motions, with special attention to automatic controls. Prerequisites: 101–21 and Mathematics 111a, and MT 201a concurrently or consent of adviser.
226–5 (2,3) Statics and Strength of Materials. (a) A study of the forces acting on the various parts of machines. **(b)** The determination of suitable materials and proportions for those parts of machines. Must be taken in a,b sequence. Prerequisites: **(a)** 201a concurrently, Mathematics 111b, or consent of adviser. **(b)** 201b concurrently, or consent of adviser.
227–3 Tool Design. A study of the principles of production machine tooling involving the design of cutting tools, tool holders, dies, jigs, and fixtures for use with machine tools such as punch presses, drill presses, turret lathes, automatic screw machines, and grinding machines. Prerequisite: 201c concurrently, or consent of adviser.

Mortuary Science (MS)

101–6 (3,3) The Funeral—History and Customs. (a) History and customs of the funeral from ancient times through modern practices. **(b)** History of American funeral directing up to the present date, including current events.
110–4 Embalming Chemistry. Chemistry of the body, sanitation, toxicology, chemical change in cadavers, disinfection, and embalming fluids. Prerequisite: introductory course in chemistry.
202–6 (3,3) Restorative Art. (a) Anatomical modeling; theories, methods, and techniques; design proportions; cranial and facial anatomy; restorative treatment. **(b)** Color theory, psychological effect of color, cosmetology; cosmetic materials, techniques, color and design; physical effect of colors upon forms. Lecture and laboratory.
203–3 Introduction to Embalming. Orientation and technique. A study of the body, sanitation, disinfection, and embalming fluids.
205–6 (3,3) Pathology. A study of the morbid changes that take place in human tissue as a result of disease processes. Must be taken in a,b sequence. Prerequisite: GSA 301.
206–5 Introductory Microbiology. Survey of microbiology; morphology, structure physiology, and populations of microbial organisms; microbial destruction, immunology, and pathogenic agents.
208–2 Public Health, Laws and Regulations. Basic principles and practices of public health administration. Organization and functions of agencies at federal, state, and local levels, which are engaged in the preservation and protection of public health. The funeral director's responsibilities and relationships to local boards of health and the State Department of Public Health.
210–6 (3,3) Psychology of Funeral Services. (a) Interpersonal relations as they affect the funeral service practitioner and specific publics; communication skills, applied psychology for funeral services. **(b)** Psychological principles relative to the funeral director in client consultation. A study of psychology of grief.
225–15 (5,5,5) Embalming Theory and Practice. Theory, practices, and techniques of sanitation and preservation as related to the care of deceased human bodies. Lecture and laboratory. Must be taken in a,b,c sequence. Prerequisite: 203.
250–5 Mortuary Management. A study of the problems involved in the practice of funeral management. Current practices and procedures in the direction of funerals. Funeral home operation and records. Laws, ethics, and professional regulations. Must be taken in a,b sequence.
275–10 Funeral Service Internship. The student will spend one quarter in a University-approved Illinois funeral establishment learning in actual practice situations, functional organization, procedures, and policies of the establishment. He will perform duties and services as assigned by preceptor and coordinator to include surveillance of and participation in the execution of total services rendered to a minimum of ten clients. Service reports and a project report are required. Prerequisite: all other requirements of the mortuary science curriculum must be met.

280–2 Funeral Service Seminar. Formal discussions, conducted by the coordinator of the program, to evaluate the experiences and progress of the participants in the internship program. Must be taken concurrently with 275.

Physical Therapy (PTH)

