



WILLIAM RAINEY HARPER COLLEGE

CATALOG

1996-1997

William Rainey Harper College
1996-97 Catalog
Volume 30
January 1996

Accreditation

North Central Association of Colleges
and Secondary Schools
Commission on Dental Education
of the American Dental Association
Community/Junior College Member of the
National Association of Schools of Music
American Bar Association
Certificate of Real Estate School,
Department of Registration and Education
School Approval #46
Commission on Accreditation of Allied
Health Education Programs (CAAHEP)
Council on Education
Division of Accreditation Approval
National League for Nursing
American Dietetic Association
National Academy of Early
Childhood Programs
Association of Collegiate
Business Schools and Programs

Harper College reserves the right to change all or
part of this catalog without prior notice.



Cover: "Reflections"

This year's cover is the Harper "quad" as reflected in the windows of the curving facade of the Liberal Arts building. Concept by members of the Graphic Design and Photography departments. Photo by Stefan Adam.

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First Semester — Fall, 1995

Registration as Scheduled	April through August 14
Faculty Report	August 15
Final Registration	August 17, 19
Classes Begin	August 21
Last Day for Late Registration	August 23
Last Day for Refunds*	September 2
Labor Day Observed (Classes Not in Session)	September 4
Midterm	October 14
Veterans' Day Observed (Classes Not in Session)	November 10
Last Day for Withdrawals	November 11
Thanksgiving Vacation (Classes Not in Session)	November 23-26
Classes Resume	November 27
Final Exam Week	December 11-16
Semester Break Begins	December 17

Second Semester — Spring, 1996

Registration as Scheduled	November through January 9
Faculty Report	January 10
Final Registration	January 11, 13
Martin Luther King's Birthday Observed (Classes Not in Session)	January 15
Classes Begin	January 16
Last Day for Late Registration	January 18
Last Day for Refunds*	January 27
Lincoln's Birthday Observed (Classes Not in Session)	February 12
Midterm	March 9
Spring Vacation	Week of March 25
Classes Resume	April 1
Good Friday (Classes Not in Session)	April 5
Last Day for Withdrawals	April 13
Final Exam Week	May 13-18
Graduation	May 19

Summer Session, 1996

Registration as Scheduled	April through May 30
Final Registration	May 30 and June 1
Classes Begin	June 3
Last Day for Late Registration	June 4
Last Day for Refunds*	June 6
Midterm	June 27
Independence Day Observed (Classes Not in Session)	July 4
Last Day for Withdrawals	July 11
Final Exams	July 24, 25

*Per institutional policy on page 24 of College catalog

First Semester — Fall, 1996

Registration as Scheduled	May through August 16
Faculty Report	August 20
Final Registration	August 19-24
Classes Begin	August 26
Labor Day Observed (Classes Not in Session)	September 2
Last Day for Refunds*	September 7
Midterm	October 19
Veterans' Day Observed (Classes Not in Session)	November 11
Last Day for Withdrawals	November 16
Thanksgiving Holiday (Classes Not in Session)	November 28-December 1
Classes Resume	December 2
Final Exam Week	December 16-22
Semester Break Begins	December 23

Second Semester — Spring, 1997

Registration as Scheduled	November through January 10
Faculty Report	January 15
Final Registration	January 13-18
Martin Luther King's Birthday Observed (Classes Not in Session)	January 20
Classes Begin	January 21
Last Day for Refunds*	February 1
Lincoln's Birthday Observed (Classes Not in Session)	February 12
Midterm	March 15
Spring Break	March 21-30
Classes Resume	March 31
Last Day for Withdrawals	April 19
Final Exam Week	May 19-24
Graduation	May 25

Summer Session, 1997

Registration as Scheduled	April through May 30
Final Registration	June 2-7
Classes Begin	June 9
Last Day for Refunds*	June 12
Midterm	July 3
Last Day for Withdrawals	July 17
Final Exams	July 30, 31

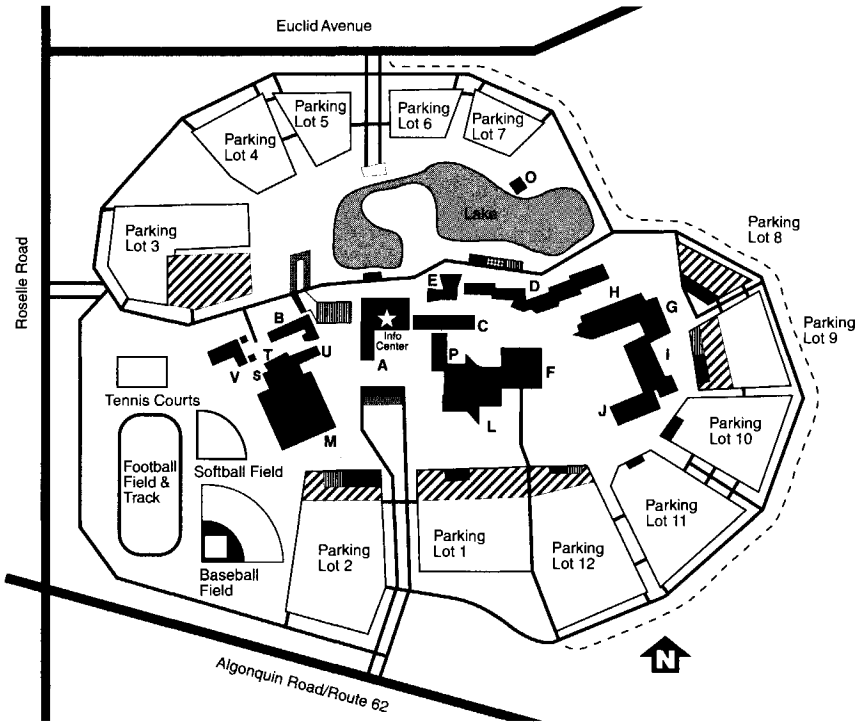
*Per institutional policy on page 24 of College catalog



Campus Map

Campus Buildings

- A College Center
- B Physical Plant Office, Public Safety
- C Admissions, Art, Community and Program Services
- D Mathematics and Science
- E Lecture-Demonstration Center
- F Learning Resources Center
- G Vocational Technology Shops and Laboratories
- H Vocational Technology Shops and Laboratories, CAD and Manufacturing Center
- I Business, Social Science, and Vocational Education
- J Business, Social Science, and Vocational Education
- L Liberal Arts, Bookstore
- M Recreation, Athletics and Physical Education
- O Observatory
- P Music, Women's Center
- S Publication & Communication Services
- T Roads and Grounds Shop, Park Management
- U Art Studio
- V Park Management, Greenhouses

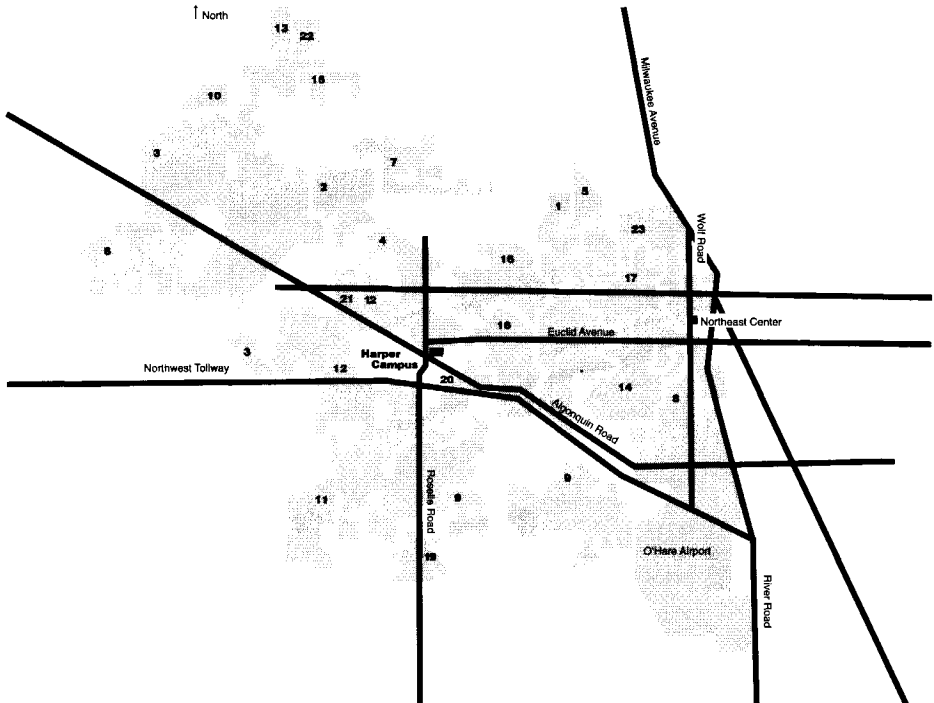


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|------------------|-------------------|--|
| Parking | | |
| Student | Administrators | Buildings, Roads and Athletic Structures |
| Medical/Handicap | Faculty and Staff | Bicycle Path |
| Visitors | Dental Hygiene | |

Communities served by Harper College District No. 512

- 1 Arlington Heights
- 2 Barrington
- 3 Barrington Hills
- 4 Inverness
- 5 Buffalo Grove*
- 6 Carpentersville*
- 7 Deer Park*
- 8 Des Plaines*
- 9 Elk Grove Village
- 10 Fox River Grove*
- 11 Hanover Park*
- 12 Hoffman Estates
- 13 Lake Barrington
- 14 Mount Prospect
- 15 North Barrington
- 16 Palatine
- 17 Prospect Heights
- 18 Rolling Meadows
- 19 Roselle*
- 20 Schaumburg
- 21 South Barrington
- 22 Tower Lakes
- 23 Wheeling

*Portions of these communities are included in the district.



Harper Extension Sites

Northeast Center

1375 South Wolf Road
Prospect Heights

Barrington High School

616 West Main Street
Barrington

Bethel Baptist Education Center

200 North Roselle Road
Schaumburg

Buffalo Grove High School

1100 West Dundee Road
Buffalo Grove

Elk Grove High School

500 West Elk Grove Boulevard
Elk Grove Village

Hoffman Estates High School

1100 West Higgins Road
Hoffman Estates

Winston Park Junior High School

900 East Palatine Road
Palatine

Additional Harper College Off-Campus (Sites) Course Locations

Arlington Heights Memorial Library

500 North Dunton Avenue
Arlington Heights

Clearbrook Center

3201 Campbell
Rolling Meadows

Edgebrook Community Center at Baldwin Greens

1926 Edgebrook Dr., Apt. 1-B
Palatine

Elk Grove Village Library

101 Kennedy Boulevard
Elk Grove Village

First Baptist Church of Hoffman Estates

325 Illinois Boulevard
Hoffman Estates

Friendship Village of Schaumburg

350 West Schaumburg Road
Schaumburg

Golden Acres Golf Courses

162 North Roselle Road
Schaumburg

Grant Wood Senior Citizens Center

225 East Elk Grove Boulevard
Elk Grove Village

Highland Woods Golf Course

2775 North Ela Road
Palatine

Hoffman Bowling Lanes

Higgins and Roselle Roads
Hoffman Estates

Humana Hospital

1555 North Barrington Road
Hoffman Estates

Kenneth W. Young Center

1001 Rohlwing Road
Elk Grove Village

Kirk Center

520 South Plum Grove Road
Palatine

North Suburban Library System

200 West Dundee Road
Wheeling

Northwest Suburban Headstart

Dunton School
1200 South Dunton
Arlington Heights

Palatine Public Library

700 North North Court
Palatine

Police Neighborhood Resource Center

2268 Algonquin Parkway
Rolling Meadows

Poplar Creek Country Club

1400 Eric Drive
Hoffman Estates

St. John United Church of Christ

308 North Evergreen Avenue
Arlington Heights

St. Marcelline's Church

822 Springinsguth
Schaumburg

Schaumburg Township Building

25 Illinois Boulevard
Hoffman Estates

Southminster United Presbyterian Church

916 East Central
Arlington Heights



The College: General Information

William Rainey Harper

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Art Collection

William Rainey Harper **Father of the Community College**

The spirit of Harper College is reflected in its name. William Rainey Harper was a scholar, teacher, writer and administrator who devoted his life to the pursuit of excellence in education. He accomplished so much in his lifetime that he is counted among the intellectual giants of his day.

A man of vision and an innovator, Dr. Harper was handpicked by John D. Rockefeller to become the first president of the University of Chicago before the turn of the century. During his 15-year presidency, that university emerged as one of the leaders in a movement to reform higher education.



Dr. Harper is recognized as the father of the two-year college, which he initiated at the University of Chicago in 1896. At that time the university was divided into two divisions — the academic college for freshmen and sophomores and the university college for juniors and seniors. Full-fledged emergence of this concept came almost 70 years later with the community college as we know it today.

In Illinois alone there are 39 public two-year community college districts serving more than 760,000 citizens each year through a full range of transfer, career-vocational and continuing education programs on both a daytime and an evening basis.



The President's Message

Harper College opens many doors and provides opportunities for success for all members of the community.

The quality of our programs and services will be important to you in your college years, your career and your personal growth for years to come.

During your time at Harper, you will find that all of us here share a commitment to helping you achieve success in your classes. Faculty members make time to meet with students outside of class, counselors are always available to assist with educational and career planning, the Learning Assistance Center will help you develop the learning skills you need for college level work, and the Tutoring Center staff will work with you to help you stay on top of difficult courses. We take pride in the success of each student.

We are also proud of the wide variety of options available to the Harper student. Within these pages, you will find the program, classes and other services that will match your own particular educational needs and desires. If you have further questions about Harper College, you will also find information about contacting us for the answers. We are here to help you take advantage of the many opportunities available at your community college. We look forward to working with you at Harper.

Sincerely,

Paul N. Thompson
President, Harper College

The College

William Rainey Harper College in Palatine, Illinois is a public community college, an integral part of the Illinois system of higher education. The College, established in 1965 by voter referendum, is governed by an elected Board of Trustees. Harper serves high school districts 211 (Palatine and Schaumburg Townships), 214 (Elk Grove and Wheeling Townships), as well as Barrington Unit School District 220.

The Harper College district (512) covers an area of about 200 square miles. Communities within the College district are Arlington Heights, Barrington, Barrington Hills, Elk Grove Village, Hoffman Estates, Inverness, Lake Barrington, Mount Prospect, North Barrington, Palatine, Prospect Heights, Rolling Meadows, Schaumburg, South Barrington, Tower Lakes and Wheeling. Also included are portions of Buffalo Grove, Carpentersville, Deer Park, Des Plaines, Fox River Grove, Hanover Park and Roselle.

Board of Trustees

The Board of Trustees is composed of seven elected individuals who represent the voters of the district and one student representative, who has an advisory vote, elected by the student body for a one-year term.

Meetings of the Board of Trustees, which are open to the public, are held on the fourth Thursday of each month at 7:00 pm in the Board Room of the administration wing of the College Center (Building A) on the Harper campus at Algonquin and Roselle Roads in Palatine.

Compliance Actions

Harper College does not discriminate on the basis of race, color, religion, sex, national origin, ancestry, age, national origin, marital status, sexual orientation, physical or mental disability or unfavorable discharge from military service. This policy governs the recruitment and admission of students, the recruitment and employment of faculty and staff and the operation of any of the College's programs and activities as specified by federal laws and regulations. It is also the policy of Harper College that no student or employee shall be subjected to sexual harassment, which is regarded as a form of discrimination.

Inquiries regarding Affirmative Action should be directed to the Director of Personnel. Inquiries regarding College compliance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act should be directed to the Dean of Academic Enrichment and Language Studies.

Services for Students with Disabilities

Support services are available for students with disabilities in accord with Section 504 of the Rehabilitation Act of 1973. Information regarding those services or about campus accessibility can be obtained in the Center for Students with Disabilities in D119. New students must apply to receive services and provide information about the nature and extent of their disability so that appropriate accommodations and services can be arranged.

Accreditation

All courses and educational programs, including counseling services, are fully accredited by the North Central Association of Colleges and Secondary Schools. In addition, the Harper Dental Hygiene career program is accredited by the Commission on Dental Education of the American Dental Association; the Harper Music Department is accredited as a Community/Junior College Member of the National Association of Schools of Music; the Harper Legal Technology Program is accredited by the American Bar Association; the Harper Real Estate Program holds a Certificate of Real Estate School, Department of Registration and Education School Approval #46; the Medical Office Assistants Program degree and certificate at Harper is accredited by the Commission on Accreditation of Allied Health Education Programs; the Harper Nursing Program is accredited by the National League for Nursing and approved by the Illinois Department of Professional Regulation; the Harper Dietetic Technician Program is granted Developmental Accreditation status by the American Dietetic Association Council of Education Division of Accreditation approval.

History

The story of William Rainey Harper College parallels the history of the community college movement in Illinois, an educational phenomenon in the late 1960s.

Late in 1964, while legislators in Springfield were adding the final revisions to the Illinois Community College Act enabling citizens to form their own college districts, concerned citizens in Chicago's northwest suburban communities petitioned for a referendum to vote on the establishment of a college. Within a matter of days after the legislation passed, voters in the four-township area of Elk Grove, Palatine, Schaumburg and Wheeling approved a referendum establishing the Harper district — on March 27, 1965.

Groundwork for the referendum to establish a two-year college had been laid early in the 1960s with a survey of student needs and the establishment of a concerned Citizen's Committee. The success of the committee was exhibited in a 3-2 margin at the polls. Voters returned to the polls 34 days after approving the referendum to elect seven citizens, from among 48 candidates, as the first board of the new college.

Two years later, Barrington School District 224 (now Unit School District 220) annexed to the Harper district, and the boundaries of Harper's 200-square-mile-constituency were established to become Illinois Community College District 512.

Since its inception, Harper College has been most fortunate in having trustees possessing the capacity to work together in planning programs, solving problems and establishing goals unique in the annals of the northwest suburbs. The first board meeting was held in May, 1965. The College had no name, no staff and no facilities, but it did have seven dedicated individuals determined to establish a community college worthy of the area it serves.

During the first year, a president was hired, architects were selected to design and plan a campus, the campus site was chosen and a decision was made to adopt the name of William Rainey Harper College in honor of the "father" of the two-year-college concept.

Voters in the district approved a \$7,375,000 building referendum 4-1 to begin Harper's second year. By September, 1967, the College was staffed and operating with more than 1,700 students attending evening classes in Elk Grove High School, and ground had been broken for a new campus. Harper College was a reality, and the northwest suburbs had the first college in a 125-year history.

Harper serves as a cornerstone in Illinois educational history as the first two-year institution to complete Phase I of its building construction and the first to receive unqualified full accreditation — only six years after its founding — in the shortest possible time in 1971.

Throughout its brief history, Harper has had a record of monumental growth. The 1967 enrollment of 1,725 students jumped to 3,700 in one year, double the projections. When the doors opened on Harper's new campus in fall, 1969, 5,350 students were enrolled. Enrollment topped 20,000 for the first time in fall, 1975.

The College employed numerous off-campus locations, instituted a Weekend College program, and opened an extension campus at Willow Park

Center in 1975 to provide additional classroom space for day and evening offerings. The Northeast Center subsequently moved to the Hawthorne School in Wheeling, and in the fall of 1982, to the Stevenson School in Prospect Heights.

A successful referendum held in September, 1975 provided funds for the College to proceed with completion of the present campus, purchase land for a second site, and construct the first phase of buildings on that site when required by enrollment increases.

Building G and H were completed and classes begun in the facilities in 1977. Building M, the physical education, athletics and recreation facility, and Buildings I and J opened to classes in the 1979-80 academic year. All plans were subject to approval by the Illinois Community College Board and the Illinois Board of Higher Education.

In 1982, the College established a training center in cooperation with high technology firms in the area. The center was designed to provide instruction and resource materials relating to computer aided design and manufacturing. The innovative educational program of the CAD Center was structured to assist high technology firms in training their employees, as well as to provide some instruction in this developing technology to students in Harper programs. In 1986, the CAD Center was relocated from a Schaumburg office to Building H at the campus.

In February 1985, residents of the college district approved a tax rate increase for operation of the College. This was the first increase in tax support for the educational programs, services and operating expenses of Harper College in the 20 years since the College was established.

Changes in population trends over the past 10 years indicated that a second campus would not be needed to accommodate projected enrollment, and the decision was made to sell the property which had been purchased in Arlington Heights. The sale was finalized in 1986.

In August, 1993, the College opened Building S which houses the Publications and Communication Services Department. In the spring of 1994, the Liberal Arts Building was opened. Building L includes the Liberal Arts division office, classrooms and faculty offices as well as the College Bookstore. First floor space includes a "black box" theatre for instructional use and three-dimensional art studios devoted to ceramics, sculpture, stagecraft and metal work. The two buildings were part of a building phase that also includes renovation plans in existing buildings.

Community Orientation and Involvement

From the beginning, College supporters have been committed to the concept of an institution oriented to its community. Harper has enjoyed a heartening involvement and interest by members of the community who continue to give countless hours to accomplish key phases of the College's programs.

Advisory committee members selected from the community for their expertise and knowledge give support to Harper on career programs, management training seminars for business and industry, women's programs, senior citizens' programs, public relations, the College's long-range plan and fund raising.

Community leaders serve as directors of the Harper College Educational Foundation, which provides scholarships and supports special projects to enhance the educational programs of the College. In 1981, the Friends of Harper organization was formed as a support group for the College by citizens interested in promoting awareness of programs and services offered by Harper. An Office of Community and Program Services was recently established.

Harper continues to evaluate itself as it plans for the future. Will planned classroom space be adequate? Is Harper meeting community needs in the career/vocational fields? How well is the College serving its constituency in terms of preparing students to meet their future educational and career requirements? Is Harper College, in fact, continuing to provide an outstanding program of higher education?

As Harper plans for the future, answers to these questions will be sought constantly and reevaluated to enable the College to continue to be accountable to the community it serves.

College/Community Programs

A student faculty cultural arts committee provides the College and community with programs representative of the various arts—dance, drama, exhibits, film, music and a lecture series for discussion of relevant issues. These programs are sponsored by the Student Activities Office and financed by student activity fees.

Philosophy

An outstanding program of higher education for the community it serves is the guiding philosophy of William Rainey Harper College.

Created by a community responsive to contemporary insistence on more education for more of its

citizens, the College is determined to meet the educational and vocational requirements of each student and thus serve the community at large, for a true community college answers to the demands of the total community.

The demands of the community are clear. In addition to the specific needs for two years of high quality transferable collegiate credit, the College recognizes the more general, but no less important, requirement of educating all of its students for a meaningful role in a free and fluid society which promises increased leisure time.

Basic to responsible participation in society is the student's contribution in voting more intelligently, producing more efficiently through the acquisition of a salable skill, and adapting more readily to a complex society. In view of the realities of the complexity of a dynamic society and the knowledge explosion, the student must not only learn what is known but also how to acquire knowledge not yet extant.

With a commitment to the dignity and significance of each student, the College endeavors to bring the student to a realization of what place he or she can make for himself or herself in today's world and to provide the necessary training for his or her social and personal goals. To this end, the College must provide those cultural experiences which will open to the student the heritage of the educated person.

Mission

William Rainey Harper College is a comprehensive community college dedicated to providing excellent education at a reasonable cost, promoting personal growth, enriching the community and meeting the needs of a changing world.

In the broad range of its offerings, Harper College will

- educate students to assume an active, productive and meaningful role in a free and changing society.
- provide students with the knowledge and experiences required to develop a system of values and the ability to contend with difficult moral choices.
- encourage student success.
- enrich the cultural and economic life of the community.
- lead in individual and community development.
- enable students to recognize the interrelationships of life, education and work.

General Education

Harper College is committed to a program of general education which acquaints the student with a broad area of knowledge. This knowledge not only provides information in particular subject fields but contributes toward an enlightened and integrated view of life. General education serves to complement specialized training designed to prepare the student for an occupation, whether a trade skill, a technical proficiency or a professional vocation.

Essential to transfer and career-oriented programs, the aim of general education is to equip the student with important understandings and insights — and the power to communicate them. Thus, efforts to assume the role of a citizen and to earn a livelihood are set in a value perspective that gives a proper order to life's activities.

The general education philosophy of Harper College is intended to permeate the entire College program, enabling all members of the College community to work together to develop and strengthen constructive attitudes, knowledge and understandings.

Degree graduation requirements have been developed to combine adequate specialization with general education.

Objectives

Specific objectives of the College are:

1. To provide the first two years of baccalaureate education which will offer students opportunities to pursue liberal arts, sciences and preprofessional curricula designed to prepare those students to transfer to four-year colleges and universities and/or to satisfy individual educational goals;
2. To provide educational opportunities in occupational, vocational, technical and semi-technical fields which will enable students to acquire the skills and knowledge necessary to enter a specific career;
3. To offer appropriate general education opportunities to assist individuals in participating more effectively in a free society as well as providing those individuals with personal and cultural enrichment;
4. To provide opportunities for training, retraining and upgrading of skills in order to facilitate adjustments in a work environment that is undergoing rapid technological change;
5. To provide adult education and remedial instruction;

6. To provide community education, including continuing education designed to meet various individual goals;

7. To provide services designed to support the programs and direction of the institution, including, but not limited to, admissions, counseling, testing, tutoring, placement, financial aid and special assistance for the disadvantaged student;

8. To provide educational resources for the use of students and community residents through learning resources and library services;

9. To provide selected public services which employ the available resources of the College and utilize the talents of faculty and staff in such a manner as to make significant and substantive contributions to the community; and

10. Whenever available, to provide and encourage the use of the College's facilities and services for educational and cultural purposes by community members, under certain provisions and controls established by the College.

Degrees

Harper College offers three degrees: The Associate in Arts, the Associate in Science, and the Associate in Applied Science. The A.A. and A.S. degrees are primarily for students desiring to transfer to four-year institutions. The A.A.S. is primarily for those in two-year career programs, although many students transfer to four-year colleges after earning the A.A.S. degree.

In addition, the College provides certificate programs designed to meet specific needs of the community. These programs are normally one year in length, and upon completion of the prescribed courses, the student receives a certificate of completion.

The Harper Year

The College follows the early semester plan and also offers a summer session. Day and evening classes are conducted throughout the College year. The College also offers a sequence of transfer courses and selected occupational and continuing education courses during the weekends of the fall and spring semesters.

The Weekend College provides college credit courses on Fridays, Saturdays and Sundays during fall and spring sessions.

College Hours

Business Hours: Business office is open Monday through Thursday from 8:00 am to 8:00 pm and on Friday from 8:00 am to 4:30 pm. The Registrar's Office is open Monday through Thursday from 8:00 am to 8:00 pm, Friday from 8:00 am to 4:30 pm and Saturday from 9:00 am to 12:00 noon. Closed Friday and Saturday during the summer term.

Class hours are generally scheduled Monday through Friday from 7:00 am until 11:00 pm, Saturdays from 7:00 am until 6:00 pm and Sundays from 1:00 until 6:00 pm.

Summer hours may differ from those listed above.

Campus Facilities

With the completion of the initial buildings, the Harper campus was opened to 5,400 students in September, 1969. Additional facilities were needed in order to keep up with the increasing enrollment which eventually led to a complex of 18 informal contemporary buildings totaling 833,130 square feet nestled in the rolling terrain of 200 rural acres. On-time delivery of the buildings marked Harper as the first Illinois public community college to complete its entire Phase I project, which was formally dedicated on May 3, 1970.

Campus structures include a comprehensive library and Learning Resources Center; a science and technology laboratory and classroom complex; a lecture-demonstration center; a fine and applied arts complex; a vocational-technical center; a park management and greenhouse facility; a College Center for student-related activities; an administrative and data processing center; and a central utility facility serving the entire campus.

Since the first phase of the campus was completed, additions to the science complex, fine arts wing, and central utility facility have been made. Buildings G and H were completed in 1977, and the physical education building M plus two other classroom-specialized career program buildings (I and J) were opened in 1980.

In 1990, a 784 square foot observatory was completed. Privately funded, the observatory houses a 12" diameter Newtonian reflecting telescope and can be used by school and community organizations.

The two most recent facilities, Buildings S and L were completed in 1993 and 1994 respectively. Building S is the campus publication building, and Building L houses the bookstore and Liberal Arts Division. Of special note in Building L are the theatre and applied arts.

The hub of the campus, the College Center, provides a natural meeting place for students and faculty — and includes a lounge, food service facilities, bookstore, various student activity offices, student development center, community meeting rooms and provisions for almost any activity the multi-purpose design might embrace.

The informal layout of the campus was designed to have a "village street" atmosphere. The architectural concept uses scale and placement of buildings, multi-level plazas, picturesque pedestrian streets, "earthtone" building materials (brick, wood and concrete), and glass window walls to give a variety of interior and exterior views, producing a stimulating and pleasing environment for learning and working.

The structures are built into the natural contours of the land, with entrances on several levels. Panoramic vistas from several buildings embrace a small scenic lake to the north of the buildings, with a foot bridge connecting the campus to the parking lot on a hill across the lake.

The Harper campus is an exciting environment for learning, complete with the latest educational tools. Students, alumni and community residents find pride in a local campus which provides educational and cultural opportunities as well as a conference center for clubs and civic organizations.

Smoking Policy

It is the policy of William Rainey Harper College to maintain a smoke/tobacco free environment consistent with its efforts to promote wellness and a campus environment conducive to work, study and activities for students, employees and the public.

The College recognizes the rights of those who choose to use tobacco and does not prohibit the use of tobacco products. It does, however, restrict the use of these materials to areas outside College buildings and vehicles. As defined in this policy, tobacco products include cigarettes, cigars, or tobacco in any other form, including smokeless tobacco which is any loose, cut, shredded, ground, powdered, compressed or leaf tobacco that is intended to be placed in the mouth without being smoked.

Implementation of this policy is subject to guidelines determined by appropriate College committees and communicated to students and staff on a regular basis. The guidelines are also printed in appropriate procedures manuals.

College Accessibility

Harper College complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. Persons with disabilities who may require accommodations and/or support services should contact the Center for Students with Disabilities, Building D, Room 119 or telephone 847/925-6266 (voice) or 847/397-7600 (TTY).

Complete College services may not be available at all off-campus or extension locations.

Parking

All members of the College community, including students, faculty/staff and administrators are required to display a valid Harper College parking permit. The permits are color-coded to the campus parking lots. Student permits are green, faculty/staff permits are red and administrator permits are blue.

Persons with physical disabilities may obtain a parking card from the city or township office in the area where they reside or from the office of the Secretary of State. For additional information regarding parking, please call the Public Safety Office, 925-6330 or 925-6491.

Harper College Bookstore

The Harper College Bookstore, located in Building L, is a resource for required textbooks, supplies, study aids, dictionaries and other items.

It is recommended that you bring your class schedule with you so the necessary texts can be located easily.

Cash, checks, Mastercard, Visa and Discover Card can be used to pay for purchases. If you are paying by check or credit card, you must have a picture ID. If you plan to use financial aid or have a scholarship to purchase books, arrangements should be made with the financial aid office before making any purchases.

Refund Policy

Save your receipts

Textbooks

You may return new or used textbooks if you purchase the wrong text or drop or withdraw from a class.

Textbooks must be returned within two weeks from the first day of classes in the term for which they were purchased (one week for summer semester and courses which meet for eight weeks or less) or textbooks may also be returned within one week from the date of purchase.

Books must be accompanied by a sales receipt, and if originally purchased new, must be clean, unmarked and undamaged. Textbooks containing software must be in original packaging with software seals intact.

Textbooks purchased the last two weeks of the semester are non-returnable.

General Books

General books may be returned one week from date of purchase provided they are in the same condition as purchased and accompanied by a receipt.

Study aids are non-returnable.

Other Merchandise

General merchandise may be returned within one week from date of purchase provided it is unopened, in its original packaging and accompanied by a receipt.

Software

Software may be returned within one week of purchase provided original packaging and software seals are not broken, and it is accompanied by a receipt.

Book Buyback

End of Semester

The Bookstore will purchase textbooks from students at the end of every semester. Dates and times will be posted on campus. Fifty percent of the new price will be paid for books that will be used for the next semester (quantities may be limited). National market value will be paid for all other books. Study guides, workbooks and lab books are acceptable only if pages are intact and contain no writing.

Year-round

The Bookstore offers a year-round buyback. Prices are determined by the national market value which is less than price paid at the end of the semester. This will not be offered one week before each semester and during the first two weeks of classes. These books are not kept by the Bookstore.

Hours are posted near the entrance to the Bookstore. For more information, call the Bookstore at 847/925-6275.

Learning Resources Center

The primary mission of the LRC is to support the instructional mission of William Rainey Harper College in the following manner: 1. to teach library patrons how to find and evaluate information for their particular purposes and 2. to support the instructional programs of the College by providing library materials and creating a learning environment which encourages active self-inquiry. The goal is to create a dynamic, functional relationship between information and people. The staff is ready to help in the development, acquisition and use of a variety of print and media materials. The LRC collection contains about 110,000 volumes, more than 800 magazines, and extensive back issues of the *Chicago Tribune* and *New York Times* on microfilm, as well as tapes, records, slides, films, videotapes, software and other media formats.

LRC Library Services

The Library Services area is located on both the first and second floor of Building F. Circulating books, books on tape, best sellers, CD Roms and reference materials are located on the second floor. Books are arranged by Library of Congress classification. Librarians are available to give reference assistance in using the library and its resources. They also provide bibliographic instruction to classes. Additional services include interlibrary loan and database searching.

Most audiovisual materials, all periodicals and reserve materials may be obtained at the Circulation desk on the first floor. All print materials are also checked out at this desk. Copy machines and an automated catalog are available on both floors.

LRC Media Services

The Media Services area is located on the first floor of Building F. The materials and equipment provided to students and faculty are aimed at making instruction more effective. Also available is a television studio for instructional and informational productions.

Flexible Facilities for Instruction

The library has a computerized, on-line catalog which can be accessed through strategically placed terminals on the first and second floors of the LRC. The catalog can also be accessed from home or office via a modem and personal computer. To augment manual methods of research, numerous computerized indexes (CD-ROM) are also available for patron use.

Nine lecture/demonstration facilities across campus provide the teachers and students with flexible resources for instructional use. These lecture/demonstration facilities are designed for large systems, remote media projection, and television linked directly to the Learning Resources Center.

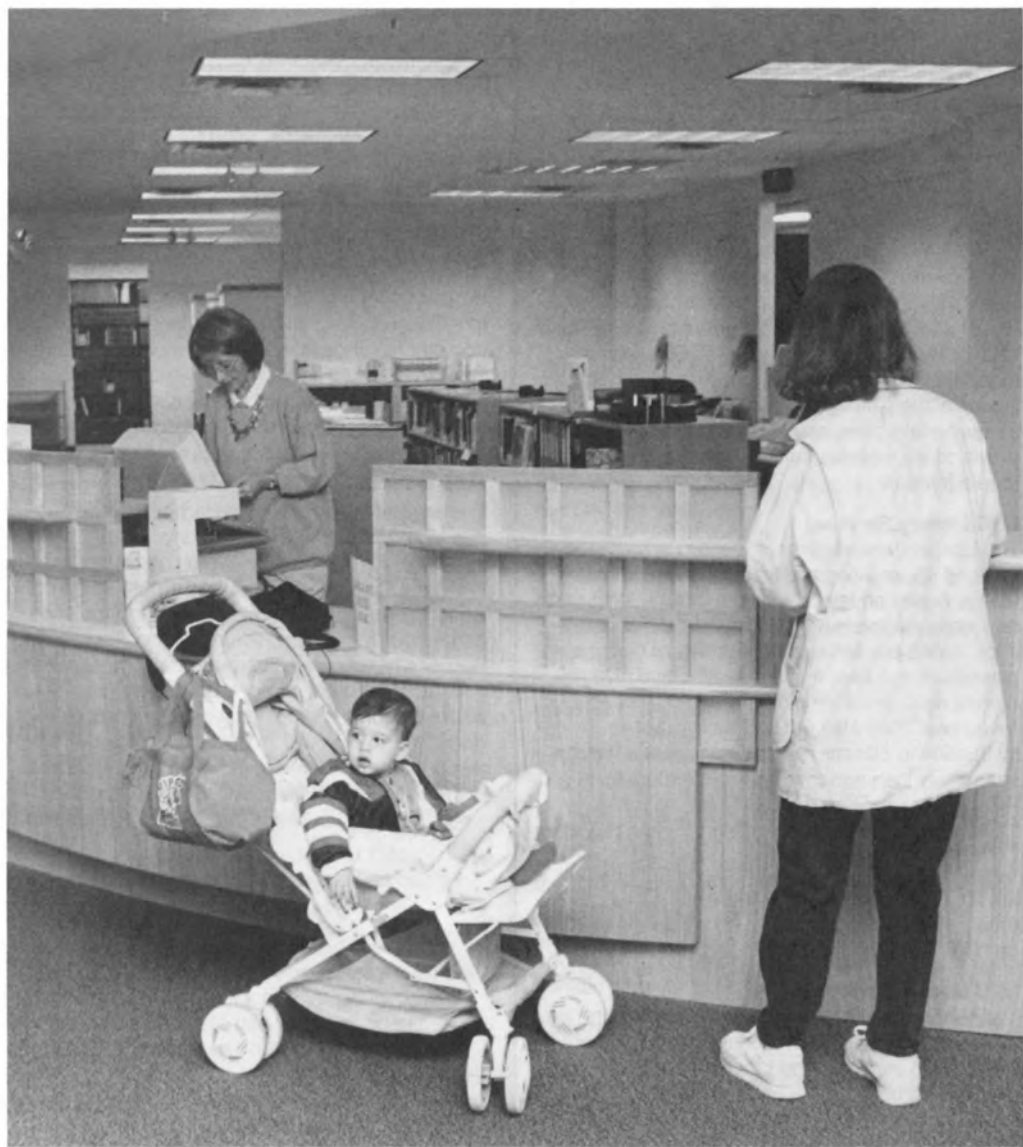
Other self-instructional spaces and the LRC independent study area, each equipped with a variety of media, are used to support individualized instruction.

Harper College cable TV channels reach 12 communities, enabling students to view telecourses and other programs in their homes.

Teleconferences and a variety of national and international programs are available via a satellite antenna system located on the Harper campus.

Art Collection

The original concept for the Harper College campus included public exhibition of works of art. By the time the initial facilities were completed in 1970, the College had acquired a permanent collection consisting of a limited number of paintings, prints and pieces of sculpture. Throughout Harper's history, the institution has actively pursued acquisition of quality works of art in order to insure a sound educational environment for students and to develop an invaluable cultural resource for the community which Harper serves. In the future, the College will continue to collect works reflecting a variety of aesthetic expressions.



Admission Information, Tuition and Fees

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Program Offerings

Students may select one of the following options and should follow the procedures identified:

Baccalaureate Transfer Program

This option is available to students interested in selecting courses transferable to institutions offering baccalaureate degrees.

Individuals seeking admission to the transfer program should see the Additional Admission Information section below for information regarding this program.

Career Programs

These sequences of courses are designed for individuals who desire to pursue a specific curriculum to prepare them for a particular career.

Continuing Education Program

Continuing Education courses have been established to provide an educational service to the public. These courses do not carry college credit. Students need not apply for admission and should register according to registration procedures outlined in the current course schedule.

Other Offerings

Courses in developmental English, reading, mathematics, study skills, and English as a Second Language are available for students who need to improve these skills in order to succeed in college studies. Students are placed in these courses based on assessment test scores.

In addition, the Adult Educational Development Department offers instruction in reading, writing, mathematics and nonnative literacy as well as preparation for GED and citizenship tests.

Admission

Eligibility

All high school graduates or the equivalent (GED) are eligible for admission to the College. A non-graduate 16 or 17 years of age who has severed his or her connection with the high school system, as certified in writing by the chief executive officer (or designee) of the high school district in which the student has legal residence, or a non-graduate 18 years of age or older, may be admitted if he or she demonstrates the capacity to benefit from programs and courses offered by the College. High school students may be admitted to selected courses upon the written approval of their high school principal (or designee) and the designated College admissions official.

To be placed in some programs in the College, the applicant may have to meet additional

requirements as specified by that program and/or the Illinois Public Community College Act.

General Admission Requirements

Upon application to the College, students are asked to indicate their enrollment plans and should note the following guidelines to assist them in making their decisions.

Full-time students enroll in at least 12 semester hours of credit courses. *Part-time students* enroll in less than 12 semester hours of credit courses. *Degree-seeking students* plan on pursuing a College degree.

Full-time applicants will be required to:

- A. Complete a Harper College application.
- B. Pay a \$15.00 nonrefundable application fee.
- C. Submit an official copy of their final high school transcript. Students who are enrolled in high school at the time of application must, in addition, submit a current high school transcript. Students who completed the GED must submit an official copy of GED results.
- D. Submit official transcripts from all colleges attended.
- E. Provide ACT scores. Either an official ACT score report or an official high school transcript that includes ACT scores can be submitted to fulfill this requirement. (This requirement will be waived for students who have completed 12 or more semester hours of college level credit and for students who are age 24 or older at the time of application.)

Degree seeking part-time applicants will be required to:

- A. Complete a Harper College application.
- B. Pay a \$15.00 nonrefundable application fee.
- C. Submit an official copy of their final high school transcript. Students who are enrolled in high school at the time of application must, in addition, submit a current high school transcript. Students who completed the GED must submit an official copy of GED results.
- D. Submit official transcripts from all colleges attended.

Non-degree-seeking part-time applicants will be required to:

- A. Complete a Harper College application.
- B. Pay a \$15.00 nonrefundable application fee.

Students who do not fulfill the appropriate admission requirements will be permitted to register for the semester for which they are applying, but will be prohibited from registering for subsequent semesters until all admission requirements have been fulfilled.

Additional Admission Information

Students Applying For Admission to Baccalaureate Transfer Program

The importance of a strong high school background as it relates to college success cannot be overstated. Students who encounter a broad variety of curricular areas in high school increase the likelihood that they will succeed at the college level. Accordingly, and in compliance with Illinois Community College Board policy, Harper College has established minimum high school course requirements for admission to the Associate in Arts Degree and Associate in Science Degree Baccalaureate Transfer Programs.

Students applying for admission to a Baccalaureate Transfer Program must meet the minimum requirements as outlined in the table below. A student who has not fulfilled these requirements at the time of application will be admitted to the College as a "Pre-Baccalaureate Transfer Student," and upon compensation of the academic deficiencies will be admitted to the Baccalaureate Transfer Program.

High School Course Requirements For Admission to Baccalaureate Programs

Area	Subject	Minimum # of Units in High School
I	English	4
II	Social Studies	2-3
III	Mathematics	2-3
IV	Science	2-3 including at least one unit of laboratory science
V	Other	1-2 units of foreign language, art, or music
VI	Flexible	0-4 units in areas I-V or <u>in vocational education</u>
Total Required:		15 units

High school course requirements for admission to Baccalaureate Transfer Programs will be waived for:

- Students whose final class rank is in the top 25 percent **and** who have an ACT composite score of 23 or higher **or** an SAT Verbal score of 610 or higher and an SAT Math score of 680 or higher;
- Students who have completed 24 semester hours of college coursework (100 level or above) with grades of "C" or better.

Applicants to the Baccalaureate Transfer Program will be classified according to the following system and should note the relevant admission requirements as follows.

Graduates of accredited high schools who received a high school diploma on or after January 1, 1993*

Must fulfill requirements as stated above.

GED Recipients

Must have obtained a minimum standard sub-score of 50 on each GED subtest and have completed at least one unit of laboratory science in high school or one semester of laboratory science in college.

International Students

Must have a TOEFL score of 520 or higher and have graduated from a college preparatory high school for further study in an area of liberal arts or from a technical high school in an area of math, science or engineering.

Graduates of Foreign High Schools

Must have graduated from a college preparatory high school for further study in an area of liberal arts or from a technical high school in an area of math, science or engineering.

*Note: Students who graduated from high school prior to January 1, 1993 who have not fulfilled the admission requirements will have coursework and/or other academic activities that compensate for course deficiencies incorporated into their curriculum.

Students Applying to Limited Enrollment Programs

The following career programs have been identified as limited enrollment programs: Cardiac Exercise Technology, Dental Hygiene, Emergency Medical Training, Sign Language Interpreting and Nursing (RN and LPN). Each of these programs has special admission requirements.

Consult the curriculum section of this catalog to determine the specific admission requirements of a particular limited enrollment program.

Selection for these programs is determined by the following: Permanent residents of the Harper College district who complete the application process by the program's application deadline will receive preferential consideration in the selection process. If, on that deadline date, more completed applications have been received than space available, those students with the highest qualifications will be selected.

A permanent resident is defined as an individual who resides in the Harper College District for reasons other than attending Harper College.

The Admissions Office shall make the final determination of permanent residency status in relation to the selection process for limited enrollment programs.

International Students

Students from other countries attending Harper College are termed "international" students, according to the following definition: "A person who is a citizen of a country other than the United States who has a visa for educational purposes with an intent to return to his or her homeland upon completion of his or her educational program."

International students must carry a minimum of twelve (12) semester hours. Because no scholarships or grants are available to international students, it is essential that students from outside the United States have sufficient funds to cover their expenses while in this country. The international student tuition is \$216.24 per semester hour (subject to change without notice).

International students are not considered residents of the College district for purposes of admission to Limited Enrollment Programs.

International students will be required to submit the following to the Admissions Office at least six weeks prior to the beginning of the semester or summer session in which they intend to begin their studies:

1. A completed Harper application with a non-refundable \$15.00 application fee.
2. Official transcripts for at least the last four years of secondary school study and any university-level or postsecondary school work that has been completed or attempted. All these records must list all subjects taken, grades earned or examination results in each subject, minimum and maximum grades possible and all diplomas and certificates awarded. If these documents are not in English, they must be accompanied by authorized English translations.
3. An official Test of English as a Foreign Language (TOEFL) score report. To be considered for admission, students must receive a minimum converted score of 520. (This requirement will be waived for students applying to the Full-time English as a Second Language Program.)
4. An affidavit of support signed by the party who will be supporting the student. The affidavit must be accompanied by statements from the

bank and employer of the party who will be supporting the student. (If students are able to document sufficient financial resources to support themselves, this will be considered adequate.)

5. A Harper College declaration of intention.
6. A written statement regarding what the student plans to study at Harper. (This requirement will be waived for students applying to the Full-time English as a Second Language Program.)
7. A Harper College "Educational Background Information Sheet."

Concurrently Enrolled High School Students

High school students age 16 and over may enroll concurrently at the College if they obtain written approval of their high school principal or designee and of the designated College admissions official. These students should follow the appropriate general admission requirements as stated above.

Summer School Students

Students who apply for summer school only should submit an application form and an application fee. Students starting first with summer session and planning to continue should follow the appropriate general admission requirements as stated above.

Readmission

A student who has previously attended Harper College and who is returning after an absence of one semester or more does not need to complete an application for readmission. (An exception to this is a student who is applying for admission to a Limited Enrollment Program. Contact the Admissions Office for details.) If a student has attended any other educational institution since attending Harper, official transcripts from each college attended should be submitted to the Admissions Office. Students dismissed from Harper for disciplinary reasons must be reviewed by Harper's vice president of student affairs.

Assessment and Placement

Harper College welcomes all who can benefit from the courses and programs offered. An assessment policy has been initiated and all new full-time students and students entering their first English or math course are required to participate. The goals of assessment are:

1. To inform students about their competency levels in English, reading/writing and math.
2. To place students in the English and math courses in which they have the best opportunity for success.

3. To help underprepared students whose reading assessment scores are substantially below college level by requiring them to enroll in developmental reading courses.

Residency

Students enrolling at William Rainey Harper College shall be classified as Resident, Non-Resident, Out-of-State or International for tuition and fee purposes:

Resident

A student who has resided within the State of Illinois and the Harper College district* thirty days immediately prior to the start of the term is eligible to be classified as a resident student for tuition calculation purposes. Residency requirements may differ for limited enrollment programs admission. Proof of residence status is required at the time of registration. Proof of residence can include drivers license, voters registration card, library card, lease, utility bill.

Non-Resident

A student who has resided in the State of Illinois, but outside the Harper College district, for thirty days* immediately prior to the start of the term shall be classified as a non-resident student.

Out-of-State

A student who has resided in the State of Illinois for less than thirty days** immediately prior to the start of the term shall be classified as an out-of-state student.

International

A student whose permanent residence is outside the United States and is attending Harper College on a visa shall be classified as an international student.

*Communities in Harper College District #512 Arlington Heights, Barrington, Barrington Hills, Buffalo Grove+, Carpentersville+, Deer Park+, Des Plaines+, Elk Grove Village, Fox River Grove+, Hanover Park+, Hoffman Estates, Inverness, Lake Barrington, Mount Prospect, North Barrington, Palatine, Prospect Heights, Rolling Meadows, Roselle+, Schaumburg, South Barrington, Tower Lakes, Wheeling.
+Portions of these communities are included in the district.

**Students who move from outside the state or district and who obtain residence in the state or Harper district for reasons other than attending the community college shall be exempt from the thirty day requirement if they demonstrate through documentation a verifiable interest in establishing permanent residency. The Registrar's Office shall make the final determination of residency status.

Tuition and Fees (subject to change without notice)

Tuition

Resident Tuition — *(includes employees of companies within Harper district)

\$40.00 per semester hour

Non-Resident Tuition (see Chargeback)

\$187.53 per semester hour

Out-of-State Tuition —

\$216.24 per semester hour

International Student Tuition

\$216.24 per semester hour

Senior Citizen Tuition

District residents age 60 and older will be assessed a 50 percent tuition discount for credit courses that are specifically dedicated to senior citizens. No other discounts apply to these classes.

District residents age 65 and older are eligible for a 100 percent discount for all credit courses (except senior-dedicated) during late registration. Late registration is the first day of the term or the first day of the session in which the class meets. Students may not drop and re-enroll for the discount.

All tuition and fees are due and payable during registration unless arrangements are made at the Office of Student Financial Assistance, A364, or the Office of the Registrar, A213. Failure to do so may result in being withdrawn from classes.

A one-time application fee of \$15.00 is charged to each new student applying for admission for credit courses. The fee, which is nonrefundable, covers the cost of processing the application.

Activity Fee

Students enrolled for 12 or more credit semester hours will pay a \$24.00 activity fee for each semester; students enrolled for less than 12 hours will pay a \$12.00 activity fee. Students enrolled for summer school credit hours will pay a \$12.00 activity fee. No activity fee is charged for students enrolled only in Continuing Education courses or Harper classes taught off-campus (extension courses).

However, students enrolled only in continuing education and extension courses may pay the activity fee and obtain an activity card (see: Student Activities).

Special Music Fee

Students enrolled in minor applied music will pay \$118.00 per semester. This entitles the student to one thirty minute private lesson per week. Major applied music students will pay \$236.00 per semester and will receive one sixty minute private

lesson per week. A limited number of musical instruments are available for lease for \$50.00 a semester, \$20.00 of which may be refunded depending upon the condition of the instrument when it is returned.

Graduation Fee

A graduation fee of \$15.00 includes the cost of the diploma (see: Graduation Requirements).

Laboratory and Music Fees

Laboratory and music fees will be indicated at time of registration.

Parking Fees

Parking fee is \$5.00 per term.

No parking fee is required for one- or two-day Continuing Education seminars or workshops.

Chargeback Tuition

Resident Students desiring to pursue a certificate or degree program not available through Harper College may apply for chargeback tuition if they attend another public community college in Illinois which offers that program. (See section on cooperative programs.)

Students approved for chargeback will pay the resident tuition of the receiving institution; the Harper College District will reimburse the college for the remainder of the non-district tuition cost.

Application for chargeback tuition must be made in the Office of the Registrar 30 days prior to the beginning of the term for the college in which the student wishes to enroll.

Non-Resident Students approved for chargeback tuition from their resident district will pay Harper's resident tuition and their district will reimburse Harper for the balance of the nonresident tuition. Non-resident students attending Harper without chargeback will pay the non-resident fees (see: Tuition and Fees).

Tuition Refund Policy

Tuition refund requests shall be made to the Office of the Registrar during normal business hours. Refunds will be made according to the following schedule:

Fall and Spring Semesters

<u>16 Week Classes</u>	<u>Percent of Refund</u>
First week through Saturday	100%
Second week through Saturday	75%
No refund after second week of semester	

<u>12 Week Classes</u>	<u>Percent of Refund</u>
First week through Friday	100%
First week Saturday through second week Wednesday	75%

<u>8 Week Classes</u>	<u>Percent of Refund</u>
First week through Wednesday	100%
First week Thursday through Saturday	75%

Classes offered on the weekend (Friday, Saturday and Sunday) may have separate refund and withdrawal dates.