100–3 (1,1,1) Physical Therapy Orientation. General orientation to the profession: historical background, professional ethics, introduction to allied medical professions, and an introduction to patient care. Opportunities for clinical observation.
200–3 Physical Therapy Science Practicum. Lecture and laboratory. Physical therapy treatment techniques in a clinical setting. Emphasis on demonstration of patients with various disabilities. Prerequisite: 100–3.
201–2 Psychology of the Aged. Study of emotional and behavior problems of the older age group. Special reference to understanding the behavior problems that accompany specific medical problems. Prerequisite: Psychology 301–4.
203–2 Pathology. Introduction to pathological conditions which exist in disease and injury. Prerequisites: GSA 301, Physiology 300–4.
205–3 Physical Therapy Science. Lectures by specialists from various fields of medicine with emphasis on conditions of particular significance to the physical therapist. Prerequisite: 100–3.
206–1 Medical Records. Introduces the student to medical records and prepares him to keep adequate records of his patients.
207–2 Massage. Lectures on the effects, indications, contraindications, and techniques of massage. Laboratory practice to develop skills. Prerequisites: GSA 301, Physiology 300–4.
209–3 Therapeutic Exercise I. Includes general exercise principles and their application to pathological conditions, muscle testing, tests and measurements, posture and body mechanics, and techniques of facilitating desired neuromuscular responses. Laboratory provides the opportunity to apply various techniques of exercise on the normal person and the patient. Prerequisites: Physical Education 303, Physiology 300.
211–3 Physical Rehabilitative Techniques. Rehabilitative nursing techniques, activities for daily living, and measurement, adjustment, and training in the use of appliances and equipment used by the disabled. Prerequisites: Physical Education 303, Physiology 300.
213–3 Therapeutic Modalities. Lectures, demonstrations, laboratory, and clinical practice on the use of various modalities used in physical therapy: heat, cold, light, water, electricity, and sound. Prerequisites: GSA 101–8, 301.
215–3 Pharmacology. Introduction to pharmacology. Action and use of drugs in disabilities which are of concern to the physical therapist. Prerequisites: GSA 101–8.
221–6 Clinical Internship. Closely supervised training experience in a general hospital and a rehabilitation facility through which the student may apply previously learned theories and techniques for patient care. The clinical training period follows, the completion of six quarters of academic work. Prerequisite: All other requirements of physical therapy curriculum must be met.
222–2 Clinical Seminar. Formal discussions, conducted by the coordinator of the program, to evaluate the experiences and progress of the participants in the internship program. Must be taken concurrently with 221.

Printing Technology (PT)

101–18 (6,6,6) Presswork Laboratory. (a) Composition and automatic presswork. Type forms are set and prepared for two-color register printing. Operation and care of automatic platen and cylinder presses. (b) Elements of offset presswork and camera work. Copy preparation, stripping of flats, plate making, and darkroom and camera procedures. (c) Advanced elements of offset work. Stripping of multiple-page forms, advanced imposition problems, and multiple color work. Must be taken in a,b,c sequence, concurrently with a corresponding section of 125.
125–9 (3,3,3) Presswork Theory. (a) Composition and automatic presswork. Procedures for single and multiple forms. Uses of hand and machine composi-

tion. **(b)** Elements of offset presswork and camera work. Comparisons of offset and letterpress with advantages and disadvantages of each. **(c)** Advanced offset problems. Different methods of reproducing copy in offset production. Must be taken in a,b,c sequence, concurrently with a corresponding section of 101.
153–3 Printing Layout and Design. A study of type faces and their appropriate uses. Comparison of good and poor design. Preparation of layouts for jobs being currently printed in the shop.
201–18 (6,6,6) Composition Laboratory. (a) Principles of Linotype and Intertype operation, with emphasis on touch system. Practice in many types of machine composition. **(b)** Advanced Linotype and elements of Ludlow operation, with the application of tabular and broached rule composition. Operations of Ludlow type caster. **(c)** Advanced production printing, letterpress and offset. Application of the techniques learned in relation to real jobs in the shop. Paper drill, stitcher, and cutter are used. Must be taken in a,b,c sequence, concurrently with a corresponding section of 225. Prerequisites: 101a, 125a.
225–9 (3,3,3) Composition Theory. (a) A study of the correct keyboard system for slug-casting machines, word division, and straight-matter composition. **(b)** Advanced Linotype and Intertype maintenance, adjustments, and advance keyboard problems, operational procedures of the Ludlow type caster. **(c)** Procedures for the planning and production of printing; a study of the kinds of ink, paper, and other supplies needed for both letterpress and offset printing. Must be taken in a,b,c sequence, concurrently with a corresponding section of 201. Prerequisites: 101a, 125a.
235–2 Printing Theory and Practice. Fundamentals of offset printing, for commercial art students. Practical instruction in lithographic copy, layout and plate making, operation of lithographic presses, camera work and dark-room processes, and the solving of copy, plate, and presswork troubles. Prerequisites: Commercial Art 210a, 230a.
251–3 Estimating and Cost in Printing. How to estimate the costs of ink, paper, and presswork time necessary to produce a printed job. Must be taken concurrently with 201c and 225c.

Secretarial (SCR)

100–3 Clerical Procedures. Nonstenographic skills in record-keeping are practiced by preparing stock records, perpetual inventories, invoices, bills of lading, checks, receipts, and statements; by auditing invoices; and by proving petty cash.
101–9 (3,3,3) Typewriting. (a) Introduction to touch typewriting techniques and attainment of a minimum net typewriting rate of 30 words per minute. Simple business correspondence, tables, and manuscripts. No credit for students who have had one year or more of typewriting instruction. **(b)** Building typewriting manipulative skill by increasing speed to 40 words per minute and developing control. All basic letter styles are practiced. Skill proficiency is developed through timed production assignments, varying from 20 to 30 minutes in length, and through development of numbers and special symbols. **(c)** Development of typewriting skills and knowledges with a minimum net typewriting rate of 50 words per minute. Special business communication forms and styles are introduced and practiced by attainment of a higher level of skill in timed production work. Must be taken in a,b,c sequence.
104–18 (6,6,6) Shorthand. (a) An introduction for beginning shorthand students, utilizing demonstration; drills on word lists; practice in reading materials; intensive drills on brief forms, phrases, and word families; and practice in taking sustained dictation at a minimum of 60 words per minute for five minutes. No credit for students who have had one year or more of shorthand instruction. Students with a deficiency in shorthand theory may audit this course. **(b)** Vocabulary, brief forms, word families, English fundamentals, punctuation, spelling aids, English vocabulary building. Emphasis on dictation, speed building, mailable transcripts, office-style transcripts, and sustained dictation at a minimum rate of 80 words per minute. A transcription rate of 20–25 words per minute for a 30–minute period is attained. Much emphasis is placed on spelling, punctuation, and English usage on all transcripts. **(c)** A further development of dictation and transcription skills. The minimum sustained dictation rate is 100 words per minute and a transcription rate of 25–30. Must be taken in a,b,c sequence.

107–3 Filing and Duplicating. Basic principles of modern filing systems, alphabetic, subject, numeric, and geographic. Students work with practice filing equipment, learning the rules of indexing, cross referencing, coding, chargeouts, color devices, and setting up a modern system. Basic principles and practice on multiple copy machines. Prerequisite: 101a or consent of adviser.

112–4 Jury Charge. Dictation of the Court charges to a jury, opinions, comments of court, counsel to jury, and counsel to court is given so that students will develop speed, accuracy, and vocabulary in taking dictation. Transcripts are made of some of the instructions to the jury, and these transcripts are checked for accuracy.

120–18 (6,6,6) Machine Shorthand. (a) A study of the principles of machine shorthand theory with emphasis and intensive drill of brief forms, phrases, and word families. Correct reading and writing techniques are emphasized. Dictation speeds are gradually increased to a minimum 60 words per minute for 5 minutes. Students with one or more years' machine shorthand instruction receive no credit. (b) Provides for learning an automatic vocabulary of brief forms, special forms, and word families. Writing practices on familiar materials and introduction of new material in dictation. Sustained writing situations are gradually introduced. Dictation speeds are gradually increased to a minimum of 80 words per minute for 5 minutes. Introduction to the principles of stenograph machines transcription, placement of letters, spelling, vocabulary building, application of grammar, transcription of business letters and reports according to modern business office standards. (c) Dictation speeds to a minimum of 120 words per minute for 5 minutes are required. Intensive drill on brief forms and word families and office-style dictation situations are presented. Must be taken in a,b,c sequence.

125–3 Personality Development. Special instructional sessions on personal hygiene, personality, poise and charm, clothing, and professional ethics.

150–2 Legal Ethics. Lectures by professional personnel (judges, attorneys, court and conference reporters, and faculty) on code of ethics required by the court and conference reporters.

205–6 (3,3) Typewriting. (a) Application of typewriting skills and theory to problem situations with a minimum net typewriting rate of 60 words per minute required. Special statistical reports, duplication procedures, legal typewriting problems, tabulation of unarranged materials, employment typewriting test, and accounting reports. (b) The development of a minimum net typewriting rate of 70 words per minute. Office-style production assignments measure skill performance. Must be taken in a,b sequence. Prerequisite: 101c.

206–3 Machine Transcription. Develops a high degree of skill in transcribing directly from voicewriting machines. Students receive practice in transcribing business letters, interoffice memorandums, and numerous business forms. Mailability is stressed. Prerequisite: 101b.