Summer Session

<u>8 Week Classes</u>	<u>Percent of Refund</u>
First week through Tuesday	100%
First week Wednesday through Thursday	75%

<u>4 Week Classes</u>	<u>Percent of Refund</u>
(Days are calendar days of semester)	
Prior to second day	100%
Second day	75%

Students may request a reconsideration of no refund by applying, in writing, to the Coordinator of Registration and Information. Appeal forms detailing circumstances acceptable for consideration are available in the Registrar's Office.

Withdrawals

If students wish to withdraw from a class after regular registration, they must withdraw officially by submitting the appropriate forms to the Office of the Registrar. A student who does not withdraw officially from a class is subject to an "F" grade. Criteria and procedures for a withdrawal due to significant medical reasons are available in the Health Services Office and the Office of the Registrar.

The following guidelines determine grades for an official withdrawal from a 16-week course; the timetable for withdrawing from other courses (8-week, 4-week, etc.) will be determined on a pro rata basis according to these guidelines:

1. Classes dropped prior to the third week will not become a part of the student's permanent record.
2. A "W" grade will be assigned to a class dropped after the beginning of the third week and prior to the thirteenth academic week,

3. A grade of "F" will be assigned to a class dropped after the twelfth week of a full semester course.
4. The deadline to withdraw from 16-week classes is printed in the official College calendar for the year in question.

Enrollment Status Verification

Students may have current or previous enrollment verified by the Registrar's Office, A213.

Full-time Status—

a student is considered full-time if he/she is enrolled in twelve or more credit hours (six credit hours for the summer term).

Part-time Status—

a student is considered part-time if he/she is enrolled in less than twelve credit hours (less than six credit hours for loan deferments).

Half-time Status—

a student is considered half-time if he/she is enrolled in six or more credit hours but less than twelve credit hours (three credit hours for the summer term).

A current semester verification is based on the enrollment status of the student on the first day of the second week of classes (after late registration.) A previous semester verification is based on the actual dates of attendance.



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Grading

At the end of each semester, the student will receive a grade for each class in which he or she was enrolled at the beginning of the third week of the semester. The official grade point average is computed on the basis of final grades awarded at the end of each semester or term.

Grade Points

Grade points are numerical values which indicate the scholarship level of the letter grades. Grade points are assigned according to the following scale:

Grade	Significance	Grade Point
A	Superior	4.0
B	Good	3.0
C	Average	2.0
D	Poor	1.0
F	Failure	.0
H	Audit	.0
P	Pass	.0
W	Withdrawal	.0
X	Incomplete	.0

The following classes are not computed in the cumulative grade point average:

Communication Skills — all courses

English as a Second Language — all courses

Math — below 100 level

Reading — below 100 level

English — below 100 level

All "P" graded courses

Academic Honors*

Trustees' Honor List

Each semester, students achieving a grade point average of 3.75 to 4.00 are recognized as Trustees' Honor List students.

Dean's Honor List

Each semester, students achieving a grade point average of 3.50 to 3.74 are placed on the Dean's Honor List.

Honors List

Each semester, students with a grade point average of 3.25 to 3.49 are given recognition on the Honors List.

*Students must have accumulated 12 semester hours at Harper to be eligible for an academic honor.

Standards for Academic Achievement

Rationale for Standards

The Standards of Academic Achievement at

Harper College have been established in order to:
-guide the student in pursuit of academic success.

The Standards assure the availability of services which can help students reach success as well as clearly notify them of their progress.

-maintain an academic environment that clearly defines expectations for progress.

The Standards communicate the College's definition of academic progress. The Standards clarify College expectations and afford the student a guideline for setting realistic goals.

-clarify the roles and responsibilities of students, faculty and administrators.

The Standards define the role of the student in terms of academic performance and responsibility as well as the role of College personnel in evaluating academic performance and intervening with special assistance at specific intervals.
-allow the institution to maintain its academic integrity.

Categories of Standards

Good Standing — Students with a cumulative GPA of 2.0 or higher and students who have attempted* fewer than seven credit hours are in good standing.

Academic Caution — Students who have attempted* seven and not more than 15 credit hours and have received a cumulative grade point average (GPA) of less than 2.0 will receive a caution notice and the recommendation to take advantage of various programs and services designed to help them achieve success.

Academic Warning — Students who have a cumulative GPA of less than 2.0 and have attempted* 16 or more credit hours, or have completed their second successive semester with a cumulative GPA of less than 2.0, are given academic warning. These students will be advised to restrict their enrollment to a maximum of 13 credit hours and may have restrictions imposed upon them.

Probation — Students who were academically warned the previous semester and have a cumulative GPA of less than 2.0 will be placed on probation. These students will be restricted to a maximum of 13 credit hours and will be required to participate in success-oriented strategies.

Suspension — Students who have attempted* 40 or more credit hours, have had three successive semesters with a cumulative GPA of less than 2.0, with one of those semesters in probation, and earned below a 2.0 semester GPA the last semester they were enrolled are placed on suspension. These students will be suspended from the College for one full semester (fall or spring). Students suspended after spring term will not be allowed to enroll for summer school. Students

must be involved in success-oriented strategies upon their return.

Dismissal — Students who have returned to the College after one semester of suspension and who receive a semester GPA of less than 2.0 will be dismissed for a minimum of two full semesters (fall/spring or spring/fall). After this dismissal period, these students must petition the vice president of student affairs for reinstatement.

*Refers to receipt of grades A, B, C, D and F.

Status	Category	Results
Academic Caution	Attempted 7+ credit hours and cumulative GPA less than 2.0	Caution and recommendations of success-oriented strategies
Academic Warning	Attempt 16 or more credit hours with cumulative GPA less than 2.0 or second successive semester with cumulative GPA less than 2.0	Recommend restriction to maximum 13 credit hours. May have restrictions imposed.
Probation	Previous semester with Academic Warning and cumulative GPA less than 2.0	Mandatory restriction to maximum of 13 credit hours. Required success-oriented strategies.
Suspension	Attempt 40 or more credit hours, at least three successive semesters with cumulative GPA less than 2.0 with one of those terms in probation and earned below a 2.0 semester GPA the last semester they were enrolled.	One semester suspension. Required success-oriented strategies upon return.
Dismissal	One semester after suspension with semester and cumulative GPA less than 2.0	Dismissal of two semesters. Must petition for reinstatement.

In addition to the Standards for Academic Achievement, federal and state financial aid recipients must also comply with the satisfactory academic progress requirements for financial aid as follows:

1. A student must be enrolled as a regular student in a program of study leading to a degree or certificate or in a transfer program leading to a baccalaureate degree.
2. Except for Illinois Veterans Grant recipients, a student must enroll for a minimum of six (6) credit hours per semester.
3. A student must complete fifty percent (50%) of the cumulative hours enrolled in for two consecutive semesters.
4. A student must maintain a cumulative grade point average of 2.0 or higher to remain eligible for financial aid. Courses in which students receive an "X" (incomplete), "W" (withdrawal), "H" (audit) or "F" (fail) will not count as completed or earned grades.
5. A student must complete his/her educational objective, degree or certificate within a specified maximum time frame.

Contact the Office of Financial Aid and Veterans' Affairs for complete details of this requirement.

Mandatory Advising for Students on Probation

As part of the required success-oriented strategies, students on probation are required to see a counselor for educational planning and academic support. Individualized strategies will be developed to assist the student to identify causes of academic difficulties and to achieve satisfactory grade point averages. College services will be utilized to help the student reach his or her educational potential and goals. Students who fail to see a counselor will not be allowed to register for subsequent classes.

Students placed on suspension and dismissal may seek counseling assistance during the semester(s) of non-attendance. Upon returning to school, previously suspended and dismissed students will be placed on probation and required to see a counselor before being allowed to register.

Repeat Policy

Students will be allowed to repeat courses and attempt to earn a higher grade. When a course has been attempted more than once, only the highest grade received for that course will be used to compute the cumulative GPA. The lower grade(s) will remain on the transcript but will not be used to compute the Harper College cumulative GPA. The repeat policy applies only to courses currently offered. A student transferring to another college should check that school's repeat policy; it may differ.

Note: In the case of courses that are approved to be taken more than one time, the repeat policy is not in effect until the number of approved repeatable hours is exceeded.

Forgiveness Policy

Under limited circumstances, a student may petition to have previously earned "F" grades removed from the cumulative grade point average but not from the student record. Eligibility guidelines and procedures are available in the Student Development Centers and the Registrar's Office.

Attendance Policy

Each instructor or program has the responsibility to establish the attendance requirements which best suit the educational goals of that class or program. No central class attendance record is kept by the College other than a mid-term report.

Academic Honesty Policy

Harper College is strongly committed to the promotion of high ethical standards. Such standards can best be accomplished in an environment where honesty and integrity are practiced.

For this reason the College strongly condemns academic dishonesty. Academic dishonesty includes cheating, plagiarism or other improper appropriation of another's work as one's own and falsifying records to advance one's academic standing.

Cheating includes but is not limited to copying answers, stealing and/or disseminating tests or answer keys, using someone else's data in preparation of reports or assignments, and assisting others in such practices.

Plagiarism involves the presentation of another person's words, ideas, or work as one's own. It includes but is not limited to copying any material, (written or non-written) without proper acknowledgement of its source, and paraphrasing another's work or ideas without proper acknowledgement.

Falsifying records includes but is not limited to falsifying or improperly altering college records and documents, or knowingly supplying false or misleading information to others (e.g. the College, other educational institutions, or prospective employers).

Any form of academic dishonesty as defined by the faculty member or department is a serious offense requiring disciplinary measures. Discipline for academic dishonesty involving a specific course shall be first determined by the instructor of the course and may include failure of the specific assignment, project or test or failure of the course. The student may appeal the instructor's decision in accordance with the College's Student Academic Complaint Procedures. In cases of academic dishonesty the faculty assigned grade supersedes a student-initiated withdrawal. In cases where disciplinary measures beyond course failure may be deemed appropriate by the instructor, or dishonesty that is not related to a specific course, the student may be disciplined in accordance with the Student Conduct Policy with the appropriate vice president involved in the decision.

Non-Solicitation Policy

Employees of the College are required at all times to perform their duties in such a manner that they present a proper and official image to the community and avoid the activities that may result in personal or private gain. Toward that end, class lists and any other data about students are to be utilized solely for College instructional, administrative, advising/counseling and business purposes. Use of this information for personal or business solicitation is strictly prohibited.

Incomplete Grades

A student may be assigned a grade of "X" for unfinished work in a course provided the work was incomplete because of circumstances deemed to be unavoidable or uncontrollable (to be determined by the instructor). The work to be completed will be assigned by the instructor. The unfinished work must be satisfactorily completed by the midterm of the following 16-week semester. Failure to do so will result in a grade of "F." In certain courses such as CIS open entry courses, it is necessary to meet the instructor deadline specified in the contract for that class.

Auditing a Course

A student who wishes to audit a course will be required to pay full tuition and fees and must obtain approval from the instructor, department chair or dean prior to enrollment in the course. At that time, a mutual set of expectations will be determined.

Registration for audit status may be completed only during late registration (the first week of the term) and must be the original enrollment in the class. Changes from credit to audit are not permitted. Students taking a course for credit are given priority in registration.

Upon completion of the course, the instructor will assign an "H" grade if the agreed upon expectations are met.

Transcripts

Official transcripts of a student's academic record will be issued and sent from the Registrar's Office, upon written request, to other educational institutions and prospective employers. A fee of \$3.00 is charged for each copy. Fax transmission of unofficial records is also available. The College reserves the right to withhold transcripts of persons who have past due monetary obligations such as tuition, fees or materials.

Transfer of Credit to Harper College

A student who has attended any other college(s) must have an official transcript from each college attended sent to the Admissions office immediately upon making application. A student may transfer credit to William Rainey Harper College according to the following conditions:

1. The collegiate institution previously attended must be a regionally accredited institution awarding college credit.
2. Credit may be transferred to Harper College for courses earning credit and successfully completed with a grade of "D" or above if the student's cumulative grade point average (GPA) is 2.0 or above ("C" average) at the previously attended institution. If the student's cumulative GPA is less than 2.0 at a previously attended institution, credit may be transferred for courses earning credit and successfully completed with a grade of "C" or above. The student's work at each institution is evaluated independently if several institutions were attended. A student must petition for evaluation of transfer credit through the Registrar's Office.

3. Credit may be transferred, but the grades earned at other institutions are not transferred, nor are the grades included in computing the cumulative GPA at Harper College. Elective credit may be awarded for transfer course work with no direct equivalency at Harper College.

4. Courses which are a part of a department or program of study not offered by Harper College are considered nontransferable.

5. Evaluation of credentials from a foreign country may be requested through the Registrar's Office.

Student Records Policy

The Student Records policy at Harper College is governed by the Family Education Rights and Privacy Act of 1974. The law and the guidelines for its use at Harper College are available in the Office of the Registrar. (See the Student Handbook/Datebook).

Student Complaint Process

A Student Grievance policy and procedure is available for students who feel improper, unfair, arbitrary or discriminatory judgments or improper use of procedures have been applied to them directly by the college or a college representative. A copy of the procedure can be obtained in the Student Senate office, Student Activities office, or office of the vice president of student affairs.



Student Services

Student Development

Academic Advising and Counseling Center

Center for New Students and Orientation

Career Center

Center for Students with Disabilities

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Student Development

This area of the College is designed to assist students in assessing, identifying and achieving their goals. Various professional services and programs are offered to maximize responsible student decisions relating to education, career, social and personal issues.

The offices and centers listed below are all a part of this division and together offer programs for the development of all students at Harper College.

Academic Advising and Counseling Centers

Two centers, located in D142 and I117, are specifically designed to help returning students with their educational plans. This includes course selection and transfer information regarding four-year schools, as well as information on Harper's career programs.

Full-time students are encouraged to see a Student Development counselor each semester. Part-time students are advised to see a Student Development counselor no later than after completion of 14 credit hours and again after completion of 29 credit hours. **Progress**, a computerized degree audit report which shows degree requirements and courses taken is available upon request from one of the Student Development centers.

The Student Development centers maintain a collection of information on college selection as well as college catalogs for personal use by students. Up-to-date transfer information on area colleges and universities is available, including specific information on program requirements for transfer to these institutions. In addition, the library maintains a subscription service with current copies of all U.S. college catalogs on microfiche.

The Academic Advising Center assists students in difficulty. Students on probation are required to see a counselor to develop strategies to be successful and improve their grade point average.

These centers also offer personal counseling to students. In addition, student development staff will provide counseling geared especially to meet the needs of adult students.

Center for New Students and Orientation

Another Student Development Center, located in C104, is available to students entering the College for the first time. The purpose of this Center is to assist all entering students by providing the preliminary information helpful in their transition to Harper College. The Center specializes in helping the adult student as well as the traditional student. Advising is provided by appointment in small groups and individually.

This Center is responsible for the organization of New Student Orientation Programs prior to the start of each semester. These programs are designed to help new students with the transition into the college setting. They provide opportunities to meet other students and to become familiar with the campus and services available here. Students begin setting goals and are assisted in the selection of and registration for courses.

Prior to beginning the fall semester, all new students and their parents are invited to the Freshman Experience. The student program is high spirited and promotes new friendships, a sense of community and a chance to talk to Harper staff and Student Activity representatives. The parents of new students are invited to a special program which helps familiarize them with Harper College and with some of the experiences their sons and daughters may have as new college freshmen.

Career Center

This Student Development Center, located in A347, assists students in making career and life planning choices. Students wishing assistance in their career choice or in gaining skills which will aid them in the job hunting process may visit the Career Center. A variety of career information is available, including DISCOVER, a computerized guidance program. Student Development faculty are available to assist in the decision-making process through individual counseling and testing as well as career planning courses and seminars.

The job placement service, located in this center, helps students with their full-time, part-time and seasonal employment needs. Job placement personnel serve as liaisons between Harper College students, faculty/staff and potential employers. This service is designed to help the Harper student acquire the skills necessary for successful job searching as well as connect the student with potential employer contacts. Job search information and employer files are available in the Career Center.

Personal and Community Counseling Services

The personal counseling service is located in P124. Students having personal, social or emotional concerns which may impede their satisfactory progress and success as students at Harper College are encouraged to consult with Student Development counselors. These highly-trained professionals are available to help students or to make referrals as necessary.

The Community Counseling Center (for local residents) is located within this office.

The Career Transitions program (for non-students) is located at the Harper Northeast Center.

Cooperative Education

Provides cooperative work experience integrating classroom with on-the-job training. The College will assist in securing employment related to the student's major field of study and/or career interest. A training plan is developed by the student, employer and cooperative faculty advisor.

Center for Students with Disabilities

The mission of the C.S.D. is to create a comprehensively accessible environment where individuals are viewed on the basis of ability, not disability. Harper College complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990.

An orientation program, academic advising, counseling and support services are available to students with disabilities. The C.S.D. office will assist students in choosing their courses, setting career goals, maintaining good academic standing and planning for after college. Specialized services include instructional support and an ESL Program for deaf/hard of hearing students. The Program to Achieve Student Success (PASS), is a fee for service program for students with learning disabilities where they can receive one-on-one specialized instruction.

New students should identify themselves, apply for supportive services and furnish the C.S.D. office with pertinent information about the nature and extent of their disability. This information will be kept confidential and will be used to plan for appropriate services and accommodations. All new students will be interviewed and will participate in the College assessment program. Testing can be adapted to meet individualized needs (materials in Braille, large print or audio tape) and extended time can be provided. Students are expected to take responsibility for the management of their services. Besides providing services, the C.S.D. office offers students the use of a wide variety of specialized equipment (Arkenstone Open Book System with optical character scanner, Phonic Ear FM Transmission System, computers with large print, speech and other adaptations). Some equipment may be borrowed for personal use. The C.S.D. office works closely with the faculty and staff of other departments at Harper to insure that the campus is physically and programmatically accessible to disabled students. Students are integrated into the mainstream of College life and resolve problems through the ordinary channels as much as possible.

Students interested in securing these services should contact the Center for Students with Disabilities at the earliest possible date. The C.S.D. office is located in D119. The TTY number is 847/397-7600. To receive services, students

must turn in a C.S.D. schedule form with requests for services noted. Availability of some services may be limited for students who turn in schedules after the last full day of open registration, prior to the beginning of a semester.

Assessment and Testing Services

This Student Development office is located in Building A, Room 148 and is responsible for the coordination and administration of academic assessment and other testing programs available to Harper College students and community members. All new full-time students are required to participate in an orientation program that includes academic assessment testing. New students assess their academic strengths in English, reading and mathematics through a battery of tests. Tests for telecourses, independent study programs, proficiency and CLEP testing and entrance examinations for limited enrollment programs are coordinated in this office. Harper College also participates in national testing programs, either as a test center or as a source of information.

A Student Development program consisting of vocational/interest tests and/or personality measures is available without charge to students enrolled in at least six (6) credit hours (three credit hours in an eight-week term). Students must first meet with a counselor to determine which tests are most appropriate.

Test results will be interpreted later by counselors and can give students valuable information in making decisions about plans and courses.

Women's Program

Since its inception in 1969, the Women's Program at Harper College has served more than 42,000 women in the northwest suburbs. The Women's Program focuses on how individuals can work collectively to facilitate change within themselves and their community. We work to facilitate the education and understanding of women's issues and encourage others to work with us in creating a community in which all individuals have full equality.

The Women's Program is comprised of four major areas:

- Continuing education courses and workshops are offered on a variety of topics related to women's issues.
- Services to students who are single parents or students who through disability, separation, divorce or death have become the head of household with the need to become self-supporting. These state-funded programs offer women and men career, personal, vocational and academic counseling, support groups,

information and referral to appropriate resources. Students are also provided with job readiness seminars designed to develop employment skills to gain access into today's competitive job market.

- Services to students who are interested in non-traditional work. This program offers services to people who are interested in careers where the majority of workers are of the opposite sex. Career, vocational and academic counseling, support groups, mentoring and job placement are available to students.
- Each March, Harper College celebrates the many contributions women have made throughout history. Activities include a keynote speaker, seminars and performances focusing on one of many areas in which women have impacted our history. This event helps us remember, recognize and learn from the women in our past.

The Women's Center, located in Building P, Room 127, is a place to relax, talk, study and become involved with women's issues in a supportive atmosphere. Coffee, campus information, women's resources and referral information are available. Men as well as women are welcome to use the facility.

For further information, please contact the Women's Program at 847/925-6558.

Alternative Credit Programs/Credit Options

Students with wide varieties of educational experience may convert this experience into college credits on the basis of satisfactory performance on proficiency examinations. A person who has been officially accepted as a Harper student may apply for and receive college credit by meeting the course objectives for no more than one-half of the academic program required for graduation at Harper. This could include Advanced Placement (AP) credit, College Level Examination Program (CLEP) credit, Harper College Proficiency Examination credit, the American Council on Education recommendations for Defense Activity of Non-Traditional Educational Support (DANTES, previously USAFI) and the Program on Noncollegiate Sponsored Instruction (PONSI). Guidelines, policies and procedures for these programs are available from the Assessment and Testing Center.

Advanced Placement Program (Offered Only in High School) Credit and placement will be awarded to students with adequate Advanced Placement (AP) examination grades in areas comparable to the Harper curriculum. The granting of credit and/or advanced placement will be determined following the guidelines listed in the Credit by Examination bulletin available in the Assessment and Testing Center.

College Level Examination Program Credit through the College Level Examination Program (CLEP) is available to all students who feel they have acquired the necessary proficiency level to meet the requirements in a variety of subjects not covered by Harper College proficiency tests. A student who has previously completed CLEP tests should request that the scores be sent to the Assessment and Testing Center. Information regarding CLEP examination may be obtained by requesting a CLEP brochure from the Assessment and Testing Center. Criteria for granting credit have been determined by each academic division. Granting of CLEP credit by Harper College is contingent upon completion of application procedures.

Harper College Proficiency Examination Program Departmental proficiency tests have been created by Harper College faculty for many courses not available through the CLEP program. Written permission to take a proficiency test must be received from the appropriate program coordinator or department chairman and brought to the Office of Assessment and Testing Services. Permission forms are available in the office of each academic division.

American Council on Education Credit Recommendations Credit will be granted for extracurricular educational experience earned through formal military training and the Program on Noncollegiate Sponsored Instruction (PONSI) and recommended by the Office on Educational Credit and Credentials of the American Council on Education. Veterans must submit the DD Form 214, Armed Forces of the United States Report of Transfer or Discharge, a transcript of in-service training from the appropriate service, or an official report of educational achievement through Defense Activity for Non-Traditional Education Support (DANTES, previously USAFI) for credit evaluation. DANTES tests equivalent to College Level Examination Program (CLEP) tests will be evaluated using Harper College CLEP standards. Students with credits from the Program on Noncollegiate Sponsored Instruction (PONSI) must submit a transcript from the business corporation, government agency or professional association where the credit was completed. The American Council on Education recommendations for these extracurricular credits will be considered only if the courses are equivalent to the courses offered by the College.

Open Test Center for GED

Harper College is an approved test center for the General Educational Development test. Upon passing the GED test, a high school equivalency certificate will be issued by the Cook County Superintendent of Schools. Tests are offered monthly at Harper.

Personal Development Seminars

Several types of group experiences are offered by the Student Development Division. Three seminars are offered for academic credit. Orientation 101 (ORN 101) provides exposure to strategies necessary to adapt to the college environment and assists students in developing initial career and educational goals. Humanistic Psychology (PSY 107) is a course dealing with personal awareness that helps students to understand themselves through experiences designed to improve self-confidence and increase motivation. Career Development (PSY 108) helps students who are undecided about their career goals or plans. Various activities focus on the career exploration process and resources.

Non-credit group seminars such as **Self Esteem, Choosing a Major, Transferring to Other Colleges, Job Search Techniques, Interviewing, and Mid-Life Adjustment** are also offered each semester. Mailings, posters and brochures will inform students of these offerings. Students may request additional information by visiting any of the Student Development Centers (A347, D142, I117 and F132).

Learning Assistance Center

The Learning Assistance Center (LAC) offers academic support to students by providing success services, developmental courses and tutoring to those who need assistance with college level work.

Success Services for Students

Students can obtain an analysis of their performance on a test in any content area. They will be given a complete breakdown on the types of errors being made as well as specific strategies that lead to improvement. The Study Behavior Inventory identifies strengths and weaknesses in the following areas: test taking tips, test anxiety, short and long term study skills, time management and writing skills. Follow-up sessions may be scheduled. The Learning Styles Inventory indicates how a person learns best. Once the learning style is determined, specific strategies will be recommended that will complement that style. Services are free of charge to Harper students. Appointments may be scheduled by coming directly to F332 or by calling 847/925-6715. All information is confidential.

LAC Community Services

The Learning Assistance Center has extended services to junior high, high school students and students from other colleges. Students may schedule an appointment for test anxiety, study skills, reading strategies or test taking tips with a learning specialist. The fee for an individualized session is \$20. For additional information, call 847/925-6715.

Tutoring Center

Tutoring in most subject areas is provided at no charge for subjects in which the student is enrolled at Harper College. Information on appointments or walk-in services can be obtained from the Tutoring Center, F315, 847/925-6539.

Tutoring for the Community

Harper's Tutoring Center has expanded its services to include junior high and high school students and students from other colleges. Qualified tutors will offer help to students in the areas of mathematics, accounting, computers, biology, English, chemistry and writing. Cost for the one on one tutoring is \$20 per hour. Tutoring sessions will be scheduled by appointment only. Further information can be obtained from the Tutoring Center, F315, 847/925-6888.

Writing Center

A supportive computerized environment for writers of all levels and disciplines. Writing specialists encourage and instruct writers in the use of technology to organize, create and edit. Software includes word processors, spelling and grammar checkers, bibliographic generators, organization and revision aides.

LAC Courses

The LAC offers the following courses which are designed to increase each student's opportunity for success:

ENG 098 ^{1,2}	Composition
RDG 090 ^{1,2}	Fundamentals of Reading
RDG 097 ^{1,2}	Reading and the College Textbook
RDG 099 ^{1,2}	Developmental Reading
RDG 105 ³	College Reading
PSY 106 ³	Practical Psychology (Learning Skills)

LAC Continuing Education Courses

The LAC offers the following courses which do not transfer and do not count toward graduation, but which are designed to improve basic skills:

LAC 0001	Grammar Review
LAC 0002	Vocabulary Development
LAC 0003	Spelling Improvement
LAC 0004	Reading Faster and Understanding More
LAC 0005	ACT Test Preparation
LAC 0006	SAT I Test Preparation

¹Non-degree credit. Does not transfer. Does not count toward graduation.

²Mandatory enrollment based on Harper assessment test.

³Transfer credit in some programs. Check with college to which you intend to transfer.

Student Financial Assistance

Harper College offers a diversified and comprehensive financial aid program. Harper participates in the following:

Federal Programs

Federal Work Study (on and off campus)
Federal Perkins Loan
Armed Forces Tuition Assistance
Federal Supplement Educational Opportunity Grants
Pell Grant

State-Sponsored Aid Programs

Illinois State Scholarships and Monetary Awards
Stafford Loans
Illinois Military Scholarships
Department of Rehabilitation Services
Illinois National Guard Scholarships

Scholarships

Each year the Board of Trustees of Harper College offers to graduates of high schools within the Harper district a series of scholarships called Trustee Scholarships. The Trustee Scholarship will also be awarded to four students selected from the general College in-district population who are not recent graduates from one of the district high schools.

During the 1980-81 academic year, several scholarships for Harper students were established based primarily on academic achievement. The Harper College Educational Foundation "Award for Excellence" is the highest honor a Harper student can achieve. Application for this scholarship is open to students from all college degree programs who meet criteria of grade point average, service and faculty recommendation.

Students in the Technology, Mathematics and Physical Sciences Division may apply for scholarship awards from a fund established by the Division. Additional scholarships in this area of study have been provided by UOP, Square D Foundation, Northrop Corporation and Amersham Corporation. Academic achievement is a major qualification for these scholarships.

In addition, many private and public agencies are ready and able to assist the worthy college student. Funds are also available through local organizations such as women's clubs, Rotary and chambers of commerce.

Endowments/Scholarships

Amersham
Robert R. Randall
Kathleen Fagan Memorial
Glenda F. Nuccio Memorial
Donald G. Albrecht Memorial

Executive Secretary Scholarship
UOP Scholarship
Square D 2+1
Northrop Grumman Engineering Scholarship
Fine Arts Scholarship
HEBA Music Scholarship
Borg-Warner Transfer
Cunningham Memorial Mathematics Scholarship
Rotary Scholarship Fund
Motorola Award for Excellence
Lou Buchenot Scholarship
Building Codes Scholarship
Displaced Homemakers Scholarship
Sue L. Schultz Memorial Endowment Fund
Carol Zack Memorial Fine Arts Scholarship
Endowment
Harper Nursing Student Scholarship
Endowment Fund
James J. McGrath Humanities Scholarship
Endowment
Sears Fashion Merchandising Scholarship
Endowment
H. Gebert Science Scholarship Endowment
Joanne Heiny Nursing Scholarship
Sharlene Marchiori Memorial Scholarship
Pepper Engineering Scholarship
Humana Hospital Nursing Scholarship
Harper Employee Transfer Scholarship
Business/Social Science Staff Scholarship
Midge C. Smith Memorial Scholarship
Renee Windle Danforth Memorial Fine Arts
Scholarship
Roy Kearns Memorial Scholarship
Stephen Boettcher Memorial Engineering
Scholarship
Doriann E. Thompson Scholarship for Women
William Simpson Memorial/Wheeling Rotary
Scholarship for NEC
Timothy A. Kolze Memorial Scholarship
IACAC Scholarship
Architectural Technology Scholarship
GED Graduate Scholarship
Minority Access Scholarship
Henry Meier Scholarship
Heidenhain Corporation Scholarship
Kathy Johnson Award for Excellence in Nursing
Scholarship
Edward Moran Memorial Computer Science
Scholarship
Harper Cardiac Rehab Scholarship
John Louis Papandrea Memorial Scholarship for
Young Men
Cheryl M. Dwyer Memorial Scholarship
Eugenia S. Chapman Memorial Scholarship
Palanois Park Garden Club Scholarship
International Studies Student Scholarship

Scholarships that are available to transfer students are listed after the section entitled "Transfer to a Senior Institution."

There are many ways to put together needed college funds. Some students receive outright grants or scholarships for a portion of their expenses. Loans up to \$2,625 each academic year (interest free and no payments while the student is in college) can be obtained. Last but not least, jobs for students under work-study or other employment programs can be obtained to assist with college financing.

Many students utilize a package aid program combining funds from two or three sources to pay for their college education in addition to what they can expect to receive from their parents. More than 1,600 Harper College students are receiving some form of assistance in programs administered by the Office of Student Financial Assistance.

Students who plan to attend Harper College and have a need for financial assistance should take the following steps:

1. Submit an application for admission to Harper College.
2. Complete the following applications for financial assistance:
 - A. Financial Aid Form
 - B. Harper College Financial Aid Application

It is important to complete all these forms, as financial assistance can be received from several sources simultaneously.

State and federal financial aid programs have specific standards for academic progress which the student must meet in order to maintain eligibility. Contact the Office of Student Financial Assistance for academic requirements.

Emergency Short-Term Loans

Loans up to a maximum of \$50.00 may be obtained in the Office of Student Financial Assistance by Harper students for emergency expenses. These must be repaid in full within ten school days. There is no charge for this service and the money is generally available within 24 hours.

Short-Term Loans

Short-term loans may be obtained through the Office of Student Financial Assistance to cover 80 percent of the cost of in-district tuition. There is a \$15.00 charge for this service.

Veteran Services

Harper College maintains a full-time veterans' assistant who has responsibility for veteran enrollment certification.

Eligible veterans and servicepersons receive a monthly educational allowance to attend school. Veterans and servicepersons pursuing an approved program of study are eligible to apply for (VA) Work Study.

Illinois veterans should inquire about eligibility criteria for the Illinois Veterans Grant.

Harper has been designated as a Serviceperson's Opportunity College by meeting or exceeding the following criteria:

Uncomplicated and non-restrictive admission policies; providing for servicemen or women to pursue educational programs through courses offered on weekends, evenings and other nontraditional times; and offering maximum credit for educational experiences obtained in the Armed Forces.

The Veterans' Outreach Division actively seeks out "returning" veterans in the College district and provides veterans with information concerning College programs and curricula. They are also assisted in securing their rights, benefits and services available to them.

Questions concerning veterans' affairs should be directed to the Office of Student Financial Assistance, A364.

Weekend College

The Weekend College option allows students to earn college credit by attending classes on Friday evening, Saturday morning and afternoon and Sunday afternoon. See description under college credit programs for details.

Student Activities

A comprehensive activities program is available which includes a college/community program series of lectures, concerts, films, art exhibits and theater productions sponsored by a student-faculty Cultural Arts Committee; social programs of concerts, films, special events and other programs of interest sponsored by the student Program Board; student publications including the College newspaper, *Harbinger*, and a literary and visual arts publication, *Point of View*; a closed circuit student radio station, WHCM; speech activities; a student travel program; free legal and medical advice; student government; and a program for student leadership development. These programs are financed by student activity fees.

Numerous clubs are active, and students are encouraged to begin other organizations within the established guidelines. Among the clubs recognized are: Association of Legal Students, Astronomy Club, Bacchus, Biology Club, Brothers and Sisters in Christ, Chinese/American Club, Collegiate Illinois Association of the Deaf, Community Service Club, Computer Information Systems Club, Food Service Club, Future Secretaries Association, Gay, Lesbian, and Bi-Sexual Club, Geology Club, German Club, Harper College Dance Company, Harper's Bizarre Fashion Club, Hindu Student Association, Honors Society, Horticulture Club, Hot Steel Pan Club, International Students Club, Intersvarsity Club, Latinos Unidos, Learning Disabilities Advocacy Organization, Le Circle Francais, Literature Club, Muslim Student Association, Political Science Club, Pom Pon/Cheerleaders, Race Unity Club, Science Fiction and Fantasy Club, Sigma Delta Mu (Hispanic Honors Society), Spread Eagle Ski Club, Stop AIDS Harper, Student Nurses Association of Illinois, Video Games and CD-Rom Club, and Vision Club.

More detailed information is available in the student handbook/datebook.

Health Services and Wellness Programs

Academic achievement and a choice of educational goals are largely dependent upon the physical and emotional well-being of the student. The College's acceptance of this fact has meant the recognition of its responsibility to provide a health program equal to the health needs of the students.

The health service is directed by a registered nurse. A part-time physician is available on selected days in the health service to diagnose, treat and refer students as necessary. There are also medications available for treating minor illnesses, as well as testing for strep throat, mononucleosis, pregnancy, tuberculosis and sexually-transmitted diseases. Students are encouraged to use health service facilities when ill or injured as well as for confidential counseling and care regarding personal health issues. A rest area is available to students, faculty and staff. Community health resources are utilized for referral when necessary.

This office coordinates campus wellness activities including an annual community Wellness Week, various health-related programs and speakers and a college-wide drug education program.

Conduct

Harper College respects the civil rights and liberties of each member of the College community. A student conduct code has been established to insure these rights and responsibilities. All students are held to be informed of the rules pertaining to these rights and responsibilities which are printed in the student handbook/datebook.

Athletics

Harper College is a member of the North Central Community College Conference (N4C), which includes Triton, DuPage, Moraine Valley, Illinois Valley, Rock Valley and Joliet Junior College for the total membership of the conference.

In addition, Harper College is a member of the National Junior College Athletic Association (NJCAA), which has a membership of approximately 560 junior and community colleges throughout the United States.

Harper College participates in football, golf, women's tennis, basketball, women's basketball, wrestling, track, tennis, baseball, women's volleyball, women's softball, men's and women's swimming, and women's track and field.

An extensive intramural program is also available for the Harper students. Activities are promoted both on and off campus. To name a few, activities include flag football, bowling, tennis, water polo, billiards, track, wrestling, weight lifting, softball and floor hockey.

Food Service

The Harper Food Service offers breakfast and lunch Monday through Friday and dinner Monday through Thursday in the Dining Hall in Building A. Operating hours are as follows:

Monday through Thursday 7:30 am-6:30 pm
Friday 7:30 am-2:30 pm

Food Service also maintains food vending machines located in buildings throughout the campus, and a snack bar in Building J. Food Service also does on-campus catering for breakfasts, luncheons, dinners and special events. This service is available to faculty, staff and students. Call 847/925-6253.

Student Senate

The Student Senate is the student government body through which students are represented to the Board of Trustees, administration and faculty. Members are responsible for recommending the student activities budget which provides for a variety of social, cultural and recreational activities as well as special programs and services. They also act upon student concerns, appoint students to College committees, review and recommend changes in College policy, recognize student clubs and organizations, and in general promote student welfare.

Child Learning Center

The Early Childhood Education Program offers:

A Preschool Room with flexible scheduling for children of Harper students, faculty and staff. Children who are completely toilet trained and three through five years of age will be accepted on a first-come, first-served basis. The room is open Monday-Friday, 7:15 am-4:45 pm. Children can spend a maximum of five hours per day in the Center. Call for current fee information.

A preschool program for children of students, faculty, staff and the community at large. The children are registered for set sessions which coincide with Harper's calendar.

Advance registration is required for both programs, and early registration is advised as the centers often reach capacity. For more information, call 847/925-6262.

The Northeast Center Campus offers a child care room with flexible hours daily when College is in session, if there is sufficient enrollment to maintain staffing, for parents attending a class or workshop. Morning preschool for the community is also available. For more information, call 847/537-8660.





Continuing Education and Community Services

Continuing Education

Job Skills Training

General Studies Certificate Requirements

Vocational Skills Certificate

University Extension Courses

Northeast Center – Extension Sites

Weekend Services

Children's and Young Adult Programs

Office of Community and Program Services

Older Adult Programs

Volunteer Management

Continuing Education Information Specialist

Workforce and Professional Development

Continuing Education

A lifelong pursuit of learning is needed to keep abreast of the knowledge explosion and the influence of social and cultural changes. The continuing education department of each division makes available to the community a rich array of continuing education courses, seminars and short-term programs that encourage lifelong learning and help students meet their professional, career, civic and personal development goals.

In addition, the Office of Community and Program Services (847/925-6591) assists other divisions and departments in meeting community needs.

Liberal Arts

The Continuing Education–Liberal Arts Division offerings allow individuals to participate in a variety of learning experiences in the areas of career, civic and personal development, enabling them to expand their cultural and personal awareness as well as their knowledge base.

Courses and seminars are offered in career enrichment, international education, field studies/travel leisure, cultural awareness, and home and family. These offerings enable students to expand their cultural and personal awareness as well as their knowledge base.

The Northwest Cardiac Rehabilitation Center

The Northwest Cardiac Rehabilitation Center (NCRC) on Harper's campus offers a comprehensive rehabilitation program for individuals with heart disease and other cardiovascular limitations. The primary purpose of the center is to support the private physician in safely and effectively returning the cardiac patient to a productive and enjoyable lifestyle.

Older Citizen Program

Existing services and programs are available to persons 50 years and older. The program promotes continuing education and credit classes of interest to them.

District residents ages 60-64 are eligible for reduced tuition rates, but not fees, for specially designated courses and workshops offered by the College. District residents 65 and older may attend tuition-free when space is available at late registration. Senior citizens will be charged for material and lunch fees when applicable. Some programs are placed at locations in the community, including senior citizen centers, churches and nursing homes. Other services of the College, including the Student Development Center, Dental Hygiene Clinic, Cardiac Rehabilitation Center and Learning Resources Center are all open to senior citizens. Older persons are welcome and encouraged to

attend cultural events sponsored by the Student Activities office. There may be nondiscounted service charges or fees.

For further information, please contact the Office of Community and Program Services, 847/925-6591.

Life Science and Human Services

Covering a broad spectrum of learning opportunities, offerings in this area are of interest to individuals in the allied health care field, the green industry or cosmetology. In addition, classes are offered in personal enrichment, health wellness for seniors, personal and family health management, criminal justice, small vehicle maintenance, child care and biology. For further information, please contact the Coordinator of Continuing Education, Life Science and Human Services Division, 847/925-6685.

Basic Nurse Assistant

The Basic Nurse Assistant Training Program is a 16-week non-degree program designed to provide the student with education and experience in assisting the professional nurse. Training will include the development of basic nursing skills through lectures, laboratory demonstration and practice and clinical experience. The program is certified by the Department of Public Health of the State of Illinois. Students who successfully complete the program receive a Harper College certificate with a State Seal and are registered with the Department of Public Health to be eligible to take the state certification examination.

High school students can take this course through the Northwest Suburban Career Cooperative for high school credit. Further information may be obtained from high school counselors or by calling Harper College, 847/925-6591.

Landscape, Garden and Floral Program

The objective of the continuing education offerings in the Landscape, Garden and Floral Program is to present to the homeowner, hobbyist and those currently employed in the green industry information about floral designing, caring for plants, gardening and landscaping.

For further information, please contact the Coordinator of Continuing Education, Life Science and Human Services Division, 847/925-6687.

Cosmetologist

The Cosmetology Program prepares candidates for the Illinois licensing examination for beauticians. Students who complete the 1500-hour program successfully will be able to demonstrate skills in hair dressing and treatment, skin and nail care and personal grooming.

Curriculum: The curriculum consists of five, 16-hour courses totaling 300 hours per semester. The final course prepares students for the state licensing examination through review and testing in the theoretical and practical aspects of the training.

Specific Eligibility Requirements: Admission to levels two through five is contingent upon successful completion of the previous level. Applicants to the program must be at least 16 years old and must pass an entrance examination.

High school students in Districts 211 and 214 may take these courses through the Northwest Suburban Career Cooperative for high school credit. They should contact a high school counselor for additional details.

Women's Program

The Women's Program works to facilitate the education and understanding of women's issues. Our classes focus on how individuals can work to facilitate change within themselves and their community and how they can participate more effectively in their chosen roles.

Wellness and Human Performance

Harper College offers more than 100 continuing education courses which provide specialized opportunities for individuals to learn and improve their physical lifestyles.

Both preventive and rehabilitative services are available with an excellent trained staff of exercise physiologists to assist individuals in determining their appropriate fitness training needs.

Vocational and Personal Skills

Short-term intensive job training is provided to meet local labor market needs plus courses designed for persons looking for a new or second career and for those who wish to upgrade or enhance their current job skills, or review for graduate school exams.

Intensive Job Skills

Intensive Job Skills consists of offerings especially designed to prepare the participants for a specific job entry within a relatively short time. Participants are counseled into the offerings individually, and job placement assistance is provided upon completion of the program. Typical job skills programs are Travel Agent and Certified Financial Planner.

Office Careers Seminars

These are designed to keep the administrative/secretarial and clerical personnel current in such areas as word processing, management skills that are used at the administrative/secretarial level, business correspondence, stylistic and technical changes, interpersonal skills and other support functions. Certificates are awarded for completion of each offering.

Travel Agent/Reservationist

The Travel Agent/Reservationist Program is an intensive, entry level job skill training program designed to prepare individuals for beginning employment with travel agencies or airlines. Emphasis is placed on learning the basic rules and regulations governing passenger travel, travel services, sales promotion, computer ticketing and marketing.

Curriculum: The curriculum consists of a 16-week day program or a 32-week evening course. An internship is available and is conducted in an actual work environment.

Specific Eligibility Requirements: Permission of counselor based on a preadmission interview.

Occupational Upgrading

Offerings and seminars in areas such as Office Skills, Hospitality, Insurance and Real Estate are designed to address the latest educational needs. Call 847/925-6591.

Test Reviews

Included in this series are the LSAT, GRE, GMAT and offerings related to test anxiety.

Job Skills Training

Courses are offered in various time frames and may require practicums or internships in agencies. In some programs, completion of the course work leads to certification or licensure by the State of Illinois.

Certificate in Volunteer Management Program

An opportunity to build credentials by taking several classes in a certificate program — or as independent classes.

Community and Program Services

The Office of Community and Program Services provides information and assistance for continuing education, extension sites, weekend college, older adult programs and children's programs. It is also the center for high school co-op programs. Call 847/925-6591.

University Extension Courses

Undergraduate and graduate level instruction may be offered at Harper College through extension courses from various four-year colleges and universities. Some of these courses may be offered at the Northeast Center and Barrington High School in addition to Harper's main campus. For more information, call 847/537-8660.

Extension Centers

Harper College operates seven major and more than 50 minor neighborhood centers as a convenience to students. A wide variety of credit and continuing education courses are available at these extension centers. The largest of these, the Northeast Center (847/537-8660), is located at 1375 South Wolf Road in Prospect Heights. This center features 29 classrooms, seven computer labs, four electronic labs and a preschool. The Career Transition Center (847/459-8233) is also located there.

Offerings at the Northeast Center include courses from all academic divisions. Word processing, spread sheet, data base and other computer skills are taught in the computer labs.

Classroom space and audiovisual equipment may be rented by businesses and community groups for educational purposes. (847/537-8660)

Office hours are from 8:30 am-9:00 pm Monday through Friday when classes are in session. The main office is open on Saturday. Call the Center at 847/537-8660 for more information.

High School Orientation Program (Co-op)

The High School Orientation Program provides opportunity for high school students from Districts 211, 214 and 220 to earn high school credit while exploring the requirements and skills needed for selected career areas. Career study areas include Health Occupations, Food Service, Law Enforcement, Refrigeration/Air Conditioning, Nurse's Aide, Fashion Merchandising and Fire Science.

For further information, call 847/925-6654.

Workforce and Professional Development

Corporate Services

On-site Training for Business and Industry

The goal of Corporate Services is to make it simple to fulfill the varied training, professional development and business requirements of your organization. Corporate Services offers the training solution or resource that complements the strategic goals of each organization.

Training is offered at the location of the client. Customized, flexibly-scheduled credit and non-credit courses and professional development seminars are offered.

Corporate Services monitors workplace and business trends to identify and provide high-quality workforce training. For more information on how Corporate Services can assist your organization in gaining the competitive edge through workforce development, call 847/925-6141.

Business and Professional Development

Starting and Building a Business

How to start and develop a business is presented through seminars/workshops and courses including how to start, how to market, and how to finance, what records to keep and a variety of other relevant topics. One-to-one counseling for business owners is also provided as a free service to our small business community.

Computer Training

All current software is taught in a weekly format or a one-day seminar format on all platforms. Topics include basic computing, spreadsheets, word processing, databases, graphics and desktop publishing.

Institute for Supervisory/Management Development

Studies include such basics as fundamentals of management, leadership training, quality control, finance and accounting procedures for the non-financial manager, business writing, interpersonal skill development and the key area of computer training.

Materials/Logistics Management Seminars

Courses are offered in material requirement planning, just-in-time procedures, inventory control, production control, physical distribution, receiving and shipping, warehousing and purchasing. Certificates are awarded for completion of each offering. Purchasing professionals may earn CPM points. Materials/logistics managers may earn CEUs.

Professional Sales and Marketing Institute

The Professional Sales and Marketing Institute offers the opportunity to learn how to become a sales representative, how to increase sales, build customer service, learn winning marketing approaches and advances in technology for salespersons.

International Trade Opportunities

This program provides the "how-to's" of importing and exporting. Learn the basics of importing or exporting, regulations applying to import and export processes and international financial requirements. Focus is placed on specific regions or countries which are important to global trade.

For additional information, call 847/925-6854.

CAD and Manufacturing Center

The CAD and Manufacturing Center provides hands-on, industry related technical skills training to meet the needs of the workplace. Technical courses are scheduled in a short-term, intensive training format for the convenience of working adults.

The manufacturing programs cover topics from the shop floor, such as SPC and blueprint reading to senior management level topics such as ISO 9000 Implementation and Registration.

Computer Aided Design (CAD) courses utilizing AutoCAD and Intergraph MicroStation PC software are available at a variety of levels for experienced drafters, designers, engineers and architects wishing to upgrade their skills to master the latest computer technology. The CAD Center is an Authorized AutoDesk Training Center, which assures industry experienced instructors and training on the most current software versions available.

For more information, call the CAD and Manufacturing Center at 847/925-6996.

Operating and Networking Systems Training

This program is designed for the professional/technical person who will install, configure and maintain operating and networking systems for one of the four products listed below. We offer a series of training classes for Microsoft NT, Unix System V and Novell Netware and Unixware Certified Engineering Programs (CNE).

The NT and CNE programs are authorized by Microsoft and Novell respectively, and are taught by certified instructors using the actual course materials and training outlines developed by these companies. The classes are designed to assist students in passing the certification exams of Microsoft and Novell.

Novell classes are conducted in partnership with an outside training company, PCDC, and are presented at several sites away from the Harper campus.

All of the classes provide lectures, tutorials and hands-on laboratory exercises that develop skills to give participants real-world experiences in installing, configuring and maintaining the systems. Upon completion of the programs, participants are expected to be competent entry-level system administrators and engineers. For more information, call 847/925-6996.

Workforce English as a Second Language and Basic Skills

The Workforce English as a Second Language (ESL) and Basic Skills Department fulfills the need for customized, on-site English as a Second

Language training for business and industry. Affordable classes for all levels, from beginning to advanced, are available to accommodate the individual needs of each company at its location. Employees' listening, speaking, reading and writing English proficiencies are evaluated. Our staff will design an English curriculum to meet the special needs of your industry and your workforce. Workforce ESL and Basic Skills programs will enable your employees to understand safety regulations and company policies, ask questions and give clear answers, understand directions, communicate better with co-workers, complete written forms and develop job/business related vocabulary.

In addition to basic and intermediate courses, we offer programs for advanced non-native English speakers in American business culture, business idioms and business grammar. Additional information is available by calling 847/925-6701.

Northwest 2001 Economic Development

Northwest 2001 is a volunteer coalition of community leaders whose mission is to raise public awareness and build a regional partnership to address issues impacting the northwest suburbs. Now an official non-profit organization, Northwest 2001 initiates discussion and builds alliances to address the needs of business, education, social service and civic organizations in the region. Additional information is available by calling 847/537-5196.

Northwest Leadership Academy

Created in the fall of 1986 by the Northwest Suburban Association of Commerce and Industry (NSACI), the Northwest Leadership Academy is currently cosponsored by Harper College. The Academy seeks to develop a source of informed civic-oriented leaders who are interested in directing the future of the northwest suburban area. This will be accomplished by assembling current and emerging leaders from diverse backgrounds and experiences and involving them in a series of thought-provoking educational programs. For additional information, call NSACI at 847/517-7110.

Community Counseling Center

Harper's Community Counseling Center makes psychological and career counseling services available to non-student residents of the community, on a fee basis.

The function of the center is to provide an evaluative, diagnostic and psychotherapeutic service for adults and adolescents with personal, social or emotional problems. The broad gamut of problems the staff works with includes marital discord, divorce adjustment, sexual problems, family relationships and drug-related problems.

The Community Counseling Center is located in Building P, Room 124. Further information may be obtained by calling Community Counseling at 847/925-6577.

Career Transition Center

The Career Transition Center provides outreach services to local businesses and residents. The center offers:

- Career counseling and workshops to assist individuals who have lost their jobs, are looking for a job or career change or want to manage their current career successfully.
- Corporate Career Services to assist companies and organizations desiring career development or outplacement for their employees.

The Career Transition Center is located at the Northeast Center. For further information, call 847/459-8233.

Weekend Services

For detailed weekend course and event information on resources, contact the Office of Community and Program Services, 847/925-6591. The reception desk (C102) and information resources are usually available through this office if other offices are closed.

Youth programs, extension potentials, Certificate Volunteer Management programs and the older adult program are administered through the Office of Community and Program Services. A continuing education information specialist is available to help you with specific continuing education questions at 847/925-6652.



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Associate Degrees

Harper College offers three associate degrees, two of which are designed for students who will transfer to a four-year college or university to complete a bachelor's degree. These are the Associate in Arts (A.A.) and the Associate in Science (A.S.) degrees, which comprise the first two years of study toward degrees in a broad range of arts-related or science-related disciplines.

The third, the Associate in Applied Science (A.A.S.) degree, is awarded upon completion of a two-year career program, designed to prepare the graduate for immediate entry into a specific career field.