209–12 (6,6) Shorthand. (a) Emphasis on dictation and transcription leading to mailable copy according to modern business standards. A minimum sustained dictation rate of 110 words per minute is attained, and a transcription rate from 30 to 35 words per minute is attained for a 30–minute period. Spelling, punctuation, and English usage are emphasized on the sustained dictation transcripts, office-style transcripts, cold-notes transcripts, and mailable copy transcripts. Attention is given to shortcuts, most-used business phrases, common business words and terms, spelling, English fundamentals, and theory. (b) Development of dictation and transcription skills leading to attractive and mailable transcribed copies. A minimum sustained dictation rate of 120 words per minute is attained, and a transcription rate of 30–45 words per minute is attained for a 30–minute period. Development of transcription skills from high-speed dictation notes using business, commercial, and industrial vocabulary. Attention is given to word usage, sentence structure, punctuation, and spelling. Must be taken in a,b sequence.

210–4 Two-Voice Testimony. Dictation of alternating questions and answers to give the student practice in taking dictation under conditions which occur in court procedure. Fluency in reading back testimony and accuracy of written transcripts are stressed daily.

214–4 to 10 (2 to 5, 2 to 5) Cooperative Secretarial Experience. (a) Students in Executive Secretarial or Medical Secretarial gain experience by spending a portion of each day working in an executive or medical office. (b) Students in Legal Secretarial or Court and Conference Reporting gain experience by

spending a portion of each day working in a legal office or assigned directly to a licensed court reporter. All positions must be approved by faculty chairman.

220–10 (5,5) Machine Shorthand. The final drive to build dictation speeds to a minimum of 200 words per minute. A culmination of all the machine shorthand classes to attain minimum dictation and transcription speeds required for the state reporters' examination passage. Must be taken in a,b sequence.

223–5 Secretarial Office Procedures. Prepares the college-level student for any secretarial position. Analyzes the secretarial profession and stresses the personal qualities needed for success in it, including human relations and good grooming. Includes specialized secretarial duties such as transmitting mail, handling incoming mail, processing telegraphic messages; receiving callers, and using the telephone; planning travel and recording meetings; using copying and duplicating machines. Stresses the latest and most efficient secretarial procedures.

224–6 Legal Shorthand. Dictation, involving special legal terms; vocabulary building; shortcuts in writing legal terms either in Gregg shorthand or in machine shorthand. Transcription from dictation notes special to the work of a legal secretary. Work in preparation of briefs and legal documents with State of Illinois Standard Form.

225–12 (6,6) Medical Shorthand. (a) Advanced dictation involving medical terminology, phrasing, and vocabulary. Special terms and definitions are used in preview consultation reports that are dictated for transcription. Emphasis on definitions, spelling, and shorthand writing of medical prefixes and suffixes. (b) Increasing speed and proficiency in the writing of medical case histories. Emphasis on phrases and special terms. Medical secretarial techniques are stressed. Emphasis on increasing speed and proficiency of medical transcripts.

230–6 (3,3) Testimony and Depositions. Stresses correct techniques of taking two-voice testimony and four-or-more-voice testimony. Both legal and medical vocabulary is stressed via tapes, records, and live voice dictation to develop State of Illinois speed requirement of 200 words per minute for 5 minutes. Transcripts are checked for verbatim accuracy at least twice weekly. Must be taken in a,b sequence.

235–6 (3,3) Advanced Legal Dictation. Includes dictation of charges to the jury. Legal vocabulary is stressed and increased. Attainment of a minimum speed of 160 words per minute for 5 minutes. Must be taken in a,b sequence.

Tool and Manufacturing Technology (TT)

101–15 (5,5,5) Machine Tool Laboratory. Supervised instruction. (a) Drill press, bench-work, engine lathe. (b) Advanced engine lathe, shaper, and milling machines. (c) Milling machine and grinder. Must be taken in a,b,c or a,c,b sequence, concurrently with a corresponding section of 125.

125–9 (3,3,3) Machine Tool Theory. (a) Introduction to basic machine tools. (b) Machineability. (c) Milling machine set-ups and tooling selection; grinding wheel safety and selection. Must be taken in a,b,c or a,c,b sequence, concurrently with a corresponding section of 101.

175–3 Basic Machine Shop Practice. Machine shop for the allied trades stressing the use of hand tools, drilling, and basic lathe work.

176–6 (3,3) Manufacturing Processes. (a) Chip machining. (b) Chipless machining. May be taken in a,b or b,a sequence.

201–9 (3,3,3) Advanced Machine Tool Laboratory. Supervised instruction on projects involving: (a) Tool and die work. (b) Production machines. (c) Production tooling and numerical control. May be taken in any sequence, concurrently with a corresponding section of 225. Prerequisite: 101–15.