In addition to the graduation requirements listed below, each degree has its own requirements for credit hours to be completed in various groups of courses. These requirements are shown on three separate charts in this section of the Bulletin.

Graduation Requirements

1. For associate degrees, attainment of a minimum of 60 semester hours of credit, at least 30 of which must be earned in attendance at Harper College and be in courses numbered 100 or above. For certificates of completion, 50% of required credit hours must be earned at Harper. Up to two hours credit in physical education activity courses (100 level) may be included as free electives in the minimum 60 required hours for an associate degree. A maximum of four semester hours of Independent Study credit may be included as free electives in the minimum 60 required hours for an associate degree.
2. Attainment of a minimum grade point average of 2.0 for all work required for the associate in arts and the associate in science degrees. Attainment of a minimum grade point average of 2.0 for any applicable 60 semester hours work for the associate in applied science degree and certificates.
3. Meet the constitution requirement of the Illinois State School Code. This can be met by (1) submitting an official Illinois high school transcript stating the requirement has been met, or (2) successfully completing PSC 101, or (3) passing a college administered test of the U.S. Constitution, Illinois Constitution, the proper use and display of the American flag and the principles of American democratic government.
4. Requirement of 60 hours must be in courses numbered 100 or above for the degrees of associate in arts or associate in science. (Courses below 100 level may be used only where A.A.S. program requires.)

5. Fulfillment of appropriate associate degree requirements as listed in the College catalog at the time the student first enrolled or any catalog thereafter except for courses no longer offered.

6. In addition to the above requirements, students enrolled in a specific career program will fulfill the requirements outlined in that program. Any changes in program requirements necessitated by licensing and/or accrediting agencies must be observed by students who are already admitted and in process in their programs.

7. A student must petition for graduation and pay the graduation fee of \$15.00. Notification of the student's intent to graduate will be accepted in the Registrar's Office no later than one week after the midterm of the semester in which the student intends to graduate. Students are encouraged to participate in the formal graduation ceremony in May. Students are encouraged to complete their petition for graduation when registering for the semester in which their graduation requirements will be fulfilled.

Transfer Programs

An important role of a community college is to provide programs of study allowing students to complete requirements for the first two years of a baccalaureate degree. Harper defines these programs as transfer programs.

As a guide for the student, the following programs of study leading to the associate in arts or associate in science degrees are recommended.

The programs are "recommended" in the sense that they are planned to provide students with the specific requirements of Harper's transfer degrees and the general requirements of the freshman and sophomore years of most colleges and universities.

Transfer students are responsible to know the specific requirements of the institutions they are considering for transfer. Catalogs may be obtained from those schools. Resource materials and counseling assistance are available in Harper's Student Development Centers I and D.

Recommended programs of study are provided for the following areas:

- Art
- Biological Sciences
- Business Administration
- Communications
- Computer Science
- Education
- Engineering
- Foreign Languages
- Health Education

Liberal Arts
Music
Physical Education
Science or Mathematics
Social Science

For other areas of interest, please contact a Student Development Center for assistance.

Transfer Compact Agreements

Some four-year colleges accept the associate in arts or associate in science degrees as meeting all lower division general education requirements and grant automatic junior standing upon transfer. Students may have to meet additional requirements for some majors at these colleges. Contact a Student Development Center for more information. Schools with which Harper has a compact agreement are:

Barat College
Eastern Illinois University
Governors State University
Illinois State University
Northeastern Illinois University
Northern Illinois University
Southern Illinois University
University of Illinois at Springfield
Western Illinois University

Other Transfer Agreements

In addition to the Compact Agreement, Harper College has developed course transfer agreements with the following public and private colleges and universities.

Alverno College
Bradley University
Chicago College of Pharmacy
College of St. Francis
Columbia College–Chicago
Concordia University
DePaul University
DeVry Institute of Technology
Drake University
Elmhurst College
Illinois Benedictine College
Illinois Institute of Technology
Kendall College
Lake Forest College
Lewis University
Loyola University
Loyola University of Chicago School of Nursing
Marquette University
Michigan Technological University
Milwaukee School of Engineering
National College of Chiropractic
National Louis University
North Central
Quincy University

Robert Morris College
Roosevelt University
Rosary College
Rush University
St. Joseph's College
St. Mary's College
St. Xavier University
University of Illinois–Chicago
University of Illinois–Champaign/Urbana
University of Iowa
University of Southern California

Contact the Student Development Center in D142 or 1117 for more information.

Transfer to a Senior Institution

Baccalaureate-oriented credits earned at Harper College are transferable to other institutions of higher learning. Students intending to transfer to other institutions should consult with that institution directly. In addition, students should make an appointment with a student development faculty member at Harper College.

Ideally students should see a counselor to discuss their transfer plans prior to registering for courses each semester. In most cases students are better served by earning an A.A. or A.S. degree before transfer.

Harper-Designated Transfer Scholarships

The following colleges and universities have scholarship resources specifically for Harper College. Information is available in the Office of Student Financial Assistance.

Aima College, Alma, Michigan
Beloit College, Beloit, Wisconsin
Bradley University, Peoria, Illinois
DePaul University, Chicago, Illinois
Drake University, Des Moines, Iowa
Illinois Institute of Technology, Chicago, Illinois
(a) General
(b) School of Business Administration
Kendall College, Evanston, Illinois
Knox College, Galesburg, Illinois
Loyola University, Chicago, Illinois
Ripon College, Ripon, Wisconsin
Roosevelt University, Chicago and Arlington Heights, Illinois

Requirements for Associate in Arts Degree (A.A.)

	Semester Hours	Courses in This Group											
Group 1 Communications	9	ENG		SPE									
		101	101										
		102											
Group 2 Mathematics and Natural Sciences	10	Mathematics					Science						
		MGT	MTH		AST	BIO	CHM	GEO	PHS	PHY			
		225	103	165	101*	101	140*	100*	101*	101	121*		
A minimum of 3 hrs. must be from mathematics and a min- imum of 7 hrs. from the sci- ences. One course must be a lab science. Lab sciences are marked with an *			104	200		103	150*	110*	102*	105	122*		
			120	201		104*	151*	121*	201*	111*	201*		
			124	202		105	152*	122*		112*	202*		
			130	203		110*	153*	131*					
			134	212		120*	154*	132*					
			265										
Group 3 Humanities	9	ART	FNA	FRN	GER	HST	HUM	LIT	MUS	PHI	SGN	SPA	SPE
		105	111	101	101	111	101	105	217	101	105	101	107
Courses in this group must be selected from at least two departments.		110	112	102	102	112	102	110	219	103	110	102	111
		111	113	201	201	121	110	112	221	104	115	201	212
		121	114	202	202	141	115	115	222	120	120	202	202
		122		205	205	142	120	206	224	223	150	205	205
				210	210	151		207	231	224	160	210	210
						152		208	232		170		
						153	JPN	210	241		180		
						210	101	216			205		
						214	102				210		
						243	201	LNG			220		
							202	105			231		
											232		
Group 4 Social Sciences	9	ANT	ECO	EDU	GEG	LNG	PSC	PSY	SOC				
		101	200	211	101	205	101	101	217	101			
Courses in this group must be selected from at least two departments.		202	211		103		220	145	218	120			
		203	212		104		250	150	220	150			
		205	225		108		270	210	225	205			
		206			210			216	228	210			
		207							230	215			
		208							235	220			
		220								230			
Group 5 Contemporary Studies and Life Skills	6	ART	CIS	CSC	MTH	ORN	PHI	PSC	RDG				
		201	100	121	108	101	115	101	105				
		206	101	122	MUS		120	210					
		225	130	208	130	PED	150	220	SOC				
		236	142	211	136	100**	170	250	120				
		240	150	215	140	160**	180	260	205				
		261	160	DIT	145	162**	205	270	230				
		291		101	150	167**	210						
		296	CRJ	ECO	165	201		PSY	SPE				
			101	115	166	203	PHS	106	115				
			BIO	JNM	167	205	105	107	180				
			103	CWE	234	169	207	108	205				
			105	220	MGT	180-199		228	216				
A maximum of 3 CWE credit hours may be used.			136	221	111	280-299							
Total General Education	43												
Group 6 Electives	17	Courses must be selected from:											
From the list of approved elective courses on page 54.		1. Extra credit hours from Group I-V from the A.A. or A.S. degrees.											
		2. Up to 10 credit hours from 100 or 200 level courses from any department or up to 10 credit hours of any associate degree credit courses.											
Total Hours Required	60												

**Up to two (2) hours of PED activity courses (100 level courses) listed above may be included as either Group 5 or Group 6 electives.

Requirements for Associate in Science Degree (A.S.)

	Semester Hours	Courses in This Group											
Group 1	9												
Communications		ENG	SPE										
		101	101										
		102											
Group 2	20	Mathematics					Science						
Mathematics and Natural Sciences		MGT	MTH	AST	BIO	CHM	GEO	PHS	PHY				
A minimum of 6 hrs. must be from mathematics and a minimum of 8 hrs. from the sciences. One course must be a lab science. Lab sciences are marked with an *.		225	103	201	101*	101	150*	100*	101*	101	107		
			104	202		103	151*	110*	102*	105	122*		
			124	203		104*	152*	121*	201*	111*	201*		
			134	212		105	153*	122*	202*	112*	202*		
			165	265		110*	154*	131*			203*		
			200			120*	160*	132*					
						130*	161*	201*					
						135	210*	204*					
						136	220*	205*					
						140*	240*	210*					
Group 3	6	ART	FNA	FRN	GER	HST	HUM	LIT	MUS	PHI	SGN	SPA	SPE
Humanities		105	111	101	101	111	101	105	217	101	105	101	107
Courses in this group must be selected from at least two departments.		110	112	102	102	112	102	110	219	103	110	102	102
		111	113	201	201	121	110	112	221	104	115	201	201
		121	114	202	202	141	115	115	222	120	120	202	202
		122		205	205	142	120	206	224	223	150	205	205
				210	210	151		207	231	224	160	210	210
						152		208	232		170		
						153	JPN	210	241		180		
						210	101	216			205		
						214	102				210		
						243	201	LNG			220		
							202	105			231		
											232		
Group 4	6	ANT	ECO	EDU	GEG	LNG	PSC	PSY	SOC				
Social Sciences		101	200	211	101	205	101	101	217	101			
Courses in this group must be selected from at least two departments.		202	211		103		220	145	218	120			
		203	212		104		250	150	220	150			
		205	225		108		270	210	225	205			
		206			210			216	228	210			
		207							230	215			
		208							235	220			
		220								230			
Group 5	3	ART	CIS	CSC	MTH	ORN	PHI	PSC	RDG				
Contemporary Studies and Life Skills		201	100	121	108	101	115	101	105				
		206	101	122	MUS		120	210					
		225	130	208	130	PED	150	220	SOC				
		236	142	211	136	100**	170	250	120				
		240	150	215	140	160**	180	260	205				
		261	160	DIT	145	162**	205	270	230				
		291		101	150	167**	210						
		296	CRJ	ECO	165	201		PSY	SPE				
			101	115	166	203	PHS	106	115				
			BIO	JNM	167	205	105	107	180				
		103	CWE	234	169	207		108	205				
A maximum of 3 CWE credit hours may be used.		105	220	MGT	180-199			228	216				
		136	221	111	280-299								
Total General Education	44												
Group 6	16	Courses must be selected from:											
Electives		1. Extra credit hours from Group I-V from the A.A. or A.S. degrees.											
From the list of approved elective courses on page 54.		2. Up to 10 credit hours from 100 or 200 level courses from any department or up to 10 credit hours of any associate degree credit courses.											
Total Hours Required	60												

**Up to two (2) hours of PED activity courses (100 level courses) listed above may be included as either Group 5 or Group 6 electives.

Associate in Arts (A.A.) and Associate in Science (A.S.) Degree Programs Approved Elective Courses

Course or credit hours for Group 6 electives must come from:

1. The list of approved elective courses on this page.
2. Any additional course listed in Group 1 through Group 5 for either the A.A. or the A.S. degree as long as the course is not being used to satisfy a Group 1 through Group 5 requirement.
3. Up to 10 hours of any associate degree credit course.

ACC	ANT	CCA	CRJ	DIT	ECO	EGR	ENG	HPI	JNM	MGT	MKT
101	209	102	201	110	210	100	103	102	130	218	245
102	250	219	202			120	130		131	225	
201	255		205		EDU	121	201	HRT		226	MTH
202			210		201	122	220	110		275	107
203	ART		220		202	210					206
211	100					211		IDS			
212			CSC			212		290			
213			216			260					
			217			262					
						270					

	MUS		PED***		RDG	SGN
102	211	All 100 level		106	103	
111	212	courses			104	
112	215	200	228			
115	216	206	230		SPE	
116	265	208	240		102	
161	266	209	241		213	
162	271	210	242			
163	272	220	243			
168		222	244			
		224	246			
		226	270			

***Up to two (2) hours of PED activity courses (100 level courses) may be included as either Group 5 or Group 6 electives.

Harper College Career Programs

Harper College offers the following career/vocational programs. Both associate in applied science degree and certificate programs are offered except where indicated. Each program of study is a required one, intended to prepare students for a specific type of employment immediately. Additional programs available through agreements with other colleges are listed under Cooperative Programs.

Accounting Aide
 Accounting Clerk¹
 Accounting—Payroll, State and Local Taxes¹
 Administrative Assistant¹
 Architectural Technology
 Automation Skills¹
 Banking and Finance¹
 Banking and Savings Association Management²
 Bread and Pastry Arts¹
 Building Codes and Enforcement¹
 Business Information Management
 CAD Technician¹
 *Cardiac Technology²
 Certified Professional Secretary¹
 CNC Technician¹
 Commercial Credit Management²
 Computer Information Systems—C Programming¹
 Computer Information Systems—Computer Operator¹
 Computer Information Systems—Microcomputers in Business
 Computer Information Systems—Midrange¹
 Computer Information Systems—Technology
 Criminal Justice
 Culinary Arts¹
 *Dental Hygiene²
 Dietary Manager¹
 Dietetic Technician²
 Digital Electronics and Microprocessor Technology
 Early Childhood Education²
 Early Childhood Education Certificates:
 Before/After School Care
 Early Childhood Administrator
 Early Childhood Education Assistant Teacher
 Early Childhood Education Teacher
 Infant/Toddler
 Special Education Para-professional
 Electrical Maintenance¹
 Electrocardiograph Technician¹
 Electronics Technology
 *Emergency Medical Technician
 Executive Secretarial Development
 Fashion Design
 Fashion Merchandising²
 Financial Management²

Financial Institution Management
 Fire Science Technology
 General Office Assistant¹
 Health Insurance Coder¹
 Hospitality Management
 Hotel Management¹
 Human Resource Management¹
 Industrial and Retail Security¹
 Insurance
 Interior Design²
 International Business
 Journalism²
 Journalism Certificates:
 Media Design
 Media Writing
 Media Writing and Design
 Legal Secretary
 Legal Technology
 Machinist¹
 Manufacturing Technology²
 Marketing²
 Materials/Logistics Management
 Mechanical Drafting¹
 Mechanical Engineering Technology²
 Medical Office Assistant
 Medical/Dental Secretary
 Medical Transcriptionist¹
 *Nursing
 Park and Grounds Operation Management²
 Park and Grounds Certificates¹:
 Arboriculture
 Golf Course Management
 Grounds Equipment Operator
 Nursery Operations
 Turfgrass Management
 *Pharmacy Technician¹
 Phlebotomist¹
 Plant Science Technology²
 Plant Science Certificates:
 Floral Design
 Garden Center Operations
 Greenhouse Operations
 Grounds Maintenance
 Landscape Design
 Master Floral Design
 Pesticide Applicator
 Plant Propagation
 Production Engineering Technician¹
 Production Welding¹
 Quality Assurance¹
 Real Estate²
 Real Estate Appraisal¹
 Real Estate Business Ownership¹
 Real Estate Investment¹
 Real Estate License Preparation¹

(cont.)

Refrigeration and Air Conditioning
Refrigeration and Air Conditioning Certificates:
Heating Service
Refrigeration Service
Refrigeration and Air Conditioning Service
Residential Comfort Systems

Retail Merchandising¹

Sales Management and Development¹

Secretarial

*Sign Language Interpreting¹

Small Business Management

Supervisory and Administrative Management

Word Processing Specialist¹

*Enrollment in program is limited. See Limited Enrollment Programs section of this catalog for guidelines.

¹Certificate program only.

²Associate degree program only.



Requirements for Associate in Applied Science Degree (A.A.S.)

	Semester Hours	Courses in This Group											
Group 1	6	ENG		JNM		SPE							
Communications		100	103	130	101								
ENG 101 or 130 and a second course, as approved for your curriculum		101	130	131									
		102		133									
Group 2	3	MGT			MTH								
Mathematics		150	060	086	105	130	202						
The mathematics requirement may be satisfied by demonstrated competency on an exam given by the College.*			061	087	106	134	206						
			062	100	107	165							
			063	103	120	200							
			080	104	124	201							
9 hrs. must be taken from a minimum of two of Groups 3, 4 and 5.													
Group 3		AST		BIO		CHM		DIT	GEO	PHS	PHY		
Natural Sciences		101	101	150	100	131	101	101	101	101	101		
			103	151	110	132		102	105	102			
			104	152	121	201		201	111	121			
			105	153	122	204		202	112	122			
			110	154	125	210				201			
			120	160						202			
			130	161									
			135	210									
			136	220									
			140	240									
Group 4		ART	FNA	FRN	GER	HST	HUM	LIT	MUS	PHI	SGN	SPA	SPE
Humanities		105	111	101	101	111	101	105	101	105	101	101	107
		110	112	102	102	112	102	110	103	110	102	102	111
		111	113	201	201	121	110	112	104	115	201	201	212
		121	114	202	202	141	115	115	120	120	202	202	216
		122		205	205	142	120	206	130	150	205	205	
		201		210	210	151		207	136	160	210	210	
		206				152		208	140	170			
		225				153	JPN	210	145	180			
		236				210	101	216	150	205			
		261				214	102	217	165	210			
		291				243	201	219	166	220			
		296					202	221	167	231			
								222	169	232			
								224	180-				
							LNG	231	199				
							105	232					
								241					
Group 5		ANT	ECO	EDU	GEG	LNG	PSC	PSY	SOC				
Social Sciences		101	115	211	101	205	101	101	217	101			
		202	200		103		220	107	218	120			
		203	211		104		250	108	220	205			
		204	212		108		270	145	225	210			
		205	225		210			150	228	215			
		206						210	230	220			
		207						216	235	230			
		208											
		220											
Total General Education	*15-18												
Group 6													
Technical Requirements and Electives	42-45												
Total Hours Minimum	60**												

*In addition to the above requirements, students enrolled in a specific career program must fulfill the requirements outlined in that program. Any changes in program requirements necessitated by licensing and/or accrediting agencies must be observed by students who are already admitted and in process in programs.

Cooperative Programs

Harper College has Joint Educational Agreements with various area colleges. Under these agreements, Harper district residents who are admitted to the programs listed below will usually be allowed to attend at the sponsoring college's in-district tuition rate.

The cooperating college will issue all degrees or certificates for successful completion of the program. Program and admission information may be obtained by calling the Director of Admissions at the college offering the program, as listed below.

College of DuPage 708/858-2800

Lambert Road and 22nd Street
Glen Ellyn, Illinois 60137

Advertising Design and Illustration
Automotive Technology
Communication Art and Sciences
Graphic Arts
Hotel/Motel Management
Human Services
Library Technical Assistant
Media
Medical Records Technology
Nuclear Medicine
Occupational Therapy Assistant
Photography
Plastics Technology
Radiologic Technology
Respiratory Therapy Technician
Supermarket Management
Travel and Transportation

College of Lake County 847/223-6601

19351 West Washington Street
Grayslake, Illinois 60030

Auto Body Repair and Painting
Automotive Technology
Building Construction Technology
Chemical Technology
 Bio-Tech Option
 Chem-Tech Option
Civil Technology
Health Information Technology
Human Services Technology
Library/Media Technology
Mechanical Maintenance/Repair
Medical Laboratory Technology
Production Management Technology
Radiography
Registered Nurse Refresher
Rehabilitation Nursing
Technical Communications
Tool and Moldmaker
Water/Wastewater
Welding—Advanced

Elgin Community College 847/697-1000

1700 Spartan
Elgin, Illinois 60120

Automotive Service Excellence
Aviation Professional Pilot
CAM
Child and Youth Advocacy
Culinary Arts
Dental Assisting
Food Manufacturing Technology
Gerontology
Graphic Design
Machine Tool, Career Advanced Program
Machine Tool Operation
Machine Tool Technology
Mental Health Generalist
Plastics Processing and Fabricating
Plastics Technology
Substance Abuse
Surgical Technology
Travel and Tourism
Truck Driving
Truck Driving Owner/Operator
Welding

McHenry County College 815/455-3700

Route 14 and Lucas Road
Crystal Lake, Illinois 60014

Agri-Business Service and Supply
Agricultural Business Technology
Automotive Technology
Industrial Supervision
 Technology
Industrial Work Measurement
Machine Apprenticeship
Photography¹
Small Business Specialist

Oakton Community College . . . 847/635-1600

1600 East Golf Road
Des Plaines, Illinois 60016

Automotive Service Excellence
Automotive Technology
Biomedical Electronics Technology
Electronic Servicing
Facilities Operation and Engineering
Health Information Technology
Human Services
Investment Economics and Analysis
Machine Technology Apprenticeship
Medical Laboratory Technology
Photography¹
Physical Therapy Assistant

¹courses only

Rock Valley College 815/654-4285
 3301 North Mulford Road
 Rockford, Illinois 61101

Aviation Maintenance Technology

Triton College 708/456-0300
 2000 Fifth Avenue
 River Grove, Illinois 60171

Automotive Technology
 Basic Addiction Counseling
 Dental Laboratory Technology
 Diesel Technology
 Laser Electro-Optic
 Machine Repair Specialist
 Magnetic Resonance Imaging
 Ophthalmic Technician
 Photo Offset
 Radiologic Technology
 Respiratory Care
 Surgical Technology¹

Harper College programs available to residents of other college districts under cooperative agreement are as follows:

Banking and Finance . . . DuPage, Lake County and McHenry County districts.
 Banking and Savings Association Management DuPage, Lake County and McHenry County districts.
 Bread and Pastry Lake County and Rock Valley districts.
 Building Codes and Enforcement . . . DuPage, Lake County, McHenry County and Oakton districts.
 Cardiac Technology . . . Elgin, Lake County and Triton districts.
 Certified Professional Secretary . . . Lake County district.
 CNC Technician McHenry County district.
 Commercial Credit Management DuPage, Lake County and McHenry County districts.
 Computer Information Systems—Computer Operator . . . McHenry County district.
 Criminal Justice² McHenry County district
 Culinary Arts Lake County, McHenry County, Oakton and Rock Valley districts.
 Dental Hygiene DuPage, Elgin, Lake County, McHenry County, Oakton and Triton districts.
 Dietetic Technician. . . . DuPage, Elgin, Lake County, McHenry County, Oakton and Triton districts.

Fashion Design Elgin, Lake County, McHenry County, Oakton and Triton districts.
 Fashion Merchandising Elgin, Lake County, McHenry County and Oakton districts.
 Financial Management Lake County and McHenry County districts.
 Fire Science Technology McHenry County district.
 Hospitality Management McHenry County district.
 Industrial and Retail Security DuPage, Lake County, and McHenry County districts.
 Insurance DuPage district.
 Interior Design Elgin, Lake County, McHenry County and Oakton districts.
 Journalism DuPage, Elgin, Lake County and McHenry County districts.
 Legal Secretary Lake County district.
 Legal Technology DuPage, Lake County, McHenry County, Oakton, Rock Valley and Triton districts.
 Materials/Logistics Management DuPage, Elgin, Lake County and McHenry County districts.
 Mechanical Engineering Technology McHenry County district.
 Medical Office Assistant DuPage, Lake County, McHenry County and Oakton districts.
 Medical/Dental Secretary DuPage district.
 Medical Transcriptionist McHenry County district.
 Nursing McHenry County district.
 Park and Grounds Operation Management DuPage, Elgin, McHenry County and Oakton districts.
 Plant Science Technology Oakton district.
 Sign Language Interpreting DuPage, Elgin, Lake County, McHenry County and Triton districts.

¹Technical courses only.
²Corrections courses only.

Pharmacy Technician	DuPage, Elgin, Lake County, McHenry County, Oakton and Triton districts.
Real Estate	Lake County and McHenry County districts.
Refrigeration and Air Conditioning Technology	McHenry County district.
Registered Nurse Refresher	Lake County district.
Sales Management and Development	DuPage district.
Supervisory and Administrative Management	DuPage district.

Telecourses

Credit courses in different disciplines are offered as telecourses for students who are self-motivated and can study independently. These courses, which are generally transferable, are shown over regular television on Channel 20 and/or cable. They are also available for viewing on the main campus, the Northeast Center in Prospect Heights and at certain local public libraries. Individual programs may also be checked out overnight for home use. Some of the telecourses can be rented for a fee. Courses are presently being offered in areas such as business, economics, gardening, history, philosophy, psychology, sociology, political science and health. Due to the costs incurred by offering these courses, a small fee is charged for each telecourse. For specific course titles and broadcast channels, check the current semester course schedule. For more information or a brochure, call 847/925-6586.

Distance Learning Classes

Credit classes from other institutions are available via two-way interactive video, transmitted live from two- and four-year institutions to a Harper classroom. Students who want to enroll in an interactive video class must apply to the institution offering the class and register at the institution offering the class. For specific information about interactive video courses offered at Harper College, check the course schedule or call 847/925-6457.

Weekend College Program

The Weekend College program (847/925-6591) provides college credit courses that are applicable to associate degree programs or can be taken for professional or personal growth.

Most courses are designed on a 12-session plus final exam format that allows students to achieve 16 weeks of credit in a shorter timespan. This is consistent with providing course opportunities for people with busy weekday or evening schedules.

Other courses are scheduled for 8 or 16 week-ends. A student may take several courses in the Weekend College schedule. Some classes may meet more than once on a weekend. There is now a five-year guaranteed plan to reach an associate degree by solely attending weekend classes.

Particular attention is given to credit courses with a concentration in business administration and liberal arts. However, a wide range of credit and continuing education courses is offered from many other departments. Weekend College is part of the Office of Community and Program Services.

International Studies Program

Harper College has joined in a consortium with 40 other community colleges, Illinois State University and several colleges in Wisconsin and Michigan to provide a semester abroad program for students at these institutions. This joint effort makes it possible for the colleges to offer a sound, viable academic program at reasonable cost, and allows qualified students to take advantage of the unique educational experience afforded through study in another country. Currently, programs are available in Canterbury, England, Salzburg, Austria, Amsterdam, Holland and San Jose, Costa Rica. Other opportunities include a new site in Japan and possibly China.

The Harper College International Studies Program was first offered in the spring of 1987. The sites in England and Austria will be offered each fall and spring. The program in Costa Rica is offered only in the summer. The program in Holland is offered in the spring only. To be eligible, a student must have completed 15 credit hours with a 2.75 grade point. Further information about the International Studies Program is available through Student Development, 1117, 847/925-6522.

Honors Program

Harper College seeks to stimulate, encourage and recognize work of depth, scope and originality by its students. A balanced curriculum of honors courses is offered in the major areas required for the General Education component of associate degrees.

Honors students enjoy the benefit of reduced class size and the challenge of social and intellectual interaction with other high achieving students while they acquire the breadth of understanding and develop leadership qualities that such settings enhance.

All honors courses are noted as such on the transcript. Additionally, upon fulfilling all other degree requirements, students who complete at least 12 hours of honors course work and maintain a GPA of 3.5 or higher will be designated as Honors Program graduates.

To be admitted to honors classes, students must meet specified criteria, complete an honors application, and have an interview with the coordinator of honors. Applications are available in the Office of Admissions, the Division offices and the Counseling Centers.

The College also offers several scholarships based primarily on academic achievement. (See Financial Aid section.)

English as a Second Language

English as a Second Language (ESL) courses are for individuals who are native speakers of another language and who need to improve their English language skills for academic or employment purposes. Courses are offered for credit at beginning, intermediate and advanced levels. Both full-time and part-time programs are offered.

The ESL/Linguistics Department serves students from any language background. Some students are referred to the department from the Harper College assessment program. Student educational backgrounds range from six grades completed through completion of graduate/professional programs. Students with fewer than six years of education are referred to the Adult Educational Development Department for enrollment in the Nonnative Literacy Program.

Students are tested during registration and counseled for appropriate program and course placement. For more information, contact the department office.

Full-Time ESL Program

An intensive approach to English language instruction is offered for beginning, intermediate and advanced students who want to learn English or improve their English language skills as quickly as possible. Emphasis is on the language skills and cultural knowledge needed to enter college and university programs in the United States. The program is also beneficial for business and professional personnel. The program includes four levels; students may complete one level per semester or twelve-week summer session. The program includes instruction in grammar, vocabulary, listening, speaking, reading, composition and American culture.

Students must have completed a minimum of 12 grades of education in their native country or in the U.S. in order to enter the program. This program meets the INS requirements for students on student visas.

Part-Time Academic ESL Program

This program is for those students who wish to improve their English language skills for educational, professional or employment reasons. A

core sequence of six levels of core courses is complemented by skill-specific courses. Students who have completed Advanced Language Skills I (core 6) or who place at Level 7 may take special advanced courses in grammar, listening/speaking, reading, composition, vocabulary, American culture, TOEFL preparation and pronunciation. Students may enroll in this program simultaneously with other appropriate college courses.

ESL Program for Deaf and Hard of Hearing Students

Special courses in ESL are offered at five levels for native Deaf and hard of hearing students whose first language is American Sign Language. Classes focus on English for academic purposes. For more information, contact the Center for Students with Disabilities.

Adult Educational Development

The Adult Educational Development (AED) Department provides instructional programs and services in the literacy, Pre-GED, GED, nonnative literacy, citizenship and pre-employment skills areas. All programs are intended for adults 16 years old and over who are not currently enrolled in a secondary school.

The nonnative literacy program serves students who have six years of schooling or less in other countries.

The literacy program is intended to teach adults who cannot read, write or perform basic arithmetic. The Pre-GED and GED programs are designed for those who have not completed a secondary education program in the United States and who have not passed the General Educational Development (GED) Test battery (high school equivalency). The citizenship training program focuses upon test preparation and procedures for U.S. citizenship. The pre-employment skills program is open to students concurrently enrolled in other AED programs or as a separate option.

Students are tested and advised during registration for placement in classes. Basic skills, nonnative literacy and Pre-GED students are advised of their progress through achievement tests in classes, and GED students are given predictive tests to measure potential success in passing the GED Test battery. Advising services are available to meet students' personal, academic and/or career/vocational needs. The on-site work-force program offers work-related customized instruction in reading, writing, language (English—listening, speaking, reading and writing for nonnative employees) and mathematical skills.

(cont.)

Daytime and evening courses are offered at the Palatine campus, Northeast Center, the Police Neighborhood Resource Center in Rolling Meadows, Edgebrook Community Center at Baldwin Greens and other locations, including area businesses. Courses include Nonnative Literacy I, II, III and IV; Basic Reading Skills, Basic English Skills, Basic Mathematical Skills, Pre-GED Reading Skills, Pre-GED English Skills, Pre-GED Mathematical Skills; GED Social Studies and Science, GED Writing Skills and Literature, GED Mathematics; Adult Pre-employment Skills; and Citizenship Training.



Transfer Programs

Programs leading to the associate in arts or associate in science degree are designed for students planning to transfer and pursue a four-year baccalaureate degree. (A general description of transfer programs is on page 50.)

Art

The art curriculum is designed to provide the transfer student with a program equivalent to the first two years of most four-year college programs. Students following this curriculum can obtain an associate in arts degree and transfer into most four-year institutions without loss of time or credit.

In order to serve the differing interests and needs of the total student body, art courses with prerequisites may be taken without the prerequisites for humanities elective credit by non-art majors with permission of the instructor. Courses without prerequisites are open for enrollment to all students.

First Year

First Semester

ART 100 Art Seminar ¹	1
ART 105 Introduction to Arts	3
ART 110 Drawing I	3
ART 121 Design I	3
ENG 101 Composition	3
Mathematics elective	3-4
	16-17

Second Semester

ART 100 Art Seminar ¹	1
ART 111 Drawing II	3
ART 122 Design II	3
ENG 102 Composition	3
FNA 111 History of Art I	3
Lab Science elective	3-4
Social Science elective	3
	19-20

Second Year

First Semester

FNA 112 History of Art II	3
Science elective	3-4
Social Science elective	3
Studio electives	6-9
	15-19

Second Semester

FNA 113 History of Art III	3
Social Science elective	3
SPE 101 Fundamentals of Speech Communication	3
Studio electives	9-12
	18-21

¹ART 100 may be repeated to 2 credit hours.

Biological Sciences¹

The following suggested curriculum is recommended for students who plan to transfer and major in biology and related fields such as medicine, dentistry and physical therapy. Check with the school of your choice or a Student Development Center for specific transfer information.

First Year

First Semester

CHM 121 General Chemistry I (4) or	
CHM 131 College Chemistry I (5)	4-5
ENG 101 Composition	3
Humanities elective	3
Mathematics elective	3-4
SPE 101 Fundamentals of Speech Communication	3
	16-18

Second Semester

BIO 210 Biological Principles	4
CHM 122 General Chemistry II (4) or	
CHM 132 College Chemistry II (5)	4-5
ENG 102 Composition	3
Mathematics elective	3-4
Social Science elective	3
	17-19

Summer Semester

Contemporary Studies and Life Skills elective	3
--	---

Second Year

First Semester

BIO 220 Botanical Principles or	
BIO 240 Zoological Principles	4
CHM 204 Organic Chemistry	5
Mathematics elective or	
PHY 121 Introductory Physics I	4-5
Humanities elective	3
	16-17

Second Semester

BIO 220 Botanical Principles or	
BIO 240 Zoological Principles	4
CHM 205 Organic Chemistry	5
Mathematics elective or	
PHY 122 Introductory Physics II	4-5
Social Science elective	3
	16-17

¹In most cases the credits earned in courses are transferable to all four-year institutions.

Since each school has its special requirements, students should see a counselor on the transferability of specific courses to specific four-year institutions.

Business Administration

This recommended transfer program for business students will meet requirements for the associate in arts degree. Students will choose a major within the business field at the four-year school. Requirements for each school vary. Students should check the requirements before completing this curriculum as outlined.

First Year

First Semester

ENG 101 Composition	3
MGT 111 Introduction to Business Organization	3
Mathematics elective ¹	3-4
Lab Science elective	3-4
SPE 101 Fundamentals of Speech Communication	3
	15-17

Second Semester

ACC 101 Principles of Accounting Theory I	3
CIS 101 Introduction to Computer Information Systems ²	3
ENG 102 Composition	3
Humanities elective	3
Science elective	3
	15

Second Year

First Semester

ACC 102 Principles of Accounting Theory II	3
ACC 211 Business Law I or ACC 213 Legal Environment of Business ²	3
ECO 211 Microeconomics	3
Humanities elective	3
Social Science elective ⁴	3
	15

Second Semester

ACC 203 Introductory Cost Accounting or elective ³	3
ECO 212 Macroeconomics	3
Humanities elective	3
MGT 225 Applied General Statistics ²	3
Social Science elective ⁴	3
	15

¹Elective: MTH 103, MTH 124 or MTH 134.

²Transfer students should check with the school they will be transferring to regarding the transferability of this course.

³ACC 203 specifically recommended for accounting and finance majors. Business majors should see a student development faculty member for elective.

⁴Social Science electives may be selected from PSY 101, PSY 145 or SOC 101.

Communications

The following first-year program is recommended for students who plan to transfer and major in such fields as English, literature, speech or theatre. Check with the school of your choice or a Student Development Center before planning your second year at Harper.

First Year

First Semester

ENG 101 Composition	3
Foreign Language	4
Mathematics or Science elective	3-4
Social Science elective	3
SPE 101 Fundamentals of Speech Communication	3
	16-17

Second Semester

ENG 102 Composition	3
Foreign Language	4
Speech or Literature elective	3
Lab Science elective	3-4
Social Science elective	3
	16-17

Computer Science¹

The following is a suggested course of study for Computer Science majors. This recommended transfer program for Computer Science students will meet requirements for the associate in science degree. The student is responsible for checking requirements of the institution to which he/she will transfer.

First Year

First Semester

CSC 121 Computer Science I	4
ENG 101 Composition	3
MTH 200 Calculus with Analytic Geometry I	5
Lab Science elective	3-5
	15-17

Second Semester

CSC 122 Computer Science II	4
ENG 102 Composition	3
Humanities elective	3
MTH 201 Calculus with Analytic Geometry II	5
	15

Second Year

First Semester

CSC 216 Data Structures and Algorithm Analysis	3
Humanities elective	3
MTH 202 Calculus with Analytic Geometry III	4
Social Science elective	3
SPE 101 Fundamentals of Speech Communication	3
	16

Second Semester

CSC 217 Assembler Programming and Machine Organization	4
Science elective	3-4
MTH 203 Linear Algebra	3
Social Science elective	3
	13-14

¹Students transferring to Barat College, Eastern Illinois University, Governors State University, Illinois State University, Northeastern Illinois University, Northern Illinois University, Sangamon State University, Southern Illinois University, or Western Illinois University should complete the associate in science degree before transfer. For other schools, students should select courses based on transfer criteria. See a student development faculty member for further details.

Education

The following program will prepare students for transfer to a college or university to major in early childhood, elementary, secondary or special education. Students will fulfill requirements for the associate in arts degree at Harper College and meet many of the teacher certification requirements for the State of Illinois. Students who will major in art, music or a secondary education field must follow a major in their field of study.

First Year

First Semester

ENG 101 Composition	3
HST 111 The American Experience ¹	3
Mathematics elective ²	3-4
PSY 101 Introduction to Psychology	3
Science elective ³	3-4
	15-17

Second Semester

ENG 102 Composition	3
Humanities elective	3
Laboratory Science elective	4
PSC 101 American Politics and Government	3
SPE 101 Fundamentals of Speech Communication	3
	16

Second Year

First Semester

Contemporary Studies and Life Skills Electives	4
Elective ²	3
Health ²	2
HST 121 History of Latin America or HST 243 The Far East in the Modern World	3
Social Science elective	3
	15

Second Semester

EDU 201 Introduction to Education ⁴	3
EDU 202 Pre-Student Teaching Clinical Experience ⁴	1
EDU 211 Educational Psychology ⁴	3
Electives ²	7-8
	14-15

¹HST 112 may be substituted.

²Check with Student Development for recommendations.

³One biological science and one of the physical sciences required.

⁴Check with transfer school for transferability.

Engineering

A strong background in mathematics and the physical sciences will be required to complete an engineering curriculum at a university. Thus, the core math and science courses should be mastered by all students planning to pursue an engineering degree. A recommended program for a student who has completed college algebra and trigonometry and who wishes to major in mechanical, civil, aeronautical or general engineering follows.

Students interested in electrical engineering or computer engineering should contact a student development faculty or an engineering faculty member before enrolling. Students planning to major in chemical engineering should take CHM 131, CHM 132, CHM 203 and CHM 204. Student Development faculty and engineering faculty should be consulted for aid in planning a program which will reflect the background of the student, the special requirements which may apply for different engineering areas and the requirements of specific transfer institutions.

Technical electives may be substituted for certain of these courses.¹

First Year _____

Summer Semester

SPE 101 Fundamentals of Speech
Communication _____ 3

First Semester

CHM 121 General Chemistry I² _____ 4
 EGR 100 Introduction to Engineering _____ 1
 EGR 120 Engineering Graphics I _____ 3
 ENG 101 Composition _____ 3
 MTH 200 Calculus with Analytic
 Geometry I _____ 5
 16

Second Semester

CHM 122 General Chemistry II _____ 4
 CSC 208 Problem Solving for Science
 and Engineering using FORTRAN (4) or
 EGR 121 Engineering Graphics II³ (3) _____ 3-4
 MTH 201 Calculus with Analytic
 Geometry II _____ 5
 PHY 201 General Physics I _____ 4
 16-17

Second Year _____

Summer Semester

Humanities elective _____ 3

First Semester

EGR 210 Analytical Mechanics (Statics) _____ 3
 ENG 102 Composition _____ 3
 MTH 202 Calculus with Analytic
 Geometry III _____ 4
 PHY 202 General Physics II _____ 4
 Social Science elective _____ 3
 17

Second Semester

EGR 211 Analytical Mechanics
 (Dynamics) _____ 3
 Humanities elective _____ 3
 MTH 212 Differential Equations _____ 3
 PHY 203 General Physics III _____ 4
 Social Science elective _____ 3
 16

¹Technical electives: EGR 211, EGR 212, EGR 260, EGR 262, EGR 270, MTH 203, MTH 265.

²CHM 131 and CHM 132 may be substituted where required for specialized curricula as chemical engineering.

³Students choosing EGR 121 who do not take CSC 208 will need to take a three-credit hour course to satisfy the contemporary studies and life skills requirement for the A.S. degree.

Foreign Languages

See: Liberal Arts

Health Education

The successful completion of the health education transfer program will enable the student to obtain an associate in science degree and to transfer with junior status to most four-year colleges and universities. To insure satisfactory transfer, the student is advised to investigate the institution to which the student plans to transfer for specific general education requirements.

First Year _____

First Semester

BIO 110 Principles of Biology _____	4
ENG 101 Composition _____	3
PED 203 Health _____	3
Physical Education elective ¹ _____	1
PSY 101 Introduction to Psychology _____	3
SPE 101 Fundamentals of Speech Communication _____	3
	17

Second Semester

BIO 140 General Zoology _____	4
ENG 102 Composition _____	3
Mathematics elective ² _____	3-4
PED 201 First Aid _____	3
PED 205 Drugs in Our Culture _____	2
Physical Education elective _____	1
	16-17

Second Year _____

First Semester

BIO 160 Human Anatomy _____	4
Math elective ² _____	3-4
PED 207 Human Sexuality _____	2
PED 270 Community Health _____	2
PHI 180 Medical Ethics _____	3
Social Science elective _____	3
	17-18

Second Semester

PHI 103 Man and Environment _____	3
BIO 161 Human Physiology _____	4
DIT 101 Basic Nutrition _____	3
EDU 211 Educational Psychology _____	3
Humanities elective _____	3
	16

¹Some, but not all, physical education courses can be taken more than one time for credit. Course descriptions indicate which are approved for repeating.

²Selection of mathematics elective is contingent on requirements of

Liberal Arts

four-year college or university to which the student is transferring. The Liberal Arts transfer curriculum lays the foundation for a broad general education. It should be followed by those who wish to become lawyers, historians, philosophers, sociologists, English

teachers, social workers, anthropologists and political scientists, and by those who have not chosen their field of specialization but who wish to satisfy the general education requirements of the university to which they will transfer.

Though the general education requirements of universities vary in some details, in general the student can be sure he or she will meet them if he or she takes at Harper two semesters of transfer-level English composition, two semesters of laboratory science, four semesters of foreign language, two semesters of mathematics and a number of courses in the social sciences and humanities. The student who has successfully completed a year or more of a foreign language in high school may qualify for advanced placement in the language at Harper College. In mathematics, the student may meet requirements of some universities through proficiency testing.

First Year _____

First Semester

ENG 101 Composition _____	3
Foreign Language elective _____	4
Laboratory science ¹ _____	3-4
Mathematics or elective _____	3-4
Social Science elective _____	3
	16-18

Second Semester

ENG 102 Composition _____	3
Foreign Language elective _____	4
Laboratory science ¹ _____	3-4
Mathematics or elective _____	3-4
Social Science elective _____	3
	16-18

Second Year

First Semester

English ² _____	3
Foreign Language ³ _____	3-4
Humanities elective ⁴ _____	3
Social Science elective _____	3
SPE 101 Fundamentals of Speech Communication _____	3
	15-16

Second Semester

Contemporary Studies and Life Skills electives _____	6
English ² _____	3
Foreign Language ³ _____	3-4
Humanities electives ⁴ _____	3
	15-16

¹Physical or biological science or physics, chemistry, botany or other lab science.

²Advanced English, literature or speech.

³Consult a student development faculty member for specific language requirements of the university to which you plan to transfer.

⁴HUM 101 and HUM 102 are recommended. Other humanities areas include art, music, literature, philosophy, fine arts. SPE 107, SPE 111, SPE 212.

Music

The curriculum at most schools of music is a classical-traditional program requiring a minimum of four years of academic work leading to the bachelor of music, bachelor of arts or bachelor of science in music. A music student should be able to perform proficiently on at least one instrument (voice is categorized as an instrument), and should have a basic working knowledge and proficiency at the keyboard. All music programs require credit hours in both applied and ensemble music.

A student who successfully completes the courses suggested in this curriculum guide will have met all requirements for an associate in arts degree. Check with the school of your choice for specific requirements.

The **music** curriculum at Harper is designed to provide the student with a program equivalent to the first two years of most four-year college programs, with emphasis in music education, musicology, composition, applied music, and theory and literature.

The **piano pedagogy** option is designed to provide the knowledge and skills necessary to teach beginning and intermediate piano students. It will provide opportunities for observation of individual and group instruction as well as supervised student teaching.

Music

First Year¹ _____

First Semester

Applied Music elective ² _____	2-4
ENG 101 Composition _____	3
Group Performance ³ _____	1
Mathematics elective ⁴ _____	3-4
MUS 111 Theory of Music I _____	3
MUS 115 Aural Skills I _____	1
MUS 120 Introduction to Music Literature _____	3
MUS 165 Class Piano I _____	2
	18-21

Second Semester

Applied Music elective ² _____	2-4
ENG 102 Composition _____	3
Group Performance ³ _____	1
Instrumental or Vocal Techniques _____	2
MUS 112 Theory of Music II _____	3
MUS 116 Aural Skills II _____	1
Lab Science elective _____	3-4
Social Science elective _____	3
	18-21



Second Year**First Semester**

Applied Music elective ²	2-4
Group Performance ³	1
Humanities elective	3
MUS 211 Theory of Music III	3
MUS 215 Aural Skills III	1
Science elective	3-4
Social Science elective	3
	16-19

Second Semester

Applied Music elective ²	2-4
Group Performance ³	1
Instrumental or Vocal Techniques	2
MUS 212 Theory of Music IV	3
MUS 216 Aural Skills IV	1
MUS 223 Instrumental Literature or Literature	3
MUS 224 Keyboard and Vocal Literature	3
Social Science elective	3
SPE 101 Fundamentals of Speech Communication	3
	18-20

Piano Pedagogy**First Year****First Semester**

Applied Music elective ²	2
ENG 101 Composition	3
Group Performance ³	1
Mathematics elective ⁴	3-4
MUS 111 Theory of Music I	3
MUS 115 Aural Skills I	1
MUS 120 Introduction to Music Literature	3
MUS 265 Class Piano III	2
	18-19

Second Semester

Applied Music elective ²	2
ENG 102 Composition	3
Group Performance ³	1
MUS 112 Theory of Music II	3
MUS 116 Aural Skills II	1
MUS 266 Class Piano IV	2
Lab Science elective	3-4
Social Science elective	3
	18-19

Second Year**First Semester**

Applied Music elective ²	2
Group Performance ³	1
Humanities elective	3
MUS 211 Theory of Music III	3
MUS 215 Aural Skills III	1
MUS 271 Piano Pedagogy I	3
Science elective	3-4
Social Science elective	3
	19-20

Second Semester

Applied Music elective ²	2
Group Performance ³	1
MUS 212 Theory of Music IV	3
MUS 216 Aural Skills IV	1
MUS 223 Instrumental Literature or Literature	3
MUS 224 Keyboard and Vocal Literature	3
MUS 272 Piano Pedagogy II	3
Social Science elective	3
SPE 101 Fundamentals of Speech Communication	3
	19

¹All majors in music must demonstrate minimum proficiency on the piano and are advised to take MUS 100 as part of their elective credit.

²To be elected from courses numbered MUS 180 and MUS 280.

³To be elected from MUS 130, MUS 136, MUS 140, MUS 145 and MUS 150.

⁴To be selected from MTH 103, MTH 124, and MTH 134.

Physical Education^{1, 2}

The successful completion of the physical education transfer program will enable the student to obtain an associate in science degree and to transfer with junior status to most four-year colleges and universities. To ensure satisfactory transfer, the student is advised to investigate the institution to which he or she plans to transfer for specific general education requirements.

A dance option is provided for students who wish to pursue a physical education degree with an emphasis in dance.

Physical Education _____

First Year _____

First Semester _____

BIO 110 Principles of Biology _____	4
ENG 101 Composition _____	3
PED 200 Introduction to Physical Education _____	2
PED 203 Health _____	3
PED 222 Football Techniques or	
PED 224 Basketball Techniques _____	2
SPE 101 Fundamentals of Speech Communication _____	3
	17

Second Semester _____

Humanities elective _____	3
ENG 102 Composition _____	3
Mathematics elective ³ _____	3-4
PED 201 Standard First Aid _____	3
PED 208 Bioscientific Foundations of Human Movement _____	3
PSY 101 Introduction to Psychology _____	3
Physical Education elective _____	1
	19-20

Second Year _____

First Semester _____

BIO 160 Human Anatomy _____	4
Mathematics elective ³ _____	3-4
PED 210 Sports Officiating _____	2
Physical Education elective _____	1
PED 211 Physical Education in Elementary School _____	3
Social Science elective _____	3
	16-17

Second Semester _____

BIO 161 Human Physiology _____	4
Humanities elective _____	3
PED 206 Athletic Training Techniques _____	3
PED 209 Principles of Teaching Exercise to Music or _____	
PED 228 Aquatics _____	2
PED 220 Track and Field Techniques or	
PED 226 Baseball Techniques _____	2
Science elective _____	4
	18

Dance Emphasis

First Year _____

First Semester _____

BIO 110 Principles of Biology _____	4
ENG 101 Composition _____	3
PED 200 Introduction to Physical Education _____	2
PED 203 Health _____	3
PED 246 Tap Dance _____	1
Physical Education elective _____	1
SPE 101 Fundamentals of Speech Communication _____	3
	17

Second Semester _____

PSY 101 Introduction to Psychology _____	3
ENG 102 Composition _____	3
Mathematics elective ³ _____	3-4
PED 201 Standard First Aid _____	3
PED 204 Selected Physical Education Activities _____	2
PED 243 Modern Dance II _____	1
Physical Education elective _____	1
	16-17

Second Year _____

First Semester _____

BIO 160 Human Anatomy _____	4
Humanities elective _____	3
PED 240 Dance Composition _____	2
PED 242 Ballet II _____	1
Mathematics elective ³ _____	3-4
Social Science elective _____	3
	16-17

Second Semester _____

BIO 161 Human Physiology _____	4
Humanities elective _____	3
PED 209 Principles of Teaching Exercise to Music or _____	
PED 244 Folk Dance II _____	2
PED 228 Aquatics _____	2
PED 241 Jazz Dance II _____	1
Science elective _____	4
	16

¹The following physical education courses can, in addition to the 100 level courses, serve to satisfy the 3 credit hour physical education teacher certification requirements for the State of Illinois: PED 201, PED 203, PED 204.

²Some, but not all, physical education courses can be taken more than one time for credit. Course descriptions indicate which are approved for repeating.

³Selection of mathematics elective is contingent on requirements of four-year college or university to which student is transferring.

Science and Mathematics

The following program is typical of the first two years of a bachelor's degree program in physical science, mathematics or computer science.

Special care should be taken in selecting the laboratory science courses appropriate to the student's career plans. The student's program should be designed so that course sequences are completed at Harper before transfer.

Chemistry and Chemical Engineering majors should elect CHM 131-132 and CHM 204-205, while Physics majors should aim at MTH 200-202, MTH 203 and MTH 212. Mathematics majors should complete the sequence of MTH 200, MTH 201, MTH 202 and MTH 212. Mathematics courses numbered MTH 104 or below usually may not be used for credit other than as electives in these programs.

Some transfer institutions may require foreign languages in mathematics and science programs. Check with the transfer school of your choice for specific requirements in all areas.

First Year _____

First Semester

ENG 101 Composition _____	3
Humanities elective _____	3
Mathematics elective _____	3-5
Laboratory Science elective _____	4-5
	13-16

Second Semester

ENG 102 Composition _____	3
Humanities elective _____	3
Mathematics elective _____	3-5
Laboratory Science elective _____	4-5
	13-16

Summer Semester

CSC 121 Computer Science I (3) or CSC 208 Problem Solving for Science and Engineering Using FORTRAN (4) _____	3-4
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Second Year

First Semester

Mathematics elective _____	4-5
Laboratory Science elective _____	4-5
Social Science elective _____	3
SPE 101 Fundamentals of Speech Communication _____	3
	14-16

Second Semester

Mathematics or Lab Science elective _____	4-5
Mathematics elective _____	4-5
Laboratory Science elective _____	4-5
Social Science elective _____	3
	16-18

Social Science

The following first-year program is recommended for students who plan to transfer and major in such fields as history, political science, anthropology, psychology or sociology. Check with the school of your choice or a Student Development Center before planning your second year at Harper.

First Year _____

First Semester

ENG 101 Composition _____	3
Foreign Language ¹ _____	4
Mathematics or Science elective _____	3-4
Social Science elective _____	3
Elective ² _____	3
	16-17

Second Semester

ENG 102 Composition _____	3
Foreign Language ¹ _____	4
Lab Science elective _____	3-4
Social Science elective _____	3
Elective ² _____	3
	16-17

¹Check with the transfer school of your choice or a Student Development Center to determine language requirement.

²Additional social science electives may be selected.

Career Programs

Curricula leading to the associate in applied science degree are for students planning to follow a career program to prepare for employment.

Accounting Aide

Accounting Aide is a two-year program leading to an associate in applied science degree, with emphasis on data processing technology. The curriculum includes the study of accounting theory and practice, partnership, corporation accounting, cost accounting and computer information systems. The program is designed to prepare students for employment as junior accountants in business, industry and government.

Certificate options are available in Accounting.

First Year _____

First Semester

ACC 101 Principles of Accounting Theory I _____	3
CIS 101 Introduction to Computer Information Systems _____	3
English ¹ _____	3
MGT 111 Introduction to Business Organization _____	3
Mathematics elective ² _____	3
	15

Second Semester

ACC 102 Principles of Accounting Theory II _____	3
CIS 106 Computer Logic and Programming Technology _____	3
ECO 200 Introduction to Economics _____	3
ENG 130 Business Writing ¹ _____	3
Humanities elective _____	3
	15

Second Year _____

First Semester

ACC or CIS elective ³ _____	3
ACC 201 Intermediate Accounting I _____	3
ACC 211 Business Law I _____	3
Business elective ⁴ _____	3
Social Science elective _____	3
	15

¹Students may elect ENG 100, ENG 101 or ENG 102, depending on their test scores and advice of a student development faculty member. ENG 130 must be taken as the second English course.

²Students may elect any mathematics course offered, depending on their test scores and advice of a student development faculty member; however, only MTH 100 or higher will satisfy this requirement.

³Elective: ACC 155, ACC 250, CIS 203.

⁴Electives: ACC 212, ACC 213, BFC 215, MGT 218, MGT 270.

⁵Elective: CIS 122, CIS 123, CIS 124.

Second Semester

ACC 202 Intermediate Accounting II _____	3
ACC 203 Introductory Cost Accounting _____	3
Business electives ⁴ _____	6
CIS electives ⁵ _____	3
	15

Requirements for the Illinois CPA Certificate

To sit for the CPA examination in Illinois, the candidate must be a high school graduate, 18 years old, of good moral character and meet residency requirements (or their equivalent).

The candidate shall have taken 120 semester hours credit from an institution acceptable to the University of Illinois of which 27 must be in accounting and business law. Up to six hours of business law may be included to satisfy the 27 hour requirement. The remaining hours are to be selected from accounting courses of the candidate's choice.

At William Rainey Harper College it is recommended that these include ACC 101, ACC 102, ACC 201, ACC 202, ACC 203, ACC 211, ACC 212, ACC 250, ACC 251, ACC 253, ACC 254 and MGT 255.

Requirements for the CMA Certificate

The CMA (Certified Management Accountant) is a national program with no state affiliates. The candidate must have senior standing at an accredited college or university, or must hold a baccalaureate degree, in any field, or have passed the U.S. CPA examination. Anyone who has passed the U.S. CPA examination is given credit for part 2 of the CMA examination.

Recommended courses at William Rainey Harper College include ACC 101, ACC 102, ACC 201, ACC 202, ACC 203, ACC 211, ACC 212, ACC 251, ACC 253, ACC 254, CIS 101, ECO 210, ECO 211, ECO 212, MGT 111, MGT 218, MGT 225, MGT 270, MTH 124 and PHI 110.

Air Conditioning

See: Refrigeration and Air Conditioning

Architectural Technology

Architectural Technology is a two-year career program leading to an associate in applied science degree. Curriculum emphasis is on architecture and construction, but courses in communication skills, social sciences and humanities are also included. Graduates from this curriculum may be qualified for positions as architectural drafters, engineering interns in building construction, building materials and system details, specification writers and ancillary professional services.

A certificate option is available in Architectural Technology.

Summer Semester

ATE 100 Architectural Career Exploration _____	1
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First Year

First Semester

ATE 101 Introduction to Architectural Technology I _____	4
ATE 103 Building Materials Technology I _____	4
ATE 105 Architectural CAD I _____	3
ENG 101 Composition _____	3
Social Science elective _____	3
	17

Second Semester

ATE 102 Introduction to Architectural Technology II _____	4
ATE 104 Building Materials Technology II _____	4
ENG 102 Composition ¹ _____	3
Mathematics elective*** _____	3
Social Science elective _____	3
	17

Summer Semester

ATE 200 Architectural Internship _____	2
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Second Year

First Semester

ATE 201 Comprehensive Building Project I _____	4
ATE 203 Construction Problems I _____	4
ATE 207 Architectural Statics _____	3
Humanities elective ² _____	3
	14

Second Semester

ATE 202 Comprehensive Building Project II _____	4
ATE 204 Construction Problems II _____	4
ATE 208 Architectural Strength of Materials _____	3
Technical elective ³ _____	3
	14

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must complete a three (3) credit hour ATE elective.

¹ENG 100, ENG 103 or ENG 130 may be used under certain conditions to satisfy this requirement.

²Recommended elective: ART 110, MUS 103, MUS 104, PHI 105 or any literature course.

³Technical elective: ATE 106, ATE 109, ATE 211 or a combination of ATE 100 and ATE 200, offered during summer semesters.



Banking

See: Financial Institution Management.

Business Information Management¹

Business Information Management is a two-year career program leading to an associate in applied science degree. This program provides in-service education for those persons working directly in, or in fields allied to, information management or office automation. Additionally, the program may provide pre-service training for those who may seek or be transferred into jobs within these fields.

A certificate option is available in Business Information Management.

First Year

First Semester

ACC 101 Principles of Accounting Theory I	3
BIM 170 Introduction to Information Applications and Technologies	3
CIS 134 Personal Computer (DOS)	3
English elective ²	3
MGT 111 Introduction to Business Organization	3
	15

Second Semester

CIS 120 Introduction to Business Software Packages	3
CIS 122 Data Base for Micros	1
CIS 123 Spreadsheet/Budgeting for Micros	1
CIS 126 Graphics for Micros	1
Elective ³	1
English elective ²	3
Mathematics elective ^{***}	3
OFC 201 Advanced Features in Word Processing	2
OFC 202 Desktop Publishing Using Word Processing	2
	17

Second Year

First Semester

BIM 181 Enterprise-Wide Information Analysis	3
BIM 190 Electronic Information Exchanges	3
BIM 210 Information Applications Resources	3
Humanities elective	3
Social Science elective ⁴	3
	15

Second Semester

BIM 220 Integration of Information Applications	3
BIM 250 Multi-Media Business Presentations	3
BIM 260 Training and Development in Information Management	3
Elective ⁵	3
Social Science elective ⁴	3
	15

^{***}A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must complete a three (3) credit hour elective approved by the program coordinator.

¹It is recommended that BIM students have keyboarding skill. OFC 110 is recommended for those students who cannot keyboard.

²As approved by the program coordinator.

³Elective to be approved by program coordinator.

⁴Social Science electives: ECO 200, ECO 211, ECO 212, PSY 145.

⁵ACC 102, BFC 101, MGT 160, MGT 267, MGT 270, MKT 140, MKT 245.

Cardiac Technology*

Cardiac Technology is a two-year career program leading to an associate in applied science degree. Students earning this degree must complete a minimum of 60 semester hours. Within the program students can choose to specialize in cardio-diagnostics, cardiac rehabilitation or cardiovascular fitness.

The cardio-diagnostic specialization is geared to prepare graduates to work in a hospital or clinical setting assisting physicians in performing treadmill tests, running resting electrocardiograms, scanning heart rhythm strips and conducting echocardiograms and Doppler evaluations. Certification is available through the National Board of Cardiovascular Testing.

The cardiac rehabilitation specialization is designed to prepare students for entry level positions in private or hospital based rehabilitation centers assisting in the care of patients with heart disease who are in need of supervised exercise therapy, risk factor modification and emotional support. Students aspiring to supervisory positions will need to consider additional training in nursing, dietetics or advanced exercise science. Certification is available through the American College of Sports Medicine.

The cardiovascular fitness specialization is ideal for students interested in positions in private, corporate or hospital based wellness centers where the primary focus is prevention rather than rehabilitation. Course work will emphasize health assessment, risk factor modification, exercise leadership, health facility management and cardiovascular science. Certification is available through the American College of Sports Medicine.

A 300 hour internship at a local hospital or corporate center is required of all three areas of specialization.

**Admission Requirements include:

- Fulfillment of the General Admission Requirements of Harper College
- Submission of an official copy of American College Test (ACT) results. (This requirement will be waived for students who have completed 12 or more semester hours of college work.)
- High school graduation or equivalent (GED).
- High school grade point average of 2.0 or better (on a 4.0 scale), or if 12 semester hours of college credit have been completed, a college grade point average of 2.0 or better (on a 4.0 scale). Students who have previously enrolled at Harper College must be in good academic standing.

- Completion of at least two semesters of high school biology with grades of "C" or better or one semester of college biology with a grade of "C" or better, *and* at least two semesters of high school math (algebra or higher level) with grades of "C" or better or one semester of college math (elementary algebra or higher level) with a grade of "C" or better. Once college work has been completed in any of the subject areas, *only* college work will be used to determine if the particular subject admission requirement has been fulfilled.
- Attendance at a Cardiac Technology Information Program Meeting.
- Satisfactory interview with the Cardiac Technology Program Director.
- Satisfactory Harper College Cardiac Technology Admission Score.

Required General Education Courses:

BIO 160 Human Anatomy	_____	4
BIO 161 Human Physiology	_____	4
English electives ¹	_____	6
Humanities or Social Science elective	_____	3
Mathematics elective ²	_____	3
SPE 101 Introduction to Speech Communication	_____	3

Required Core Courses:

HPI 100 Introduction to the Cardiac Technology Program	_____	1
HPI 101 Fundamentals of Exercise Testing	_____	3
HPI 102 Exercise Physiology	_____	3
HPI 107 Internship	_____	4
HSC 112 Medical Terminology	_____	2

Specialized Study Areas

Cardio-Diagnostics

Required:

HPI 103 Prevention and Treatment of Cardiac Emergencies	_____	3
HPI 105 Electrocardiography	_____	4
HPI 106 Cardiovascular Physiology and Pathology	_____	3
HPI 109 Diagnostics I	_____	3
HPI 110 Diagnostics II	_____	3
HPI 111 Medical-Legal Aspects	_____	1
HPI 113 Ultrasound Physics	_____	2
HPI 114 Hospital Procedures and Patient Care	_____	1
CHM 100 Chemistry for the Health Sciences	_____	4

Cardiac Rehabilitation

Required:

HPI 103 Prevention and Treatment of Cardiac Emergencies _____	3
HPI 104 Data Analysis and Exercise Prescription _____	3
HPI 105 Electrocardiography _____	4
HPI 106 Cardiovascular Physiology and Pathology _____	3
HPI 108 Practical Experience in Health Promotion Programming _____	3
HPI 111 Medical-Legal Aspects _____	1
HPI 112 Health Facility Management _____	3
HPI 114 Hospital Procedures and Patient Care _____	1
DIT 101 Basic Nutrition _____	3

Cardiovascular Fitness

Required:

HPI 104 Data Analysis and Exercise Prescription _____	3
HPI 108 Practical Experience in Health Promotion Programming _____	3
HPI 112 Health Facility Management _____	3
DIT 101 Basic Nutrition _____	3
PED 195 Physical Fitness I _____	1
PED 201 Standard First Aid _____	3
PED 206 Athletic Training Techniques _____	3
PED 208 Bioscientific Foundations of Human Movement _____	3
PED 209 Principles of Teaching Aerobic Dance/Exercise _____	2

¹Students should seek the advice of a student development faculty member to determine the appropriate English course.

²A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement.

*Cardiac Technology is a limited enrollment program. See Limited Enrollment Programs section of this catalog for details.

**Subject to change. Contact the Admissions Office for additional information.

Child Development

See: Early Childhood Education

Commercial Credit Management

Commercial Credit Management is a two-year career program leading to an associate in applied science degree. The program is designed for those currently employed in, or seeking employment in, entry level management positions in commercial credit (accounts receivable) management. Upon completion of this degree, students can also receive an Associate Award granted by the National Institute of Credit, a division of the National Association of Credit Management.

First Year

First Semester

ACC 101 Principles of Accounting Theory I _____	3
BFC 101 Principles of Financial Institution Operators _____	3
ENG 100 Composition or ENG 101 Composition _____	3
MGT 111 Introduction to Business Organization _____	3
MGT 150 Business Math _____	3
	15

Second Semester

ACC 102 Principles of Accounting Theory II _____	3
CIS 120 Introduction to Business Software Packages _____	3
ECO 211 Microeconomics _____	3
ENG 130 Business Writing _____	3
MGT 218 Introduction to Finance _____	3
OFC 110 Keyboarding I _____	1
	16

Second Year

First Semester

BFC 102 Commercial Law _____	3
BFC 201 Commercial Credit & Collections Principles _____	3
BFC 215 Financial Statements Interpretation and Analysis _____	3
ECO 212 Macroeconomics _____	3
SPE 101 Fundamentals of Speech Communication _____	3
	15

Second Semester

BFC 202 Advanced Commercial Credit and Collections _____	3
BFC 217 Uniform Commercial Code Elective ¹ _____	3
Humanities elective _____	3
MKT 245 Principles of Marketing _____	3
	15

¹Elective: ACC 201, BFC 225, ECO 210, INS 121, MGT 225, MGT 270, PSY 145.

Computer Information Systems— Microcomputers in Business

Computer Information Systems—Microcomputers in Business is a career program leading to an associate in applied science degree. The technical curriculum trains students for various positions in the field of microcomputers. The student will take courses in business, computer information systems and general education. The student may choose from four specialized study areas: C Programming, Packages, LAN Administration or Programming. The student must select a minimum of 65 semester hours from these specialized study areas. Graduates of the program may find employment as microcomputer programmers, system analysts and consultants.

Certificate options in Computer Information Systems—Microcomputers in Business and Computer Information Systems—C Programming are available.

Required Core Courses:

CIS 101 Introduction to Computer Information Systems _____	3
CIS 106 Computer Logic and Programming Technology _____	3
CIS 134 Personal Computer (DOS) _____	3
CIS 203 Systems Analysis and Design I _____	3
CIS 204 Advanced Systems Analysis and Design _____	3

Required General Education Courses:

ENG 101 Composition _____	3
ENG 102 Composition or	
ENG 103 Technical and Report Writing or	
SPE 101 Fundamentals of Speech Communication ¹ _____	3
MTH 080 Intermediate Algebra _____	4
Natural Science, Social Science or Humanities electives ² _____	6

Specialized Study Areas

Programming

Required:

ACC 101 Principles of Accounting Theory I _____	3
ACC 102 Principles of Accounting Theory II _____	3
CIS 120 Introduction to Business Software Packages (3) or	
CIS 122 Data Base for Micros (1) and	
CIS 123 Spreadsheet Budgeting for Micros (1) and	
CIS 125 Word Processing for Micros (1) _____	3

CIS 130 BASIC for Business or	
CIS 166 Introduction to Programming in C _____	4
CIS 133 Personal Computer Programming—Assembler Language or	
CIS 186 C Programming for Graphical User Interfaces or	
CIS 266 C++ and Object Oriented Software Development _____	4
CIS 170 Introduction to Data Communications _____	3
CIS 171 Microcomputer Networks _____	3
CIS 176 Advanced C Programming or	
CIS 231 Advanced BASIC with Graphics _____	4
CIS elective ³ _____	1
ECO 200 Introduction to Economics or	
ECO 211 Microeconomics ² _____	3
MGT 111 Introduction to Business Organization _____	3

Packages

Required:

ACC 101 Principles of Accounting Theory I _____	3
CIS 122 Data Base for Micros _____	1
CIS 123 Spreadsheet Budgeting for Micros _____	1
CIS 124 Advanced Spreadsheet for Micros _____	1
CIS 125 Word Processing for Micros _____	1
CIS 126 Graphics for Micros _____	1
CIS 131 Microcomputer Printers _____	1
CIS 147 Windows _____	2
CIS 152 Data Base Programming, Microcomputers _____	3
CIS 170 Introduction to Data Communications _____	3
CIS 171 Microcomputer Networks _____	3
CIS electives ⁴ _____	8
MGT 111 Introduction to Business Organization _____	3
Social Science, Humanities or Natural Science elective ² _____	3

LAN Administration

Required:

CIS 122	Data Base for Micros	_____	1
CIS 123	Spreadsheet Budgeting for Micros	_____	1
CIS 124	Advanced Spreadsheet for Micros	_____	1
CIS 125	Word Processing for Micros	_____	1
CIS 126	Graphics for Micros	_____	1
CIS 131	Microcomputer Printers	_____	1
CIS 146	Operating System—OS/2 (3) or		
CIS 147	Windows (2)	_____	2-3
CIS 149	Personal Computer UNIX or		
CIS 171	Microcomputer Networks	_____	3
CIS 152	Data Base Programming, Microcomputers	_____	3
CIS 170	Introduction to Data Communication	_____	3
MGT 111	Introduction to Business Organization	_____	3
SPE 101	Fundamentals of Speech Communication	_____	3
Electives ⁵		_____	8
Social Science or Humanities elective ²		_____	3

C Programming

Required:

CIS 122	Data Base for Micros	_____	1
CIS 147	Windows	_____	2
CIS 149	UNIX	_____	3
CIS 152	Data Base Programming, Microcomputers	_____	3
CIS 166	Introduction to Programming in C	_____	4
CIS 176	Advanced C Programming	_____	4
CIS 186	C Programming for Graphical User Interfaces	_____	4
CIS 266	C++ and Object Oriented Software Development	_____	4
Electives ⁶		_____	6
Social Science, Humanities or Natural Science elective ²		_____	3

¹Students from LAN Administration specialization are required to choose from ENG 102 or ENG 103. ENG 103 is recommended.

²Students must take nine (9) hours in a minimum of two of these areas.

³CIS elective: CIS 105, CIS 117, CIS 124, CIS 126, CIS 131, CIS 147.

⁴CIS 105, CIS 121, CIS 127, CIS 129, CIS 130, CIS 132, CIS 133, CIS 144, CIS 145, CIS 146, CIS 148, CIS 149, CIS 154, CIS 223, CIS 224, CIS 231.

⁵ACC 101, ACC 102, CIS 103, CIS 105, CIS 121, CIS 127, CIS 132, CIS 137, CIS 144, CIS 145, CIS 146, CIS 147, CIS 148, CIS 149, CIS 154, CIS 171, CIS 223, CIS 224.

⁶ACC 101, ACC 102, CIS 126, CIS 127, CIS 131, CIS 133, CIS 144, CIS 145, CIS 146, CIS 148, CIS 160, CIS 170, CIS 171, CIS 231.



Computer Information Systems— Technology

Computer Information Systems—Technology is a career program leading to an associate in applied science degree. The technical curriculum trains students for various positions in the field of computer information systems. The student will take courses in mathematics, business, data processing and general education. Graduates of the program may find employment as computer programmers, systems analysts and computer operators.

First Year _____

First Semester

CIS 101 Introduction to Computer Information Systems _____	3
CIS 106 Computer Logic and Programming Technology _____	3
ENG 101 Composition _____	3
MTH 080 Intermediate Algebra _____	4
Social Science elective _____	3
	16

Second Semester

ACC 101 Principles of Accounting Theory I _____	3
CIS 108 Computer Programming—COBOL _____	5
CIS 203 Systems Analysis and Design I _____	3
ENG 103 Technical and Report Writing _____	3
MGT 111 Introduction to Business Organization _____	3
	17

Second Year _____

First Semester

ACC 102 Principles of Accounting Theory II _____	3
CIS 110 Computer Programming—Assembler Language _____	5
CIS 204 Advanced Systems Analysis and Design _____	3
CIS elective ¹ _____	3-4
Humanities elective _____	3
	17-18

Second Semester

CIS 170 Introduction to Data Communications _____	3
CIS 202 Programming Systems _____	3
CIS 208 Computer Programming—Advanced COBOL or _____	
CIS 210 Computer Programming—Advanced Assembler Language _____	4
ECO 200 Introduction to Economics _____	3
	13

¹CIS electives: CIS 111, CIS 112, CIS 113, CIS 117, CIS 120, CIS 121, CIS 122, CIS 123, CIS 124, CIS 125, CIS 126, CIS 127, CIS 128, CIS 129, CIS 130, CIS 131, CIS 132, CIS 133, CIS 134, CIS 136, CIS 140, CIS 142, CIS 150, CIS 152, CIS 153, CIS 154, CIS 160, CIS 166, CIS 171, CIS 208, CIS 210, CIS 215, CIS 220, CIS 223, CIS 224, CIS 230, CIS 231, CIS 240, CIS 266, CIS 270, CIS 280.

Criminal Justice

Criminal Justice is a two-year career program leading to an associate in applied science degree. It is designed to serve the needs of men and women in criminal justice organizations at the local, state and federal levels, and to prepare others to enter this service. Opportunities include positions in crime prevention, probation, correction, court records, communications, and general police and security work. Options are available for those wishing to continue in any of these special areas or for those who plan to earn a baccalaureate degree at a four-year college or university.

Certificate options are available in Criminal Justice and in Industrial and Retail Security.

Students earning an associate in applied science degree in criminal justice are required to complete a minimum of 60 semester hours of work. Courses must satisfy both the College and the program's minimum requirements.

Required General Education Courses:

Electives ²	_____	9
English elective ³	_____	6
Humanities elective	_____	3
Mathematics electives ^{***}	_____	3
PSC 101 American Politics and Government or		
PSC 220 Suburban, Urban and State Politics	_____	3
PSY 101 Introduction to Psychology	_____	3
PSY 217 Adolescent Psychology	_____	3
SOC 101 Introduction to Sociology	_____	3
SOC 205 Social Problems	_____	3
SPE 101 Fundamentals of Speech Communication	_____	3

Required Core Courses:

CRJ 101 Introduction to Criminal Justice ¹	_____	3
CRJ 104 Introduction to Corrections	_____	3
CRJ 201 Criminal Law I ¹	_____	3
CRJ 202 Criminal Law II	_____	3
CRJ 205 Juvenile Delinquency	_____	3
CRJ 210 Introduction to Criminology ¹	_____	3
CRJ 213 Crime Prevention	_____	3

Specialized Study Areas

Students should select electives from one or more of the following specialized areas of study depending on interest and career needs.

Basic Law Enforcement

CRJ 105 Criminal Courts of the U.S.	_____	3
CRJ 116 Introduction to Forensics	_____	3
CRJ 203 Law and Society	_____	3
CRJ 216 Investigative Process	_____	3
CRJ 235 Street Procedures	_____	4
CRJ 238 Defensive Techniques	_____	3
CRJ 299 Criminal Justice Practicum	_____	3

Advanced Law Enforcement

CRJ 105 Criminal Courts of the U.S.	_____	3
CRJ 209 Police — Public — Community Relations	_____	3
CRJ 216 Investigative Process	_____	3
CRJ 220 Police Administration	_____	3
CRJ 222 Police Operations	_____	3
CRJ 224 Police Supervision	_____	3
CRJ 226 Case Management	_____	3

Corrections

CRJ 105 Criminal Courts of the U.S.	_____	3
CRJ 215 Alternatives to Confinement	_____	3
CRJ 299 Criminal Justice Practicum	_____	3

Industrial Security

CRJ 250 Industrial Security Administration	_____	3
CRJ 252 Industrial Fire Protection, Disaster Control	_____	3
CRJ 253 Safety Management	_____	3
CRJ 299 Criminal Justice Practicum	_____	3

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must complete a three (3) credit hour elective.

¹Students may take CRJ 203 or CRJ 215, with approval of program coordinator.

²In determining electives, the student should consult with the coordinator.

³Students must take either ENG 101 or ENG 130 within the six (6) hour English requirement.

Dental Hygiene*

Dental Hygiene is a career program leading to an associate in applied science degree. The program meets State guidelines and is accredited by the Commission on Dental Accreditation of the American Dental Association.

Prior to receiving a license in the practice of dental hygiene, graduates must successfully complete the program and pass the Dental Hygiene Written National Board exam and a Regional Clinical exam.

**Admission requirements include:

- Fulfillment of the General Admission Requirements of Harper College.
- Submission of an official copy of American College Test (ACT) results. (This requirement will be waived for students who have completed 12 or more semester hours of college work.)
- High school graduation or equivalent (GED).
- A high school grade average of 2.5 or better (on a 4.0 scale) or if 12 semester hours of college credit have been completed, a college grade average of 2.0 or better (on a 4.0 scale). Students who have previously enrolled at Harper College must be in good academic standing.
- Completion of at least two semesters of high school biology with grades of "C" or better or one semester of college biology with a grade of "C" or better; two semesters of high school chemistry with grades of "C" or better or one semester of college chemistry with a grade of "C" or better; and two additional semesters of high school science with grades of "C" or better or one additional semester of college science with a grade of "C" or better. Once college biology and chemistry have been completed, *only* college biology and chemistry will be used to determine if the biology and chemistry course work admission requirements have been fulfilled.
- Students who have completed any of the following courses (or their equivalent) must have obtained a grade of "C" or better in each course completed: BIO 130 — Microbiology, BIO 160 — Human Anatomy, BIO 161 — Human Physiology, CHM 100 — Chemistry for the Health Sciences, CHM 125 — Organic and Biochemistry for the Health Sciences, DIT 101 — Basic Nutrition
- *Subject Competency Requirements.* All students must show proof of completion of a) the Harper College English/Reading Assessment Test or a college level English composition course with a grade of "C" or better and b) the Harper College Math Assessment Test or a college level math course with a grade of "C" or better.

- Attendance at a Dental Hygiene Program Information Meeting.
- Satisfactory Harper College Dental Hygiene Admission score.

First Year

Summer Semester

BIO 160	Human Anatomy ²	_____	4
CHM 100	Chemistry for the Health Sciences ² or		
CHM 125	Organic and Biochemistry for the		
	Health Sciences ^{1,2}	_____	4
			8

First Semester

BIO 130	Microbiology ²	_____	4
DHY 100	Pre-Clinic	_____	5
DHY 159	Head and Neck Anatomy	_____	3
DHY 161	Dental Anatomy	_____	2
DIT 101	Basic Nutrition ²	_____	3
			17

Second Semester

BIO 161	Human Physiology ²	_____	4
DHY 101	Clinical Dental Hygiene I	_____	5
DHY 111	Dental Radiology	_____	3
DHY 190	General and Oral		
	Pathology	_____	2
PSY 101	Introduction to Psychology	_____	3
			17

Summer Semester

DHY 104	Interpretation of Dental		
	Scientific Literature	_____	2
DHY 151	Clinical Dental Hygiene II	_____	2
SPE 101	Fundamentals of Speech		
	Communication	_____	3
			7

Second Year

First Semester

DHY 200	Periodontology	_____	2
DHY 202	Radiology I	_____	1
DHY 220	Community Dentistry I	_____	2
DHY 240	Dental Pharmacology	_____	2
DHY 250	Clinical Dental Hygiene III	_____	5
DHY 269	Science of Dental Materials	_____	1
DHY 270	Dental Material Laboratory		
	Techniques	_____	1
ENG 101	Composition	_____	3
			17

Second Semester

DHY 201	Ethics, Jurisprudence and		
	Practice Management	_____	2
DHY 203	Radiology II	_____	1
DHY 221	Community Dentistry II	_____	2
DHY 251	Clinical Dental Hygiene IV	_____	5
	Mathematics elective***	_____	3
SOC 101	Introduction to Sociology	_____	3
			16

*Dental Hygiene is a limited enrollment program. See Limited Enrollment Programs section of this catalog for details.

**Subject to change. Contact the Admissions Office for additional

information.

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement.

¹Meet with student development faculty member or coordinator of the Dental Hygiene program for appropriate testing and/or placement.

²Must be completed with a grade of "C" or better no earlier than five years prior to beginning the Dental Hygiene program.

Dietetic Technician

Dietetic Technician is a two-year career program leading to an associate in applied science degree. This program, with its major emphasis on nutritional care, prepares a student for employment in a hospital, long term care facility, the food industry or in community feeding programs under the direct or general supervision of registered dietitians. Activities the technician performs include nutritional assessment, planning menus, implementing and evaluating diets and dietary counseling.

The Dietetic Technician program is currently granted development accreditation status by the Commission on Accreditation/Approval from Dietetics Education of the American Dietetic Association, a specialized accrediting body recognized by the Commission on Recognition of Post Secondary Accreditation and the United States Department of Education. Graduates of the program are eligible to take the registration examination for Dietetic Technicians.

The Dietetic Technician program is traditionally offered as a full-time, two-year program but individualized part-time programs can be developed. Not all courses are offered every semester. To help avoid scheduling conflicts an orientation and planning session with the coordinator is recommended.

A certificate option is available for Dietary Manager.

First Year

First Semester

BIO 135	Introductory to Human Anatomy and Physiology*	4
DIT 100	Introduction to the Dietetics**	2
DIT 101	Basic Nutrition	3
FSM 114	Food Standards and Sanitation	2
HSC 112	Medical Terminology	2
Mathematics elective***		3
		16

Second Semester

BIO 136	Introduction to Human Disease*	3
DIT 102	Advanced Nutrition	3
DIT 150	Dietetic Clinical Laboratory I ¹	3
ENG 101	Composition	3
PSY 101	Introduction to Psychology	3
		15

Second Year

First Semester

DIT 110	Principles of Food Preparation	3
DIT 200	Dietetic Clinical Laboratory II ¹	5
DIT 201	Nutritional Services in Institutions	3
FSM 212	Hospitality Supervision or	
MGT 160	Principles of Supervision	3
SOC 101	Introduction to Sociology	3
		17

Second Semester

DIT 202	Nutrition Care Seminar	2
DIT 203	Dietetic Technician Seminar	1
DIT 220	Food Systems Administration	3
DIT 250	Dietetic Clinical Laboratory III ¹	5
SPE 101	Fundamentals of Speech Communication	3
		14

*BIO 135 and BIO 136 are recommended for the first year of the program to avoid scheduling conflicts.

**DIT 100 must be taken fall semester, prior to taking DIT 150 offered only in spring.

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement.

¹A baccalaureate graduate with a degree in nutrition/dietetics meeting American Dietetic Association guidelines after completing the clinical laboratory courses DIT 150, DIT 200 and DIT 250 will then be eligible to take the registration examination for Dietetic Technicians.

Digital Electronics and Microprocessor Technology

Digital Electronics and Microprocessor Technology is a two-year career program leading to an associate in applied science degree. It is designed to prepare students for the field of digital electronics in industries associated with computers and microprocessor equipment. The curriculum offers courses in electronics, digital electronics, computer hardware, software and peripheral systems, mathematics and general education.

Graduates may be employed in a variety of electronics related industries with job classifications as technician, programmer or field service technician.

A certificate option is available in Digital Electronics and Microprocessor Technology.

First Year

First Semester

ELT 110	Introductory Electronics	4
ELT 210	Computer Programming	3
ENG 101	Composition	3
Humanities elective ¹		3
MTH 106	Mathematics I	5
		<u>18</u>

Second Semester

ELT 111	Electronics I, Resistive	3
ELT 203	Electronics II, Digital	5
ENG 102	Composition or	
ENG 103	Technical and	
Report Writing		3
		<u>11</u>

Second Year

First Semester

ELT 206	Electronic Computers	5
ELT 216	Microprocessor	
Software Applications		5
Programming elective ²		4
Social Science elective ³		3
		<u>17</u>

Second Semester

ELT 217	Microprocessor	
Peripheral Systems		5
ELT 218	Principles of Microprocessor	
System Design		5
Electronics elective ⁴		3
Social Science elective ³		3
		<u>16</u>

¹Any 3-credit hour course in the humanities area will meet this requirement.

²Programming elective: CSC 208, CIS 133.

³Any 3-credit hour course in the social science area will meet this requirement.

⁴To be approved by program coordinator.

Early Childhood Education

Early Childhood Education is a two-year career program leading to an associate in applied science degree. The 60 semester hour curriculum is designed to provide students with the requisite skills and theoretical knowledge to work in a variety of facilities for young children as a teacher or director for half-day and full day early childhood centers; a teacher's assistant in academic at-risk, special needs and public school classrooms; resource and referral agencies; before/after school care, recreational programs and related settings.

Certificate options are available in Early Childhood Education.

Required Core Courses:

CCA 101 Introduction to Early Childhood Education_____	3
CCA 102 Child Development I_____	3
CCA 103 Child Development II_____	3
CCA 115 Principles of Early Childhood Curriculum_____	3
CCA 209 Language Development and Activities for the Young Child_____	3
CCA 210 Creative Activities for Young Children or	
CCA 230 Movement and Rhythms for the Young Child_____	3
CCA 221 Math and Science for the Young Child_____	3
CCA 219 Psychology of Exceptional Children or	
CCA 223 Exceptional Child in Early Childhood Programs_____	3
CCA 226 Observation and Guidance of the Young Child_____	3
CCA 252 Child-Family-Community_____	3
CCA 291 Practicum I_____	3
CCA 292 Practicum II_____	3
CCA electives ¹ _____	3
HSC 220 Health, Nutrition and Safety for the Young Child_____	3

Elective:

CCA 100 Early Childhood Career Exploration_____	1
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Required General Education Courses:

ENG 101 Composition_____	3
ENG 103 Technical and Report Writing or	
SPE 101 Fundamentals of Speech Communication_____	3
Mathematics***_____	3
Natural Science elective ² _____	3
Humanities elective ³ _____	3
PSY 101 Introduction to Psychology_____	3

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must complete SOC 101 in order to have the 60 semester hours required for this degree.

¹CCA electives: Any CCA course including: CCA 151, CCA 152, CCA 153, CCA 154, CCA 155, CCA 156 or CCA 158.

²Natural Science elective: BIO 101 or BIO 103.

³Humanities elective: ART 105, HST 210, HUM 110, LIT 219, MUS 103, MUS 104, PHI 115, SGN 101, SPE 111.

Electronics Technology

Electronics Technology is a two-year career program leading to an associate in applied science degree. It is designed to prepare students for the field of electronics and associated industries. The curriculum offers courses in electronics, circuit analysis, mathematics, physics and general education, with laboratory emphasis placed on equipment familiarization and use.

Graduates may find employment as electronic engineering technicians, industrial technicians, electronic/electrical draftsmen, customer engineers, technical writers and research laboratory technicians.

Additional certificate options are available. See program coordinator for details.

Summer Semester

ELT 100 Electronics Career Exploration ¹	1
MTH 100 Basic Applied Mathematics	2

First Year

First Semester

ELT 101 Circuits I	5
ELT 110 Introductory Electronics	4
General Education elective	3
MTH 106 Mathematics I	5
	17

Second Semester

ELT 102 Circuits II	4
ELT 111 Electronics I, Resistive	3
ELT 210 Computer Programming	3
MTH 107 Mathematics II	5
	15

Summer Semester

ELT 200 Electronics Internship ¹	2
General Education electives	6

Second Year

First Semester

ELT 103 Circuits III	5
ELT 203 Electronics II, Digital	5
General Education elective ²	3
PHY/AUT electives ³	3-5
	16-18

Second Semester

ELT 204 Electronics III, Advanced Electronics	5
ELT 206 Electronic Computers	5
General Education elective ²	3
PHY/AUT electives ³	4-5
	17-18

¹High school tech prep students must take ELT 100 during first summer semester and ELT 200 during second summer semester.

²General Education electives: See program coordinator and student development faculty member.

³PHY/AUT electives: PHY 121 and PHY 122 or AUT 125, AUT 130, AUT 135.

Executive Secretarial Development

Executive Secretarial Development is a two-year career program leading to an associate in applied science degree. The curriculum emphasizes office practices, secretarial duties and functions of office administration.

Graduates may be employed in any of a variety of organizations, including manufacturing firms, government agencies, insurance companies, service organizations, schools and colleges, banks, as well as advertising and airline companies.

Certificate options are available under the Secretarial and General Office area.

First Year _____

First Semester

OFC 104	Introduction to Office Careers	_____	1
OFC 105	Human Relations for Office Careers	_____	1
OFC 113	Keyboarding IV ¹	_____	3
OFC 125	Shorthand	_____	5
OFC 133	Word Processing Software I ²	_____	2
OFC 201	Advanced Features in Word Processing	_____	2
OFC 203	Proofreading and Editing	_____	2
			16

Second Semester

BIM elective ³	_____	3	
ENG 130	Business Writing	_____	3
OFC 106	Time Management for Office Careers	_____	1
OFC 220	Automated Office Procedures ¹	_____	4
OFC 228	Records Control for the Office	_____	1
OFC 229	Meeting and Conference Planning	_____	1
SPE 101	Fundamentals of Speech Communication	_____	3
			16

Second Year _____

First Semester

ACC 156	Survey of Accounting	_____	3
CIS 123	Spreadsheet/Budgeting for Micros	_____	1
CIS 124	Advanced Spreadsheet for Micros	_____	1
MGT 111	Introduction to Business Organization	_____	3
OFC 230	Executive Machine Transcription	_____	2
OFC 237	Secretarial Seminar and Internship I	_____	3
OFC 247	Professional Development	_____	2
			15

Second Semester

ECO elective ⁴	_____	3	
Humanities elective	_____	3	
MTH elective ⁵	_____	3	
OFC 238	Secretarial Seminar and Internship II	_____	3
Social Science elective	_____	3	
			15

¹Placement into OFC 113 and OFC 220 is contingent upon previous training and consent of instructor.

²Students are required to take WordPerfect as their software package choice during the first 8-weeks of the first year, first semester.

³BIM elective: BIM 170, BIM 181, BIM 210, BIM 250, BIM 260.

⁴ECO elective: ECO 115, ECO 200.

⁵While students may take any mathematics course offered depending upon their test scores and the advice of a student development faculty member, MGT 150 is recommended.

Fashion Design

Fashion Design is a two-year career program leading to an associate in applied science degree. The program is designed to train students in apparel design, flat pattern design, draping, fashion illustrating and in professional design room practices of tailoring. Facilities will stimulate the professional atmosphere of the fashion industry.

Graduates may find employment as couture fashion designers, mass production fashion designers, flat pattern makers, fashion illustrators and fashion coordinators.

Close cooperation between the College and the fashion industry helps to ensure the type of training the fashion industry demands. Trips to manufacturers are included.

A certificate option is available in Fashion Design.

First Year

First Semester

English ¹	3
FAS 101 Flat Pattern Design and Draping I	3
FAS 103 Apparel Design and Construction I	3
FAS 105 Fashion Design Illustration I	1
FAS 107 Textiles I	2
FAS 110 Costume History	2
Social Science elective	3
	17

Second Semester

English ¹	3
FAS 102 Flat Pattern Design and Draping II	4
FAS 104 Apparel Design and Construction II	4
FAS 106 Fashion Design Illustration II	1
FAS 108 Textiles II	2
FAS 109 Fashion Arts and Design	2
	16

Second Year

First Semester

FAS 201 Advanced Flat Pattern Design and Draping I	4
FAS 203 Advanced Diversified Apparel Design I	4
FAS 205 Tailoring Techniques I	2
FAS 209 Advanced Fashion Illustration I	1
Mathematics elective***	3
Social Science elective	3
	17

Second Semester

FAS 202 Advanced Flat Pattern Design and Draping II	4
FAS 204 Advanced Diversified Apparel Design II	4
FAS 206 Tailoring Techniques II	2
FAS 210 Advanced Fashion Illustration II	1
FAS 212 Visual Fashion Merchandising	2
Humanities elective ²	3
	16

***A competency test, available in the testing center, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must complete MKT 106.

¹Students may elect ENG 100, ENG 101 or ENG 102, depending on their test scores and advice of a student development faculty member.

²ART 105 is recommended.

Fashion Merchandising

Fashion Merchandising is a two-year career program leading to an associate in applied science degree.

The fashion merchandising curriculum provides all the phases of fashion merchandising, not only in business aspects, but also in aesthetic and creative sides of fashion, such as window display, fashion basics and textile. Students will study fashion history and trends as well as their influence on our lives. In addition, they will survey the development of style leading up to contemporary design. Students will also take courses in English composition, computer information systems, sociology and introductory psychology.

An educational background in fashion merchandising opens the door to various careers, such as fashion coordinating, fashion promoting, fashion advertising, fashion displaying, fashion copywriting, fashion photographing, fashion buying and store managing.

First Year _____

First Semester

ENG 101	Composition _____	3
FAS 107	Textiles I _____	2
FAS 110	Costume History _____	2
MGT 111	Introduction to Business Organization _____	3
MGT 150	Business Math _____	3
MKT 106	Retail Merchandising _____	3
		16

Second Semester

ENG 102	Composition _____	3
FAS 111	20th Century Costume and Trends _____	3
FAS 112	Fashion Basics _____	3
PSY 101	Introduction to Psychology _____	3
SPE 101	Fundamentals of Speech Communication _____	3
		15

Second Year _____

First Semester

ART 105	Introduction to Arts _____	3
FAS 229	Promotion of Fashion _____	3
MKT 140	Principles of Professional Selling _____	3
MKT 245	Principles of Marketing _____	3
MKT 250	Retailing _____	3
SOC 101	Introduction to Sociology _____	3
		18

Second Semester

CIS 101	Introduction to Computer Information Systems _____	3
FAS 230	Contemporary Living _____	3
FAS 116	Fashion Industries Career Practicum and Seminar or	
FAS 240	Fashion Projects _____	3
MKT 247	Consumer Buying Behavior _____	3
MKT 251	Retail Merchandise Management _____	3
		15

Financial Management

Financial Management is a two-year career program leading to an associate in applied science degree. The curriculum is structured to meet the needs of individuals in gaining or improving financial skills. The thrust of the program is to study the field of, and the options within, the corporate finance environment. The curriculum emphasizes developing competencies needed for middle level management positions in the field of corporate finance.

First Year

First Semester

BFC 101 Principles of Financial Institutions Operations	3
BFC 102 Commercial Law	3
ENG 101 Composition	3
MGT 111 Introduction to Business Organization	3
MGT 150 Business Math	3
	15

Second Semester

ACC 101 Principles of Accounting Theory I	3
BFC 201 Commercial Credit and Collection Principles	3
ECO 115 Consumer Economics or	
ECO 211 Microeconomics	3
ENG 130 Business Writing	3
Humanities elective	3
	15

Second Year

First Semester

ACC 102 Principles of Accounting Theory II	3
BFC 200 Investment Management	3
CIS 120 Introduction to Business Software Packages	3
ECO 200 Introduction to Economics or	
ECO 212 Macroeconomics	3
MGT 218 Introduction to Finance	3
	15

Second Semester

BFC 215 Financial Statements Interpretation and Analysis	3
BFC 225 International Finance	3
ECO 210 Money and Banking	3
Electives ¹	6
	15

¹Electives: ACC 203, BFC 202, BFC 219, INS 121, MAT 101, MKT 245, RES 124.

Financial Institution Management

Financial Institution Management is a two-year career program leading to an associate in applied science degree emphasizing the banking, savings and loans and credit union industry. The program is designed for those currently employed in or seeking employment in banks, savings and loans and credit unions. The curriculum emphasizes developing competencies necessary for middle management and lending positions within the financial industry.

A certificate option is available in Banking and Finance.

Summer Semester

BFC 100 Banking Career Exploration _____ 1

First Year

First Semester

BFC 101 Principles of Financial Institution Operations _____ 3
 BFC 115 Advanced Principles of Financial Institution Operations _____ 3
 ENG 100 Composition or
 ENG 101 Composition _____ 3
 MGT 111 Introduction to Business Organization _____ 3
 MGT 150 Business Math _____ 3
 15

Second Semester

ACC 101 Principles of Accounting Theory I _____ 3
 BFC 102 Commercial Law _____ 3
 BFC 117 Marketing for Financial Institutions _____ 3
 ECO 115 Consumer Economics or
 ECO 211 Microeconomics _____ 3
 SPE 101 Fundamentals of Speech Communication _____ 3
 SPE 115 Interviewing _____ 1
 16

Summer Semester

BFC 230 Banking Internship _____ 2

Second Year

First Semester

ACC 102 Principles of Accounting Theory II or
 BFC 211 Accounting for Financial Institutions _____ 3
 Elective¹ _____ 3
 ECO 200 Introduction to Economics or
 ECO 211 Microeconomics _____ 3
 ENG 130 Business Writing _____ 3
 MGT 218 Introduction to Finance _____ 3
 15

Second Semester

BFC 118 Credit Administration in Financial Institutions _____ 3
 BFC 215 Financial Statements Interpretation and Analysis _____ 3
 ECO 210 Money and Banking _____ 3
 Elective¹ _____ 3
 Humanities elective _____ 3
 15

¹Electives: BFC 200, BFC 212, BFC 213, BFC 216, BFC 217, BFC 219, BFC 220, BFC 225, BFC 235, CIS101, CIS 120, ECO 211, ECO 212, INS 121, MGT 160, MGT 265, MGT 270, PSY 101, PSY 145.

BFC 100 and BFC 230, offered during the summer semester, can be substituted for one of these electives.

Fire Science Technology

Fire Science Technology is a two-year career program leading to an associate in applied science degree. This 61 credit hour curriculum offers areas of specialization which are applicable to both public and private sector career fields. In the public sector, the program offers courses which will prepare students wishing to enter into public fire services. Specialities in fire prevention or fire suppression which meet the guidelines for certification by the Office of the State Fire Marshal may be chosen.

In the private sector, primarily with sprinkler contractors and consultants, and the insurance industry, the specialty area in fire protection design will prepare the students to seek certification within the National Institute of Engineering Technologies for Automatic Sprinkler Design Layout: Level II.

Students wishing to pursue a career in fire science should discuss these opportunities with the Fire Science program coordinator or a Student Development faculty member before entering this program.

A certificate option is available in Fire Science Technology.

Required General Education Courses:

ENG 101	Composition	3
ENG 103	Technical and Report Writing	3
	Humanities elective ¹	3
MTH 080	Intermediate Algebra (4) or	
MTH 086	Intermediate Algebra I (2) and	
MTH 087	Intermediate Algebra (2)	4
	Physical Science elective ¹	3
PSY 101	Introduction to Psychology	3
	Social Science elective ¹	3
SPE 101	Fundamentals of Speech Communication	3

Specialized Study Areas

Students should complete an additional 36 credit hours of course work for the A.A.S. degree. It is recommended that students pursue one of the following specialized areas and consult with the program coordinator.

Summer Semester

FIS 105	Fire Science Career Exploration ²	1
FIS 200	Fire Science Internship ²	2

¹See program coordinator for advice on recommended electives.

²FIS 105 and FIS 200 may be counted as technical electives with approval of coordinator.

Fire Prevention Officer

Required:

FIS 100	Introduction to Fire Science or	
FIS 121	Principles of Combustion	3
FIS 102	Fire Management I	3
FIS 122	Fire Prevention Principles I	3
FIS 123	Fire Prevention Principles II	3
FIS 132	Hazardous Materials I	3
FIS 145	Fire Instructor I	3
FIS 212	Fire Alarm and Suppression Systems	3
FIS 222	Fire Prevention Principles III	3
FIS 223	Fire Prevention Principles IV	3
FIS 224	Fire Prevention Principles V	3
FIS 242	Hydraulics	3
FIS 252	Fire Sprinkler Design and Layout I	3

Fire Officer

Required:

FIS 100	Introduction to Fire Science or	
FIS 121	Principles of Combustion	3
FIS 102	Fire Management I	3
FIS 103	Tactics and Strategy I	3
FIS 122	Fire Prevention Principles I	3
FIS 132	Hazardous Materials I	3
FIS 133	Hazardous Materials II	3
FIS 145	Fire Instructor I	3
FIS 202	Fire Management II	3
FIS 203	Tactics and Strategy II	3
FIS 212	Fire Alarm and Suppression Systems	3
FIS 220	Fire Instructor II	3
FIS 252	Fire Sprinkler Design and Layout I	3

Automatic Sprinkler Design Technician

Required:

BCE 101	Basic Construction for Building Codes	3
BCE 201	Basic Building Codes	3
FIS 121	Principles of Combustion	3
FIS 122	Fire Prevention Principles I	3
FIS 123	Fire Prevention Principles II	3
FIS 222	Fire Prevention Principles III	3
FIS 223	Fire Prevention Principles IV	3
FIS 224	Fire Prevention Principles V	3
FIS 242	Hydraulics	3
FIS 252	Fire Sprinkler Design and Layout I	3
FIS 253	Fire Sprinkler Design and Layout II	3
MET 101	Applied Mechanical Drafting	3

Food Service Management

See: Hospitality Management

Hospitality Management

Hospitality Management is a two-year career program leading to an associate in applied science degree. Emphasis is placed on the techniques and technology of the hospitality industry from a management point of view. Graduates of this 60 credit hour curriculum will be qualified to assume positions as production supervisors, management trainees and small unit managers. Upon successful completion of approved hospitality management courses, students may be granted a Certificate of Completion and a Management Development Diploma from the Educational Foundation of the National Restaurant Association. Upon successful completion of approved hospitality management courses, students may be awarded a certificate from the Educational Institute of the American Hotel and Motel Association. Contact the Hospitality Management coordinator for details.

Students may choose a basic program of study in hospitality or one of the specialized study areas. Students earning an associate in applied science degree in Hospitality Management must complete the following required general education courses, required core courses and 11 hours of course work from the specialized study areas.

One year certificate programs are offered in Bread and Pastry Arts, Culinary Arts, Hospitality Management and Hotel Management.

Required General Education Courses:

English ¹	6
Humanities elective ²	4
Mathematics elective ^{***}	3
PSY 101 Introduction to Psychology	3
Social Science elective	3

Required Core Courses:

ACC elective ³	3
FSM 109 Introduction to Food Preparation/Production	4
FSM 111 Introduction to the Hospitality Industry	3
FSM 113 Dining Room Operations	3
FSM 114 Food Standards and Sanitation	2
FSM 115 Menu Planning	3
FSM 211 Purchasing and Storage	3
FSM 212 Hospitality Supervision	3
FSM 213 Seminar and Internship	3
FSM 214 Hospitality Operations Analysis	3

Elective:

FSM 100 Hospitality Career Exploration ⁴	1
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Specialized Study Areas

It is recommended that students pursue one of the specialized study areas and consult with the program coordinator.

Food Service Operations Management

Electives: Select at least 11 credit hours from the courses listed below:

CIS 100 Computer Literacy	3
FSM 215 Restaurant Layout and Equipment	3
FSM 216 Introduction to Wines, Spirits and Beverage Management	3
FSM 220 Hospitality Promotions	3
FSM 230 Hospitality Law and Risk Management	4
FSM 255 Contract/Institutional Food Service Management	3

Hotel Operations Management

Electives: Select at least 11 credits from the courses listed below:

CIS 100 Computer Literacy	3
FSM 120 Front Office Operations	3
FSM 210 Hospitality Facility Maintenance	3
FSM 220 Hospitality Promotions	3
FSM 230 Hospitality Law and Risk Management	4

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must complete a three (3) credit hour elective approved by the program coordinator.

¹Students may elect ENG 100, ENG 101 or ENG 102, depending on their test scores and the advice of a student development faculty member.

²SPA 101 is recommended.

³ACC 099, ACC 101 or ACC 156.