225–9 (3,3,3) Advanced Machine Tool Theory. (a) Quality control and inspection practices. (b) Process planning—which includes operation analysis, feed and speed calculations, process and machinery selection. (c) Cost estimating and production scheduling. May be taken in any sequence, concurrently with a corresponding section of 201. Prerequisite: 125–9.

275–9 (3,3,3) Metallurgy. (a) Welding metallurgy. The study of the behavior of metals in welding processes with regard to heat transfer, heat affected zones, and grain structures. (b) Ferrous metallurgy. The theory of alloys, study of basic phase diagrams, simple heat treating processes, and microstruc-

tures. (c) Tool steel metallurgy. Study of tool steels with emphasis on selection and heat treatment and relationships to design criteria. Must be taken in a,b or a,b,c or b,c sequence.

Water Resources Technology (WRT)

101–2 Water Resources Technology, Introduction. A broad view of the technological, managerial, operational, and utilization practices in the water resources field. Frequent field trips to further present the full scope of the technology.

103–6 (3,3) Analysis of Water and Wastewater I, II. Laboratory procedures for the determination of water constituents and for the control of treatment processes; practical application of "Standard Methods for the Examination of Water and Waste-Water"; laboratory equipment selection, use, and arrangement; techniques; interpretation and reporting of results. Field visits.

105–3 Hydraulics. Properties of fluids especially waters; hydrostatic principles; pressure and force measurents and determination; fundamental ideas describing the flow of real fluids; use of the continuity, energy, momentum, and head loss equations; basic design and operational ideas for pipe and for open channel flow; flow metering and devices; network flow; pumps and pumping. Laboratory experiments designed to amplify that covered in class.

107–3 Applied Microbiology. Introduction to the scope and history of microbiology; classification of micro organisms; bacterial protozoa, fungi, algea, viruses; microscopy; identification techniques and laboratory procedures for detection and reporting. Limited to organisms in the water resources field; potable and waste. Prerequisites: GEN 115a, GSA 101a.

109–16 (8,8) Supervised Work Experience. Supervised employment with firms, industries, and other organizations through which the participant is subjected to a wide range of experience to better enable him to relate his course work and to aid him in deciding in which particular area of the field he wishes to seek employment. Prerequisite: first three quarters.

201–5 Hydrology and Drainage. Introduction to basic ideas of hydrology; data sources; surface run-off including storm flow and water storage; ground water flow, recovery, or elimination; rational storm drainage formulary; storm drainage system design construction and operation; construction methods and materials for wells, storm drains, channels, dams, and weirs. Laboratory work to illustrate ideas expressed. Field trips to illustrate current practices.

203–4 Surveying. Introduction to underlying theory for current engineering and construction surveying practices; tape, level, and transit familiarity; notekeeping and reduction practice; office and field computations; traverses; earthwork; topographic mapping techniques; construction surveying including pipeline and building layout.

205–4 Applied Electricity. Fundamental ideas, terms, and units of electricity; direct current circuits and machines; alternating current circuits and machines; control devices; generating equipment; motors; codes; introduction to electronic principles and devices. Prerequisite: GSA 101–8.

207–3 Legal Aspects. Introduction to basic ideas of contracts for construction, equipment, supplies, and services; codes; Federal and State laws, rules, regulations governing the use of water resources; necessary civil and criminal law to support understanding of the topics covered.

209–8 (4,4) Unit Operations I, II. Theory of basic sanitary engineering water and wastewater treatment processes and study of current design practices and operational techniques; chemical feeding and treatment; flocculation; sedimentation; ion exchange; electrolysis; desinfection; biological treatment; pumps and pumping equipment; solids handling, treatment, and disposal; industrial waste treatment processes. Field and laboratory investigations include comprehensive reports. Prerequisites: 201, GSA 101–8.

211–4 Water Systems. Investigation into the sources, quantities, and quality of raw waters; transmission system materials, design considerations, and operation; treatment systems including managerial and technological organization; distribution system design considerations, operational techniques and materials and equipment; storage of water, fire protection; water works organizations, billing. Prerequisites: 105, Highway and Civil Technology 203.