⁴FSM 100 may be counted as an elective with approval of the program coordinator.

Insurance

Insurance is a two-year career program leading to an associate in applied science degree. This program is designed as pre-service training for those individuals planning a career in property/liability or life/health insurance. Additionally, the program provides in-service training for those people currently employed in insurance. This program is not intended to provide prelicensing training for insurance producers.

A certificate option is available in insurance.

Summer Semester

INS 100 Insurance Career Exploration	1
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First Year

First Semester

Elective ¹	3
ENG 101 Composition	3
INS 121 Principles of Property and Liability Insurance	3
MGT 111 Introduction to Business Organization	3
MGT 150 Business Math***	3
	15

Second Semester

ACC 101 Principles of Accounting Theory I	3
BFC 102 Commercial Law	3
CIS 100 Computer Literacy	3
INS 122 Principles of Personal Insurance or	
INS 124 Principles of Life and Health Insurance	3
SPE 101 Fundamentals of Speech Communication	3
	15

Summer Semester

INS 200 Insurance Internship	2
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Second Year

First Semester

ACC 102 Principles of Accounting Theory II	3
ECO 211 Microeconomics	3
Elective ¹	3
INS 123 Principles of Commercial Insurance or	
INS 125 Principles of Life and Health Insurance Operations	3
PHI 150 Business Ethics	3
	15

Second Semester

BFC 215 Financial Statements Interpretation and Analysis	3
CIS 120 Introduction to Business Software Packages	3
ECO 212 Macroeconomics	3
ENG 130 Business Writing	3
LTE 201 Tort and Insurance Law	3
	15

***A competency test, available in the testing office, may be utilized to meet the MGT 150 requirement.

¹Electives: BFC 101 or any social science or humanities course. INS 100 and INS 200, offered during the summer semesters, can be substituted for one of these electives.



Interior Design

Interior Design is a two-year career program leading to an associate in applied science degree. The curriculum emphasizes both the creative and practical aspects of interior design. Course work provides extensive training in the selection and arrangement of furnishings including detailed work in space planning, color, salesmanship, lighting, furniture history, architectural construction, business practices and materials and sources.

Students may elect to concentrate in residential design or select a contract design course to give them a background in designing interiors for business. Periodic field trips to Chicago are required and allow students to study the current market.

The curriculum is designed to provide an overview of topics tested by the National Council for Interior Design Qualification (N.C.I.D.Q.) exam. This exam must be completed before interior designers may be registered by the State of Illinois.

Graduates may find employment as residential designer/sales person in the retail home furnishings field, assistant to an interior designer in a private practice, assistant buyer of home furnishings merchandise, manufacturer's representative for designer oriented products, or showroom manager in the Merchandise Mart.

First Year _____

First Semester

ART 121	Design I	_____	3
English ¹		_____	3
IND 101	Basic Interior Design I	_____	3
IND 103	Furniture History	_____	3
IND 105	Interior Design Theory	_____	1
IND 106	Materials and Sources	_____	3
			16

Second Semester

ATE 107	Architectural Principles for the Interior Designer I	_____	4
FNA 112	History of Art II	_____	3
IND 102	Basic Interior Design II	_____	3
IND 107	Interior Perspective and Rendering	_____	2
IND 108	Color for Interior Design/CAD	_____	3
SPE 101	Fundamentals of Speech Communication	_____	3
			18

Second Year _____

First Semester

ATE 108	Architectural Principles for the Interior Designer II	_____	4
IND 203	3-D Design for Interiors	_____	2
IND 205	Interior Design Historic Styles	_____	3
IND 206	Lighting for Interior Design	_____	2
MGT 154	Small Business Management ²	_____	3
			14

Second Semester

Interior Design elective ³		_____	3
IND 208	Advanced Residential Design or		
IND 209	Contract Interior Design	_____	3
IND 211	Professional Practices for Interior Design	_____	3
Mathematics elective ^{***}		_____	3
Social Science elective		_____	3
			15

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement.

¹A competency test, available in the testing office, must be taken before registering for ENG 101 or ENG 130.

²Prerequisite waived for interior design students.

³Interior Design elective: IND 207, MKT 106 or MKT 140.

International Business

International Business is a two-year career program leading to an associate in applied science degree. Completing this program will prepare students to secure employment in the dynamic and growing field of international business. Specific vocational opportunity areas would include international marketing, finance, management and distribution. Businesses hiring graduates from this program include airlines, banks, export/import management companies, freight forwarders and the retailing industry.

A certificate option in International Business is available.

First Year

First Semester

ECO 200 Introduction to Economics	3
GEG 101 World Geography	3
MGT 111 Introduction to Business Organization	3
MGT 115 Introduction to International Business	3
SPE 101 Fundamentals of Speech Communication	3
	15

Second Semester

ACC 101 Principles of Accounting Theory I	3
Mathematics elective***	3
MGT 165 International Management	3
MKT 245 Principles of Marketing	3
MKT 260 International Marketing	3
	15

Second Year

First Semester

BFC 225 International Finance	3
CIS 100 Computer Literacy or CIS 101 Introduction to Computer Information Systems	3
ENG 130 Business Writing	3
MAT 101 Fundamentals of Material Management	3
MKT 190 Export Documentation	3
MKT 290 Principles of Exporting	3
	18

Second Semester

Foreign Language elective	4
GEG 210 Economic Geography or HST 243 The Far East in the Modern World	3
MAT 230 International Material Management	3
MKT 292 International Marketing Research	3
MKT 293 International Marketing Channel Strategy	3
	16

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must complete a 3-credit hour elective or must complete a 3-credit hour MKT elective.

Journalism

Journalism is a two-year career program leading to an associate in applied science degree. It is designed to provide students with a balance of practical training and general education. The curriculum offers students an opportunity to learn about the journalism profession, or working professionals to increase their skills. The courses provide intensive practice in the journalistic writing style as well as hands-on experience in the technology of desktop publishing. The program offers a solid educational background for people interested in careers in writing, editing, business and trade publishing, advertising, public relations, desktop publishing, work-at-home businesses and other related fields.

First Year

First Semester

ENG 101	Composition	3
HST 111	The American Experience to 1877	3
JNM 130	Fundamentals of Journalism or	
JNM 137	Media Writing	3
Mathematics elective***		3
SPE 101	Fundamentals of Speech Communication	3
		15

Second Semester

HST 112	The American Experience Since 1877	3
Humanities elective		3
JNM 131	News Reporting and Writing	3
JNM 133	Feature Writing	3
JNM 136	Broadcast Writing	3
		15

Second Year

First Semester

Electives ¹		6
JNM 234	Mass Communications	3
JNM 235	Publications Editing and Design	3
PSC 101	American Politics and Government	3
		15

Second Semester

CWE 220	Cooperative Education I,	
IDS 290	Newsletters, or	
Elective ¹		3
ECO 200	Introduction to Economics or	
ECO 211	Microeconomics	3
Elective ¹		3
JNM 232	Advertising Copywriting and Design	3
JNM 233	Public Relations Writing and Design	3
		15

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must take a foreign language course.

¹Electives: ART 110, ART 121, ART 122, ART 240, BFC 101, CRJ 101, ENG 102, FRN 101, FRN 102, GER 101, GER 102, HST 210, HST 214, JPN 101, JPN 102, MGT 111, MGT 218, MGT 225, MGT 275, MKT 245, MKT 248, PHI 210, PSC 210, PSC 220, PSC 250, PSC 260, PSC 270, PSY 101, SOC 101, SOC 205, SPA 101, SPA 102, SPE 205.

Legal Secretary

Legal Secretary is a two-year career program leading to the degree of associate in applied science for those interested in pursuing secretarial careers in law firms, government, law departments of business firms and banks. The curriculum is designed to give the student experience in legal dictation, legal office procedures, background in legal terminology and supervised internship training in a legal office or department.

A certificate option in this discipline is available.

First Year

First Semester

OFC 102	Survey of Law Office Practice	3
OFC 104	Introduction to Office Careers	1
OFC 105	Human Relations for Office Careers	1
OFC 113	Keyboarding IV	3
OFC 125	Shorthand	5
OFC 133	Word Processing Software I	2
		15

Second Semester

	English elective	3
OFC 106	Time Management for Office Careers	1
OFC 228	Records Control for the Office	1
OFC 229	Meeting and Conference Planning	1
OFC 234	Legal Office Procedures	3
OFC 235	Legal Transcription	3
SPE 101	Fundamentals of Speech Communication	3
		15

Second Year

First Semester

ACC 156	Survey of Accounting	3
CIS 123	Spreadsheet/Budgeting for Micros	1
CIS 126	Graphics for Micros	1
OFC 203	Proofreading and Editing	2
OFC 233	Document Processing in the Law Office	3
OFC 237	Secretarial Seminar and Internship I	3
PSC 101	American Politics and Government	3
		16

Second Semester

ACC 211	Business Law I	3
	Humanities elective	3
	Mathematics elective***	3
OFC 238	Secretarial Seminar and Internship II	3
	Social Science elective	3
		15

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must complete a three (3) credit hour elective approved by the program coordinator.

Legal Technology

Legal Technology is a two-year career program leading to an associate in applied science degree. The program is designed to prepare men and women as technically qualified assistants to a lawyer. Under the supervision of a lawyer, the legal technician may perform such functions as investigation, detail work with regard to probate matters, preparation of tax forms and returns, searching public and court records, office management, library service, bookkeeping, serving and filing legal documents and preparing legal forms.

A certificate option in Legal Technology is available.

First Year _____

First Semester

ACC 101 Principles of Accounting Theory I _____	3
ENG 101 Composition _____	3
LTE 101 Introduction to Legal Technology _____	3
PSY 101 Introduction to Psychology _____	3
SOC 101 Introduction to Sociology _____	3
	15

Second Semester

ENG 103 Technical and Report Writing _____	3
LTE 102 Fundamentals of Legal Research _____	3
LTE 103 Litigation _____	3
LTE 105 Family Law _____	3
LTE 123 Real Property Law _____	3
	15

Second Year _____

First Semester

ACC 211 Business Law I _____	3
LTE 202 Estate Planning _____	3
LTE 203 Income Taxation I _____	3
Mathematics elective*** _____	3
PSC 101 American Politics and Government _____	3
	15

Second Semester

ACC 102 Principles of Accounting Theory II or _____	
LTE 204 Income Taxation II _____	3
ACC 212 Business Law II or _____	
LTE 210 Corporate and Securities Law _____	3
CIS 120 Introduction to Business Software Packages _____	3
Humanities elective ¹ _____	3
LTE 200 Probate _____	3
LTE 208 Externship in Legal Technology ² _____	3
	18

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement may take LTE 201, LTE 212, LTE 220, LTE 230.

¹PHI 115 is recommended.

²Required for persons with no legal experience. Persons with legal experience may substitute another Legal Technology course.

Manufacturing Technology

Manufacturing Technology is a two-year career program leading to an associate in applied science degree. The program is designed to give students training and education in the field of manufacturing with emphasis on automated manufacturing techniques.

This 69-credit hour program includes courses in production control, process planning, automation, CAD and related areas of study. A general education component is included.

Graduates of this program could accept positions as quality control technicians, production controllers, numerical control machine programmers, process technicians or sales engineers.

Students completing this program may continue their education by pursuing a bachelor of science in technology degree with a major in manufacturing or industrial technology.

All courses in this program are regularly offered at night to meet the needs of those wishing to pursue training while working in local industry.

Students wishing to study in this field should consult with a student development faculty member or a teaching faculty member in this department when planning their schedule.

Required General Education Courses:¹

ENG 101	Composition	3
ENG 103	Technical and Report Writing	3
MTH 106	Technical Mathematics I	5
MTH 107	Technical Mathematics II	5
	Humanities elective	3
	Social Science electives	6

Required Core Courses:¹

MET 102	Technical Drafting	3
MET 103	Descriptive Geometry	3
MET 202	Advanced Technical Drafting	3
MET 235	Computer Graphics	4
MET 236	Three-Dimensional Graphics Applications	3
MFG 101	Introduction to NC/CAM	3
MFG 105	Machining Processes I or	
MFG 205	Machining Processes II	3
MFG 108	Manufacturing Processes and Materials	3
MFG 115	Part Programming I	3
MFG 206	Metallurgy and Heat Treatment	3
MFG 211	Process Planning and Tool Design	4
MFG 215	Part Programming II	3
QUA 130	Quality Assurance Concepts	3
	Technical elective ^{2,3}	3

¹In planning a course sequence, prerequisites listed in the course descriptions should be considered.

²Technical electives: MET 237, MFG 216, MFG 228, QUA 160.

³MFG 100 and MFG 200 may be counted as technical electives with approval of coordinator.

Marketing

Marketing is a two-year career program leading to an associate in applied science degree. The curriculum is designed for persons interested in preparing for positions in the dynamic field of marketing.

Career opportunities in marketing are quite extensive and diversified. Career objectives of persons completing this program would be in the areas of advertising, sales, sales promotion, market research, product development, pricing, wholesaling, direct marketing, retailing and merchandising.

Students can choose a basic program of study in marketing or one of the specialized study areas. Students earning an associate in applied science degree in marketing must complete the following required General Education courses, required core courses and 21 semester hours of course work from the specialized study areas¹.

Certificate options in Sales Management and Development or Retail Merchandising are also available.

Required General Education Courses:

ENG 101	Composition	3
ENG 102	Composition or	
ENG 130	Business Writing I or	
SPE 101	Fundamentals of Speech	
	Communication	3
	Humanities elective	3
MGT 150	Business Math (3) or	
	Mathematics elective ² (3-4)	3-4
PSY 101	Introduction to Psychology	3
PSY 145	Psychology in Business	
	and Industry	3

Required Core Courses

ACC 099	Business Recordkeeping ³ or	
ACC 156	Survey of Accounting or	
ACC 101	Principles of Accounting	
	Theory I	3
ACC 102	Principles of Accounting	
	Theory II or	
ACC 211	Business Law I	3
ECO 200	Introduction to Economics ³ or	
ECO 211	Microeconomics	3
CIS 100	Computer Literacy ³ or	
CIS 101	Introduction to Computer	
	Information Systems	3
MGT 111	Introduction to Business	
	Organization	3
MGT 270	Principles of Management	3
MKT 245	Principles of Marketing	3

Elective:

MKT 100	Marketing Career Exploration ⁴	1
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Specialized Study Areas

Depending on the student's career needs, he/she may choose courses from the following specialized study areas. It is recommended that students pursue one of the following specialized areas and consult with the program coordinator or student development faculty member.

Marketing

Any combination of 21 credit hours may be selected from the courses listed below.

MKT 106	Retail Merchandising	3
MKT 140	Principles of Professional	
	Selling	3
MKT 217	Advertising	3
MKT 240	Advanced Sales Skills	3
MKT 246	Business to Business	
	Marketing	3
MKT 247	Consumer Buying Behavior	3
MKT 248	Direct Marketing	3
MKT 250	Retailing	3
MKT 255	Marketing Research	3
MKT 260	International Marketing	3
MKT 265	Marketing Decision Making	3
MKT 280	Marketing Problems	3
MKT 281	Marketing Internship	3
MKT 285	Topics In Marketing	5-3
MKT 290	Principles of Exporting	3

Retailing

Required:⁵

FAS 212	Visual Fashion Merchandising or	
MKT 110	Retail Store Layout and	
	Imaging	2
MKT 106	Retail Merchandising	3
MKT 120	Customer Service	1
MKT 250	Retailing	3
MKT 251	Retail Merchandise	
	Management	3

Electives: Select at least 9 credit hours from the following:⁵

MGT 154	Small Business Management	3
MGT 160	Principles of Supervision	3
MKT 140	Principles of Professional	
	Selling	3
MKT 217	Advertising	3
MKT 247	Consumer Buying Behavior	3
MKT 248	Direct Marketing	3
MKT 281	Marketing Internship	3
MKT 285	Topics in Marketing	5-3

Sales

Required:⁵

MKT 140	Principles of Professional	
	Selling	3
MKT 141	Sales Management	3
MKT 240	Advanced Sales Strategies	3
MKT 247	Consumer Buying Behavior	3

Electives: Select at least 9 credit hours from the following:⁵

MGT 160	Principles of Supervision	3
MKT 106	Retail Merchandising or	
MAT 125	Purchasing	3
MKT 120	Customer Service	1
MKT 246	Business to Business Marketing	3
MKT 248	Direct Marketing	3
MKT 281	Marketing Internship	3
MKT 285	Topics in Marketing	5-3

Marketing Communications

Required:⁵

JNM 137	Media Writing	3
JNM 232	Advertising Copywriting and Design or	
MKT 217	Advertising	3
MKT 255	Marketing Research	3

Electives: Select at least 12 credit hours from the following:⁵

JNM 136	Broadcast Writing	3
JNM 233	Public Relations Writing and Design	3
JNM 235	Publications Editing and Design	3
MKT 140	Principles of Professional Selling	3
MKT 246	Business to Business Marketing	3
MKT 247	Consumer Buying Behavior	3
MKT 248	Direct Marketing	3
MKT 260	International Marketing	3
MKT 281	Marketing Internship	3

¹Students are reminded that not all courses are offered each semester. In determining course selection, the student should consult with a Student Development faculty member or program coordinator.

²Mathematics elective: MTH 080, MTH 103, MTH 124, MTH 134, MTH 165. Meet with Student Development faculty member or program coordinator for appropriate course.

³Meet with student development faculty member or program coordinator for appropriate ACC, CIS or ECO course.

⁴MKT 100 is a recommended one-hour elective for students interested in exploring careers in marketing.

⁵Students must satisfy prerequisites for each course selected.

Materials/Logistics Management

Materials/Logistics Management is a two-year career program leading to an associate in applied science degree. The program is designed to provide in-service education for those persons working directly in, or in fields allied to, materials/logistics management. Additionally, the program may provide pre-service training for those who may seek or be transferred into jobs within these fields.

A certificate option in Materials/Logistics Management is available.

First Year

First Semester

ACC 101	Principles of Accounting Theory I	3
CIS 122	Data Base for Micros	1
CIS 123	Spreadsheet/Budgeting for Micros	1
CIS 124	Advanced Spreadsheet for Micros	1
ENG 101	Composition	3
MAT 101	Fundamentals of Materials/Logistics Management	3
MGT 111	Introduction to Business Organization	3
		15

Second Semester

ACC 102	Principles of Accounting Theory II	3
ENG 130	Business Writing	3
MAT elective ¹		3
MGT 270	Principles of Management	3
PSY 145	Psychology in Business and Industry ²	3
		15

Second Year

First Semester

ACC 211	Business Law I	3
ECO 200	Introduction to Economics	3
MAT electives ¹		6
MGT 150	Business Math***	3
		15

Second Semester

MAT elective ¹		3
Materials/Logistics Management electives ³		9
PHI 150	Business Ethics	3
		15

***A competency test, available in the testing office, may be utilized to meet the mathematics requirement. Students in this program who utilize the competency test to meet the mathematics requirement must select an additional 200 level MAT course.

¹MAT electives:

MAT 120	Production Control Concepts	3
MAT 121	Principles of Physical Distribution	3
MAT 122	Inventory Control	3
MAT 123	Traffic and Transportation	3
MAT 124	Material Handling and Packaging	3
MAT 125	Purchasing	3

²Prerequisite waived for MAT students.

³Materials/Logistics Management electives:

MAT 226	Material Requirements Planning	3
MAT 227	Just-In-Time (JIT)	3
MAT 230	International Materials/Logistics Management	3
MAT 259	Advanced Purchasing	3
MAT 281	Topics in Materials/Logistics Management	1-3
MGT 274	Operations Management	3

Mechanical Engineering

Mechanical Engineering Technology is a two-year career program leading to an associate in applied science degree. The program is designed to give students training and education in the field of mechanical design. Emphasis on computer aided design and automated manufacturing techniques is included in this program.

This 66-68 credit hour program includes courses in design, drafting, materials, mechanics and related areas of study. A general education component is included.

Graduates of this program could accept positions as mechanical designers, mechanical drafters, CAD operators or designers, mechanical engineering technicians, tool designers or sales engineers.

Students completing this program may continue their education by pursuing a bachelor of science in technology degree with a major in mechanical engineering or individual design technology.

All courses in this program are regularly offered at night to meet the needs of those wishing to pursue training while working in local industry.

Students wishing to study in this field should consult with a student development faculty member or a teaching faculty member in this department when planning their schedule.

Required General Education Courses:¹

ENG 101	Composition	3
ENG 103	Technical and Report Writing	3
	Humanities elective	3
MTH 106	Technical Mathematics I	5
MTH 107	Technical Mathematics II	5
	Social Science electives	6

Required Core Courses:¹

MET 102	Technical Drafting	3
MET 103	Descriptive Geometry	3
MET 201	Mechanisms	4
MET 202	Advanced Technical Drafting	3
MET 207	Machine Design	4
MET 240	Statics and Strength of Materials	5
MFG 101	Introduction to NC/CAM	3
MFG 105	Machining Processes I or	
MFG 205	Machining Processes II	3
MFG 108	Manufacturing Processes and Materials	3
MFG 206	Metallurgy and Heat Treatment	3

MFG 211	Process Planning and Tool Design	4
PHY 101	Technical Physics I — Mechanics, Heat and Sound or	
PHY 121	Introductory Physics I or	
	Technical elective ^{2,3}	3-5

¹In planning a course sequence, prerequisites listed in the course descriptions should be considered.

²Technical elective: MET 235, MET 245, MFG 216, MFG 228, QUA 160.

³MET 100 and MET 200 may be counted as technical elective with approval of coordinator.

Medical/Dental Secretary

Medical/Dental Secretary is a two-year career program leading to an associate in applied science degree. It is designed for individuals interested in expanding previous office experience or health care training and learning skills necessary to work as a secretary in a health care facility, insurance company, extended care facility, home health care agency, pharmaceutical house, medical supply company or hospital.

Alternate job titles would include medical or dental receptionist, insurance secretary, claims clerk, nursing unit secretary, ward clerk, medical typist or doctor's secretary. Administrative duties include patient reception, claims processing, coding, medical records management, billing and collections and written communications.

A minimum typing speed of 30 words per minute is recommended to enter the program; 40 words per minute is recommended to progress through externship. The degree program may be taken part-time and many courses are available on an evening basis. An orientation and planning session with the coordinator is recommended for each student. Detailed information will be sent upon request or upon application to the program.

A certificate option is available in the Medical/Dental Secretary program.

First Year

First Semester

BIO 135	Introduction to Human Anatomy and Physiology ¹ or	4
BIO 160	Human Anatomy	4
	Communications elective	3
HSC 100	Computer Usage in Health Services	1
HSC 105	Introduction to the Health Care Field	3
HSC 112	Medical Terminology	2
MOA 145	Health Care Records Management	2
		15

Second Semester

BIO 136	Introduction to Human Diseases ¹ (3) or	
BIO 161	Human Physiology (4)	3-4
	Communications elective	3
HSC 151	Math Applications in Health Care	1
MOA 190	Basic Clinical Procedures	2
MOA 195	Health Insurance and Coding	2
	Social Science or Humanities elective	3

14-15

Second Year

First Semester

ACC 099	Business Recordkeeping	3
	Elective ²	2
MGT 111	Introduction to Business Organization	3
MOA 202	Clinical Laboratory Principles	3
MOA 235	Office Procedures in Health Care	4
NUR 200	Pharmacology ³	2
		17

Second Semester

HSC 213	Medical Law and Ethics	3
	Mathematics elective ^{***}	3
MOA 240	Introduction to Medical Transcription	3
MOA 245	Health Care Office Management	3
MOA 270	Medical Secretarial Seminar and Externship	3
		15

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the competency test to meet the mathematics requirement must take a three-credit hour elective.

¹Students take BIO 135 and BIO 136 or BIO 160 and BIO 161.

²Requires approval of program coordinator.

³Obtain approved list from program coordinator. MOA 204 and MOA 264 are recommended.

Medical Office Assistant

Medical Office Assistant is a two-year career program leading to an associate in applied science degree, designed for persons interested in becoming medical assistants in the physician's office or other out-patient health care setting.

The curriculum is designed to give the student training in a variety of administrative and clinical tasks to facilitate the work of the physician.

Administrative duties include patient communication and recordkeeping. Clinical duties include assisting with examinations and diagnostic testing.

A minimum typing speed of 30 words per minute is recommended to enter the program; 40 words per minute is recommended to progress through externship. The program may be taken part-time and many courses are available on an evening schedule; however, not all courses are offered every semester. An orientation and planning session with the coordinator is recommended for each student. Detailed information will be sent upon request or upon application to the program.

A certificate option in the Medical Office Assistant program is available.

First Year _____

First Semester

BIO 135 Introduction to Human Anatomy and Physiology ¹ or	
BIO 160 Human Anatomy _____	4
HSC 100 Computer Usage in Health Services _____	1
HSC 105 Introduction to the Health Care Field _____	3
HSC 112 Medical Terminology _____	2
MOA 145 Health Care Records Management _____	2
Communications elective _____	3
	15

Second Semester

BIO 136 Introduction to Human Diseases ¹ (3) or	
BIO 161 Human Physiology (4) _____	3-4
Communications elective _____	3
HSC 151 Math Applications in Health Care _____	1
MOA 190 Basic Clinical Procedures _____	2
MOA 195 Health Insurance and Coding _____	2
Social Science or Humanities elective _____	3
	14-15

Summer Semester

NUR 200 Pharmacology _____	2
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Second Year _____

First Semester

Elective ³ _____	3
MOA 211 Advanced Clinical Procedures _____	4
MOA 212 Clinical Laboratory Procedures _____	4
MOA 235 Office Procedures in Health Care _____	4
	15

Second Semester

HSC 213 Medical Law and Ethics _____	3
Mathematics Elective*** _____	3
MOA 240 Introduction to Medical Transcription _____	3
MOA 245 Health Care Office Management _____	3
MOA 280 Medical Office Assistant Seminar and Externship _____	3
	15

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students who utilize the competency test to meet the mathematics requirement must complete a three-credit hour elective.

¹Students take BIO 135 and BIO 136 or BIO 160 and BIO 161.

²Prerequisite waived for MOA students.

³Obtain approved list from the program coordinator. MOA 283 or MOA 284 are recommended.

Nursing (Practical and Associate Degree)*

The Nursing program is designed to enable students to receive a certificate in practical nursing at the completion of the first year and an associate in applied science degree in nursing at the completion of the two-year sequence. The program is accredited by the Illinois Department of Professional Regulation and the National League for Nursing.

**Admission requirements include:

- Fulfillment of the General Admission Requirements of Harper College.
- Submission of an official copy of American College Test (ACT) results. (This requirement will be waived for students who have completed 12 or more semester hours of college work.)
- High school graduation or equivalent (GED).
- *Grade Point Average Requirement.* All students must have a high school grade point average of 2.0 or better (on a 4.0 scale), or if twelve (12) semester hours of college credit have been completed, a college grade point average of 2.0 or better (on a 4.0 scale). Students who have previously enrolled at Harper College must be in good academic standing.
- *Course Work Requirements.* Completion of at least two semesters of high school biology with grades of "C" or better or one semester of college biology with a grade of "C" or better; two semesters of high school chemistry with grades of "C" or better or one semester of college chemistry with a grade of "C" or better; and two semesters of high school math (algebra or higher level) with grades of "C" or better or one semester of college math (elementary algebra or higher level) with a grade of "C" or better. Once college work has been completed in any of the subject areas, *only* college work will be used to determine if the particular subject admission requirement has been fulfilled.
- Completion of the Entrance Examination for Schools of Nursing.
- *English Competency Requirement.* Completion of the *Harper College English/Reading Assessment Test* or a college level English composition course with a grade of "C" or better.
- *Math Competency Requirement.* Students must pass the *Harper College Basic Math Skills Test for Competency.* This requirement will be waived for students who have completed one semester of college math (elementary algebra or higher level) with a grade of "C" or better.
- Attendance at a Nursing Program Information Meeting.
- Satisfactory Harper College Nursing Admission score.

Licensed practical nurses are eligible for admission into the RN completion program after they:

- Fulfill all Nursing Program admission requirements as listed above.
- Arrange an interview with the Director of the Nursing Program.
- Complete BIO 160, BIO 161, NUR 200, PSY 101, PSY 228 and computer elective (or their equivalents) with grades of "C" or better.
- Submit an "Employer Evaluation Form."

The Practical Nursing Certificate qualifies the graduate for NCLEX-PN and application for Illinois licensure as a practical nurse. The Associate in Applied Science in Nursing qualifies the graduate for NCLEX-RN and application for Illinois licensure as a registered nurse. Positions are available in a variety of health care settings.

First Year!

First Semester***

BIO 160 Human Anatomy	4
NUR 101 Nursing Fundamentals	9
NUR 200 Pharmacology ²	2
PSY 101 Introduction to Psychology	3
Mathematics***	0
	18

Second Semester

BIO 161 Human Physiology	4
Computer elective ³	1
NUR 102 Nursing Care of Clients with Commonly Occuring Health Needs	9
PSY 228 Human Development	3
	17

Summer Semester

NUR 104 Nursing Field Experience ⁴	4
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Second Year

First Semester

BIO 130 Microbiology	4
ENG 101 Composition	3
NUR 201 Advanced Nursing I	9
	16

Second Semester

ENG 102 Composition	3
NUR 202 Advanced Nursing II	10
SOC 101 Introduction to Sociology	3
	16

*Nursing is a limited enrollment program. See Limited Enrollment Programs section of this catalog for details.

**Subject to change. Contact the Admissions Office for additional information.

***Group II math requirement is met by Nursing program admission requirements.

¹A grade of "C" or better in all NUR courses, BIO 130, BIO 160 and BIO 161 is required for all students.

²Must be completed no earlier than three years before graduation.

³CIS 100, CIS 125, HSC 100, SEC 133. Credit hours by proficiency testing available for HSC 100.

⁴Required for students electing to earn a certificate in Practical Nursing. It is not required for the student who proceeds to the second level of study.

Park and Grounds Operation Management

Park and Grounds Operation Management is a two-year career program leading to an associate in applied science degree. Students can prepare for employment with municipal park districts, property management agencies, cemetery/memorial parks, industry/office parks, educational facilities, golf courses and other related careers.

Students earning an associate in applied science degree in Park and Grounds Operation Management are required to complete 63-credit hours of work.

Certificate options in Park and Grounds Operation Management are also available.

Required Core Courses:

PKM 140	Grounds Equipment and Shop Operation	4
PKM 210	Drainage and Irrigation ¹	3
PKM 214	Principles of Landscape Design and Construction ²	4
PKM 220	Arboriculture ²	4
PKM 250	Park Management Seminar ²	1
PST 101	Ornamental Plants ¹	4
PST 102	Plant Diseases and Pests ²	4
PST 110	Soil Science	4
PST 111	Basic Horticulture Skills ¹	4
PST 212	Turfgrass Science ¹	4

Required General Education Courses:

BIO 120	Botany	4
	Communications electives ³	6
PED 201	Safety and First Aid ⁴	3
	Mathematics elective ⁵	3

Students must select 5-credit hours from at least two of the following areas:

	Humanities, Natural Sciences or Social Sciences	5
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Electives: Select a minimum of 6-credit hours from the following:

ELT 142	Basic Electricity (Residential/Commercial)	2
PKM 100	Park and Horticulture Careers ¹	1
PKM 141	Basic Carpentry Skills	2
PKM 143	Basic Plumbing Skills	2
PKM 150	Park and Plant Science Technology Internship ⁶	5
PKM 230	Contracts, Specifications and Estimating	3
PKM 240	Grounds Equipment and Power Units ⁷	4
PKM 242	Golf Course Management ⁷	4
PST 244	Nursery Management ⁷	3
PST 248	Garden Center Management ⁷	3

¹Offered during fall semester only.

²Offered during spring semester only.

³Students may elect ENG 100, ENG 101 or ENG 102, depending on their test scores and advice of a student development faculty member. ENG 130 may be taken as the second English course.

⁴May be waived if a comparable certificate is presented.

⁵A competency test, available in the testing office, may be utilized to meet the mathematics requirement. Students who utilize the competency test to meet the mathematics requirement must complete a 3-credit hour PKM or PST elective.

⁶See coordinator.

⁷May be offered every other year.

Plant Science Technology

Plant Science Technology is a two-year career program leading to an associate in applied science degree. Students can prepare for employment in floral design, garden centers, greenhouses, grounds maintenance, landscape design and construction, nurseries, pesticide application, plant propagation, and other green industry careers.

Plant Science Technology study areas are also available as a certification of completion in a specialized area.

Certificate options in Plant Science Technology are also available.

Required Core Courses:

PKM 100 Park and Horticulture Careers ¹	_____	1
PKM 214 Principles of Landscape Design and Construction ²	_____	4
PKM 220 Arboriculture ²	_____	4
PKM 250 Park Management Seminar ²	_____	1
PST 101 Ornamental Plants ¹	_____	4
PST 102 Plant Diseases and Pests ²	_____	4
PST 110 Soil Science	_____	4
PST 106 Introductory Horticulture (2) ³ and		
PST 108 Introductory Horticulture Laboratory (2) ³ or		
PST 111 Basic Horticulture Skills (4) ¹	_____	4
		26

Required General Education Courses:

BIO 120 Botany	_____	4
Communications electives ⁴	_____	6
PED 201 Safety and First Aid ⁵	_____	3
Mathematics elective ⁶	_____	3
Students must select 5-credit hours from at least two of the following areas:		
Humanities, Natural Sciences or Social Sciences	_____	5
		21

Specialized Study Areas

Floral Design

Required:

PST 104 Floral Design ¹	_____	3
PST 204 Advanced Floral Design ²	_____	3
PST 205 Master Floral Design I	_____	2
PST 206 Master Floral Design II	_____	2
PST 207 Master Floral Design III	_____	2
PST 247 Floral Shop Management ²	_____	3
		15

Total 61 credit hours for Floral Design option

Horticulture

Required:

MGT elective ⁷	_____	3
PKM 140 Grounds Equipment and Shop Operation	_____	4
		7

Electives: Select any 10-credit hours from the following:

ELT 142 Basic Electricity (Residential/Commercial)	_____	2
PKM 141 Basic Carpentry Skills	_____	2
PKM 143 Basic Plumbing Skills	_____	2
PKM 210 Drainage and Irrigation ¹	_____	3
PKM 230 Contracts, Specifications, Estimating ⁸	_____	3
PKM 240 Grounds Equipment Power Units ⁸	_____	4
PKM 242 Golf Course Management ⁸	_____	4
PST 104 Floral Design ¹	_____	3
PST 212 Turfgrass Science ¹	_____	4
PST 244 Nursery Management ⁸	_____	3
PST 248 Garden Center Operations ⁸	_____	3

Total 63 credit hours for Horticulture option

¹Offered during fall semester only.

²Offered during spring semester only.

³PST 106 and PST 108 may be substituted for PST 111 with consent of coordinator.

⁴Students may elect ENG 100, ENG 101 or ENG 102, depending on their test scores and advice of a student development faculty member. ENG 130 may be taken as a second English course.

⁵May be waived if a comparable certificate is presented.

⁶Floral Design option: A competency test, available in the testing office, may be utilized to meet the mathematics requirement. Students who utilize the competency test to meet the mathematics requirement must complete a 3-credit hour PKM or PST elective.

Horticulture option: Students may elect any mathematics course offered, depending on their test score and advice of a student development faculty member; however, only MTH 100 or higher will satisfy this requirement. MGT 150 will also satisfy this requirement.

⁷MGT elective: MGT 111, MGT 154, MGT 160.

⁸May be offered every other year.

Real Estate

Real Estate is a two-year career program leading to an associate in applied science degree. This program is designed for those men and women who desire to excel as real estate salespersons or wish to expand their career opportunities to include managing or owning a real estate business. Career objectives might also include appraising, banking, savings and loan, title company, mortgage brokerage, estate counseling and others.

A certificate option in Real Estate is available.

First Year

First Semester

ACC 156	Survey of Accounting	3
ATE 209	Principles of Building Construction	3
ENG 100	Composition or	
ENG 101	Composition	3
MGT 111	Introduction to Business Organization	3
RES 101	Real Estate Transactions	3
RES 105	Real Estate Math Applications or	
RES 140	Standards of Professional Appraisal Practice	1
		16

Second Semester

CIS 100	Computer Literacy or	
CIS 101	Introduction to Computer Information Systems	3
ENG 130	Business Writing	3
	Mathematics elective***	3
	RES elective ¹	3
RES 123	Real Estate Law	3
		15

Second Year

First Semester

ACC 157	Survey of Business Law or	
MKT 245	Principles of Marketing	3
ECO 200	Introduction to Economics	3
	Natural Science or Social Science elective	3
PHI 150	Business Ethics	3
RES elective ²		4
		16

Second Semester

	Elective ³	3
MGT 154	Small Business Management	3
	MKT elective	3
RES 124	Real Estate Finance or	
RES 230	Property Management Methods	3
RES 233	Real Estate Problems Seminar	3
		15

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the proficiency test to meet the mathematics requirement must take a three-credit hour RES elective.

¹May be chosen from RES 121, RES 150 or RES 220.

²May be chosen from RES 160 or RES 110 and RES 221.

³May be chosen from BCE 101, BFC 101 or MKT 217.

Refrigeration and Air Conditioning Technology

Refrigeration and Air Conditioning Technology is a two-year career program leading to an associate in applied science degree. The courses in the curriculum are theory design and service oriented. Theory courses deal with energy conversions. Service courses are strongly related to a hands-on philosophy. Emphasis is placed upon operating, servicing and installing equipment.

Graduates from this program may be employed as engineering laboratory assistants, equipment salesmen, heating and refrigeration servicemen, estimators and system designers or stationary engineers.

Certificate options in Refrigeration and Air Conditioning are available.

Summer Semester

RAC 100 Heating and Cooling
Exploration¹ _____ 1

First Year² _____

First Semester

English elective³ _____ 3
RAC 101 Refrigeration
Fundamentals _____ 4
RAC 103 Heating Principles _____ 4
RAC 105 Heating and Cooling
Controls _____ 4
15

Second Semester

MET 101 Applied Mechanical Drafting⁴ _____ 3
RAC 102 Refrigeration Systems _____ 4
RAC 104 Residential Comfort
Systems _____ 4
RAC 106 Advanced Controls _____ 4
15

Summer Semester

RAC 200 Heating and Cooling
Internship¹ _____ 2

Second Year² _____

First Semester

English elective³ _____ 3
RAC 201 Refrigeration System
Design I _____ 4
RAC 203 Air Conditioning Principles _____ 4
Social Science elective _____ 3
14

Second Semester

Humanities elective⁵ _____ 3
Mathematics elective*** _____ 3
RAC 202 Refrigeration System
Design II _____ 4
RAC 204 Air Distribution _____ 3
Social Science elective _____ 3
16

***A competency test, available in the testing office, may be utilized to meet the mathematics elective requirement. Students in this program who utilize the proficiency test to meet the mathematics requirement must complete a three (3) credit hour course from the following list: MET 110, MGT 111, MGT 154, MGT 160, RAC 208, RAC 211 or RAC 290.

¹RAC 100 and RAC 200 may be counted as technical electives with approval of coordinator.

²RAC 290 may be substituted for some of the listed RAC courses, with approval of coordinator.

³Students may take ENG 100 or ENG 101 the first semester, depending upon their test scores and the advice of a student development faculty member. ENG 102, ENG 103 or ENG 130 are suggested second semester electives.

⁴Students will enroll in sections of MET 101 designed for RAC students.

⁵Suggested humanities elective: ART 122 or PHI 110.

See: Executive Secretarial Development
Legal Secretary
Medical Office Assistant
Medical/Dental Secretary

Small Business Management

Small Business Management is a two-year career program leading to an associate in applied science degree. This program is designed as pre-service training for those people planning a career in small business. Additionally, the program may provide in-service training for people working in the field.

A certificate option is available in Small Business Management.

First Year _____

First Semester	
ACC 156 Survey of Accounting _____	3
ENG 101 Composition _____	3
MGT 111 Introduction to Business Organization _____	3
MGT 150 Business Math _____	3
PSY 101 Introduction to Psychology _____	3
OFC 133 Word Processing Software I ¹ _____	2
	17

Second Semester

ACC 157 Survey of Business Law _____	3
CIS 122 Data Base for Micros _____	1
Elective ² _____	3
ENG 130 Business Writing _____	3
MGT 140 Practical Management Interaction _____	3
MGT 154 Small Business Management _____	3
	16

Second Year _____

First Semester

CIS 124 Advanced Spreadsheet for Micros _____	1
Elective ² _____	6
MGT 160 Principles of Supervision _____	3
PHI 150 Business Ethics _____	3
PSY 145 Psychology in Business and Industry _____	3
	16

Second Semester

Electives ² _____	6
MGT 254 Small Business Formation _____	3
MKT 245 Principles of Marketing _____	3
	12

¹Prerequisite waived for Small Business Management students.

²Electives: ECO 115, INS 121, MAT 101, MGT 115, MGT 160, MGT 165, MGT 211, MGT 230, MGT 250, MGT 270, MGT 274, MGT 275, MGT 280, MKT 106, MKT 140, MKT 217, MKT 240, MKT 250.

Supervisory and Administrative Management

Supervisory and Administrative Management is a two-year career program leading to an associate in applied science degree. The program is designed to assist students in a wide variety of business occupations. The curriculum is structured to meet the needs of individuals interested in gaining or improving management skills. The program not only develops abilities to organize, coordinate and evaluate the functions of a unit, department or branch of an organization in either an industrial or an administrative management capacity, but it also provides the fundamental management skills needed by the successful owner-manager of a business.

A certificate option is available in Supervisory and Administrative Management.

First Year _____

First Semester

ACC 101 Principles of Accounting	
Theory I _____	3
ENG 101 Composition _____	3
MGT 111 Introduction to Business	
Organization _____	3
MGT 150 Business Math*** _____	3
MGT 160 Principles of Supervision _____	3
PSY 101 Introduction to	
Psychology _____	3
	18

Second Semester

ACC 102 Principles of Accounting	
Theory II _____	3
CIS 101 Introduction to Computer	
Information Systems _____	3
English elective _____	3
MGT 270 Principles of Management _____	3
PSY 145 Psychology in	
Business and Industry _____	3
	15

Second Year _____

First Semester

ACC 211 Business Law I _____	3
ECO 200 Introduction to Economics _____	3
Electives ¹ _____	6
MKT 245 Principles of Marketing _____	3
	15

Second Semester

Humanities elective _____	3
Electives ¹ _____	6
MGT 218 Introduction to Finance _____	3
MGT 291 Problems in Management and	
Supervision _____	3
	15

***A proficiency test, available in the testing office, may be utilized to meet the MGT 150 requirement.

¹ Electives: ACC 215, ACC 216, MGT 115, MGT 120, MGT 140, MGT 154, MGT 165, MGT 167, MGT 168, MGT 170, MGT 172, MGT 173, MGT 174, MGT 204, MGT 211, MGT 215, MGT 216, MGT 225, MGT 230, MGT 250, MGT 254, MGT 265, MGT 266, MGT 274, MGT 275, MGT 276.

Certificate Programs

A certificate program is a sequence of courses in a specialized academic and/or technical area requiring approximately two or three years of part-time or one year full-time course work. Completion of the course work required for a specific program with a grade point average of 2.0 (C) or higher entitles the student to a certificate of achievement in that field of specialization.

Courses in certificate programs are offered in the evening as well as during the day to permit part-time evening students to meet their particular training needs and to reach an obtainable goal within a reasonable period of time. All courses creditable toward a certificate are also applicable toward an associate degree.

Accounting Aide

This 18-credit hour certificate program is designed for persons interested in pursuing careers as junior accountants in business, government and industry. There is an acute shortage of persons with the training needed to be successful in accounting.

Required:

ACC 101 Principles of Accounting Theory I _____	3
ACC 102 Principles of Accounting Theory II _____	3
CIS 123 Spreadsheet/Budgeting for Micros _____	1
CIS 124 Advanced Spreadsheet for Micros _____	1
CIS 125 Word Processing for Micros _____	1

Electives: Select any three courses from the following:

ACC 155 Tax and Payroll Accounting _____	4
ACC 201 Intermediate Accounting I _____	3
ACC 202 Intermediate Accounting II _____	3
ACC 203 Introductory Cost Accounting _____	3
ACC 250 Income Tax Accounting _____	3
ACC 251 Advanced Tax Accounting _____	3
ACC 253 Advanced Accounting I _____	3
ACC 254 Auditing _____	3

Accounting Clerk

This 9-credit hour certificate program provides the student with the courses needed for an entry level position in such areas as accounts payable, accounts receivable and inventory accounting.

ACC 101 Principles of Accounting Theory I _____	3
ACC 102 Principles of Accounting Theory II _____	3
CIS 123 Spreadsheet/Budgeting for Micros _____	1
CIS 124 Advanced Spreadsheet for Micros _____	1
CIS 125 Word Processing for Micros _____	1

Accounting—Payroll, State, and Local Taxes

This 7-credit hour certificate program will provide the student with the courses needed for an entry level position in this particular area.

ACC 155 Tax and Payroll Accounting _____	4
CIS 123 Spreadsheet/Budgeting for Micros _____	1
CIS 124 Advanced Spreadsheet for Micros _____	1
CIS 125 Word Processing for Micros _____	1

Administrative Assistant

This 30-credit hour certificate program is designed for persons with secretarial experience who are interested in expanding their business knowledge for higher level positions such as administrative assistant, office manager, or a higher level management position. A combination of 30 credit hours may be selected from the following courses with the approval of the coordinator of the program or a student development faculty member.

Required:

ACC 101 Principles of Accounting Theory ¹	_____	3
ENG 130 Business Writing I	_____	3
MGT 111 Introduction to Business Organization	_____	3
MGT 160 Principles of Supervision	_____	3
MGT 280 Human Relations in Business	_____	3

Electives: Select at least 15 credit hours from the following courses:

Accounting elective	_____	3
ACC 211 Business Law ¹	_____	3
CIS 101 Introduction to Computer Information Systems	_____	3
CIS 121 General Accounting Applications for Micros	_____	2
CIS 122 Data Base for Micros	_____	1
CIS 123 Spreadsheet/Budgeting for Micros	_____	1
CIS 124 Advanced Spreadsheet for Micros	_____	1
ECO 200 Introduction to Economics ¹	_____	3
ENG 103 Technical and Report Writing	_____	3
MGT 167 Records and Information Management I	_____	3
MGT 265 Personnel Management	_____	3
MGT 267 Office and Administrative Management	_____	3
MGT 270 Principles of Management	_____	3
MGT 275 Labor-Management Relations	_____	3
PSY 145 Psychology in Business and Industry	_____	3
OFC 106 Time Management for Office Careers ¹	_____	1
OFC 228 Records Control for the Office ¹	_____	1
OFC 229 Meeting and Conference Planning ¹	_____	1
Word Processing equipment electives	_____	2-6

¹For those who have passed the Certified Professional Secretary Examination within the past five years, credit will be given for these courses. Contact the testing office for information on procedures and appropriate fees.

Air Conditioning

See: Refrigeration and Air Conditioning

Architectural Technology

This is a technical program leading to a certificate of completion of any of the following courses, totaling 15 credit hours, providing the combination has approval of a student development faculty member. The curriculum emphasis is on architecture in the related areas of construction, CAD, drafting, estimating, specifications, construction management, model making, historical survey, rendering and perspective drawing.

This is also a two-year Architectural Technology career program leading to an associate degree.

ATE 101 Introduction to Architectural Technology I	_____	4
ATE 102 Introduction to Architectural Technology II	_____	4
ATE 103 Building Materials Technology I	_____	4
ATE 104 Building Materials Technology II	_____	4
ATE 105 Architectural CAD I	_____	3
ATE 106 Architectural CAD II	_____	3
ATE 107 Architectural Principles for the Interior Designer I	_____	4
ATE 108 Architectural Principles for the Interior Designer II	_____	4
ATE 109 Chicago's Great Architectural Tradition	_____	3
ATE 201 Comprehensive Building Project I	_____	4
ATE 202 Comprehensive Building Project II	_____	4
ATE 203 Construction Problems I	_____	4
ATE 204 Construction Problems II	_____	4
ATE 205 Architectural Computer Applications I	_____	3
ATE 206 Architectural Computer Applications II	_____	3
ATE 207 Architectural Statics	_____	3
ATE 208 Architectural Strength of Materials	_____	3
ATE 209 Principles of Building Construction	_____	3
ATE 210 Cost Estimating	_____	3
ATE 211 Solar Energy Architecture	_____	3
ATE 212 Architectural Presentation Graphics	_____	3
ATE 213 Construction Management Process	_____	3
ATE 214 Architectural Models	_____	3

Automation Skills

This 30-credit hour certificate program is designed to train students in a variety of entry level positions in industries targeting service and maintenance activities. The curriculum offers courses in a wide variety of specific topics leading to an understanding of robotics and automated manufacturing repair and maintenance needs of industry.

Any combination of 30-credit hours may be selected from the courses listed below, providing the combination has approval of coordinator.

Graduates may find employment in a variety of electricity-electronic or mechanical related industries with job classifications of millwright, maintenance mechanic or field service mechanic.

AUT 101	Analog Electricity-Electronics	4
AUT 105	Digital Electronics	4
AUT 108	Industrial Computer Overview	1
AUT 110	Safety and OSHA	1
AUT 125	Optics: Fiber	2
AUT 130	Pneumatics and Hydraulics	3
AUT 135	Sensors	2
AUT 140	Controllers-PLC's	2
AUT 145	Print, Measurements and QC	3
AUT 146	Industrial Blueprint Reading	1
AUT 147	Measurements and Instruments	1
AUT 148	Quality Skills	1
AUT 155	Machine Shop Practices	3
AUT 160	Robotic Systems	6
AUT 165	CNC Setup and Operation	1

Banking and Finance

This program, totaling 18-credit hours, is designed for those currently employed in, or seeking employment in, banks, savings and loans associations, credit unions or other finance-oriented enterprises. The curriculum emphasizes developing the competencies necessary for supervisory and public contact positions in the finance field. Students may apply this entire program toward the two-year associate degree in Financial Institution Management and Financial Management.

ACC 101	Principles of Accounting Theory I	3
BFC 101	Principles of Financial Institution Operations	3
BFC 102	Commercial Law	3
BFC 117	Marketing for Financial Institutions	3
Electives ¹		6

¹Electives: BFC 115, BFC 118, BFC 200, BFC 211, BFC 212, BFC 213, BFC 215, BFC 216, BFC 217, BFC 219, BFC 220, BFC 225, BFC 235, ECO 210, INS 121.

Bread and Pastry Arts

This is a 26-credit hour certificate program planned to prepare students for entrance into the food service industry. Graduates may be able to secure positions as qualified bakers and bakers' helpers in institutional, retail and commercial bakeries.

There is also a two-year Hospitality Management career program leading to an associate degree.

First Semester

FSM 107	Basic Quantity Bread and Pastry Arts	4
FSM 114	Food Standards and Sanitation	2
FSM 173	Cake Decoration	2
FSM electives ¹		6
		14

Second Semester

FSM 108	Advanced Quantity Bread and Pastry Arts	4
FSM 115	Menu Planning	3
FSM 172	Classical Baking	2
FSM electives ¹		3
		12

¹FSM electives: FSM 109, FSM 110, FSM 111, FSM 113, FSM 120, FSM 162, FSM 163, FSM 211, FSM 212, FSM 214, FSM 215, FSM 216, FSM 220, FSM 230, FSM 255.

Building Codes and Enforcement

This certificate program, which totals 24 credit hours, is designed to meet the educational and training needs of those employed in the building code compliance field, as well as those in the building and construction industry who are interested in keeping abreast of building code changes and requirements.

The emphasis of this specialized program is on building codes and their interpretation and application in the field. This offers students a unique opportunity to develop and expand their knowledge and skills. The certificate may enhance students' opportunities for employment and career advancement. New employment opportunities are cyclical in nature, and students should consult the program coordinator or student development faculty member before registering for this program.

BCE 101	Basic Construction for Building Codes	3
BCE 102	Basic Code Enforcement Techniques	3

BCE 104	Basic Mechanical and Energy Conservation Codes or	
FIS 123	Fire Prevention Principles II ¹	3
BCE 105	Basic Plumbing Codes	3
BCE 106	Basic Electrical Codes	3
BCE 201	Basic Building Codes	3
ENG 103	Technical and Report Writing	3
SPE 101	Fundamentals of Speech Communication	3

¹Prerequisite of FIS 122 will be waived.