213–3 Stream Sanitation. Introduction to the basic field, laboratory and office

procedures underlying data collection including understanding of the chemical, physical and biological forces at work in waterways. Field and laboratory investigations include comprehensive reports of activities.
215–4 Wastewater Systems. Investigation into the sources, quantities, quality, and reduction and/or elimination of industrial wastes and sewage; collection system design considerations, materials, and equipment; design consideration and operational techniques of various wastewater treatment plants including managerial and technological organization. Field investigations.
217–3 Industrial Wastes. Investigation into the in-plant sources of liquid wastes, their reduction, transportation, quality measurement and treatment by industry. Field and office investigations. Laboratory analyses. Report writing.

Welding (WEL)

101–15 (5,5,5) Welding Laboratory. (a) Gas welding and cutting processes, use of the oxy-acetylene blowpipe, cutting blowpipe, inert gas welding (TIG), and hard soldering. (b) Metallic arc welding on heavy gauge steel using AC and DC welding machines, introducing all positions in metallic arc welding. (c) Metallic arc welding in all positions with special application to electrodes, ferrous metals, and nonferrous metals. Must be taken in a,b,c or b,c, a sequence concurrently with a corresponding section of 125.
125–15 (5,5,5) Welding Theory. (a) Gas welding and cutting theory involving the use of oxy-acetylene equipment, tungsten inert gas equipment, and hard surfacing and soldering techniques. (b) Theory of metallic arc welding, including types of electrodes, welding machines, techniques, and proper joints with mild steels. (c) Theory of metallic arc welding in ferrous and nonferrous alloys.
175–3 Oxy-Acetylene and Electric Arc Welding. Provides the machinist and other tradesman with enough welding experience to make simple repairs.

OTHER COURSES INCLUDED IN VTI PROGRAMS

The following courses are administered not by the Vocational-Technical Institute but by the General Studies Division, the College of Liberal Arts and Sciences, the College of Education, and the School of Technology. They are, however, required or recommended for VTI Programs. They are listed here for convenience. For the complete list of courses offered in these subject areas and for their descriptions, refer to the Undergraduate Catalog.

Man's Physical Environment and Biological Inheritance (GSA)

101–8 (4,4) Introduction to Physical Science. The aim of this course, given jointly by the departments of Chemistry and Physics, is to introduce the student to a few of the basic concepts underlying the contemporary scientific view of nature, such as the understanding of energy properties, and behavior of matter.
201–8 (4,4) Introductory Biology. Lecture and laboratory on the fundamentals of biological science: the cell and protoplasm, development, inheritance, structure and function of animals and plants, evolution and ecology. Must be taken in a,b, sequence. Prerequisite: GSA first level or Chemistry 110 or 111.
301–4 Principles of Physiology. A comprehensive introductory analysis of the functional machinery of the human body.

Man's Social Inheritance and Social Responsibilities (GSB)

102–8 (4,4) Man and His World. Anthropology: the nature of man; his behavior as the only culture-bearing animal. Geography: description of the content and spatial patterns of the contemporary world.
201–8 (4,4) Behavior and Society. An examination of the variables related to the acquisition of human behavior and social interaction in human institutions.
211–8 (4,4) Political Economy. The functioning of the economy, the theory, organization, and operation of government, and the making of public policy in the economic sphere.

Man's Insights and Appreciations (GSC)

100–3 Music Understanding. Criteria for discriminative music listening as an asset to general culture. An examination of basic materials, techniques, and forms. Three consecutive quarters of music 001a–1 Symphonic Band, 002b–1 Oratorio Chorus, or 003a–1 University Orchestra may be substituted for this course. Prerequisite: two years of appropriate performing experience.
101–3 Art Appreciation. Study of significant achievements in art related to Western culture and contemporary life.
103–3 World Literature for Composition. Reading in English, literary masterpieces of the Western world, to increase the student's competence in reading imaginative literature, to acquaint him with the great ideas and values of the best literature, and to train him to deal with literary materials in his writing. Prerequisite: GSD 102 or appropriate ACT score.
110–9 (3,3,3) An Introduction to Western Humanities. A selection of great works expressing the aesthetic, moral, and religious values of Western man. Sets forth the critical vocabulary of six humanistic disciplines: art, music, philosophy, design, literature, and theater; provides some direct experience of each one; and calls attention to interrelations among the disciplines and between the humanities and other aspects of Western culture. Must be taken in a,b,c sequence.
201–3 Introduction to Drama. Not a history of the drama. The class will read about a dozen plays, modern and ancient, and consider how various dramatic conventions and devices are used to give form and meaning to human experience.
203–3 Drama and the Arts of the Theater. The study of drama as a literary type: the relationship with the theater audience, the role of the theater in Western culture and its relation to other creative arts.
209–4 Modern Literature: Form and Idea. Designed to give the student an interest in and an understanding of the forms, themes, and values of modern American, British, and Continental literature.
210–3 Introduction to Fiction. A study of the chief techniques of fiction and of some of the acceptable criteria for judging fiction. Readings in some of the masterpieces among American and European short story and novel writers.

Organization and Communication of Ideas (GSD)

101–3 English Composition. Basic rhetorical principles in expository writing.
102–3 English Composition. Basic rhetorical principles in expository writing. Prerequisite: 101 or appropriate ACT score.
103–3 Oral Communication of Ideas. The basic principles and techniques of oral communication as applied to everyday speech activities.

Health and Physical Development (GSE)

100–3 (1,1,1) Restricted Physical Education (Men).
101–3 (1,1,1) Swimming (Men). **(a)** Beginning swimming, **(b)** Intermediate swimming, **(c)** Diving.

Chemistry (CHEM)

115–5 Introductory General Chemistry. Equivalent to a year of high school chemistry. For students who have had less than a year of high school chemistry and who require a year or more of college chemistry. May be audited by students who have had a year or more of high school chemistry. Three lectures, four laboratory hours, and one recitation per week.

Government (GOVT)

360–5 Public Administration. Principles and problems of administration on the national, state, and local level. Prerequisite: 231.

Health Education (H ED)

312–4 Emotional Health. Concepts of positive emotional health as related to teacher and parent in terms of influences on the child in the classroom and community.
334s–4 First Aid. Red Cross First Aid Course with lectures, demonstrations, and practical applications. Red Cross Instructor's Certificate given.
401–3 Disease Prevention and Control. 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.

Mathematics (MATH)

111–10 (5,5) College Algebra and Trigonometry. For students who have had intermediate algebra and plane geometry in high school. Must be taken in a,b sequence.

Physical Education for Men (PEM)

100f–1 Methods of Teaching Exercise.
303–5 Kinesiology. Study of joint and muscle action as a basis for the mechanical analysis of human physical movement executed in daily life and in physical education activities and sports. Prerequisites: Physiology 300, GSA 301.

Physiology (PHSL)

300–4 Human Anatomy. Lectures, demonstrations, and periodic observation of the prosected body. Lectures confined to bones, joints, muscles, and nerves. Primarily for students in physical education. Four hours lecture per week.

Psychology (PSYC)

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.
305–4 Psychology of Personality. A study of the inferred patterns underlying an individual's unique reactions to his environment. Investigates the motivations, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: GSB 201c.

Sociology (SOC)

306–4 Social Control. The means and principles of social controls; social institutions as factors in control; techniques of directing social action. Prerequisite: GSB 201b or 301.
372–4 Criminology. The nature of crime; criminal statistics; casual factors; theories and procedures in prevention and treatment. Prerequisite: GSB 201b or 301.

Technical and Industrial Education (TIED)

303–4 Diversified Crafts for Teachers and Recreational Leaders. Experience in constructional activities involving the use of wood, metals, leathers, plastics, reed, raffia, clay, and other materials adaptable to the needs and interests of camp counselors and elementary school leaders. Laboratory.

4 / Faculty

Vocational-Technical Institute

Accounting

Associate Professor John William Cundiff, J.D., C.P.A.
Assistant Professors Chester Johnston, M.A. *(chairman of faculty)*
J. Kenneth Markwell, M.Ed., C.P.A.
Frank Eugene Vaughn, M.S.
Instructor John Kuruc, M.S.

Architectural Technology

Assistant Professors Paul Lougeay, B.S., Registered Architect, *(chairman of faculty)*
Franklin Bassett, B.S.
Joseph Lete, B.S.
Harold Little, B.S., Registered Architect
Clifton Rutledge, M.A.

Automotive Technology

Assistant Professor L. D. Willey, B.S.Ed., *(chairman of faculty)*
Lewis Runkle, M.Ed.
Instructors Paul Jones
James McDonald, B.S.
Joseph G. Kazda, M.S.Ed.
Lecturer James White, B.S.
Assistants in Automotive Technology
Everett Shelton
Charles Romack, B.S.