Business Information Management^{1,2}

This certificate program, which totals 21-credit hours, is designed for the person who will be using the power of the new information technologies to help control costs, boost productivity, assist in new product and service introduction, improve sales and marketing efforts and help in controlling a company's strategic direction. Additionally, the program may provide pre-service training for those who may seek or be transferred into jobs within these fields.

There is also a two-year Business Information Management career program leading to an associate degree.

Required:

BIM 170	Introduction to Information Applications and Technologies	3
BIM 181	Enterprise-Wide Information Analysis	3
BIM 210	Information Applications Resources	3
BIM 220	Integration of Information Applications	3

Electives: Select 9 credit hours from the following courses, providing the combinations have approval of program coordinator.

ACC 101	Principles of Accounting Theory I	3
BIM 190	Electronic Information Exchanges	3
BIM 250	Multi-Media Business Presentations	3
BIM 260	Training and Development in Information Management	3
CIS 120	Introduction to Business Software Packages	3
CIS 121	General Accounting for Micros Applications	2
CIS 122	Data Base for Micros	1
CIS 123	Spreadsheet/Budgeting for Micros	1
CIS 124	Advanced Spreadsheet for Micros	1

CIS 126	Graphics for Micros	1
CIS 127	Advanced Business Graphics	1
CIS 128	DOS Basics for Micros	1
CIS 131	Microcomputer Printers	1
CIS 134	Personal Computer (DOS)	3
CIS 144	Advanced DOS	3
CIS 147	Windows	2
CIS 149	Personal Computer UNIX	3
CIS 170	Introduction to Data Communications	3
CIS 171	Microcomputer Networks	3
CIS 223	Spreadsheet Graphics	1
CIS 224	Spreadsheet Macros and Other Advanced Topics	1
MGT 111	Introduction to Business Organization	3
MGT 167	Records Management	3
MGT 267	Office and Administrative Management	3
MGT 270	Principles of Management	3
OFC 133	Word Processing Software I	2
OFC 134	Word Processing Software II	2
OFC 201	Advanced Features in Word Processing	2
OFC 202	Desktop Publishing Using Word Processing	2
OFC 204	Macros for Word Processing	2
OFC 205	Using Tables in Word Processing	2
OFC 206	Using Merges in Word Processing	2

¹It is recommended that BIM students have keyboarding skill. OFC 110 is recommended for students who cannot keyboard.

²Students should meet with the program coordinator to develop a specific course of study.

CAD Technician

This 19-20 credit hour certificate program is for individuals interested in a concentrated exposure in computer aided drafting, or CAD. This is especially suitable for those in the field of engineering who wish to fill a gap in their knowledge or those who wish to receive pre-service training in the area of CAD.

MET 102	Technical Drafting	3
MET 103	Descriptive Geometry	3
MET 202	Advanced Technical Drafting	3
MET 235	Computer Graphics	4
MET 236	Special Problems in Three-Dimensional Graphics	3
Technical electives ¹		3-4

¹Technical electives: MET 237, MFG 101, MFG 105, MFG 211.

Certified Professional Secretary

This is a 6-credit hour certificate program specifically designed for individuals with a high degree of secretarial skill and business experience who are currently employed as secretaries and wish to raise their level of professionalism and/or quality for promotion into executive secretarial, administrative assistant or managerial types of positions within a company.

This program emphasizes advanced secretarial and business training in order to provide the secretary with a deeper and broader understanding of the dynamics of the business world and the vital role performed by the secretary in the ever-increasing demands of the business.

OFC 260	Behavioral Science in Business (CPS)	1
OFC 261	Business Law (CPS)	1
OFC 262	Economics and Management (CPS)	1
OFC 263	Accounting (CPS)	1
OFC 264	Office Administration and Communication (CPS)	1
OFC 265	Office Technology (CPS)	1



Child Development

See: Early Childhood Education

CNC Technician

This 18-credit hour certificate program allows for in-depth course work in numerical control. Computers are now integrated into the systems used in the control of manufacturing equipment. Capabilities of these systems are similar to those of many small microcomputers. CNC, which stands for computerized numerical control, relates to this type of system. The following courses should help provide an individual with the background to assume a responsible position in this area.

MFG 101	Introduction to NC/CAM	3
MFG 105	Machining Processes I	3
MFG 115	Part Programming I	3
MFG 215	Part Programming II	3
Technical electives ¹		6
		18

¹Technical electives may be chosen from ELT 110, MFG 205, MTH 100, MTH 106, QUA 130, QUA 160.

Computer Information Systems—C Programming

This is an 18-credit hour certificate program to familiarize a student with the business use of C on the microcomputer. The student will gain exposure to microcomputers using the C programming language. This exposure will be useful to a person whose job or business requires the use of the C Programming language.

CIS 101	Introduction to Computer Information Systems	3
CIS 106	Computer Logic and Programming Technology	3
CIS 166	Introduction to Programming in C	4
CIS 176	Advanced C Programming	4
CIS 186	C Programming for Graphical User Interfaces or	
CIS 266	C++ and Object Oriented Software Development	4

Computer Information Systems Computer Operator

This 27-29 credit hour certificate program which includes the study of computer information systems, computer logic and programming technology, programming systems, an internship at an industrial training station and general clerical subjects. Graduates may find employment as computer operators, tape librarians, peripheral equipment handlers or in other clerical positions in computer installations in business, industry and government.

First Semester

CIS 101	Introduction to Computer Information Systems	3
CIS 106	Computer Logic and Programming Technology	3
CIS 135	Computer Operator (DOS)	3
ENG 101	Composition	3
MGT 111	Introduction to Business Organization	3
		15

Second Semester

CIS elective ¹		3-5
CIS 136	Job Control/Utilities	3
ENG 103	Technical and Report Writing	3
MGT 150	Business Math	3
		12-14

¹CIS electives: CIS 108, CIS 120, CIS 121, CIS 122, CIS 123, CIS 124, CIS 125, CIS 126, CIS 127, CIS 129, CIS 130, CIS 131, CIS 134, CIS 137, CIS 144, CIS 146, CIS 149, CIS 154, CIS 170, CIS 171, CIS 223, CIS 224.

Computer Information Systems—Microcomputers

This is a 16-credit hour certificate program designed to familiarize a student with the business uses of microcomputers. The student will gain exposure to microcomputers and microcomputer software. This exposure will be useful to the person whose job or business requires the use of a microcomputer.

There is also a two-year Computer Information Systems—Microcomputers in Business career program leading to an associate degree.

Required:

CIS 100	Computer Literacy or	
CIS 101	Introduction to Computer Information Systems	3
CIS 126	Graphics for Micros	1
CIS 134	Personal Computer (DOS)	3

Electives: Group I (select three hours)

CIS 120 Introduction to Business Software Packages _____	3
CIS 122 Data Base for Micros _____	1
CIS 123 Spreadsheet/Budgeting for Micros _____	1
CIS 125 Word Processing for Micros _____	1

Electives: Group II (select at least six hours¹)

CIS 105 Introduction to Multimedia _____	3
CIS 106 Computer Logic and Programming Technology _____	3
CIS 117 Introduction to Windows _____	1
CIS 121 General Accounting Application for Micros _____	2
CIS 124 Advanced Spreadsheet for Micros _____	1
CIS 127 Advanced Business Graphics _____	1
CIS 129 Personal Information Management _____	1
CIS 130 BASIC for Business _____	4
CIS 131 Microcomputer Printers _____	1
CIS 132 Advanced Business Software Packages _____	4
CIS 133 Personal Computer Programming— Assembler Language _____	4
CIS 144 Advanced DOS _____	3
CIS 146 Operating System-OS/2 _____	3
CIS 147 Windows _____	2
CIS 148 Personal Computer Utilities _____	2
CIS 152 Data Base Programming, Microcomputers _____	3
CIS 153 Expert Systems _____	3
CIS 154 Desktop Publishing _____	3
CIS 170 Introduction to Data Communications _____	3
CIS 171 Microcomputer Networks _____	3
CIS 203 Systems Analysis and Design I _____	3
CIS 204 Advanced Systems Analysis and Design _____	3
CIS 223 Spreadsheet Graphics _____	1
CIS 224 Spreadsheet Macros and Other Advanced Topics _____	1

¹Students must satisfy prerequisites for each course selected.

Electives: Select 9 credit hours from the following courses:

CIS 106 Computer Logic and Programming Technology _____	3
CIS 112 AS400 System Operations _____	3
CIS 113 AS400 Facilities _____	3
CIS 140 RPG Programming _____	3
CIS 240 Advanced RPG _____	3

**Computer Information Systems—
Technical**

Any combination of 15-credit hours may be selected from the courses listed below providing the appropriate prerequisites have been satisfied.

CIS 101 Introduction to Computer Information Systems _____	3
CIS 106 Computer Logic and Programming Technology _____	3
CIS 108 Computer Programming— COBOL _____	5
CIS 110 Computer Programming— Assembler Language _____	5
CIS 111 Introduction to the AS 400 _____	3
CIS 112 AS 400 System Operations _____	3
CIS 113 AS 400 Facilities _____	3
CIS 120 Introduction to Business Software Packages ¹ _____	3
CIS 121 General Accounting Applications for Micros ¹ _____	2
CIS 122 Data Base for Micros ¹ _____	1
CIS 123 Spreadsheet/Budgeting for Micros ¹ _____	1
CIS 124 Decision Support for Micros ¹ _____	1
CIS 125 Word Processing for Micros ¹ _____	1
CIS 126 Graphics for Micros ¹ _____	1
CIS 127 Advanced Business Graphics ¹ _____	1
CIS 128 DOS Basics for Micros ¹ _____	1
CIS 129 Personal Information Management ¹ _____	1
CIS 130 BASIC for Business _____	4
CIS 131 Microcomputer Printers ¹ _____	1
CIS 132 Advanced Business Software Packages _____	4
CIS 133 Personal Computer Programming— Assembler Language _____	4
CIS 134 Personal Computer (DOS) _____	3
CIS 135 Computer Operator (DOS) _____	3
CIS 136 Job Control/Utilities _____	3
CIS 140 RPG Programming _____	3
CIS 142 PL/1 Programming Language _____	3
CIS 150 Business FORTRAN _____	3

**Computer Information Systems—
Midrange**

This is a 15-credit hour certificate program designed to introduce the student to the AS400.

Required:

CIS 101 Introduction to Computer Information Systems _____	3
CIS 111 Introduction to the AS400 _____	3

CIS 152 Database Programming, Microcomputers _____	3
CIS 153 Expert Systems _____	3
CIS 154 Desktop Publishing _____	3
CIS 160 Introduction to Pascal Programming _____	3
CIS 166 Introduction to Programming in C _____	4
CIS 170 Introduction to Data Communication _____	3
CIS 171 Microcomputer Networks _____	3
CIS 176 Advanced C Programming _____	4
CIS 202 Programming Systems _____	3
CIS 203 Systems Analysis and Design I _____	3
CIS 204 Advanced Systems Analysis and Design _____	3
CIS 208 Computer Programming— Advanced COBOL _____	4
CIS 210 Computer Programming— Advanced Assembler Language _____	4
CIS 220 Topics in Data Processing _____	1-6
CIS 223 Spreadsheet Graphics _____	1
CIS 224 Spreadsheet Macros and Other Advanced Topics _____	1
CIS 231 Advanced BASIC with Graphical User Interfaces _____	4
CIS 240 Advanced RPG _____	3
CIS 266 C++ and Object Oriented Software Development _____	4
CIS 270 Data Communications with CICS Applications _____	4
CIS 280 Introduction to Data Base _____	3

¹No more than four hours may be selected from this group.

Criminal Justice

This 15-credit hour certificate program is designed to provide specialized education for those currently employed, or other interested persons who wish to obtain a certificate indicating completion of the courses as a group. Any combination of 15 credit hours may be selected from the courses listed below, providing the combination has coordinator approval. These courses must be taken at Harper College.

There is also a two-year Criminal Justice career program leading to an associate degree.

CRJ 101 Introduction to Criminal Justice _____	3
CRJ 105 Criminal Courts of the U.S. _____	3
CRJ 116 Introduction to Forensics _____	3
CRJ 203 Law and Society _____	3
CRJ 207 Vice and Drug Control _____	3
CRJ 213 Crime Prevention _____	3
CRJ 215 Alternative to Confinement _____	3

CRJ 216 Investigative Process _____	3
CRJ 220 Police Administration _____	3
CRJ 222 Police Operations _____	3
CRJ 224 Police Supervision _____	3
CRJ 226 Case Management _____	3
CRJ 235 Street Procedures _____	4
CRJ 238 Defensive Techniques _____	3

Culinary Arts

This is a 32-credit hour certificate program planned to prepare students for entrance into the food service industry. Graduates may be able to secure positions as head cooks, assistant cooks, specialty cooks, or chef's assistants.

There is also a two-year Hospitality Management career program leading to an associate degree.

First Semester

FSM 107 Basic Quantity Bread and Pastry Arts _____	4
FSM 109 Introduction to Food Preparation/Production _____	4
FSM 114 Food Standards and Sanitation _____	2
FSM elective ¹ _____	6
	16

Second Semester

FSM 110 Advanced Quantity Culinary Arts _____	4
FSM 115 Menu Planning _____	3
FSM 162 Classical Cuisine _____	4
FSM 163 Garde Manager _____	2
FSM electives ¹ _____	3
	16

¹FSM electives: FSM 111, FSM 113, FSM 120, FSM 172, FSM 173, FSM 211, FSM 212, FSM 214, FSM 220, FSM 255.

Dietary Manager

This 18-credit hour certificate program is designed for persons who desire a position in health care food service supervision. Food service personnel working in nutrition related fields who would like to enhance their management and clinical skills and promotion opportunities may also benefit from this program of study.

A dietary manager performs supervisory and clinical duties necessary to meet the basic nutritional needs of individuals. Supervision of employees, assuring menu acceptance by clients and managing food production are several of the responsibilities of a dietary manager.

The curriculum is approved by the Dietary Manager Association. Students who complete the 18-credit hour certificate are eligible to take a national certification examination.

There is also a two-year Dietetic Technician career program leading to an associate degree.

First Semester	
DIT 100 Introduction to Dietetics	2
DIT 101 Basic Nutrition	3
FSM 114 Food Standards and Sanitation	2
	7

Second Semester	
DIT 102 Advanced Nutrition	3
DIT 200 Dietetic Clinical Laboratory II ¹	5
DIT 220 Food Systems Administration ¹	3
	11

Digital Electronics and Micro-Processor Technology

¹Prerequisites waived for Dietary Manager student.

This is a 25-credit hour certificate program designed to give the student a job entry level skill in the field of digital electronics and microprocessors.

There is also a two-year Digital Electronics and Microprocessor Technology career program leading to an associate degree.

ELT 110 Introductory Electronics	4
ELT 111 Electronics I, Resistive	3
ELT 203 Electronics II, Digital	5
ELT 206 Electronic Computers	5
ELT 210 Computer Programming	3
MTH 106 Mathematics I	5
	25

Electrical Maintenance

Residential and commercial electrical servicing methods are the focus of this 11-credit hour certificate program. This program is designed for maintenance individuals interested in learning and upgrading skills in troubleshooting, repairing and maintaining of residential and commercial electrical equipment and machinery. Emphasis is on tools, measuring equipment, controls, motors, sensors and wiring diagrams. Single and three-phase delta and wye circuits are covered. In addition, an overview of pneumatics, hydraulics and programmable logic controllers is introduced.

ELT 110 Introductory Electronics	4
ELT 142 Basic Electricity (Residential/Commercial)	2
ELT 215 Industrial Controls and Motors	5

Electrocardiograph Technician

A concentrated two-semester, 10-credit hour certificate program designed for the person interested in becoming an electrocardiographer in a health care facility such as a hospital, health care practice or health maintenance organization.

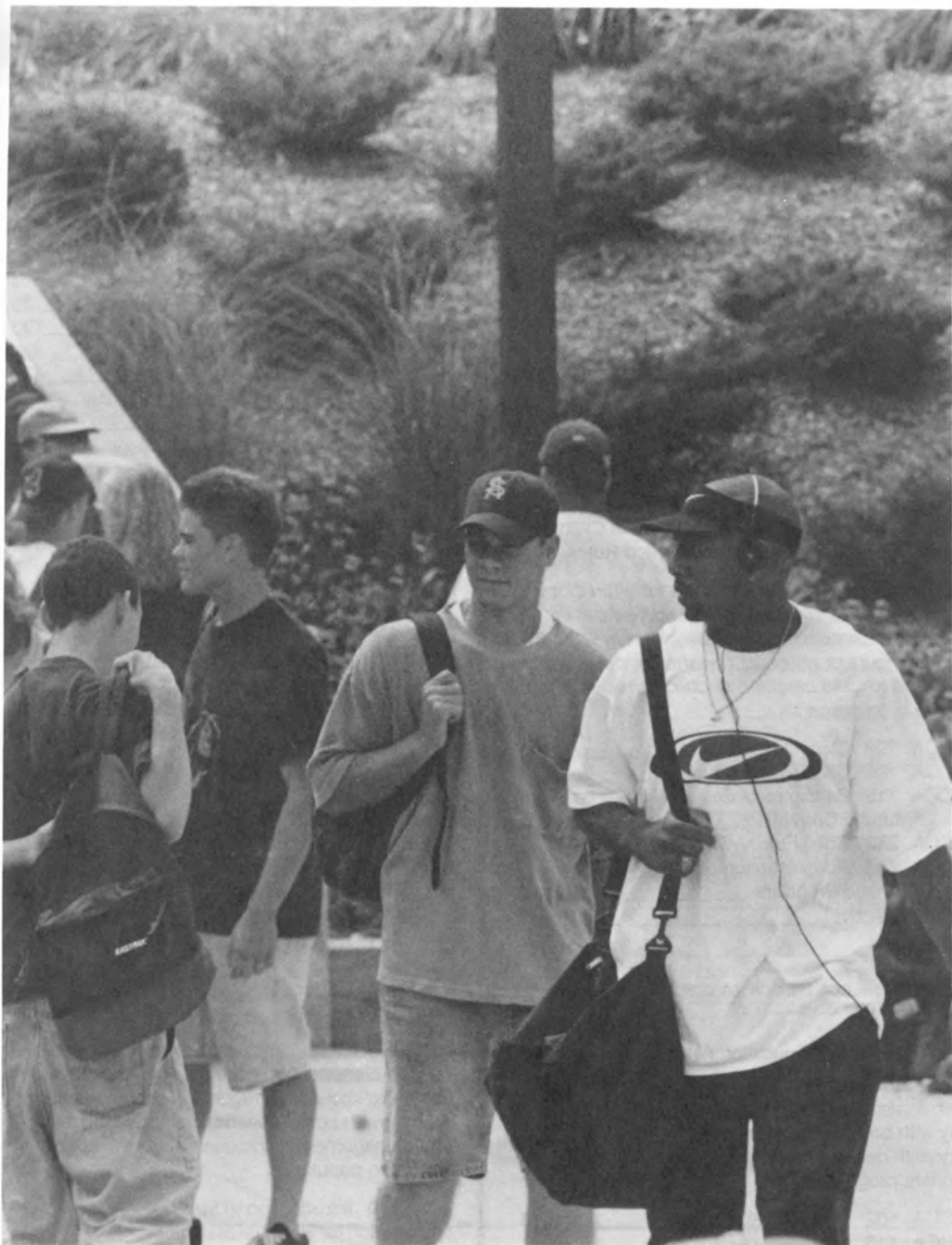
The program may be taken part-time and some of the courses are available on an evening schedule. An orientation and planning session with the coordinator is required for each student. Detailed information will be sent upon request or upon application to the program.

Completers of the Electrocardiograph Technician program are encouraged to sit for a national certification examination to become a certified ECG Technician.

HSC 105 Introduction to the Health Care Field	3
HSC 112 Medical Terminology	2
HSC 151 Math Applications in Health Care	1
MOA 204 Electrocardiography and Dysrhythmias ¹	2
MOA 284 ECG Seminar and Externship ²	2
	10

¹MOA 204 offered during fall semester only.

²MOA 284 offered during second 8-weeks of fall semester only.



Two of the boys in the group are wearing caps and carrying bags.

Two of the boys in the group are wearing caps and carrying bags.

Early Childhood Education Certificates

Early Childhood Education— Before/After School Care

This 6-credit hour certificate program provides basic knowledge about developmentally appropriate programming and guidance for school age care.

CCA 226 Observation and Guidance of the Young Child _____	3
CCA 235 Principles of School Age Care _____	3

Early Childhood Administrator

This 18-credit hour certificate program is designed specifically to meet the training/educational requirements of early childhood centers, as requested by the Illinois Department of Children and Family Services, **Text of Adopted Rules.**

Minimal education requirements for a director in a licensed child care center are two years of credit from an accredited college or university with 18-credit hours or equivalent quarter hours in courses related to child care and/or child development from birth to age six.

CCA 102 Child Development I _____	3
CCA 103 Child Development II _____	3
CCA 115 Principles of Early Childhood Curriculum _____	3
CCA 252 Child-Family-Community _____	3
CCA 253 Administration of Early Childhood Programs _____	3
CCA elective ¹ _____	3

¹CCA elective: CCA 111, CCA 209, CCA 219, CCA 223, CCA 226, CCA 230, CCA 235, HSC 220.

Early Childhood Education Assistant Teacher

This 6-credit hour certificate program will provide an assistant teacher in a licensed child care facility with basic knowledge regarding child growth/development and developmentally appropriate programming.

CCA 102 Child Development I _____	3
CCA 115 Principles of Early Childhood Curriculum _____	3

Early Childhood Education Teacher

This 30-credit hour certificate program emphasizes a combination of theoretical and practical knowledge. It meets the minimal educational requirements established by the Illinois Department of Children and Family Services, for an early childhood teacher who has obtained one year's experience in a licensed center.

CCA 101 Introduction to Early Childhood Education _____	3
CCA 102 Child Development I _____	3
CCA 115 Principles of Early Childhood Curriculum _____	3
CCA 209 Language Development and Activities for the Young Child _____	3
CCA 210 Creative Activities for Young Children or	
CCA 221 Math and Science for the Young Child _____	3
CCA 219 Psychology of Exceptional Children or	
CCA 223 Exceptional Child in Early Childhood Programs _____	3
CCA 226 Observation and Guidance of the Young Child _____	3
CCA 252 Child-Family-Community _____	3
CCA 291 Practicum I _____	3
CCA electives ² _____	3

Early Childhood Education— Infant/Toddler

This 6-credit hour certificate program provides theoretical and practical knowledge about infants and toddlers.

CCA 102 Child Development I _____	3
CCA 111 First Three Years of Life _____	3

Early Childhood Education— Special Education Paraprofessional

This 6-credit hour certificate program will provide a paraprofessional in a special education facility with basic knowledge regarding characteristics of children with special needs, methods, and behavioral management techniques within the special education population.

CCA 120 Introduction to Special Education for Paraprofessionals _____	3
CCA 121 Behavioral Management in Special Education Setting _____	3

²Any CCA course including CCA 151, CCA 152, CCA 153, CCA 154, CCA 155, CCA 156 or CCA 158.

Electronics

Any combination of 16-credit hours may be selected from the courses listed below, providing the combination has approval of program coordinator.

There is also a two-year Electronics Technology career program leading to an associate degree.

ELT 101	Circuits I _____	5
ELT 102	Circuits II _____	4
ELT 103	Circuits III, Networks _____	5
ELT 105	Electro-Mechanical Drafting _____	3
ELT 110	Introductory Electronics _____	4
ELT 111	Electronics I, Resistive _____	3
ELT 142	Basic Electricity (Residential/Commerical) _____	2
ELT 203	Electronics II, Digital _____	5
ELT 204	Electronics III, Advanced Electronics _____	5
ELT 205	Electronic Instrumentation _____	4
ELT 206	Electronic Computers _____	5
ELT 207	UHF Communications and Reception _____	4
ELT 210	Computer Programming _____	4
ELT 215	Industrial Controls and Motors _____	4
MTH 100	Basic Applied Mathematics _____	3
MTH 106	Mathematics I _____	5
MTH 107	Mathematics II _____	5
MTH 206	Mathematics III _____	3

Fashion Design

Any combination of 15-credit hours may be selected from the courses listed below, providing the combination has coordinator approval.

There is also a two-year Fashion Design career program leading to an associate degree.

FAS 101	Flat Pattern Design and Draping I _____	3
FAS 102	Flat Pattern Design and Draping II _____	3
FAS 103	Apparel Design and Construction I _____	3
FAS 104	Apparel Design and Construction II _____	3
FAS 105	Fashion Design Illustration I _____	1
FAS 106	Fashion Design Illustration II _____	1
FAS 107	Textiles I _____	2
FAS 108	Textiles II _____	2
FAS 109	Fashion Arts and Design _____	2
FAS 110	Costume History _____	2
FAS 114	Fashion Modeling _____	1
FAS 201	Advanced Flat Pattern Design and Draping I _____	4
FAS 202	Advanced Flat Pattern Design and Draping II _____	4
FAS 203	Advanced Diversified Apparel Design I _____	4
FAS 204	Advanced Diversified Apparel Design II _____	4
FAS 205	Tailoring Techniques I _____	2
FAS 206	Tailoring Techniques II _____	2
FAS 209	Advanced Fashion Illustration I _____	1
FAS 210	Advanced Fashion Illustration II _____	1
FAS 212	Visual Fashion Merchandising _____	2

Fire Science Technology

This 15-credit hour certificate program is designed to upgrade people currently employed in the fire science field and to enable them to seek more responsible positions within that field by furthering their knowledge in special areas of fire science.

There is also a two-year Fire Science Technology career program leading to an associate degree.

Electives: Select at least 6 credit hours from the following courses.

ENG 100	Composition	3
ENG 101	Composition	3
ENG 103	Technical and Report Writing	3
MTH 100	Basic Applied Mathematics	3
SOC 101	Introduction to Sociology	3

Electives: Select at least 9 credit hours from the following courses, providing the combination has approval of a student development faculty member.

FIS 100	Introduction to Fire Science	3
FIS 101	Municipal Fire Administration I	3
FIS 103	Fire Fighting Tactics I	3
FIS 112	Fire Alarm and Extinguishing Systems	3
FIS 122	Fire Prevention Principles I	3
FIS 123	Fire Prevention Principles II	3
FIS 132	Hazardous Materials I	3
FIS 133	Hazardous Materials II	3
FIS 145	Fire Instructor I	3
FIS 201	Municipal Fire Administration II	3
FIS 203	Fire Fighting Tactics II	3
FIS 222	Fire Prevention Principles III	3
FIS 223	Fire Prevention Principles IV	3
FIS 224	Fire Prevention Principles V	3
FIS 242	Fire Hydraulics	3
FIS 262	Water Supply Analysis	3
HSC 110	Emergency Medical Technical Training	6

Food Service Management

See: Hospitality Management

Health Insurance Coder

This concentrated 30-credit hour certificate program is designed for the individual who is interested in becoming an insurance claims approver in an insurance company or an insurance coder in an HMO or large health care practice. The program offers a generalized exposure to the health care field, plus specific training in insurance coding procedures and experience which should enable the graduate to assume a responsible position within the health insurance industry.

This certificate program may be taken part-time and many courses are available on an evening schedule, however, not all courses are offered every semester and some courses are offered on an eight-week basis. An orientation and planning session with the coordinator is recommended for each student. Detailed information will be sent upon request or upon application to the program.

First Semester

HSC 100	Computer Usage in Health Care	1
HSC 105	Introduction to the Health Care Field	3
HSC 112	Medical Terminology	2
MOA 145	Health Care Records Management	2
MOA 195	Health Insurance and Coding	2
MOA 201	Advanced Clinical Principles	3
MOA 250	Insurance Coding Seminar and Externship I ¹	2
		15

Second Semester

BIO 136	Introduction to Human Diseases	3
HSC 151	Math Applications in Health Care	1
HSC 213	Medical Law and Ethics	3
MOA 245	Health Care Office Management	3
MOA 255	Insurance Coding Seminar and Externship II ²	3
NUR 200	Pharmacology ³	2
		15

¹Scheduled second 8 weeks of first semester.

²Scheduled for 16 weeks of second semester.

³Prerequisite waived for coding student.

Hospitality Management

This is a 24-credit hour certificate program designed for people presently employed in the hospitality industry enabling them to upgrade their management skills to assume more responsible positions. Upon completion of this program, students may also be awarded a Management Development Diploma by the National Restaurant Association. Contact the Hospitality Management coordinator for details.

There is also a two-year Hospitality Management career program leading to an associate degree.

First Semester

FSM 111 Introduction to the Hospitality Industry _____	3
FSM 114 Food Standards and Sanitation _____	2
FSM 115 Menu Planning _____	3
FSM 230 Hospitality Law and Risk Management _____	4
	12

Second Semester

FSM 211 Purchasing and Storage _____	3
FSM 212 Hospitality Supervision _____	3
FSM 214 Hospitality Operations Analysis _____	3
FSM 215 Restaurant Layout and Equipment _____	3
	12

Hotel Management

This 21-credit hour certificate program is designed for people presently employed in the lodging industry enabling them to upgrade their management skills to assume more responsible positions. Upon completion of this program, students may be awarded a Rooms Division Management Certificate of Specialization from the Educational Institute of the American Hotel and Motel Association. Contact the Hospitality Management coordinator for details.

There is also a two-year Hospitality Management career program leading to an associate degree.

Required:

CIS 100 Computer Literacy _____	3
FSM 120 Front Office Operations _____	3
FSM 210 Hospitality Facility Maintenance _____	3
FSM 212 Hospitality Supervisor _____	3
FSM 230 Hospitality Law and Risk Management _____	4

Electives: Select at least 5 credit hours from the following courses:

FSM 111 Introduction to the Hospitality Industry _____	3
FSM 114 Food Standards and Sanitation _____	2
FSM 214 Hospitality Operations Analysis _____	3
FSM 220 Hospitality Promotions _____	3

Human Resource Management

This 24-credit hour certificate program is designed for those individuals either currently employed or wishing to be employed in the human resource field.

Required:

MGT 160 Principles of Supervision _____	3
MGT 265 Human Resources Management _____	3

Electives: Select 12 credit hours from the following:

ACC 215 Labor Law _____	3
ACC 216 Employment Law _____	3
MGT 167 Records Management _____	3
MGT 168 OSHA Standards and Compliance Procedures _____	3
MGT 204 Training and Development _____	3
MGT 266 Wage Analysis and Administration _____	3
MGT 275 Labor-Management Relations _____	3
MGT 276 Collective Bargaining _____	3
PSY 145 Psychology in Business and Industry ¹ _____	3

Electives: Select 6 credit hours from the following:

MGT 111 Introduction to Business Organization _____	3
MGT 270 Principles of Management _____	3
MGT 280 Human Relations in Business _____	3

¹Prerequisite waived for Human Resource Management students.

Industrial and Retail Security¹

This 15-credit hour certificate program is designed to provide a specialized group of courses for those presently employed and for those who may wish to have a better knowledge of this area when seeking employment in the security field. To qualify for the certificate, students must take a total of 15 credit hours at Harper College.

There is also a two-year Criminal Justice career program leading to an associate degree.

Required:

CRJ 250 Industrial Security Administration _____	3
CRJ 252 Industrial Fire Protection, Disaster Control _____	3
CRJ 253 Safety Management _____	3

Electives: Select at least 6 credit hours from the following:

CRJ 201 Criminal Law I _____	3
CRJ 202 Criminal Law II _____	3
CRJ 213 Crime Prevention _____	3
CRJ 216 Investigative Process _____	3
CRJ 222 Police Operations _____	3
CRJ 226 Case Management _____	3
CRJ 235 Street Procedures _____	4
CRJ 238 Defensive Techniques _____	3

¹Students having special needs should see the coordinator.

Insurance

This 18-credit hour certificate program is designed for those individuals currently employed in, or seeking employment in, property/liability or life/health insurance companies or agencies. It is especially suited for those in the field who are seeking to fill in knowledge "gaps" in their total preparation. Students may apply this entire program toward the two-year associate in applied science degree in Insurance.

BFC 102	Commercial Law	3
Elective ¹		3
INS 121	Principles of Property and Liability Insurance	3
INS 122	Principles of Personal Insurance or	
INS 124	Principles of Life and Health Insurance	3
INS 123	Principles of Commercial Insurance or	
INS 125	Life and Health Insurance Company Operations	3
MGT 111	Introduction to Business Organization	3

¹Elective: ACC 101, CIS 100, CIS 120, ECO 201, ENG 101, MGT 150, PHI 150, SPE 101.



International Business

This 30-credit hour certificate program will prepare students for entry-level positions in the field of international business. The specific goal of this program is to provide students with sufficient competencies in international business to allow them to qualify for and succeed in positions with firms such as international freight forwarders, export and import management companies and financial institutions dealing with companies in the field of international trade.

There is also a two-year International Marketing career program leading to an associate degree.

First Semester

ACC 101	Principles of Accounting Theory I	_____	3
MGT 115	Introduction to International Business	_____	3
MKT 190	Export Documentation	_____	3
MKT 260	International Marketing	_____	3
MKT 290	Principles of Exporting	_____	3
			15

Second Semester

BFC 225	International Finance	_____	3
MKT	elective	_____	3
MKT 245	Principles of Marketing	_____	3
MKT 292	International Marketing Research	_____	3
MKT 293	International Marketing Channel Strategy	_____	3
			15

Journalism

These certificate programs are for individuals who are interested in a concentrated exposure to writing and/or design for publications in the media, the business world or home-based businesses.

Students may tailor their program to emphasize advertising, design, public relations, publishing or writing. Desktop publishing is emphasized in JNM 232, JNM 233, JNM 235 and IDS 290. Contact the program coordinator for assistance in planning and selecting courses.

There is also a two-year Journalism degree program leading to an associate degree.

Media Design

This is a 15-credit hour certificate program designed for those students who want to focus on design for the media.

Required:			
ART 121	Design I	_____	3
JNM 137	Media Writing	_____	3

Electives:

ART 110	Drawing I	_____	3
ART 240	Computer Graphics Studio	_____	3
IDS 290	Independent Study ¹	_____	3-4
JNM 232	Advertising Copywriting and Design	_____	3
JNM 233	Public Relations Writing and Design	_____	3
JNM 235	Publications Editing and Design	_____	3

¹Honors section.

Media Writing

This is a 15-credit hour certificate program designed for those students who want to focus on writing for the media.

Required:

JNM 137	Media Writing	_____	3
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Electives: Select 12 credit hours from the following:

IDS 290	Independent Study ¹	_____	3-4
JNM 131	News Reporting and Writing	_____	3
JNM 133	Feature Writing	_____	3
JNM 136	Broadcast Writing	_____	3
JNM 232	Advertising Copywriting and Design	_____	3
JNM 233	Public Relations Writing and Design	_____	3
JNM 235	Publications Editing and Design	_____	3

¹Honors section.

Media Writing and Design

This is a 21-credit hour certificate program designed for those students who want skills and background in both media writing and design.

Required:

JNM 137	Media Writing	_____	3
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Electives: Select 12 credit hours from the following:

ART 110	Drawing I	_____	3
ART 121	Design I	_____	3
IDS 290	Independent Study ¹	_____	3-4
JNM 131	News Reporting and Writing	_____	3
JNM 133	Feature Writing	_____	3
JNM 136	Broadcast Writing	_____	3
JNM 232	Advertising Copywriting and Design	_____	3
JNM 233	Public Relations Writing and Design	_____	3
JNM 235	Publications Editing and Design	_____	3

¹Honors section.

Legal Secretary

This 28-credit hour certificate program is designed for individuals who possess a high degree of office skills and are interested in pursuing employment in law firms, government or legal departments of corporations.

A minimum typing speed of 30 words per minute is recommended to enter the program; 40 words per minute is recommended to progress through internship. The program may be taken part-time, and many courses are available on an evening schedule; however, not all courses are offered every semester.

There is also a two-year Legal Secretary career program leading to an associate degree.

ACC 211	Business Law I _____	3
MGT 111	Introduction to Business Organization _____	3
OFC 102	Survey of Law Office Practice _____	3
OFC 104	Introduction to Office Careers _____	1
OFC 105	Human Relations for Office Careers _____	1
OFC 106	Time Management for Office Careers _____	1
OFC 133	Word Processing Software I _____	2
OFC 228	Records Control for the Office _____	1
OFC 229	Meeting and Conference Planning _____	1
OFC 233	Document Processing in the Law Office _____	3
OFC 234	Legal Office Procedures _____	3
OFC 235	Legal Transcription _____	3
OFC 237	Secretarial Seminar and Internship _____	



Legal Technology

This 21-credit hour certificate program is designed for those individuals who are currently employed or employable in the legal field or those who because of legal experience, could benefit from these specialty options. The various choices available allow the student to develop special interests and skills.

To receive a certificate in Legal Technology, students must have earned an Associate or bachelor's degree. Verification of the degree must be submitted before the certificate will be awarded.

Students who complete the 21-credit hour certificate are eligible to use our computerized placement service and otherwise work as paralegals for a practicing attorney. Students should be aware that there are legal restrictions on the practice of law by laymen.

Students electing to earn a certificate in Legal Technology are eligible to apply credits earned toward completion of the Associate in Applied Science degree.

There is also a two-year Legal Technology career program leading to an associate degree.

Required:

LTE 101	Introduction to Legal Technology	3
LTE 102	Fundamentals of Legal Research	3
LTE 103	Litigation	3

Electives: Select at least 12 credit hours from the following courses, providing the combination has the approval of the coordinator or a student development faculty member.

LTE 105	Family Law	3
LTE 123	Real Property Law	3
LTE 200	Probate	3
LTE 201	Tort and Insurance Law	3
LTE 202	Estate Planning	3
LTE 203	Income Taxation I	3
LTE 204	Income Taxation II	3
LTE 208	Externship in Legal Technology	3
LTE 210	Corporate and Securities Law	3
LTE 212	Law Office Systems	3
LTE 220	Community Law	3
LTE 230	Topics in Legal Technology	3

Machinist

This 15-17-credit hour certificate program allows those interested or presently engaged in metalworking to develop knowledge and skills to assume responsible positions in the field.

MET 101	Applied Mechanical Drafting or	
MET 102	Technical Drafting	3
MFG 105	Machining Processes I	3
MFG 205	Machining Processes II	3
QUA 160	Dimensional Metrology	3
Technical electives ¹		3-5

¹Technical electives: MFG 108, MFG 110, MFG 210, MTH 104, MTH 106.

Materials/Logistics Management

This 18-credit hour certificate program is designed to provide in-service education for those persons working directly in, or in fields related to, material management and logistics. This particular curriculum format is especially suitable for those who may be in the field and are seeking to fill in knowledge or skill "gaps" in their total preparation. Additionally, the program may provide pre-service training for those who may seek or be transferred into jobs within these fields.

There is also a two-year Materials/Logistics Management career program leading to an associate degree.

Required:

MAT 101	Fundamentals of Material Management	3
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Electives: Group I (select at least four courses.)

MAT 120	Production Control Concepts	3
MAT 121	Principles of Physical Distribution	3
MAT 122	Inventory Control	3
MAT 123	Traffic and Transportation	3
MAT 124	Material Handling and Packaging	3
MAT 125	Purchasing	3

Electives: Group II (select one course.)

MAT 226	Material Requirements Planning (MRP)	3
MAT 227	Just-In-Time (JIT)	3
MAT 230	International Material Management	3

MAT 259	Advanced Purchasing _____	3
MGT 160	Principles of Supervision _____	3
MGT 270	Principles of Management _____	3
MGT 274	Operations Management _____	3

Mechanical Drafting

This 19-21-credit hour certificate program has been developed in conjunction with area industries to prepare students for challenging careers in drafting.

MET 102	Technical Drafting _____	3
MET 103	Descriptive Drafting _____	3
MET 202	Advanced Technical Drafting _____	3
MFG 211	Process Planning and Tool Design _____	4
MTH 100	Basic Applied Mathematics (3) or	
MTH 106	Mathematics I (5) _____	3-5
	Technical elective ¹ _____	3

¹Technical Electives: MET 201, MET 235, MFG 105.

HSC 151	Math Applications in Health Care _____	1
HSC 213	Medical Law and Ethics _____	3
MOA 145	Health Care Records Management _____	2
MOA 190	Basic Clinical Procedures _____	2
MOA 195	Health Insurance and Coding _____	2
MOA 202	Clinical Laboratory Principles _____	3
MOA 235	Office Procedures in Health Care _____	4
MOA 240	Introduction to Medical Transcription _____	3
MOA 245	Health Care Office Management _____	3
MOA 270	Medical/Dental Office Seminar and Externship _____	3
NUR 200	Pharmacology ¹ _____	2

¹Prerequisite waived for Medical/Dental Secretary students.

Medical/Dental Secretary

This 34-credit hour certificate program is designed for the person who is interested in expanding her/his previous office experience or health care training. The program offers skills necessary to work as a secretary in a health care facility, home health care agency, pharmaceutical house, medical supply company or hospital.

Alternate job titles include medical or dental receptionist, insurance secretary, claims clerk, nursing unit secretary, medical typist or doctor's secretary. Administrative duties include patient reception, claims processing, coding, medical records management, billing and collections and written communications.

A minimum typing speed of 30 words per minute is recommended to enter the program; 40 words per minute is recommended to progress through externship. The program may be taken part-time and many courses are available on an evening basis; however, not all courses are offered every semester. An orientation and planning session with the coordinator is recommended for each student. Detailed information will be sent upon request or upon application to the program.

HSC 100	Computer Usage in Health Services _____	1
HSC 105	Introduction to the Health Care Field _____	3
HSC 112	Medical Terminology _____	2

Medical Office Assistant

A concentrated 39-credit hour certificate program designed for the person interested in becoming a medical assistant in a physician's office or other out-patient health care setting. The curriculum is designed to give the student training in a variety of administrative and clinical tasks to facilitate the work of the physician. Administrative duties include patient communications and recordkeeping. Clinical duties include assisting with examinations and diagnostic testing.

A minimum typing speed of 30 words per minute is recommended to enter the program; 40 words per minute is recommended to progress through externship. The program may be taken part-time and many courses are available on an evening schedule; however, not all courses are offered every semester. An orientation and planning session with the coordinator is recommended for each student. Detailed information will be sent upon request or upon application to the program.

There is also a two-year Medical Office Assistant career program leading to an associate degree.

HSC 100 Computer Usage in Health Services _____	1
HSC 105 Introduction to the Health Care Field _____	3
HSC 112 Medical Terminology _____	2
HSC 151 Math Applications in Health Care _____	1
HSC 213 Medical Law and Ethics _____	3
MOA 145 Health Care Records Management _____	2
MOA 190 Basic Clinical Procedures _____	2
MOA 195 Health Insurance and Coding _____	2
MOA 211 Advanced Clinical Procedures _____	4
MOA 212 Clinical Laboratory Procedures _____	4
MOA 235 Office Procedures in Health Care _____	4
MOA 240 Introduction to Medical Transcription _____	3
MOA 245 Health Care Office Management _____	3
MOA 280 Medical Office Assistant Seminar and Externship _____	3
NUR 200 Pharmacology ¹ _____	2

Medical Transcriptionist

A concentrated 31-credit hour certificate program designed for the person interested in expanding her/his previous health care or secretarial experience and learning skills necessary to transcribe medical reports in a hospital, large medical practice, HMO or clinic. The curriculum offers the secretarial and clinical training needed to understand the various types of dictation utilized.

A minimum typing speed of 50 words per minute is recommended to enter the program; 60 words per minute is recommended to progress through externship. The program may be taken part-time and many courses are offered every semester. An orientation and planning session with the coordinator is recommended for each student. Detailed information will be sent upon request or upon application to the program.

First Semester

HSC 100 Computer Usage in Health Services _____	1
HSC 105 Introduction to the Health Care Field _____	3
HSC 112 Medical Terminology _____	2
MOA 145 Health Care Records Management _____	2
MOA 201 Advanced Clinical Principles _____	3
MOA 202 Clinical Laboratory Principles _____	3
NUR 200 Pharmacology ¹ _____	2
	16

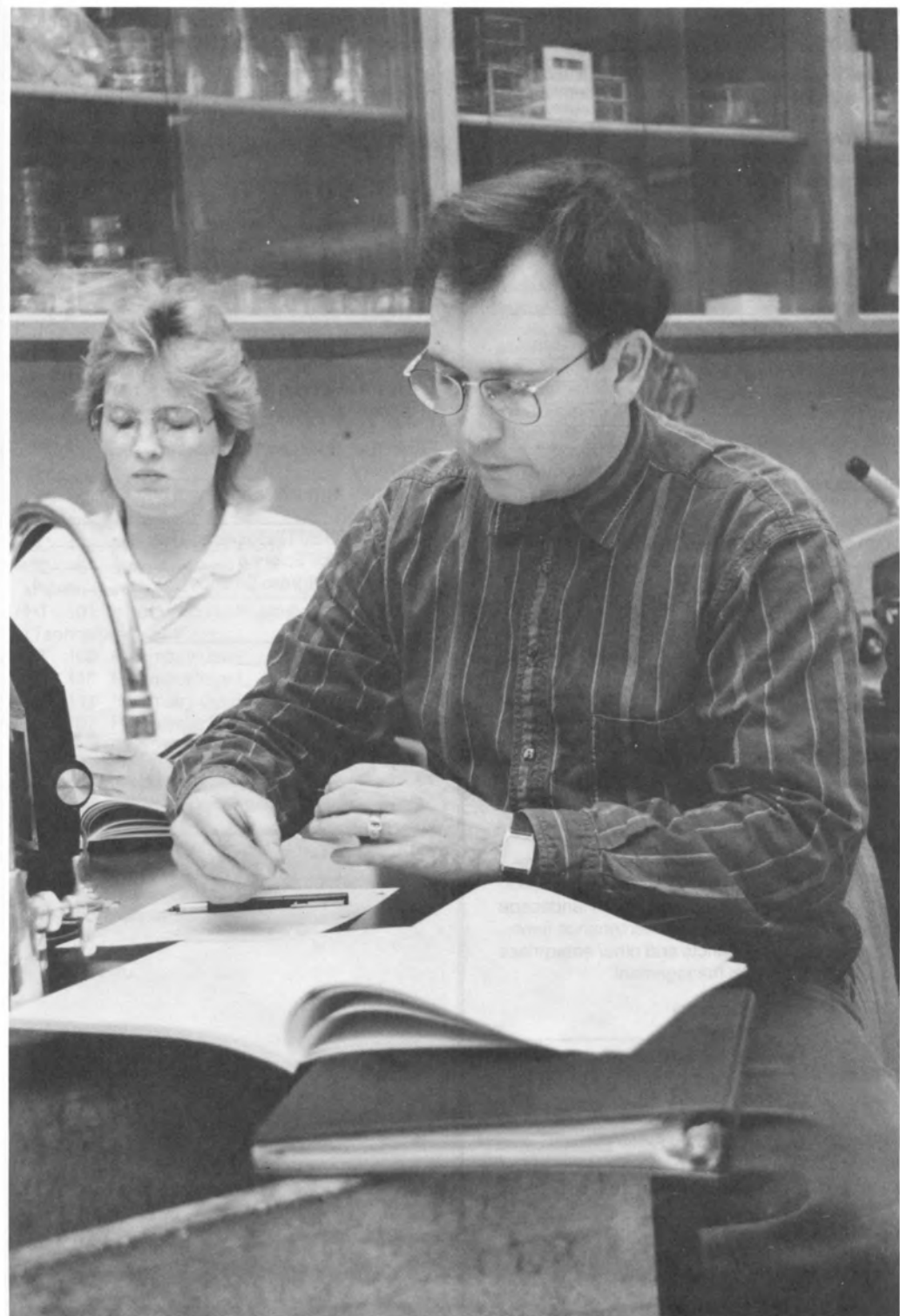
Second Semester

BIO 136 Introduction to Human Diseases _____	3
HSC 213 Medical Law and Ethics _____	3
MOA 242 Medical Transcription for the Transcriptionist _____	3
MOA 245 Health Care Office Management _____	3
MOA 260 Medical Transcriptionist Seminar and Externship ² _____	3
	15

¹Prerequisite waived for Medical Transcriptionist students

²Externship placement upon arrangement with coordinator following successful completion of MOA 242.

¹Prerequisite waived for Medical Office Assistant students.



Park and Grounds Operation Management Certificates

Arboriculture

Graduates of this 21-credit hour certificate program will be able to select, operate and care for the appropriate tools and equipment used in this field, as well as diagnosing and correcting tree problems and performing all tree maintenance procedures in a safe and efficient manner.

PKM 100 Park and Horticulture Careers _____	1
PKM 140 Grounds Equipment and Shop Operation _____	4
PKM 220 Arboriculture _____	4
PST 101 Ornamental Plants _____	4
PST 110 Soil Science _____	4
PST 111 Basic Horticulture Skills _____	4

Golf Course Maintenance

Graduates of this 20-credit hour certificate program are prepared for employment or promotion in the golf course industry, turfgrass production and athletic field maintenance.

PKM 100 Park and Horticulture Careers _____	1
PKM 210 Drainage and Irrigation _____	3
PKM 242 Golf Course Management _____	4
PST 110 Soil Science _____	4
PST 212 Turfgrass Science _____	4
PKM 140 Grounds Equipment and Shop Operation _____	4

Grounds Equipment Operator

Graduates of this 15-credit hour certificate program are prepared for employment or promotion as grounds equipment operators with landscape construction and landscape maintenance firms, golf courses, park districts and other enterprises engaging in grounds management.

ELT 142 Basic Electricity (Residential/Commercial) _____	2
PKM 100 Park and Horticulture Careers _____	1
PKM 140 Grounds Equipment and Shop Operation _____	4
PKM 141 Basic Carpentry Skills _____	2
PKM 143 Basic Plumbing Skills _____	2
PKM 240 Grounds Equipment and Power Units _____	4

Nursery Operations

Graduates of this 20-credit hour certificate program will be able to identify, culture and produce nursery plant materials free of disease and pests for use by the landscape industry.

PKM 100 Park and Horticulture Careers _____	1
PST 101 Ornamental Plants _____	4
PST 102 Plant Diseases and Pests _____	4
PST 110 Soil Science _____	4
PST 111 Basic Horticultural Skills _____	4
PST 244 Nursery Management _____	3

Turfgrass Maintenance

Graduates of this 17-credit hour certificate program are prepared for employment or promotion in lawn care, sod production and sports turf.

PKM 100 Park and Horticulture Careers _____	1
PKM 140 Grounds Equipment and Shop Operation _____	4
PST 102 Plant Diseases and Pests _____	4
PST 110 Soil Science _____	4
PST 212 Turfgrass Science _____	4

Pharmacy Technician

This 28-credit hour certificate program provides technical and practical pharmaceutical knowledge leading to employment as an assistant to a registered pharmacist. It offers basic academic training in prescription order processing, inventory activities, over-the-counter drug sales, record-keeping, product prepackaging, bulk compounding and manufacturing, computer operations and related tasks. A practicum serves to expand the technical training of the technician by actual on-the-job pharmacy experience.

Currently, the State of Illinois requires a pharmacy apprentice license for internship (practicum) and employment in a pharmacy. The applicant for a pharmacy license should be free of conviction of any criminal offense (other than minor traffic violations).

First Semester

HSC 100	Computer Usage in Health Services _____	1
HSC 112	Medical Terminology _____	2
HSC 151	Math Applications in Health Care _____	1
PHT 101	Introduction to Pharmacy Technology _____	1
PHT 102	Pharmacy Law _____	1
PHT 110	Pharmacology I _____	3
PHT 111	Pharmacy Operations I _____	3
PSY 107	Humanistic Psychology _____	2

Second Semester

BIO 136	Introduction to Human Disease _____	3
PHT 112	Pharmacy Operations II _____	5
PHT 120	Pharmacology II _____	3
PHT 140	Sterile Products and Aseptic Techniques _____	3

Phlebotomist

A three-semester, 15-credit hour certificate program designed for the person interested in becoming a phlebotomist in a health care facility such as a hospital, medical practice or health maintenance organization.

The program may be taken part-time and some of the courses are available on an evening schedule. An orientation and planning session with the coordinator is required for each student. Detailed information will be sent upon request or upon application to the program.