Aviation Technology

Associate Professor Edmund DaRosa, B.A. *(chairman of faculty)*
Instructors Joseph Schafer, B.S.
Lennart Raymond Ohman, B.S.
Assistants In Robert James Collett
Paul Dean Burkey
Richard Cannon
Donald Lee
Russell William Riter
David Rich

Building Construction Technology

Assistant Professors Paul Lougeay, B.S., *(chairman of faculty)*
Franklin Bassett, B.S.
Joseph Lete, B.S.
Harold Little, B.S.
Clifton Rutledge, M.A.

Commercial Art

Instructors Richard Hoffman, B.F.A., *(chairman of faculty)*
Doris Swayne, B.S.Ed.
Kermit Ruyle
Gertrude Boza

Cooperative Retailing

Associate Professor Walter Elder, M.S. *(chairman of faculty)*
Assistant Professor Ruth H. Soderstrom, M.S.
Assistant in Cooperative Retailing
Ronald Thompson, B.S.

Corrections and Law Enforcement

Henry Burns, Jr., M.S.

Dental Hygiene

Associate Professor Eleanor Bushee, D.D.S. *(chairman of faculty)*
Assistant Professors Alan Willis, D.D.S.
George Cavaness
Assistants in Dental Hygiene
Jane Marie Johnson
Lucille Pierpont

Dental Laboratory Technology

Assistant Professor William Leebens, D.D.S. *(chairman of faculty)*
Instructors Peter Bykowski, C.D.T.
George Pennock, C.D.T.
Douglas Morr, M.S.
Lecturer Charles Christy, C.D.T.

Electronic Data Processing

Assistant Professor James Robb, M.A. *(chairman of faculty)*
Assistants in Electronic Data Processing Robert Dick, B.S.
Richard D. Starkey, A.A.
David Lohmeier
Michael Fitzpatrick

Electronics Technology

Assistant Professors Paul Caldwell, M.S.Ed. *(chairman of faculty)*
Raymond Schultz
Charles M. Green, M.S.Ed.
Instructor Albert Becker, M.S.
Assistants in Electronics Technology
Edward Barnes, B.S.
Denny Corbell, B.S.

Forest Products Technology

Instructor Harold Osborn, M.S.Ed. *(chairman of faculty)*
Assistant Professor Alga Carman, M.S.

General

Assistant Professor Jason Collins, M.S.Ed. *(chairman of faculty)*
Instructors Donald Cunningham, M.S.
Howard Crenshaw, M.S.
James Harbison, M.S.
Arthur Workun, M.S.
Charles Crowe, M.S.
Donald Smith, M.S.
Wangshik Shin, M.S.
Dorothy Bleyer, M.S.
William Venable, M.S.
Eric Beaven, M.S.
Edward Kirby, M.S.
Ronald Choate, M.S.
Alan Cissell, M.S.
Louise Graham, M.S.
Mary Wright, B.S.
Iva Marie Chenoweth, M.S.
Marie Palmer, M.S.
Vivianne Hertz, M.S.
Lecturer Emilyn Morris, M.S.Ed.

Highway and Civil Technology

Assistant Professor Frank Bassett, B.S. *(chairman of faculty)*

Machine Drafting and Design Technology

Assistant Professors Frank Muhich, M.S.Ed. *(chairman of faculty)*
Clarence Beauchamp, M.S.
Duncan Lampman, M.S.Ed.
Instructor Eugene Sanders, B.S.

Mortuary Science

Assistant Professors Walter Thorsell, M.S.Ed. *(chairman of faculty)*
Donald Hertz, M.S.Ed.

Physical Therapy

Instructor Ted Y. Okita, M.A. *(chairman of faculty)*

Printing Technology

Instructors H. E. Cornell, M.S. *(chairman of faculty)*
David Britt, M.S.

Secretarial

Assistant Professors Chester Johnston, M.A. *(chairman of faculty)*
Theresa Miriani, M.S.
Instructors Margaret Garrison, M.S.
John Kuruc, M.S.
Winifred Norman, M.S.
James Tooley, M.S.
Ronald Leon Case, M.S.
Helen Richey, M.S.

Tool and Manufacturing Technology

Associate Professor Harry Soderstrom, M.S.
Assistant Professors Frank Muhich, M.S.Ed. *(chairman of faculty)*
Lelon Traylor, M.S.
Instructor Douglas Murdock, M.S.

Water Resources Technology

Assistant Professor Daniel Cote, M.S.

Welding

Assistant Professors Murnice Dallman, M.S.Ed. *(chairman of faculty)*
John Griswold, M.S.
Assistants in Welding
Phillip Tregoning
George Williams

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