Graduates of the Phlebotomist program are encouraged to sit for the national certification examination offered by the American Society of Clinical Pathologists (ASCP) to become a certified phlebotomist.

HSC 105	Introduction to the Health Care Field _____	3
HSC 112	Medical Terminology _____	2
HSC 151	Math Applications in Health Care _____	1
HSC 213	Medical Law and Ethics _____	3
MOA 212	Clinical Laboratory Procedures ¹ _____	4
MOA 283	Phlebotomist Seminar and Externship ² _____	2
		15

¹MOA 212 offered during fall semester only.

²MOA 283 offered during spring semester only.

Plant Science Technology Certificates

Floral Design

Graduates of this 10-credit hour certificate program are prepared for employment or promotion in retail and wholesale floral businesses.

PKM 100 Park and Horticulture Careers _____	1
PST 104 Floral Design _____	3
PST 204 Advanced Floral Design _____	3
PST 247 Floral Shop Management _____	3

Garden Center Operations

Graduates of this 15-16-credit hour certificate program are prepared for employment or promotion with garden centers and retail outlets of plant materials and associated merchandise.

PKM 100 Park and Horticulture Careers _____	1
PKM 214 Principles of Landscape Design and Construction (4) or	
PST 104 Floral Design (3) _____	3-4
PST 101 Ornamental Plants _____	4
PST 248 Garden Center Operations _____	3
PST 111 Basic Horticultural Skills _____	4

Greenhouse Operations

Graduates of this 19-credit hour certificate program are prepared for employment or promotion in commercial and retail greenhouses and interior plant management.

ELT 142 Basic Electricity (Residential/Commercial) _____	2
PKM 100 Park and Horticulture Careers _____	1
PKM 141 Basic Carpentry Skills _____	2
PKM 143 Basic Plumbing Skills _____	2
PST 102 Plant Diseases and Pests _____	4
PST 110 Soil Science _____	4
PST 111 Basic Horticultural Skills _____	4

Grounds Maintenance

Graduates of this 21-credit hour certificate program are prepared for employment or promotion in culture and care of gardens, landscapes, parks, turfgrass and other passive or active grounds areas.

PKM 100 Park and Horticulture Careers _____	1
PKM 140 Grounds Equipment and Shop Operation _____	4
PST 101 Ornamental Plants or	
PST 212 Turfgrass Science _____	4
PST 102 Plant Diseases and Pests _____	4
PST 110 Soil Science _____	4
PST 111 Basic Horticultural Skills _____	4

Landscape Design

Graduates of this 20-credit hour certificate are prepared for employment or promotion in residential and commercial landscape design and landscape construction planning and estimating.

PKM 100 Park and Horticulture Careers _____	1
PKM 214 Principles of Landscape Design and Construction _____	4
PKM 230 Contracts, Specifications, Estimating _____	3
PST 101 Ornamental Plants _____	4
PST 110 Soil Science _____	4
PST 111 Basic Horticultural Skills _____	4

Master Floral Design

Graduates of this 16-credit hour certificate program are prepared for advanced floral design work and are able to work in all phases of design within the floral industry.

PKM 100 Park and Horticulture Careers _____	1
PST 104 Floral Design _____	3
PST 204 Advanced Floral Design _____	3
PST 205 Master Floral Design I _____	2
PST 206 Master Floral Design II _____	2
PST 207 Master Floral Design III _____	2
PST 247 Floral Shop Management _____	3

Pesticide Applicator

Graduates of this 17-credit hour certificate program are prepared for employment or promotion in the application of chemicals used to prevent pest infestation or eradicate pests from landscape and turf areas. An Illinois Pesticide Applicator or Pesticide Operators license is also required prior to applying pesticides. The student is prepared to take licensing tests through this course of study; however, such tests are only available through the State of Illinois Department of Agriculture, and are, therefore, not an integral part of this program.

PKM 100	Park and Horticulture	
	Careers _____	1
PKM 140	Grounds Equipment and Shop	
	Operation _____	4
PST 101	Ornamental Plants _____	4
PST 102	Plant Diseases and Pests _____	4
PST 111	Basic Horticulture Skills _____	4

Plant Propagation

Graduates of this 17-credit hour certificate program will be able to produce disease and pest free plants from seed as well as by a variety of vegetative methods as commonly encountered in the greenhouse and nursery industry.

PKM 100	Park and Horticulture	
	Careers _____	1
PST 101	Ornamental Plants _____	4
PST 110	Soil Science _____	4
PST 111	Basic Horticulture Skills _____	4
PST 102	Plant Disease and Pests _____	4

Production Engineering Technician

This 15-credit hour certificate program allows for in-depth course work in the technical aspects of manufacturing, quality control and production planning. Such a program should provide an individual with the necessary background to assume a responsible position in these areas. Any combination of at least 15 credit hours may be selected from the courses listed below, provided that the combination has the program approval of the coordinator.

MAT 120	Production Control	
	Concepts _____	3
MET 102	Technical Drafting _____	3
MFG 101	Introduction to	
	NC/CAM _____	3
MFG 108	Manufacturing Processes	
	and Materials _____	3
MFG 115	Part Programming I _____	3
MFG 211	Process Planning and	
	Tool Design _____	4
MFG 215	Part Programming II _____	3
MTH 100	Basic Applied	
	Mathematics ¹ _____	3
QUA 130	Introduction to	
	Quality Assurance Concepts _____	3
QUA 160	Dimensional Metrology _____	3

¹Students with appropriate background should elect MTH 106.

Production Welding

This 18-20-credit hour certificate program is designed for those interested or presently working in a welding occupation to prepare for work and/or a more responsible position in the field. This certificate is not to be confused with the American Welding Society or local industrial welding certifications.

MET 101	Applied Mechanical	
	Drafting _____	3
MFG 110	Basic Welding _____	3
MFG 210	Advanced Welding _____	3
MTH 100	Basic Applied Mathematics (3) or	
MTH 106	Mathematics (5) _____	3-5
	Technical electives ¹ _____	6

¹Technical electives: MFG 101, MFG 105, MFG 108, MFG 206, QUA 160.

Quality Assurance

This 18-20-credit hour certificate program provides an introduction to the concepts and applications of total quality management. The available courses allow sufficient flexibility for students from both manufacturing and service-oriented institutions to complete the required work.

Elective ² _____	3
MGT 225 Applied General Statistics or	
MTH 165 Elementary Statistics _____	3
Mathematics elective ¹ _____	3-5
QUA 130 Quality Assurance Concepts _____	3
QUA 160 Dimensional Metrology or	
QUA 235 Practical Problems of	
Quality Management _____	3
QUA 230 Statistical Process Control _____	3

¹MGT 150, MTH 080, MTH 086 and MTH 087, or MTH 106 or higher level course to be chosen with program coordinator.

²Elective to be chosen in conjunction with program coordinator and to reflect basic course work in the student's major area. Examples of approved electives: MAT 101, MFG 101, MFG 108, MGT 160.

Real Estate

Real Estate Appraisal

This 14-credit hour certificate program is designed for those who desire to appraise all categories of real property. It satisfies the State of Illinois educational requirements for licensure and/or certificates.

RES 101 Real Estate Transactions _____	3
RES 140 Standards of Professional	
Appraisal Practice _____	1
RES 150 Appraisal Principles and	
Residential Appraisal Procedures _____	3
RES 160 Non-Residential Real Estate	
Appraisal _____	4
RES elective _____	3

Real Estate Business Ownership

This 19-credit hour certificate program is designed for those who intend to own and/or operate a real estate sales company. Inasmuch as Illinois State law already requires that owners, partners, and branch office managers have a broker's license, it is appropriate for those not licensed as brokers to investigate the Real Estate License Preparation certificate also.

RES 101 Real Estate Transactions _____	3
RES 105 Real Estate Math Applications _____	1
RES 121 Advanced Principles, Marketing	
and Brokerage _____	3
RES 123 Real Estate Law _____	3
RES 124 Real Estate Finance _____	3
RES 233 Real Estate Problems Seminar _____	3
Elective ¹ _____	3

¹Elective: MGT 154 or RES 230.

Real Estate Investment

This 15-credit hour certificate program is designed for those who look upon investing in real estate for personal use or as a career. It emphasizes decision making analysis, tax ramifications, and long or short term investment goals.

RES 101 Real Estate Transactions _____	3
RES 123 Real Estate Law _____	3
RES 124 Real Estate Finance _____	3
RES 220 Real Estate Investment	
Analysis I _____	3
RES 221 Real Estate Investment	
Analysis II _____	3

Real Estate License Preparation

This 8-credit hour certificate program will provide the minimum number of hours and mandatory courses to complete the education requirements for application to take the State of Illinois Real Estate Brokers test.

RES 101 Real Estate Transactions _____	3
RES 115 Brokers Preparation _____	4
Elective ¹ _____	1

¹Elective: RES 105 or RES 100.

Refrigeration and Air Conditioning Certificates

The following certificate programs are designed to prepare the students for servicing refrigeration and heating equipment or selling environmental equipment to contractors and/or servicemen.

Heating Services

Required:

RAC 103 Heating Principles_____	4
RAC 105 Heating and Cooling Controls ____	4
RAC 106 Advanced Controls_____	4

Refrigeration Service

Required:

RAC 101 Refrigeration Fundamentals_____	4
RAC 102 Refrigeration Systems _____	4
RAC 105 Heating and Cooling Controls _____	4
RAC 106 Advanced Controls _____	4

Refrigeration and Air Conditioning Service

Required:

MET 101 Applied Mechanical Drafting _____	3
RAC 101 Refrigeration Fundamentals_____	4
RAC 102 Refrigeration Systems _____	4
RAC 103 Heating Principles_____	4
RAC 104 Residential Comfort Systems _____	4
RAC 105 Heating and Cooling Controls _____	4
RAC 106 Advanced Controls _____	4

Residential Comfort Systems

Required:

RAC 101 Refrigeration Fundamentals_____	4
RAC 103 Heating Principles_____	4
RAC 104 Residential Comfort Systems _____	4
RAC 105 Heating and Cooling Controls _____	4
RAC 106 Advanced Controls _____	4

Retail Merchandising

This is a 17-18-credit hour certificate program designed for individuals with career interests in the retail management field. It is especially appropriate for those individuals employed in retailing who are seeking skills and knowledge which may prepare them for career advancement.

Required:

FAS 212 Visual Fashion Merchandising (2) or	
MKT 217 Advertising (3)_____	2-3
MKT 106 Retail Merchandising _____	3
MKT 250 Retailing _____	3
MKT 251 Retail Merchandise Management_____	3

Electives: Select at least 6 credit hours from the following courses.

ACC 099 Business Recordkeeping or ACC 101 Principles of Accounting Theory I _____	3
MGT 111 Introduction to Business Organization _____	3
MGT 154 Small Business Management_____	3
MGT 160 Principles of Supervision _____	3
MKT 140 Principles of Professional Selling _____	3
MKT 245 Principles of Marketing ¹ _____	3

¹Students must satisfy prerequisites for each course selected.

Sales Management and Development

This 15-credit hour certificate program is designed to provide in-service and pre-service training and development for industrial sales and sales management personnel representing manufacturers, service marketers, wholesalers or other marketing middlemen. Through the selection of courses, this program can satisfy both the career needs of individuals seeking to develop and expand their selling and account servicing skills and individuals preparing for sales management responsibilities. This certificate program would be especially appropriate for individuals who are entering the professional field without a formal sales or marketing education.

Program requirements are satisfied by completing 6 hours from Group I and 9 hours from Group II for a total minimum of 15 credit hours. To achieve an individual program designed to complement the student's industrial and educational background, the selection of courses should be made in consultation with the coordinator.

Electives: Group I (select at least two courses¹).

MKT 140 Principles of Professional Selling _____	3
MKT 141 Sales Management _____	3
MKT 240 Advanced Sales Strategies _____	3
MKT 247 Consumer Buying Behavior _____	3

Electives: Group II (select at least three courses¹).

ACC 211 Business Law I _____	3
MAT 125 Purchasing _____	3
MGT 111 Introduction to Business Organization _____	3
MGT 160 Principles of Supervision _____	3
MKT 141 Sales Management _____	3
MKT 240 Advanced Sales Strategies _____	3
MKT 245 Principles of Marketing _____	3
MKT 246 Business to Business Marketing _____	3

¹Students must satisfy prerequisites for each course selected.

Secretarial and General Office Certificates

The following certificate programs are designed specifically for individuals without any formal office training or for persons currently in the work force who want to acquire additional knowledge and skills for specific office positions. Credit hours received for one certificate may be applied toward any other certificate or degree program in Secretarial Science.

There are also two-year secretarial career programs leading to an associate degree.

Administrative Assistant

See: Administrative Assistant

Certified Professional Secretary

See: Certified Professional Secretary

General Office Assistant

This 20-credit hour certificate program is designed for persons interested in working in an office in any type of business organization. The curriculum is designed to give basic training in office skills and business knowledge that is expected in the business world today.

Graduates of the program are prepared for positions as clerks, receptionists and general office assistants. A combination of 20 credit hours may be selected from the following courses, with approval of the coordinator or a student development faculty member:

ACC 156 Survey of Accounting _____	3
CIS 123 Spreadsheet/Budgeting for Micros _____	1
ENG 100 Composition _____	3
MGT 111 Introduction to Business Organization _____	3
MGT 150 Business Math _____	3
OFC 104 Introduction to Office Careers _____	1
OFC 105 Human Relations for Office Careers _____	1
OFC 111 Keyboarding II _____	3
OFC 112 Keyboarding III ¹ _____	3
OFC 113 Keyboarding IV ¹ _____	3
OFC 133 Word Processing Software I _____	2
OFC 134 Word Processing Software II _____	2
OFC 201 Advanced Features in Word Processing ¹ _____	2
OFC 202 Desktop Publishing Using Word Processing ¹ _____	2
OFC 203 Proofreading and Editing _____	2
OFC 247 Professional Development _____	2

¹Placement into courses contingent upon previous training.

Legal Secretary
See: Legal Secretary

Secretarial

This 28-credit hour certificate program is designed to give experience, training and development in secretarial skills in order to obtain general secretarial or word processing secretarial positions, to be promoted into a secretarial position or to expand and update one's secretarial/office skills. Students may apply this entire program toward the two-year Executive Secretarial Development degree program.

A combination of 28 credit hours is required for this certificate with the approval of the coordinator or student development faculty member.

Required:

OFC 104	Introduction to Office Careers	_____	1
OFC 105	Human Relations for Office Careers	_____	1
OFC 106	Time Management for Office Careers	_____	1
OFC 133	Word Processing Software I	_____	2
OFC 201	Advanced Features in Word Processing	_____	2
OFC 220	Automated Office Practices	_____	4
OFC 228	Records Control for the Office	_____	1
OFC 229	Meeting and Conference Planning	_____	1
OFC 230	Executive Machine Transcription	_____	2
OFC 237	Secretarial Seminar and Internship I	_____	3

Electives: Select at least 10 credit hours from the following courses.

CIS 121	General Accounting Applications for Micros	_____	1
CIS 122	Data Base for Micros	_____	1
CIS 123	Spreadsheet/Budgeting for Micros	_____	1
CIS 124	Advanced Spreadsheet for Micros	_____	1
ENG 130	Business Writing	_____	3
OFC 113	Keyboarding IV ¹	_____	3
OFC 202	Desktop Publishing Using Word Processing	_____	2
OFC 203	Proofreading and Editing	_____	2
OFC 204	Macros for Word Processing	_____	2
OFC 205	Using Tables in Word Processing	_____	2
OFC 206	Using Merges in Word Processing	_____	2
SPE 101	Fundamentals of Speech Communication	_____	3

¹Placement into courses contingent upon previous training.

Sign Language Interpreting*

This 38-credit hour part-time certificate program is designed to provide students with entry level interpreting/transliterating skills, a general knowledge of deaf culture and an understanding of the interpreting profession. Students enrolled in this program must already possess fluency in sign language. For those students not fluent, Harper College courses SGN 101, SGN 102, SGN 103, SGN 104, SGN 201 and SGN 202 are offered to assist in acquiring the necessary skills. (See sign language course information.) In addition to preparing students for careers as full-time interpreters, the program seeks to meet the needs of individuals working in other fields (such as business, education, health) in which interpreting skills would be useful.

ITP 101	Introduction to Interpreting	_____	3
ITP 110	Interpreting I: Voice to Sign	_____	3
ITP 111	Interpreting I: Sign to Voice	_____	3
ITP 120	Interpreting II: Voice to Sign	_____	3
ITP 121	Interpreting II: Sign to Voice	_____	3
ITP 201	Topics in Interpreting	_____	4
ITP 210	Special Areas of Interpreting	_____	3
ITP 211	Interpreting III: Sign to Voice	_____	3
ITP 215	Interpreting III: Voice to Sign	_____	3
ITP 220	Practicum	_____	3
SGN 205	American Sign Language V	_____	3
SGN 210	American Sign Language Community: A Cultural Perspective	_____	4

*Sign Language Interpreting is a limited enrollment program and has special admission requirements. Contact the Admissions Office for details.

Small Business Management

This 30-credit hour certificate program was developed for those who wish to explore the field of small business.

There is also a two-year Small Business Management career program leading to an associate degree.

Required:

ACC 156	Survey of Accounting	3
ACC 157	Survey of Business Law	3
MGT 111	Introduction to Business Organization	3
MGT 154	Small Business Management	3
MGT 160	Principles of Supervision	3
MGT 254	Small Business Formation	3

Electives: Select at least 12 credit hours from the following courses.

CIS 122	Data Base for Micros	1
CIS 123	Spreadsheet/Budgeting for Micros	1
ECO 115	Consumer Economics	3
INS 121	Principles of Property and Liability Insurance	3
MAT 101	Fundamentals of Material Management	3
MGT 140	Practical Management Information	3
MGT 211	Internship in Small Business	3
MGT 230	Topics in Small Business	.5-3
MGT 250	Franchising	3
MGT 270	Principles of Management	3
MGT 275	Labor-Management Relations	3
MGT 280	Human Relations in Business	3
MKT 106	Retail Merchandising	3
MKT 140	Salesmanship	3
MKT 217	Advertising	3
MKT 240	Advanced Sales Skills	3
MKT 245	Principles of Marketing	3
MKT 250	Retailing	3
OFC 133	Word Processing Software I ¹	2

¹Prerequisite waived for Small Business Management students.

Supervisory and Administrative Management

This is a certificate program requiring completion of 18-credit hours.

There is also a two-year Supervisory and Administrative Management career program leading to an associate degree.

Required:

MGT 111	Introduction to Business Organization	3
MGT 160	Principles of Supervision	3
MGT 270	Principles of Management	3
MGT 291	Problems of Management and Supervision ¹	3

Electives: Select at least 6 credit hours from the following courses.

ACC 101	Principles of Accounting Theory I	3
MGT 154	Small Business Management	3
MGT 165	International Management	3
MGT 167	Records and Information Management I	3
MGT 168	OSHA Standards and Compliance Procedures	3
MGT 265	Personnel Management	3
MGT 267	Office and Administrative Management	3
MGT 274	Operations Management	3
MGT 275	Labor-Management Relations	3
MGT 280	Human Relations in Business	3

¹MGT 291 should be the last course taken in completing this sequence.

Word Processing Specialist

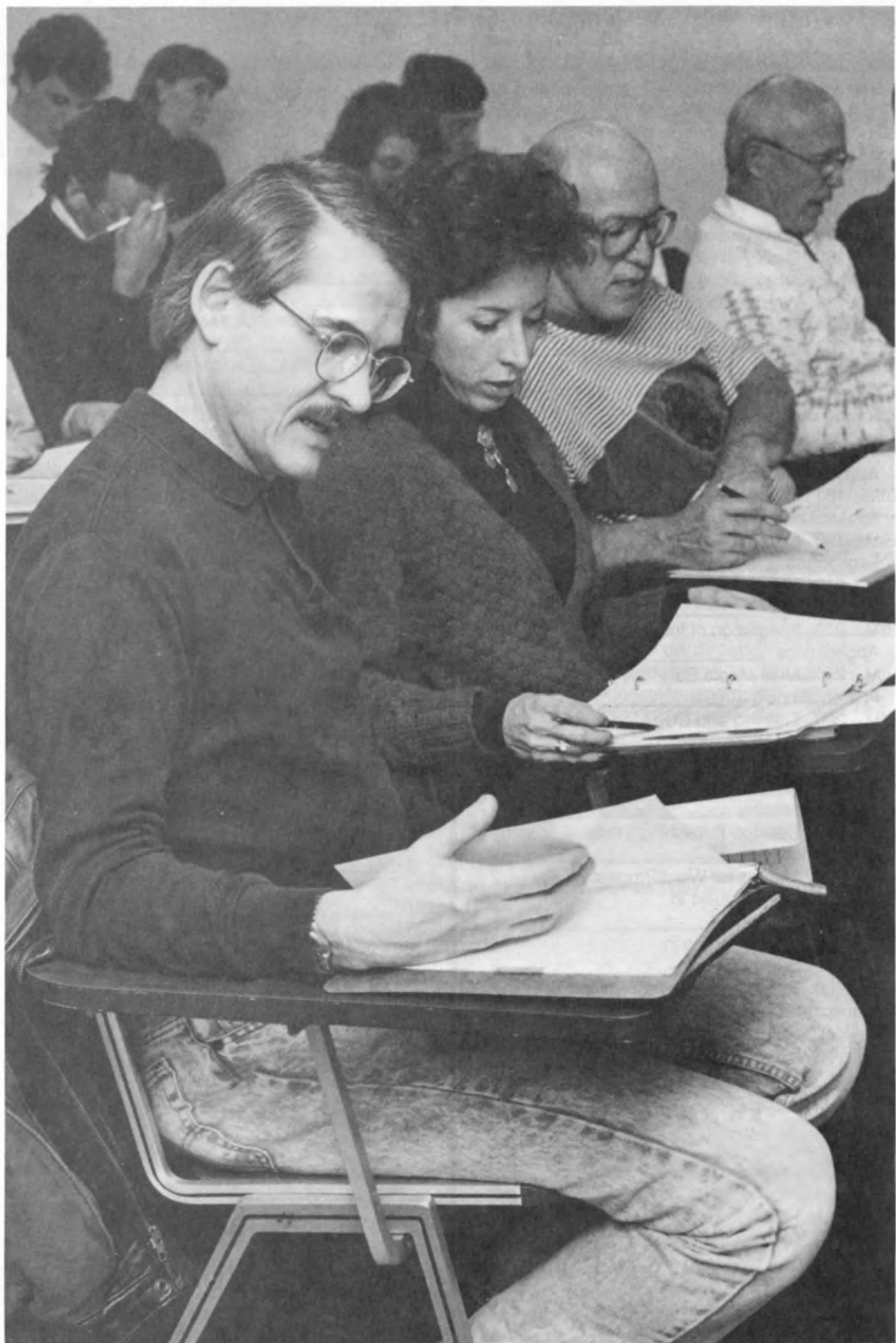
This 14-credit hour certificate program is designed for the individual with good typing skills who is interested in entering the field of word processing or upgrading her/his office skills as a specialist in one or more word processing software programs.

Required:

OFC 113	Keyboarding IV _____	3
OFC 130	Survey of Word Processing Software Applications _____	1
OFC 133	Word Processing Software I _____	2
OFC 134	Word Processing Software II _____	2
OFC 203	Proofreading and Editing _____	2

Electives: Select at least 4 credit hours from the following courses:

BIM 170	Introduction to Information Applications and Technologies _____	3
BIM 181	Enterprise-Wide Information Analysis and Implementation _____	3
BIM 190	Electronic Information Exchanges _____	3
BIM 210	Integration Applications Resources _____	3
BIM 220	Integration of Information Applications _____	3
BIM 250	Multi-Media Business Presentations _____	3
BIM 260	Training and Development in Information Management _____	3
OFC 201	Advanced Features in Word Processing _____	2
OFC 202	Desktop Publishing Using Word Processing _____	2
OFC 204	Macros for Word Processing _____	2
OFC 205	Using Tables in Word Processing _____	2
OFC 206	Using Merges in Word Processing _____	2
OFC 230	Executive Machine Transcription _____	2



Course Descriptions

Course Numbering System

Courses Offered at Harper College

Below is an alphabetized list of disciplines followed by a prefix. (Course descriptions contained on the following pages are in alphabetical order by prefix.)

Discipline	Prefix
Accounting	ACC
Adult Educational Development	AED
Anthropology	ANT
Architectural Technology	ATE
Art	ART
Astronomy	AST
Automation Skills	AUT
Banking and Finance	BFC
Biology	BIO
Building Codes and Enforcement	BCE
Business Information Management	BIM
Cardiac Technology	HPI
Chemistry	CHM
Computer Information Systems	CIS
Computer Science	CSC
Cooperative Work Education	CWE
Criminal Justice	CRJ
Dental Hygiene	DHY
Dietetic Technician	DIT
Early Childhood Education	CCA
Economics	ECO
Education	EDU
Electronics	ELT
Engineering	EGR
English	ENG
English as a Second Language	ESL
Fashion Design/Merchandising	FAS
Fine Arts	FNA
Fire Science	FIS
French	FRN
Geography	GEG
Geology	GEO
German	GER
History	HST
Hospitality Management	FSM
Humanities	HUM
Human Services	HSC
Independent Study	IDS
Insurance	INS
Interior Design	IND
Japanese	JPN
Journalism	JNM
Legal Technology	LTE
Linguistics	LNG
Literature	LIT
Management	MGT
Manufacturing	MFG
Marketing	MKT
Materials/Logistics Management	MAT
Mathematics	MTH
Mechanical Engineering	MET
Medical Office Assistant	MOA
Music	MUS

Nursing	NUR
Office and Administrative Services	OFC
Orientation	ORN
Park and Grounds Operation	
Management	PKM
Pharmacy Technician	PHT
Philosophy	PHI
Physical Education	PED
Physical Science	PHS
Physics	PHY
Plant Science Technology	PST
Political Science	PSC
Psychology	PSY
Quality Assurance	QUA
Reading	RDG
Real Estate	RES
Refrigeration/Air Conditioning	RAC
Sign Language	SGN
Sign Language Interpreting	ITP
Sociology	SOC
Spanish	SPA
Speech	SPE

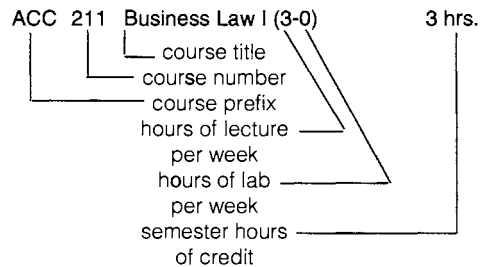
Course Numbering System

In general, courses numbered below 100 are not intended for transfer credit. These courses may be counted toward the A.A.S. degree, but not the A.A. or A.S. degrees.

Courses numbered 100 or above may be expected to fulfill transfer requirements. In some cases the courses designed primarily for vocational programs may not be acceptable to transfer to all four-year institutions. Students should see a student development faculty member for clarification of the transferability of these courses.

Courses numbered 200 and above are intended for the sophomore level.

Sample Course Listing



The following outlines of courses offered at Harper College describe the content of each course at the time of publication of the Catalog. Harper College reserves the right to revise course content to reflect changing conditions, trends and information within the discipline.

Course Outlines

In accordance with Illinois law, Harper College maintains a file of course outlines for all courses listed in the Catalog. Complete information is given on course content, methodology and objectives. The outlines are available for student review in the Division offices or in the Office of the Assistant to the Vice President of Academic Affairs.

Prerequisites

Many course descriptions state that a prerequisite (for example—satisfactory completion of a specific course or instructor consent) is necessary for enrollment in such a course. Students are advised that enrolling in a course without satisfying the prerequisite may result in the student being withdrawn from such course at the request of the instructor. Refer carefully to Catalog course descriptions.

ACC Accounting

ACC 099 Business Recordkeeping (3-0) 3 hrs.

Presents standard bookkeeping procedures for small firms, both business and professional. The material covers journalizing, posting, preparing a work sheet, financial statements, bank reconciliation, petty cash and payroll.

ACC 101 Principles of Accounting Theory I (3-0) 3 hrs.

Presents course material in the following sequential order with emphasis on the basic structure of accounting, accounting for a merchandise enterprise, deferrals, accruals, accounting systems, cash, receivables, temporary investments, inventories, plant assets, intangible assets, payroll, notes payable and other current liabilities.

ACC 102 Principles of Accounting Theory II (3-0) 3 hrs.

Continues the concept of basic principles of financial accounting and managerial accounting. The topics include corporations, long term liabilities, investments in stocks and bonds, financial statement analysis, statement of cash flows, responsibility accounting, manufacturing operation, standard cost, cost-volume-profit analysis, differential analysis and capital investment analysis. Prerequisite: ACC 101 with a grade of "C" or better.

ACC 155 Tax and Payroll Accounting (4-0) 4 hrs.

Explains the federal tax structure and instruction in the application of tax principles to specific problems. Also, the preparation of payroll records, including tax returns for old age benefits and employment insurance.

ACC 156 Survey of Accounting (3-0) 3 hrs.

Takes the student through the basics: what accounting information is, what it means and how it is used. Students examine the financial statements and discover what they do and do not communicate. This knowledge will help them gain decision-making and problem solving abilities.

ACC 157 Survey of Business Law (3-0) 3 hrs.

Introduces the student to the legal principles and practices in the operations of a business. The course offers a brief overview of business law including contracts, agency, sales, bailments and commercial paper.

ACC 201 Intermediate Accounting I (3-0) 3 hrs.

Presents accounting and reporting process, accounting theory, inventories, tangibles and intangible fixed assets. Problem solving course in accounting principles begin in ACC 101 and ACC 102.

Prerequisite: ACC 102 with a grade of "C" or better.

ACC 202 Intermediate Accounting II (3-0) 3 hrs.

Presents course materials in the following sequences: Accounting for corporations, including capital stock, retained earnings, bonds payable, income statement and balance sheet analysis, pensions and leases, fund flow analysis, consignments and installment sales.

Prerequisite: ACC 201 with a grade of "C" or better.

ACC 203 Introductory Cost Accounting (3-0) 3 hrs.

Includes an examination of the nature of costs and the use of relevant accounting data for purposes of improved decision making. Topics covered are product costs (process, job order and standard), overhead variance, by-product costs, joint-product cost and direct and variable costing. Prerequisite: ACC 102 with a grade of "C" or better.

ACC 211 Business Law I (3-0) 3 hrs.

Presents the history of the source of law, civil and criminal wrongs, law of contracts, agency, employment, property and related topics. Problems and case materials are used. (NOTE: Transfer students should check with the school they will be transferring to regarding the transferability of this course.)

ACC 212 Business Law II (3-0) 3 hrs.
Presents business organizational concepts, commercial transactions, basic legal concepts of commercial paper, sales, secured transactions, creditors' rights and related topics. Problems and case materials are used.

Prerequisite: ACC 211 with a grade of "C" or better.

(NOTE: Transfer students should check with the school they will be transferring to regarding the transferability of this course.)

ACC 213 Legal Environment of Business (3-0) 3 hrs.

Introduces the student to the nature, function and application of law in the commercial context.

Emphasizes the regulation of business by statutes, administrative regulations and court decisions.

Prerequisite: ACC 211 with a grade of "C" or better or consent of instructor.

ACC 215 Labor Law (3-0) 3 hrs.

Examines labor laws, beginning with the first judicial trials, through federal legislation. Major laws such as the Wagner Act, Taft-Hartley Act, and Landrum-Griffin Act will be reviewed in detail, as well as landmark legal cases applying to labor and management, with any pending labor legislation.

ACC 216 Employment Law (3-0) 3 hrs.

Examines past and present employment laws in the United States and their impact on employers and employees. Creates an understanding of the rights, duties and obligation of both employment groups under the law.

ACC 250 Income Tax Accounting (3-0) 3 hrs.

Offers a practical study of current federal and Illinois taxes as they relate to business and individual income tax procedures. Topics studied include income inclusions and exclusions, capital gains and losses, business and personal deductions and accounting methods.

Prerequisite: ACC 102 with a grade of "C" or better.

ACC 251 Advanced Tax Accounting (3-0) 3 hrs.

Presents the basic concepts of corporation income taxation, partnerships, estates and trusts. The course includes a study of the taxation on the transfer of wealth, both during lifetime and testamentary.

Prerequisite: ACC 102 with a grade of "C" or better.

ACC 252 Advanced Cost Accounting (3-0) 3 hrs.

Continues the study of cost accounting concepts with an emphasis on the development of accounting information for management decisions. Topics include segment performance measurement, transfer pricing, cost behavior patterns, capital budgeting and decision models.

Prerequisite: ACC 203 with a grade of "C" or better.

ACC 253 Advanced Accounting I (3-0) 3 hrs.

Studies municipal accounts, business combinations and the preparation of consolidated financial statements. Topics will include branches, consolidated statements, elimination of intercompany transactions, general funds and nonprofit service organizations.

Prerequisite: ACC 202 with a grade of "C" or better.

ACC 254 Auditing (3-0) 3 hrs.

Examines the auditory theory and procedures involving the topical areas of audit reporting, auditing standards and evidence, statistical, sampling and electronic data processing. The legal and ethical dimensions of auditing will also be studied with emphasis on how government affects financial reporting through court decisions, federal securities laws, the S.E.C. and the Foreign Corrupt Practice Act.

Prerequisite: ACC 253 with a grade of "C" or better.

ACC 255 Advanced Accounting II (3-0) 3 hrs.

Continues the study of advanced accounting concepts with heavy problem solving and simulated professional examination conditions.

Prerequisite: ACC 253 with a grade of "C" or better.

AED Adult Educational Program

AED 001 Nonnative Literacy Skills I (1-0 to 4-0) 1-4 hrs.

Introduces basic English conversation and literacy skills. Develops the listening, speaking, reading and writing skills necessary to basic survival needs. Concentrates on the following topic areas: general information, social skills/American culture, health, environment, community skills, consumer skills, employment skills and transportation. Grammar points are integrated as appropriate. Focuses on vocabulary acquisition and beginning listening and literacy skills. This course is for students of English who have minimal native literacy skills. It is the first in a sequence of four courses.

AED 002 Nonnative Literacy Skills II (1-0 to 4-0) 1-4 hrs.

Continues to introduce basic English conversation and literacy skills. Develops the listening, speaking, reading and writing skills necessary to basic survival needs. Concentrates on the following topic areas: general information, social skills/American culture, health, environment, community skills, consumer skills, employment skills and transportation. Grammar points are integrated as appropriate. Focuses on using basic vocabulary and literacy skills in daily routine situations. This course is for students of English who have minimal native language literacy skills. It is the second in a sequence of four courses.

AED 003 Nonnative Literacy Skills III (1-0 to 4-0) 1-4 hrs.

Extends basic English conversation and literacy skills. Develops the listening, speaking, reading and writing skills necessary to basic survival needs. Concentrates on the following topic areas: general information, social skills/American culture, health, environment, community skills, consumer skills, employment skills and transportation. Grammar points are integrated as appropriate. Focuses on building vocabulary in everyday situations. This course is for students of English who have minimal native language literacy skills. It is the third in a sequence of four courses.

AED 004 Nonnative Literacy Skills IV (1-0 to 4-0) 1-4 hrs.

Reviews basic English conversation and literacy skills. Develops the listening, speaking, reading and writing skills necessary to basic survival needs. Concentrates on the following topic areas: general information, social skills/American culture, health, environment, community skills, consumer skills, employment skills and transportation. Grammar points are integrated as appropriate. Focuses on effective communication and literacy strategies used in everyday situations. This course is for students of English who have minimal native language literacy skills. It is the fourth in a sequence of four courses.

AED 021 Basic Reading Skills (1-0 to 4-0) 1-4 hrs.

Introduces basic word recognition and word attack skills including prereading skills, sight words, phonics skills and structural analysis skills; comprehension and advanced reading skills in relation to words, sentences, selections and sequence; and specialized skills in locating and organizing information, reading maps, interpreting graphs, tables or diagrams, and developing personal reading skills. Introduces skills of application, analysis and evaluation of reading materials. Prepares the student for AED 023.

AED 023 Pre-GED Reading Skills (1-0 to 3-0) 1-3 hrs.

Reinforces and reviews word recognition and word attack skills of structural analysis; comprehension and advanced reading skills including deriving meaning from words, sentences, selections and identifying sequence; specialized reading skills including locating and organizing information, reading maps and interpreting graphs, tables or diagrams; and personal reading skills. Introduces skills of application, analysis and evaluation. Prepares the student for AED 025.

AED 025 GED Social Studies and Science (1-0 to 6-0) 1-6 hrs.

Reviews specific social studies, science and U.S./Illinois Constitution content areas and skills. Emphasis is upon review of comprehension, application, analysis and evaluation levels of cognitive skills. Prepares the student for the GED Social Studies, Science and U.S./Illinois Constitution tests.

AED 031 Basic English Skills (1-0 to 6-0) 1-6 hrs.

Presents basic English grammar and usage, spelling rules, vocabulary/dictionary use, capitalization and punctuation. Develops skills in producing short, clear writing examples. Prepares the student for AED 033.

AED 033 Pre-GED English Skills (1-0 to 3-0) 1-3 hrs.

Reinforces basic English grammar and usage, spelling rules, vocabulary/dictionary use, capitalization, punctuation and sentence/paragraph development. Introduces skills of application, analysis and evaluation. Prepares the student for AED 035.

AED 035 GED Writing Skills and Literature (1-0 to 3-0) 1-3 hrs.

Reviews basic grammar and usage; sentence structure, style, logic and paragraph organization, punctuation, capitalization and spelling. Produces writing samples that require the writer to take a position and defend it with appropriate evidence, detail and argumentative strategies. Prepares students for the GED Writing Skills Test. Reviews literacy types, terms, techniques, interpretation and commentary to prepare the student for the GED Interpreting Literature and the Arts Test.

AED 041 Basic Mathematical Skills (1-0 to 6-0) 1-6 hrs.

Introduces basic arithmetic skills including the fundamental operations with whole numbers, decimals, fractions and mixed numbers, verbal reasoning and measurement systems. Prepares the student for AED 043.

AED 043 Pre-GED Mathematical Skills (1-0 to 3-0) 1-3 hrs.

Reinforces arithmetic skills including the fundamental operations with decimals, fractions, mixed numbers, verbal reasoning and measurement systems. Introduces percents, ratio and proportion and charts and graphs. Introduces comprehension, application, analysis and evaluation levels of cognitive skills. Prepares the student for AED 045.

AED 045 GED Mathematics (1-0 to 3-0) 1-3 hrs.

Reviews arithmetic skills including decimals, fractions, numbers, verbal reasoning, measurement, percents, ratio and proportion and charts and graphs. Introduces algebra and geometry concepts, multi-step problem solving, using formulas and numeration statistics. Emphasizes review of comprehension, application, analysis and evaluation levels of cognitive skills. Prepares the student for the GED Mathematics Test.

AED 065 Adult Pre-Employment Skills (1-0 to 3-0) 1-3 hrs.

Introduces, reinforces or reviews the world of work and values clarification, interest, attitude and work inventories, aptitude and skill assessment, career exploration, job search, employment documents, interviewing, job retention skills and resignation or dismissal.

AED 071 Citizenship Training (1-0 to 3-0) 1-3 hrs.

Introduces the basic structure, functions and purposes of U.S. federal, state and local government and major aspects of American history. Reviews the responsibilities and application/test procedures for U.S. citizenship. Studies American customs and institutions.

Air Conditioning

See: RAC Refrigeration and Air Conditioning

ANT Anthropology

ANT 101 Introduction to Anthropology (3-0) 3 hrs.

Addresses such central questions as "What does it mean to be human?" and "How did we get to be the way we are?" Among the topics to be examined will be human, physical and cultural evolution, the origin of culture, language, religion, kinship, economics and the impact of contemporary life on the world's populations.

ANT 202 Cultural Anthropology (3-0) 3 hrs.

Describes and analyzes how people throughout the world define and resolve the problems of life that are found everywhere. Some of the specific topics studied will be religion, social structure, law, "the unknown," economics and the formation of behavior within particular groups.

ANT 203 American Indians (3-0) 3 hrs.

Acquaints the student with our American heritage. There are detailed studies of various American Indian groups, both before and after the arrival of the Europeans. The religion, social organization, art work and relationship to the natural environment of the native American is viewed as offering solutions for some of the problems that confront the Western world today.

ANT 205 Physical Anthropology (3-0) 3 hrs.

Studies the origins and evolution of humans as physical and cultural beings. Includes origin, history and behavior of primates, fossil records and the principles of population genetics and their application to study of human variation.

ANT 206 Archeology (3-0) 3 hrs.

Surveys archeological concepts, research and methods for the study of prehistoric cultures. Includes rise and development of modern civilization, land and land use, agriculture, current archeological investigations, interpretations of finds and introduction to field work techniques.

ANT 207 Ancient Civilization of Mexico and Central America (3-0) 3 hrs.

Studies the origin and development of ancient civilizations of Mexico and Central America using historical and archeological evidence. This course will explore the world of the Aztec, Maya, Toltec and others as seen through architecture, art, food production, politics and religion.

ANT 208 Archeology of the Near East (3-0) 3 hrs.

Studies origins and development of civilization of ancient Near East. Includes archeology and cultural history of such countries as Egypt, Mesopotamia and Palestine.

ANT 209 Anthropological Theory (3-0) 3 hrs.

Surveys the theoretical origin and development of modern anthropology. Includes examination of works by Benedict, Boas, Dukheim, Khaidun, Malinowski, Mead, Morgan, Tylor, Weber and others.
Prerequisite: ANT 101 or SOC 101 with a grade of "C" or better.

ANT 220 Topics in Anthropology 1-6 hrs.
 Studies selected problems or topics in social science. The exact content and instructional methodology will vary from semester to semester depending on the material to be studied. A syllabus or course outline containing additional information will be available with preregistration materials each time that the course is offered. This course may be repeated two times to a maximum of six credit hours.

ANT 250 Field Methods in Archeology I (1-4) 3 hrs.
 Provides intensive introduction to the methods and techniques of archeological survey and excavation through practical fieldwork, accompanied by lecture and discussion. The student will participate in laboratory analysis of materials excavated within the Midwest.
 Prerequisite: ANT 101 with a grade of "C" or better and/or consent of instructor.
 (NOTE: This course is taught only at an archeological site during the summer.)

ANT 255 Field Methods in Archeology II (1-4) 3 hrs.
 Designed for students who have had previous field school experience at the introductory level. This is an intensive course in advanced field methods in archeology. In addition to the continued pursuit of excavation procedures and techniques, the student will be concerned with some of the theoretical and interpretative aspects of archeological analysis.
 Prerequisite: ANT 101, ANT 250 with a grade of "C" or better and/or consent of instructor.
 (NOTE: This course is taught only at an archeological site during the summer.)

ART 111 Drawing II (0-6) 3 hrs.
 Emphasizes the interaction between design abilities, image and content. Prerequisite: ART 110 with a grade of "C" or better or consent of instructor.

ART 121 Design I (0-6) 3 hrs.
 Emphasizes the use of design elements and principles as applied to concepts of second dimension.

ART 122 Design II (0-6) 3 hrs.
 Emphasizes the use of design elements and principles as applied to concepts of third dimension. Prerequisite: ART 121 with a grade of "C" or better or consent of instructor.

ART 201 Drawing Studio (0-6) 3 hrs.
 Emphasizes drawing as visual idea. May be repeated up to six hours credit.
 Prerequisite: ART 111 with a grade of "C" or better or consent of instructor.

ART 206 Printmaking Studio (0-6) 3 hrs.
 Emphasizes traditional and contemporary methods of graphic reproduction of visual ideas pertaining to the fine arts. May be repeated up to six hours credit.
 Prerequisite: ART 111, ART 121 with a grade of "C" or better or consent of instructor.

ART 225 Figure Drawing Studio (0-6) 3 hrs.
 Emphasizes drawing the human figure in action and from still poses. Rapid sketching, long poses, memory work, studio and lecture. May be repeated up to six hours credit.
 Prerequisite: ART 111 with a grade of "C" or better or consent of instructor.

ART 236 Composition (0-6) 3 hrs.
 Emphasizes pictorial composition in line, value, pattern and color. May be repeated up to six hours credit.
 Prerequisite: ART 111 and ART 121 with a grade of "C" or better.

ART 240 Computer Graphics Studio (0-6) 3 hrs.
 Presents a computer software-based approach to visual image manipulation and generation. Includes the integration of computer hardware, software and peripheral devices as tools to manufacture, capture and combine traditional and contemporary visual ideas as applied to art and design.
 Prerequisite: ART 111, ART 121 with a grade of "C" or better or consent of instructor.

ART Art

ART 100 Art Seminar (1-0) 1 hr.
 Problems relating to the artist and art student. Required of all majors. May be repeated up to two hours credit.

ART 105 Introduction to Arts (3-0) 3 hrs.
 Introduces visual arts with an emphasis on the following aspects: building the student's awareness of aesthetic concepts, theory and criticism; developing sensitivity to works of art; and acquainting the student with vocabulary applicable to describe visual situations. Required by all majors.

ART 110 Drawing I (0-6) 3 hrs.
 Emphasizes the design elements and principles as applied to visual imagery.

ART 261 Painting Studio (0-6) 3 hrs.
Emphasizes the relationship between painting and visual ideas. May be repeated up to six hours credit.
Prerequisite: ART 122 with a grade of "C" or better or consent of instructor.

ART 291 Ceramics Studio (0-6) 3 hrs.
Emphasizes the exploration of ceramic media as related to the expression of visual ideas. May be repeated up to six hours credit.
Prerequisite: ART 122 with a grade of "C" or better or consent of instructor.

ART 296 Sculpture Studio (0-6) 3 hrs.
Emphasizes the exploration of sculptural media as related to visual ideas. May be repeated up to six hours credit.
Prerequisite: ART 122 with a grade of "C" or better or consent of instructor.

AST Astronomy

AST 101 Introductory Astronomy (3-2) 4 hrs.
Introduces the various topics of astronomy using a non-mathematical approach. Covers the origin of the universe, structure and composition of galaxies, the solar system, historical astronomy, constellations, meteors, comets and the latest from space exploration. Laboratory experience will complement the above.

ATE Architectural Technology

ATE 100 Architectural Career Exploration (.5-10) 1 hr.
Studies an overview of career and employment possibilities in architecture. Includes observation of practices in architecture and attendance at a seminar to discuss related experiences. (NOTE: Summer semester only.)
Prerequisite: For students with no prior courses or work experience in the architecture field and consent of coordinator.

ATE 101 Introduction to Architectural Technology I (1-6) 4 hrs.
Introduces fundamentals of architecture and technical procedures. Covers drafting, lettering, orthographic projection, dimensioning, program development, proximities, circulation studies, sketching, orientation, and coding and zoning formats. Design development drawings including schedules are based on a one or two story residence.

ATE 102 Introduction to Architectural Technology II (1-6) 4 hrs.
Extends technical procedures to include oblique and perspective projections. Covers cross-referencing, indexing, outline specifications, estimating and working drawings. State accessibility code, office and toilet room planning and reflected ceiling plans are addressed. Includes a case study project program of a steel industrial building with offices.

ATE 103 Building Materials Technology I (2-4) 4 hrs.
Studies masonry and wood construction for one and two story buildings. Residential lot and permit requirements are reviewed; concrete foundation and footing details, wall and building sections are covered.

ATE 104 Building Materials Technology II (2-4) 4 hrs.
Introduces steel construction for one and two story buildings which covers framing design and detailing using rolled and fabricated sections. Open web steel joists framing, metal panel and window wall construction and roof slopes and details are investigated.

ATE 105 Architectural CAD I (2-2) 3 hrs.
Introduces computer hardware and state-of-the-art software as applied to applications in architecture, interior design and other parameters for design and drafting technologies; entity creating and editing, printing and plotting, and file/data management. Projects are correlated primarily to architectural design issues.

ATE 106 Architectural CAD II (2-2) 3 hrs.
Covers advanced CAD techniques and procedures developed in two-dimensional architectural drafting and detailing. Develops a working knowledge and understanding of command structures, detailed data management and manipulation techniques, and software customization procedures. Projects are correlated primarily to detailing issues. Prerequisite: ATE 105 with a grade of "C" or better or consent of instructor.

ATE 107 Architectural Principles for the Interior Designer I (1-6) 4 hrs.
Introduces fundamentals and procedures of architecture applied to a residential project. Develops drafting and lettering skills, applicable to programming, space and circulation diagrams, dimensioning, schedules, specifying, zoning and building code standards, evaluations and sections, stair details, millwork and cabinetry details. Isometric and one point perspective will be covered.

ATE 108 Architectural Principles for the Interior Designer II (1-6) 4 hrs.

Extends application of architectural drafting conventions in the development of a commercial office building. Investigates programming, specifications, accessibility standards, project costs, plans, security systems, reflected ceiling elevations and acoustics. Oblique projections and two point perspective will be covered. Prerequisite: ATE 107 with a grade of "C" or better.

ATE 109 Chicago's Great Architectural Tradition (3-0) 3 hrs.

Introduces an historical survey of culture and technology impact on Chicago's architecture. Emphasizes ideas and trends in modern building originating with the balloon frame and continuing through to the skyscraper.

ATE 200 Architectural Internship (1-15) 2 hrs.

Applies appropriate skills to the architectural technology field. (NOTE: Summer semester only.) Prerequisite: Successful completion of at least 70 percent of courses in first and second semesters of the architectural program and consent of coordinator.

ATE 201 Comprehensive Building Project I (0-8) 4 hrs.

Covers the designing of a multi-storied steel office building program of 40,000 square feet. Planning of building core includes stairs, elevators, mechanical rooms and toilet rooms. Investigations of building module, prototypical offices, building elevations and enclosure strategies, zoning height and area limitations, and site planning including parking, grading and landscaping. Prerequisite: ATE 101 with a grade of "C" or better or consent of instructor.

ATE 202 Comprehensive Building Project II (0-8) 4 hrs.

Emphasizes the study of multi-storied concrete residential buildings on a suburban and a city site. Develops apartment and townhouse plans, minimum property standards, permitted zoning uses, orientation, parking and site amenities. Prerequisite: ATE 101 with a grade of "C" or better or consent of instructor.

ATE 203 Construction Problems I (2-4) 4 hrs.

Develops construction strategies of a multi-storied steel commercial building. Covers stairs, elevators and toilet room layouts. Reviews fire resistive construction technologies: window walls, lighting, ceiling grids and partition systems. Prerequisite: ATE 104 with a grade of "C" or better or consent of instructor.

ATE 204 Construction Problems II (2-4) 4 hrs.

Covers multi-storied reinforced concrete construction. Analysis of precast walls: their connections and textural finishes. Covers concrete beam, column, slab, drop panel and flat plate systems. Prerequisite: ATE 104 with a grade of "C" or better or consent of instructor.

ATE 205 Architectural Computer Applications I (2-2) 3 hrs.

Introduces three-dimensional architectural computer graphic techniques and applications. Covers the transition from two-dimensional to three-dimensional drawings, creation and manipulation of wireframe and solid modeling techniques. Prerequisite: ATE 105 with a grade of "C" or better or consent of instructor.

ATE 206 Architectural Computer Applications II (2-2) 3 hrs.

Provides in-depth exposure to advanced three-dimensional representations of architectural forms. A variety of post-processing programs introduces advanced three-dimensional representations to include modeling, shades and shadows, texture applications, walk-throughs, and photorealistic rendering. Special problems are investigated. Prerequisite: ATE 105 with a grade of "C" or better or consent of instructor.

ATE 207 Architectural Statics (3-0) 3 hrs.

Introduces architectural statics and covers concepts of force systems in equilibrium: parallel forces, perpendicular forces, analysis of concentrated and distributed loads in live and dead load applications resulting in tension and compression members and members subjected to combined forces.

ATE 208 Architectural Strength of Materials (3-0) 3 hrs.

Covers strength of materials in critical force systems using loading, shear, moment and deflection diagrams and analysis. Applies principles of design analysis to steel, concrete and wood construction materials in beam, column, foundation and beam configurations. Prerequisite: ATE 207 with a grade of "C" or better.

ATE 209 Principles of Building Construction (3-0) 3 hrs.

Emphasizes survey of building processes. Covers zoning and code requirements, legal description, surveys, foundations, masonry and frame walls, roofing, insulation, interior finishes, mechanical and electrical systems and cost estimating. Useful for those contemplating home design and construction.

ATE 210 Cost Estimating (3-0) 3 hrs.
Introduces development of preliminary estimates. Covers building plan take-offs and unit costs applied to residential and small scale construction projects.

ATE 211 Solar Energy Architecture (3-0) 3 hrs.
Covers history of solar energy, climatic data, energy conservation, heat loss and solar calculations. Includes passive design analysis, construction methods and building costs.

ATE 212 Architectural Presentation Graphics (2-2) 3 hrs.
Introduces media, methods and techniques for various types of architectural presentation graphics. Provides a hands-on approach to architectural design exploration, presentation and color composition.

ATE 213 Construction Management Process (3-0) 3 hrs.
Includes the study of contracts, preconstruction services, construction services, process liabilities, cost estimating, planning and scheduling, phasing and packaging of work and controlling the projects time and cost.

ATE 214 Architectural Models (1-4) 3 hrs.
Introduces variety of materials, methods and techniques for various types of architectural presentation models: site contour models, building enclosure models and interior space models. Covers scale, selection of landscape materials, colors and details.

AUT Automation Skills

AUT 101 Analog Electricity-Electronics (2-4) 4 hrs.
Presents a practical comprehensive introduction to students who are new to electricity-electronics. Material focuses upon properties, measurement and uses of electricity. Basic theory and extensive applications are the goal.
Prerequisite: Placement test for automation.

AUT 105 Digital Electronics (2-4) 4 hrs.
Details the basics of combinatorial digital logic elements. The emphasis is on applied skills in the laboratory environment to compliment the theory. Introduces digital applications to controls: timers, counters, shift registers, display circuits.
Prerequisite: AUT 101 with a grade of "C" or better.

AUT 108 Industrial Computer Overview (0-2) 1 hr.
Provides basic overview of computers in technical or industrial applications. Introduces principles of computer use with common applications, basic

terminology and operation of computers and peripheral equipment. Describes typical industrial, manufacturing and technical service uses. For those with no computer experience.

AUT 110 Safety and OSHA (1-0) 1 hr.
Studies safety relating to the individual and his co-workers in the world of work. OSHA right to know materials are presented.

AUT 125 Optics: Fiber (1-2) 2 hrs.
Investigates optics for the purpose of working with communication control and measuring systems. Principles of physical and geometric optics are presented.

AUT 130 Pneumatic and Hydraulics (1-4) 3 hrs.
Considers the properties of hydraulic fluids as a medium to transmit control energy and supply power to do work. Studies the individual components and circuits found in typical pneumatic-hydraulic applications. Electrical and hydraulic servo controls are introduced.

AUT 135 Sensors (1-2) 2 hrs.
Investigates sensor operation and application for a variety of applications: tactile, photo, fiber-optic, magnetic, thermal, sonic, pressure and vision systems.
Prerequisite: AUT 105 with a grade of "C" or better.

AUT 140 Controllers—PLC's (1-2) 2 hrs.
Examines the procedures and mechanisms by which programmable controller's functions are used. Programming in ladder logic and controller code focuses on the direct application of a variety of input and output devices. Hardware, programming, peripherals and accessories are emphasized.
Prerequisite: AUT 125, AUT 130 and AUT 135 with a grade of "C" or better.

AUT 145 Prints, Measurements and QC (1-4) 3 hrs.
Develops skills in reading blueprints, using basic precision measurement tools and fundamentals of Statistical Process Control (SPC) and Statistical Quality Control (SQC).

AUT 146 Industrial Blueprints Reading (.5-1) 1 hr.
Develops skills in reading blueprints and interpreting engineering drawings. Emphasizes projection styles commonly found on industrial prints such as orthographic, auxiliary, section and isometric. Covers precision dimensioning fundamentals in part assemblies and subassemblies.

AUT 147 Measurements and Instruments (0-3) 1 hr.

Develops skills in the use and handling of precision and semi-precision measuring instruments. Emphasizes data gathering uses of hand instruments in context of quality improvement systems. Prerequisite: AUT 146 with a grade of "C" or better.

AUT 148 Quality Skills (1-1) 1 hr.

Introduces quality control concepts with particular emphasis on statistical process control (SPC). Covers application of sampling, normal distributions and variance, control charts, process capability, variables and attributes.

AUT 155 Machine Shop Practices (1-4) 3 hrs.

Presents activities in bench operations, selected power tools, welding, fabrication and repair techniques. Prerequisite: AUT 145 with a grade of "C" or better.

AUT 160 Robotic Systems (2-8) 6 hrs.

Investigates operation and maintenance of an automated system for manufacturing a specific product. Integrates all previous course topics with the focus on an automated manufacturing system.

AUT 165 CNC Setup and Operation (.5-1) 1 hr.

Includes discussion, demonstration and practice of various CNC setup and operations such as tool location, holding techniques and precision measuring tools used to setup CNC machining systems. Covers operation of CNC machines including zero location and tool offset. Also introduces CNC program loading and editing.

Prerequisite: Demonstrate ability to use micrometers and vernier calipers and to measure to .016 (1/64) of an inch or .4 mm with a machinist rule.

BCE Building Codes and Enforcement

BCE 101 Basic Construction for Building Codes (3-0) 3 hrs.

Introduces materials used in building construction, their growth or manufacture, preparation and application. Emphasizes frame and masonry construction types, working drawings and structural details for code compliance.

BCE 102 Basic Code Enforcement Techniques (3-0) 3 hrs.

Introduces building inspection principles. Includes application of building codes to structures in the inspection process. Covers application of zoning restrictions and regulations, code

interpretation using reference documents, components of field inspection and report requirements. Emphasizes plan and specification review, permit processes and issuance, legal ramifications in inspection law.

BCE 104 Basic Mechanical and Energy Conservation Codes (3-0) 3 hrs.

Introduces the theory and code requirements for mechanical and energy conservation systems. Covers procedures, layouts and safety principles for heating, cooling and ventilation systems; application of HVAC code requirements for residential units (up to six dwelling units) and light commercial buildings. Includes application of energy conservation code requirements to principles of building inspection and identification of components in heating, ventilating and air conditioning systems to discern code violations.

BCE 105 Basic Plumbing Codes (3-0) 3 hrs.

Introduces basic theory and code requirements for plumbing systems and their installation. Concentrates on procedures, practices and layouts, and codes inspection problems for residential, commercial and industrial installations.

BCE 106 Basic Electrical Codes (3-0) 3 hrs.

Introduces basic theory and code requirements for electrical systems and their installation. Concentrates on procedures, practices and layouts, and code inspection problems for residential, commercial and industrial installations.

BCE 201 Basic Building Codes (3-0) 3 hrs.

Covers the latest edition of the BOCA National Building Code. Explains its use, intent, rationale and interpretation. Includes enforcement and administration, liability, plan review and permit process definitions, use groups, types of construction, general building limits, special uses, means of egress, materials and tests, fire resistive construction, mechanical equipment and systems, fire protection systems, electric wiring and equipment, elevators, plumbing systems and use of reference standards.

BFC Banking and Finance

BFC 100 Banking Career Exploration (.5-10) 1 hr.
 Studies an overview of career and employment possibilities in the banking or insurance industry. Each student will observe practices in this industry and attend a seminar to discuss his/her experience. (NOTE: Summer semester only.)
 Prerequisite: For students with no prior courses or work experience in the banking/finance field and interview with coordinator.

BFC 101 Principles of Financial Institution Operations (3-0) 3 hrs.
 Surveys the internal operations of a bank and of a savings and loan association. Emphasizes the general principles of operations applicable to institutions of all sizes. Provides a sound foundation for newcomers to the industry regardless of age or prior academic experience.

BFC 102 Commercial Law (3-0) 3 hrs.
 Provides a general knowledge of, and prepares the banker or credit manager to act in accordance with, legal principles pertaining to business and to banking. Topics include contracts, commercial paper, bank deposits and collections, bankruptcy, the Statute of Frauds, insurance law and appropriate articles of the Uniform Commercial Code.

BFC 115 Advanced Principles of Financial Institution Operations (3-0) 3 hrs.
 Continues the study of financial institution operations by analyzing banking products and services. Topics include checking accounts, N.O.W. accounts, time deposits, money market accounts and the contractual nature of these accounts. Also includes ownership methods, insurance coverage and an introduction to consumer lending.
 Recommended prerequisite: BFC 101 with a grade of "C" or better.

BFC 117 Marketing for Financial Institutions (3-0) 3 hrs.
 Provides an overview of the essentials of public relations and marketing for financial institutions. Includes the goals, development, implementation and evaluation of internal and external public relations and marketing plans.

BFC 118 Credit Administration in Financial Institutions (3-0) 3 hrs.
 Emphasizes the identification and examination of factors influencing and determining a financial institutional loan policy. Topics include methods of credit investigation and analysis, credit operation techniques, case problems in credit administration and standard and unconventional types of loans.

BFC 200 Investment Management (3-0) 3 hrs.
 Introduces the student to the fundamentals of equity and fixed income investing. The course will also explore other investment management subjects such as mutual funds, international investing and retirement planning as well as tax-advantaged investments. Basic derivatives such as futures and options will also be discussed. Credit will be given for either BFC 200 or MGT 170, but not both.

BFC 201 Commercial Credit and Collection Principles (3-0) 3 hrs.
 Provides the principles of commercial credit management. Emphasizes analysis and control of funds advanced to customers through sales (Accounts Receivable Management). Topics include credit associations, asset management, credit policies, basic principles of credit analysis and collection principles.
 Prerequisite: ACC 101 with a grade of "C" or better or consent of coordinator.

BFC 202 Advanced Commercial Credit and Collection (3-0) 3 hrs.
 Continues study of commercial credit management. Emphasis is placed on Accounts Receivable Management. Topics include financial statement analysis, budgeting, bad debts and receivables cash flow and a detailed study of bankruptcy proceedings and international credit transactions.
 Prerequisite: BFC 201 with a grade of "C" or better.

BFC 211 Accounting for Financial Institutions (3-0) 3 hrs.
 Studies basic accounting procedures, techniques and systems used in banks, savings and loans and other financial institutions. Emphasis on the components of the Statement of Condition and Income Statement.
 Prerequisite: ACC 101, BFC 101 with grades of "C" or better and consent of coordinator.

BFC 212 Home Mortgage Lending (3-0) 3 hrs.
 Emphasizes the role of the mortgage loan officer seeking to develop a sound mortgage portfolio. The mortgage market is described, followed by the acquisition of a mortgage portfolio, mortgage plans and procedures, mortgage loan processing and servicing and finally the obligations of the mortgage loan officer in overall portfolio management.
 Recommended prerequisite: ACC 211 with a grade of "C" or better.

BFC 213 Trust Functions and Services (3-0) 3 hrs.

Introduces trust operations. Presents the duties of, and services rendered by, institutions engaging in trust business, differentiating between the business and legal aspects of trust functions. Intended for all bankers and not limited to only those specializing in trust functions and services.

BFC 215 Financial Statements Interpretation and Analysis (3-0) 3 hrs.

Explores the characteristics of financial statements and financial statements analysis. Emphasis is on the income statement, balance sheet and sources and uses of funds statement. Effects of reserves, inventory valuations, depreciation, depletion, amortization, subsidiaries and affiliates are studied. Also addressed are cash flow, reported earnings, taxable earnings and interpretation of the financial data by means of ratio analysis. Prerequisite: ACC 101 with a grade of "C" or better.

BFC 216 Bank Auditing and Internal Control (3-0) 3 hrs.

Explores principles, standards, techniques and professionalism in bank auditing. External audits and the role of the external auditor. Internal control, audit procedures and the role of the internal auditor. Audits by directors, trust department audits, EDP audits, other audits. Customer confirmations. Prerequisite: ACC 101 with a grade of "C" or better (MGT 111 is recommended).

BFC 217 Uniform Commercial Code (3-0) 3 hrs.

Explores the Uniform Commercial Code and related uniform acts and their impact upon common documents. Instruments considered include negotiable instruments, nonnegotiable instruments and quasi-negotiable instruments. Topics include formal requirements, form and content, interpretation, delivery, negotiation, endorsement, presentment, notice of dishonor and protest, acceptance and certification and discharge.

BFC 219 Consumer and Commercial Credit in Financial Institutions (3-0) 3 hrs.

Emphasizes the practical aspects of both consumer and commercial credit management. Techniques of lending such as credit verification, secured and unsecured lending, slow loans and workouts. Prerequisite: BFC 118 with a grade of "C" or better or minimum of six months lending experience.

BFC 220 Human Resource Management in Banking (3-0) 3 hrs.

Presents the theories and application of human resource management in banking. Surveys the techniques of selecting, motivating and controlling bank employees. Personnel selection, interviewing, training and rewarding employees will be stressed in this course. Prerequisite: BFC 101 with a grade of "C" or better.

BFC 225 International Finance (3-0) 3 hrs.

Emphasizes international trade financing. Presents mechanics of importing and exporting, credit and political considerations. Focuses on credit considerations, market product profiles, letters of credit, collection, credit information outside the United States and entry into these markets. Prerequisite: ACC 101 with a grade of "C" or better.

BFC 230 Banking Internship (1-15) 2 hrs.

Applies student's appropriate skills to the banking workplace setting. (NOTE: Summer semester only.) Prerequisite: Successful completion of the 30-credit hours of the first and second semesters of the Banking and Savings Association Management program, and interview with coordinator.

BFC 235 Banking Internship (1-15) 3 hrs.

Provides cooperative work experience as a banking trainee. Credit for this course will be given for participation in supervised cooperative work experience. The experience must be provided through an organized training plan in a college-approved training station. One lecture hour per week will be devoted to job analysis and banking issues. Prerequisite: Consent of coordinator and completion of the first semester course work in the Banking and Savings Association Management Program.

BIM Business Information Management

BIM 170 Introduction to Information Applications and Technologies (2.5-1) 3 hrs.

Provides an overview of business information applications — technology, people and procedure — within organizational and environmental context. Improvements in productivity through appropriate application of office tools and techniques (manual or electronic) are stressed. Major technologies, both hardware and software, that support information (1) creation, (2) storage and retrieval, (3) manipulation and (4) distribution are covered.

BIM 181 Enterprise-Wide Information Analysis and Implementation (2.5-1) 3 hrs.

Examines collection and analysis of organization needs, utilizing planning tools and collecting data for assessing the impact of change upon work groups, tactics and strategies based on information analysis results, case or field-based projects with particular attention devoted to development of end-user office support system.

BIM 190 Electronic Information Exchanges (3-0) 3 hrs.

Introduces the different types of electronic information devices available for offices. Provides for the development of tools to evaluate cost effectiveness and usefulness in the modern electronic office as well as in those offices that plan to upgrade equipment. Offers an opportunity for an exchange of current practices.

BIM 210 Information Applications Resources (2.5-1) 3 hrs.

Examines the applications of information automation technologies from the end-user perspective to enhance productivity of office employees — executive/managerial, professional and support personnel. Relationship of automated technologies and corporate goals. Comparative and evaluative techniques for appropriate selection of hardware and software.

Prerequisite: Prior or concurrent enrollment in BIM 180 with a grade of "C" or better or consent of coordinator.

BIM 220 Integration of Information Applications (2.5-1) 3 hrs.

Summarizes and provides synthesis and application of concepts related to current information systems topics.

Prerequisite: BIM 210 with a grade of "C" or better.

BIM 250 Multi-Media Business Presentations (2.5-1) 3 hrs.

Provides application of communication theory, human relations concepts, research methods, and information technology combined with multimedia resources to effect the internal communications of professionals who work in environments with automated information and communication systems.

BIM 260 Training and Development in Information Management (2.5-1) 3 hrs.

Provides application of theories of learning and instructional development to the education and training of employees in business information. Topics include instructional design, strategy, technology, and the implementation, evaluation and management of training in an organizational environment.

BIO Biology

BIO 101 Biology Survey (3-0) 3 hrs.

Surveys the science of biology, emphasizing the human organism. Includes chemical and physical properties, physiological systems of control, growth, differentiation, reproduction, genetics, ecology, evolution and ethical considerations. Also includes a broader overview of the plant and animal kingdoms and humans' place in, and interaction with, those kingdoms.

BIO 103 Man and Environment (3-0) 3 hrs.

Surveys and analyzes man's role as an environmental modifier. Ecological, social cultural, economic and political influences on environment are considered. The historical and current pollution problems and other environmental disruptions are analyzed and evaluated. Possible remedial courses of action are discussed and evaluated.

BIO 104 Environmental Laboratory Biology (2-2) 3 hrs.

Examines and analyzes the parameters of the biosphere as a biological support system and the implications of natural and human caused changes in that support system. An examination of biosphere (natural world) and industriosphere (technological world) interactions is included.

BIO 105 Heredity, Evolution and Culture (3-0) 3 hrs.

Examines life and the evolutionary record with emphasis on humans and the gene pool. Factors such as social and environmental entities and the problems of the 20th century are considered.

BIO 110 Principles of Biology (3-3) 4 hrs.
Studies and emphasizes cell structure and function by exploring the various patterns that have evolved within cells for carrying out important life functions. This includes cell ultrastructure, cell surface-volume relationships, cellular metabolism and energetics, mitosis and meiosis, genetics, DNA, RNA and protein synthesis, gene action, population genetics, development and environment.
Prerequisite: High school biology with "C" or better or BIO 101 with a grade of "C" or better or consent of instructor.

BIO 120 General Botany (3-3) 4 hrs.
Surveys the plant kingdom emphasizing ecological relationships, plants and their growth, structure, physiology and reproduction.
Prerequisite: High school biology with "C" or better or BIO 101 with a grade of "C" or better or consent of instructor.

BIO 130 Microbiology (2-4) 4 hrs.
Examines characteristics and importance of microorganisms; emphasis on identification, anatomy and physiology, control, relationship to health and disease and economic importance.
Prerequisite: High school biology with "C" or better or BIO 101 or BIO 110 with a grade of "C" or better or consent of instructor. College chemistry or equivalent is desirable.

BIO 135 Introduction to Human Anatomy and Physiology (4-0) 4 hrs.
Surveys the human body, with emphasis on basic physical and chemical concepts, anatomy, physiology and embryology. Designed to meet the needs of students in certain allied health career programs.
Prerequisite: High school biology with "C" or better or BIO 101 with a grade of "C" or better or consent of instructor.

BIO 136 Introduction to Human Disease (3-0) 3 hrs.
Surveys the nature of human disease, with emphasis on the functional disturbances within the body systems. Designed to meet the needs of students in certain allied health career programs.
Prerequisite: High school biology with "C" or better or BIO 101 with a grade of "C" or better or consent of instructor. Recommended Prerequisite: BIO 135.

BIO 140 General Zoology (3-3) 4 hrs.
Surveys the animal kingdom based on theory of organic evolution, including morphology, histology, physiology, taxonomy, parasitology, embryology and ecology.
Prerequisite: High school biology with "C" or better or BIO 101 with a grade of "C" or better or consent of instructor.

BIO 150 Field Biology (2-4) 4 hrs.
Emphasizes field and laboratory work with local soils, flora, fauna — their collection, identification and ecological relationships. Assists students in acquiring basic working knowledge in field work. Field work or field trips every class day, weather permitting.
Prerequisite: BIO 120 or BIO 140 with a grade of "C" or better or consent of instructor.

BIO 151 Field Biology Cape Cod (2-4) 4 hrs.
Emphasizes field and laboratory work with local, as well as Cape Cod coastal marine soils, flora, fauna — their collection, identification and ecological relationships. Assists students in acquiring basic working knowledge in field work. Weather permitting, field work or field trips will be offered every day including an extended trip to Cape Cod, Massachusetts.
Prerequisite: BIO 120 or BIO 140 with a grade of "C" or better or consent of instructor.

BIO 152 Field Biology Isle Royale (2-4) 4 hrs.
Emphasizes field and laboratory work with local, as well as Isle Royale soils, flora, fauna — their collection, identification and ecological relationships. Assists students in acquiring basic working knowledge in field work. Weather permitting, field work or field trips will be offered every day including an extended trip to Isle Royale, Michigan.
Prerequisite: BIO 120 and BIO 140 with a grade of "C" or better or consent of instructor.

BIO 153 Field Biology Tropical (2-4) 4 hrs.
Emphasizes field and laboratory work with local, as well as tropical (Belize) fauna, flora, soils — their collection, identification and ecological relationships. Assists students in acquiring basic working knowledge in field work. Weather permitting, field work or field trips will be offered every day including an extended trip to Belize.
Prerequisite: BIO 120 and BIO 140 with a grade of "C" or better or consent of instructor.

BIO 154 Field Biology—Mountain Ecology (2-4) 4 hrs.
Emphasizes field and laboratory work with local, as well as mountain (Smoky Mountains) soils, flora, fauna—their collection, identification and ecological relationships. Assists students in acquiring basic working knowledge in field work. Weather permitting, field work or field trips will be offered every day including an extended field trip to the Smoky Mountains.
Prerequisite: BIO 120 or BIO 140 with a grade of "C" or better or consent of instructor.

BIO 160 Human Anatomy (3-2) 4 hrs.
Introduces the anatomy of the human body; the following systems studied either regionally or systematically: integumentary, skeletal, articular, muscular, circulatory, lymphatic, nervous, respiratory, digestive, excretory, endocrine and reproductive. Includes some introductory histology. Specially designed for studies in health careers, biology and physical education.
Prerequisite: High school biology with a "C" or better or BIO 101 with a grade of "C" or better or consent of instructor.

BIO 161 Human Physiology (3-2) 4 hrs.
Emphasizes physiological principles at the molecular, cellular, tissue, organ and system level, as they pertain to the human organism. The following systems are studied in detail: skeletal, muscular, circulatory, nervous, digestive, respiratory, urinary, reproductive and endocrine. In this course, special applications will be made to meet the needs of students in health careers, biology and physical education.
Prerequisite: BIO 160 with a grade of "C" or better.

BIO 210 Biological Principles (3-3) 4 hrs.
Emphasizes the following topics: the origin and evolution of life, cell structure and functions, transformation of energy, biological chemistry, physical and chemical life processes, regulatory mechanisms, cellular reproduction, inheritance, gene action and development. Primarily for biology major and minor students.
Prerequisite: One semester of college chemistry (CHM 121 with a grade of "C" or better) or two years of high school chemistry and physics.

BIO 220 Botanical Principles (3-3) 4 hrs.
Studies the plant kingdom emphasizing ecological relationships, evolutionary relationships, growth, structure, physiology, energy relationships, life cycles, and reproduction. Primarily for biology majors and minor students.
Prerequisite: BIO 210 with a grade of "C" or better.

BIO 240 Zoological Principles (3-3) 4 hrs.
Studies the animal kingdom emphasizing evolutionary study from protozoans through vertebrates including organic evolution, morphology, histology, physiology, taxonomy, parasitology, embryology and ecology. Primarily for biology major and minor students.
Prerequisite: BIO 210 with a grade of "C" or better.

CCA Early Childhood Education

CCA 100 Early Childhood Career Exploration (.5-10) 1 hr.
Provides an overview of career and employment opportunities in early childhood education. Each student will observe and participate in an early childhood site and attend a seminar to discuss her/his experience. (NOTE: Summer semester only.)
Prerequisite: For students with no prior courses or work experience in early childhood education and consent of coordinator.

CCA 101 Introduction to Early Childhood Education (3-0) 3 hrs.
Provides an overview of history, philosophies and program models for your children and their families. Includes observational skills, child development, schedules, curriculum, classroom environment, developmentally appropriate practice, interpersonal skills, cultural diversity, the role of the parents and appropriate teacher behaviors. Identifies state and federal guidelines governing early childhood programs and characteristics of professionalism.

CCA 102 Child Development I (3-0) 3 hrs.
Presents research, theory and practical application related to development from conception through middle childhood. Discusses social, emotional, physical and cognitive growth of the child, children in groups and professional practice.

CCA 103 Child Development II (3-0) 3 hrs.
Presents research, theory and practical application related to development from adolescence through maturity. Discusses social, emotional, physical and cognitive growth within age-related stages. Stresses relevance of developmental theory in working with children and adults in an early childhood program.
Prerequisite: CCA 102 with a grade of "C" or better or consent of instructor.

CCA 111 First Three Years of Life (3-0) 3 hrs.
Examines the theories and research related to infants and toddlers with a focus on methods of care given in home-based and school-based infant programs. Observation of infants/toddlers and infant/toddler programs.

CCA 115 Principles of Early Childhood Curriculum (3-0) 3 hrs.
 Provides an overview of principles involved in planning, implementing and evaluating developmentally appropriate curriculum. Includes lesson plans, emerging curriculum, scheduling, room arrangement, materials and equipment; individual, small and large group activities; short and long term goals; and teacher's roles and responsibilities in curriculum development.

CCA 120 Introduction to Special Education for Paraprofessionals (3-0) 3 hrs.
 Examines characteristics of children with special needs and the methods used in special education. The role of the special education teacher's aide will be studied with a focus on implementing educational plans, family issues, legal rights and responsibilities.

CCA 121 Behavioral Management in Special Education Setting (3-0) 3 hrs.
 Studies the role of behavioral management within the special education population and provides understanding of rationale, terminology and methods used when working with special needs children and their families.

CCA 151 Communicating with Parents and Children (1-0) 1 hr.
 Establishes parent relationships through effective listening, speaking, writing. Develops communication skills in relation to children and co-workers.

CCA 152 Principles of Child Growth and Development, Birth-5 (1-0) 1 hr.
 Discusses principles of child growth and development from birth through age five. Emphasis on developmental milestones and cultural influences.

CCA 153 Guiding Children and Managing the Classroom (1-0) 1 hr.
 Provides methods of guiding children's behavior, encouraging prosocial behavior and dealing with common problems. Emphasis on principles and skills in classroom management.

CCA 154 Activities and Resources for Young Children I (1-0) 1 hr.
 Aids in planning the learning environment, which includes the schedule, themes and activities incorporating art, motor, music and movement, health and safety, and nutrition.

CCA 155 Activities and Resources for Young Children II (1-0) 1 hr.
 Aids in planning the learning environment to incorporate appropriate themes and activities in math, science, social studies, language, literature, dramatic play and group time.

CCA 156 Effective Teaching (1-0) 1 hr.
 Provides methods for maintaining and increasing effective teaching behaviors. Also includes relations with parents and co-workers, teacher behaviors, burnout and professional growth.

CCA 158 Home Day Care Management (3-0) 3 hrs.
 Considers issues and responsibilities in providing home day care for infants and young children.

CCA 209 Language Development and Activities for the Young Child (3-0) 3 hrs.
 Provides an in-depth knowledge and understanding of language development, the stages involved, the role that adults play and the relationship of language to other aspects of development. Introduces the student to a wide variety of language activities appropriate for young children and develops skills in preparing, presenting and evaluating language activities.

CCA 210 Creative Activities for Young Children (2-2) 3 hrs.
 Examines the theoretical framework for art, creativity, music and movement. Acquaints the student with a variety of creative art materials and methods appropriate for use in programs for young children. Includes first hand experience with materials and planning an arts program. Stresses the relationship of creative experiences within the curriculum and the role of creative experiences within the early childhood program.

CCA 219 Psychology of Exceptional Children (3-0) 3 hrs.
 Stresses identification, classification and programming of exceptional children, individually and in groups. Discusses local, state and federal legislation requirements. Studies specialized educational approaches for exceptional children, including gifted.
 Prerequisite: PSY 101 with a grade of "C" or better.

CCA 221 Math and Science for the Young Child (3-0) 3 hrs.
 Introduces the theory and practice related to math and science for young children. Emphasis will be placed on the development and evaluation of developmentally appropriate activities and instructional materials.

CCA 223 Exceptional Child in Early Childhood Programs (3-0) 3 hrs.

Examines the characteristics of the young child with special needs and provides programming considerations for integrating the child with special needs into early childhood programs. Practical issues include adapting classroom environments, equipment and providing developmentally appropriate educational experiences. Presents guidelines for working with educators, young children, families and community resources. Identifies the legal and program compliance requirements for early childhood programs.

CCA 226 Observation and Guidance of the Young Child (3-0) 3 hrs.

Studies of guidance practices which support the development of the young child. Emphasizes theories and practices that support the caregivers analysis of child behavior as well as the development of guidance skills. Students will develop and understand the relationship between careful observation, communication and effective interaction with children.

CCA 230 Movement and Rhythms for the Young Child (3-0) 3 hrs.

Presents research, theory and practical application as it relates to teaching music and movement; illustrates appropriate methods, materials and equipment for use in classroom programming.

CCA 235 Principles of School Age Care (3-0) 3 hrs.

Relates theory and practice of school age programming. Emphasizes program planning, implementation and assessment, use of materials, principles of growth and development, role of teacher and techniques of classroom management. Students will observe and participate in school age child care.

CCA 252 Child-Family-Community (3-0) 3 hrs.

Concentrates on teacher's role in working with the child's family and community, stresses parent education, changing families and legal responsibilities. Specifies criteria and methods for effective parent-teacher communication. Includes an in-depth study of community resources.

CCA 253 Administration of Early Childhood Programs (3-0) 3 hrs.

Provides guidelines for the establishment and operation of a child development center. Emphasizes the director's role in programming, school policies, budgeting, record keeping, licensing, municipal codes, insurance, staff development, evaluation procedures, parent communication and community resources.

CCA 291 Practicum I (1-10) 3 hrs.

Emphasizes the practical application of principles and theories in early childhood education within a supervised setting, while working with young children. The student will be supervised by a qualified professional and meet weekly for a seminar. Prerequisite: Completion of 15 credit hours in CCA course work with a grade of "C" or better, consent of instructor and current C.P.R. certification.

CCA 292 Practicum II (1-10) 3 hrs.

Emphasizes the practical application of early childhood education principles and theories in a supervised setting, while working with young children. The student will be supervised by a qualified professional and meet weekly for a seminar. Prerequisite: CCA 291 with a grade of "C" or better, consent of instructor and current C.P.R. certification.

CHM Chemistry

CHM 100 Chemistry for the Health Sciences (3-3) 4 hrs.

Introduces basic concepts of inorganic and organic chemistry and biochemistry. Emphasizes chemical principles applied to biological systems. Laboratory exercises apply theory to biological and consumer products. Especially designed for students in allied health sciences. Meets the prerequisite of the Nursing Program.

CHM 110 Fundamentals of Chemistry (3-3) 4 hrs.

Introduces concepts of chemistry. Emphasizes the composition of matter, the periodic table, the chemistry of solutions and chemical calculations. The laboratory experiments utilize many common household materials to demonstrate applications of chemical concepts. For students whose preparation does not permit enrollment in CHM 121 and CHM 131.

Prerequisite: MTH 080 or MTH 087 with a grade of "C" or better or concurrent enrollment.

CHM 121 General Chemistry I (3-3) 4 hrs.

Studies principles of atomic and molecular structure, bonding, stoichiometry, thermochemistry, states of matter and kinetic molecular theory. Corresponding laboratory experiments include volumetric and gravimetric analyses, qualitative studies of reactions and calorimetry.

Prerequisite: Two semesters of high school chemistry or CHM 110 with a grade of "C" or better and MTH 080 or MTH 087 with a grade of "C" or better or concurrent enrollment in MTH 080 or MTH 087.

CHM 122 General Chemistry II (3-3) 4 hrs.
Continues CHM 121. Principles of chemical kinetics, equilibria, electro-chemistry, thermo-dynamics, redox, descriptive chemistry of metals and non-metals, an introduction to organic chemistry and nuclear chemistry. Laboratory includes experiments related to the lecture material along with the theory and practice of qualitative analysis. Prerequisite: CHM 121 with a grade of "C" or better.

CHM 125 Organic and Biochemistry for the Health Sciences (3-3) 4 hrs.

Introduces principles and health applications of organic chemistry and biochemistry. Studies the structure, nomenclature and reactions of organic compounds. Also studies carbohydrates, lipids, proteins, enzymes, nucleic acids, metabolic pathways and bioenergetics. Includes related laboratory exercises. Intended for students in the allied health sciences but open to all non-physical science majors.

Prerequisite: CHM 110 or CHM 121 with a grade of "C" or better or placement exam and consent of the chemistry department chairperson.

CHM 131 College Chemistry I (3-6) 5 hrs.

Studies principles of chemistry including molecular, atomic and electronic theories of matter and their relations to the periodic table. Quantitatively treats thermochemistry, bonding, behavior of gases, solids and liquids, and solutions.

Emphasizes interpretation of laboratory data. Primarily for students in chemistry, chemical engineering or physical sciences.

Prerequisite: Two semesters of high school chemistry with a grade of "B" or better, or a grade of "B" or better in CHM 110, and credit or registration in MTH 103 with a grade of "C" or better or equivalent.

CHM 132 College Chemistry II (3-6) 5 hrs.

Continues CHM 131 with emphasis on kinetics, thermodynamics, equilibria, acid-base reactions, coordination chemistry, electrochemistry and nuclear chemistry. Primarily for students in chemistry, chemical engineering or physical science curricula. Laboratory includes qualitative analysis. Prerequisite: CHM 131 with a grade of "C" or better.

CHM 201 Basic Organic Chemistry (3-3) 4 hrs.

Survey of organic chemistry covering nomenclature, structure, reactions and synthesis of the major classes of organic compounds, including hydrocarbons, alcohols, aldehydes, ketones, carboxylic acids and amines. The laboratory includes experiments in distillation, crystallization, chro-

matography, extraction, synthesis and analysis. Prerequisite: CHM 122 with a grade of "C" or better or consent of instructor.

CHM 204 Organic Chemistry I (3-6) 5 hrs.
Application of modern theories of electronic structures to the study of chemical and physical properties of organic compounds. Laboratory includes syntheses, qualitative organic analyses, IR and visible spectrophotometry, gas chromatography, thin-layer chromatography, polarimetry and refractometry.

Prerequisite: CHM 122 or CHM 132 with a grade of "C" or better.

CHM 205 Organic Chemistry II (3-6) 5 hrs.
Continues CHM 204.

Prerequisite: CHM 204 with a grade of "C" or better.

CHM 210 Quantitative Analysis (3-6) 5 hrs.

Studies chemical, theoretical and applied methods relevant to sampling, gravimetric analysis, titrimetry, acid-base reactions, chemical separations, chromatography and spectroscopy.

Prerequisite: CHM 122 or CHM 132 or equivalent with a grade of "C" or better.

CIS Computer Information Systems

CIS 100 Computer Literacy (2-2) 3 hrs.

Provides the student with an understanding of computers and software as they are used in the business environment. Laboratory time will be used to look at a few applications of software packages (like word processing, possibly spreadsheets, data bases and/or graphics) with the intent of helping students become familiar with a microcomputer. This course is not intended for computer information majors and does not include programming.

CIS 101 Introduction to Computer Information Systems (2-2) 3 hrs.

Introduces a student to the computer through lecture and laboratory assignments. No prior knowledge of computers is necessary. The student will learn the fundamentals of computers and how computers are used in a business environment, including learning how to use a word processor, data base manager, spreadsheet, and other packages. The student will also learn to write simple programs using the BASIC language. (NOTE: Transfer students should check with the school they will be transferring to regarding the transferability of this course.)

CIS 103 Computer Information Systems Career Exploration (.5-10) 1 hr.

Studies an overview of career and employment possibilities in the computer industry. Each student will observe practices in this industry and attend a seminar to discuss her/his experiences. (NOTE: Summer semester only.)

Prerequisite: For students with no prior courses or work experience in the computer field, and interview with coordinator.

CIS 105 Introduction to Multimedia (2-2) 3 hrs.

Introduces terminology, uses of multimedia, creation of presentations and tutorials. Students will use pictures, both still and animated, music and text in a multimedia project. (NOTE: Some previous typing and personal computer experience helpful.)

CIS 106 Computer Logic and Programming Technology (2-2) 3 hrs.

Familiarizes the student with the necessary tools to design efficiently the steps in a business computer program. Includes advanced concepts of the BASIC programming language. Requires the students to code and debug their own sample cases. Also teaches documentation, problem analysis, structured programming logic, decision tables, system flowcharting, table utilization and file maintenance.

Prerequisite: CIS 101 or concurrent enrollment with a grade of "C" or better.

CIS 108 Computer Programming—COBOL (4-4) 5 hrs.

Provides an in-depth study of COBOL. Extensive laboratory experiences in writing, testing, debugging and documenting programs for business applications. Emphasis on structured design and documentation.

Prerequisite: CIS 101, CIS 106, and MTH 080 or MTH 087 with a grade of "C" or better or consent of instructor.

CIS 110 Computer Programming—Assembler Language (4-4) 5 hrs.

Utilizes program writing, testing, debugging, and documentation using the IBM S/360-730, 4300, etc., assembler language. Extensive laboratory experience in planning, writing and testing programs for typical business applications.

Prerequisite: CIS 108 with a grade of "C" or better or consent of instructor.

CIS 111 Introduction to the AS 400 (2-2) 3 hrs.

Introduces the AS 400 computer systems, its basic components and their capabilities.

CIS 112 AS 400 System Operations (2-2) 3 hrs.

Introduces the operation of an integrated mini-computer system and how to manage jobs and perform system maintenance.

Prerequisite: CIS 111 with a grade of "C" or better or consent of instructor.

CIS 113 AS 400 Facilities (2-2) 3 hrs.

Builds on the information in CIS 112 to reinforce and introduce advanced topics for the operation of the AS 400.

Prerequisite: CIS 112 with a grade of "C" or better or consent of instructor.

CIS 117 Introduction to Windows (.5-1) 1 hr.

Introduces the student to the use of a graphical interface for the operating system. Includes the use of graphical interface, and some of the built-in desktop and system accessories.

CIS 120 Introduction to Business Software Packages (2-2) 3 hrs.

Provides an opportunity to become proficient in the use of currently popular software packages on a variety of microcomputers.

CIS 121 General Accounting for Micros Applications (1-2) 2 hrs.

Provides an opportunity to become proficient in the use of a currently popular general accounting package.

Prerequisite: ACC 101 with a grade of "C" or better or consent of instructor.

CIS 122 Data Base for Micros (.5-1) 1 hr.

Provides an opportunity to become proficient in the use of a currently popular data base package. May be repeated up to a maximum of three credit hours utilizing different software packages for each unit of credit.

CIS 123 Spreadsheet/Budgeting for Micros (.5-1) 1 hr.

Provides an opportunity to become proficient in the use of a currently popular spreadsheet package. May be repeated up to a maximum of three credit hours utilizing different software packages for each unit of credit.

CIS 124 Advanced Spreadsheet for Micros (.5-1) 1 hr.

Provides an opportunity to become proficient in the use of a currently popular advanced spreadsheet package. May be repeated up to a maximum of three credit hours utilizing different software packages for each unit of credit.

Prerequisite: CIS 123 with a grade of "C" or better or consent of instructor.

CIS 125 Word Processing for Micros (.5-1) 1 hr.
 Provides an opportunity to become proficient in the use of a currently popular word processing package. Previous typing helpful but not required. May be repeated up to a maximum of three credit hours utilizing different software packages for each unit of credit.

CIS 126 Graphics for Micros (.5-1) 1 hr.
 Provides an opportunity to become proficient in the use of a currently popular microcomputer business graphics package. May be repeated up to a maximum of three credit hours utilizing different software packages for each unit of credit.

CIS 127 Advanced Business Graphics (.5-1) 1 hr.
 Includes advanced features of a business graphics package, such as chart styling, importing, exporting, maps, templates, macros and drawing. Prerequisite: CIS 126 with a grade of "C" or better or consent of instructor.

CIS 128 DOS Basics for Micros (.5-1) 1 hr.
 Provides instruction in the most commonly used DOS commands. Designed as an introduction of applications software such as word processing, spreadsheets or data bases. This course does not include extensive use of batch files, EDLIN or DEBUG.

CIS 129 Personal Information Management (.5-1) 1 hr.
 Uses a currently popular personal information management package. Provides techniques to manage time, analyze reports, manage accounts and import data from other sources.

CIS 130 BASICS for Business (3-2) 4 hrs.
 Utilizes elementary as well as some extended features of the BASIC programming language, with particular emphasis on practical business-oriented applications appropriate for the types of microcomputers and minicomputers used in small businesses. Prerequisite: CIS 101 with a grade of "C" or better or consent of instructor.

CIS 131 Microcomputer Printers (.5-1) 1 hr.
 Includes a survey of current printer hardware. Methods of communicating commands to printers from the operating system, programming languages, and software packages will be included as well as programming micros for printers and creating new characters or fonts.

CIS 132 Advanced Business Software Packages (3-2) 4 hrs.
 Provides an opportunity to build a business system using BASIC programming and software packages. These systems will be developed on a variety of microcomputers. Prerequisite: ACC 101, CIS 106 and three credit hours chosen from: CIS 120, CIS 121, CIS 122, CIS 123, CIS 124 and CIS 125 with grades of "C" or better or consent of instructor.

CIS 133 Personal Computer Programming—Assembler Language (3-2) 4 hrs.
 Introduces assembler language programming on a personal computer with emphasis on writing well-formed programs for a variety of business applications. Prerequisite: CIS 101 and CIS 106 or CIS 130 with a grade of "C" or better or consent of instructor.

CIS 134 Personal Computer (DOS) (2-2) 3 hrs.
 Covers beginning and advanced personal computer DOS commands with a special emphasis on business file management. Prerequisite: Some previous personal computer experience helpful.

CIS 135 Computer Operator (3-0) 3 hrs.
 Covers the terminology in a computer operations environment including learning about the major functions in a computer operations department and how other areas interface with operations. Prerequisite: Prior or concurrent enrollment in CIS 101 with a grade of "C" or better.

CIS 136 Job Control/Utilities (2.5-1) 3 hrs.
 Provides the student with an understanding of Job Control Language and Utility Programs. Emphasis is placed on the operational aspects of these topics. There will be numerous assignments requiring coding and running of utility programs and job control. Prerequisite: CIS 101, CIS 106 and CIS 135 with a grade of "C" or better or consent of instructor.

CIS 137 Computer Operator Internship (1-15) 3 hrs.
 Provides students with coordinated computer operations or related experience in a data processing installation. Case studies will be used in the event that training stations are not available. Prerequisite: Second semester standing with a GPA of 2.5 overall and 3.0 in computer courses and consent of coordinator.

CIS 140 RPG Programming (2-2) 3 hrs.
Gives experience in writing, testing, debugging, and documenting programs for business applications using a report writing type language (RPG II).

Prerequisite: CIS 101 and CIS 106 with grades of "C" or better or consent of instructor.

CIS 142 PL/1 Programming Language (2-2) 3 hrs.

Programming techniques in the PL/1 language will be developed for a wide variety of problems of both a business and non-business nature. This course will be offered only when the demand is sufficient.

Prerequisite: CIS 101 and CIS 106 with grades of "C" or better or consent of instructor.

CIS 144 Advanced DOS (2-2) 3 hrs.

Provides a continuation of CIS 134. The new or expanded coverage includes the DOS environment, DOS drivers, CONFIG SYS, hard disk management, graphics, batch files, memory allocation and DEBUG.

Prerequisite: CIS 134 with a grade of "C" or better or consent of instructor.

CIS 145 Microcomputer Hardware (3-0) 3 hrs.

Introduces a student to the various hardware components of a microcomputer. The function of each component is explained. In addition, the various models available for each component are compared and contrasted.

Prerequisite: CIS 144 with a grade of "C" or better or consent of instructor.

CIS 146 Operating System — OS/2 (2-2) 3 hrs.

Provides an introduction to the OS/2 operating system. It will cover beginning and advanced commands including device control, redirection, subdirectories, backups and batch files.

Prerequisite: CIS 134 with a grade of "C" or better or consent of instructor.

CIS 147 Windows (1-2) 2 hrs.

Introduces a student to the use of a graphical interface for the operating system. The course includes the use of the graphical interface, built-in desktop accessories and built-in system accessories. Special features of application packages when used in a Windows environment, networking considerations and switching between applications will also be covered.

Prerequisite: CIS 134 with a grade of "C" or better or consent of instructor.

CIS 148 Personal Computer Utilities (1-2) 2 hrs.

Provides instruction about a popular utility package. The general functions of such packages are performance enhancement, preventative maintenance, disk repair, data recovery and data security.

Prerequisite: CIS 134 with a grade of "C" or better or consent of instructor.

CIS 149 Personal Computer UNIX (2-2) 3 hrs.

Provides in-depth laboratory-oriented discussion of the UNIX operating system. Applies to a wide variety of problems in business data processing. Prerequisite: CIS 134 and either CIS 160 or CIS 166 with grades of "C" or better or consent of instructor.

CIS 150 Business FORTRAN (2-2) 3 hrs.

Introduces FORTRAN as it applies to business applications using a current compiler. Programming projects will include applications such as accounting, finance and marketing.

Prerequisite: CIS 101, CIS 106 and MTH 080 or MTH 087 with grades of "C" or better or consent of instructor.

CIS 152 Data Base Programming, Microcomputers (2-2) 3 hrs.

Uses the command language from a currently popular data base package for microcomputers. A set of business-oriented programs will be developed making extensive use of the command language.

Prerequisite: CIS 106 and CIS 122 with grades of "C" or better.

CIS 153 Expert Systems (2-2) 3 hrs.

Contrasts the types of expert systems available. Uses a currently popular expert system package and develops business applications using the package.

Prerequisite: CIS 120 with a grade of "C" or better or consent of instructor.

CIS 154 Desktop Publishing (2-2) 3 hrs.

Introduces the concepts and practices found in microcomputer based desktop publishing. Provides an opportunity to become proficient in the use of a currently popular desktop publishing software package with the associated hardware.

CIS 160 Introduction to Pascal Programming (3-2) 4 hrs.

Provides an introduction to the elements of Pascal programming. The course uses the Pascal programming language to develop problem-solving skills for business applications.

Prerequisite: CIS 101 and CIS 106 with a grade of "C" or better or consent of instructor.

CIS 166 Introduction to Programming in C (3-2) 4 hrs.

Introduces and develops programming techniques in the C language. A wide range of problems of both a business and non-business nature will be studied, including system programming type problems. Language features unique to C will be addressed, along with problem-solving techniques.

Prerequisite: CIS 101 and CIS 106 or CIS 130 with a grade of "C" or better or consent of instructor.

CIS 170 Introduction to Data Communications (3-0) 3 hrs.

Provides an introduction to telecommunications, information analysis, system design, terminal equipment, data modems, common carrier facilities and communications processing equipment.

Prerequisite: CIS 101 with a grade of "C" or better or consent of instructor.

CIS 171 Microcomputer Networks (2-2) 3 hrs.

Introduces the concept of computer networks and when to use them in the business environment.

The advantages and disadvantages of micro to mainframe or mini-computer and micro to micro links will be discussed. Various configurations will be compared.

Prerequisite: CIS 170 with a grade of "C" or better or consent of instructor.

CIS 176 Advanced C Programming (3-2) 4 hrs.

Addresses the advanced features of the C programming language, along with advanced programming techniques. Algorithms and data structures are presented and applied to a wide variety of business programming problems.

Prerequisite: CIS 166 with a grade of "C" or better or consent of instructor.

CIS 186 C Programming for Graphical User Interfaces (3-2) 4 hrs.

Introduces and develops programming techniques necessary to write graphical user interfaces for interactive application programs.

Emphasis is on the use of business software tools (C function libraries) provided in currently popular software for development of windowing environments on microcomputers.

Prerequisite: CIS 176 with a grade of "C" or better or consent of instructor.

CIS 202 Programming Systems (3-0) 3 hrs.

Indicates purpose and function of various programming systems such as program compilers, operating systems, utility program, sortmerges and job control language.

Prerequisite: CIS 110 with a grade of "C" or better.

CIS 203 Systems Analysis and Design (3-0) 3 hrs.

Includes the functions and techniques of system analysis, design and development using the Life Cycle Methodology. These include analyzing and using management data, establishing system specifications and equipment needs and implementing management information systems.

Stresses methods and tools used in business systems analysis and design and stresses communications with users in order to design systems meeting the user's needs.

Prerequisite: CIS 101 with a grade of "C" or better.

CIS 204 Advanced Systems Analysis and Design II (3-0) 3 hrs.

Continues CIS 203. The student will individually, or in a group, actually carry a project from the beginning (study phase) to the finish (implementation) including interviewing and making presentations. Various software, if appropriate, will be utilized to aid in the design and implementation of the project.

Prerequisite: CIS 203 with a grade of "C" or better or consent of instructor.

CIS 208 Computer Programming—Advanced COBOL (3-2) 4 hrs.

Familiarizes the student with advanced features of COBOL. The course includes extensive table handling, the SORT feature, indexed file handling, report writer and modular programming.

Prerequisite: CIS 108 and CIS 110 with a grade of "C" or better or consent of instructor.

CIS 210 Computer Programming—Advanced Assembler Language (3-4) 4 hrs.

Continues CIS 110. Programming magnetic tape, random storage devices, and remote terminal systems. Includes the use of IOCS for input-output devices.

Prerequisite: CIS 110 with a grade of "C" or better or consent of instructor.

CIS 215 Accounting Information Systems (3-0) 3 hrs.

Provides the student with an understanding of the structure and function of modern computerized business systems. Emphasis is placed on analysis as opposed to system design. Topics studied include forms design, information gathering techniques, coding and methods of evaluation and review.

Prerequisite: CIS 101, CIS 106 and CIS 108 with a grade of "C" or better or consent of instructor.

CIS 220 Topics in Data Processing 1-6 hrs.
Studies selected problems, computer software or computer languages. The exact content and instructional methodology will vary semester to semester depending on the material to be studied. A syllabus or course outline containing additional information with preregistration materials will be available each time the course is offered. This course may be repeated up to a maximum of six credit hours.

Prerequisite: Consent of instructor.

CIS 223 Spreadsheet Graphics (.5-1) 1 hr.
Uses currently popular software designed to enhance spreadsheet graphics with original drawings, cataloged symbols and text.

Prerequisite: CIS 123 with a grade of "C" or better or consent of instructor.

CIS 224 Spreadsheet Macros and Other Advanced Topics (.5-1) 1 hr.

Provides an opportunity to become proficient in the use of spreadsheet macros and other advanced topics used with a currently popular spreadsheet package. May be repeated up to a maximum of three credit hours utilizing different software packages for each unit of credit.

Prerequisite: CIS 124 with a grade of "C" or better or consent of instructor.

CIS 230 Computer Programmer Internship (1-15) 3 hrs.

Applies computer skills in practical situations. Field project or case study in local computer installation. Open only to computer degree candidates.

Prerequisite: Fourth semester standing with an overall GPA of 3.0 and 3.5 GPA in computer courses.

CIS 231 Advanced BASIC with Graphics (3-2) 4 hrs.

Presents the basic principles for the design, use and understanding of computer graphical user interfaces in business. Other advanced topics include designing menu-driven interactive software, custom controls and data file management. Emphasis is on building various software in Visual Basic to solve common business programming problems, using relevant controls, data structures and algorithms.

Prerequisite: CIS 130 with a grade of "C" or better or equivalent.

CIS 240 Advanced RPG (2-2) 3 hrs.

Provides instruction in advanced concepts of the RPG language. Emphasis is on disk and tape applications involving multiple input and output files, tables, arrays and subroutines.

Prerequisite: CIS 140 with a grade of "C" or better or consent of instructor.

CIS 266 C++ and Object Oriented Software Development (3-2) 4 hrs.

Reviews the concepts of pointers and structures in the 'C' language. Introduces the concept of object-oriented programming, in general, and C++, in particular. The various features of C++ as a business programming language, and as a superset of the "C" language, will be presented. Problems will be presented and solved both as a tool for learning C++ and as a means of learning the overall philosophy of object-oriented programming.

Prerequisite: CIS 166 with a grade of "C" or better or consent of instructor.

CIS 270 Data Communications with CICS Applications (3-2) 4 hrs.

Introduces Customer Information Control System (CICS) as a data communications operating system. Command level CICS will be used.

Prerequisite: CIS 108 and CIS 170 with a grade of "C" or better or consent of instructor.

CIS 280 Introduction to Data Base (3-0) 3 hrs.

Provides an overview of the theory of data base systems and the principal data base management systems current in the field. The course includes physical representation, modeling, commercial systems and implementation.

Prerequisite: CIS 108 or CIS 110 with a grade of "C" or better or consent of instructor.

CRJ Criminal Justice

CRJ 101 Introduction to Criminal Justice (3-0) 3 hrs.

Studies the history, role, development, and constitutional aspects of law enforcement and public safety. Review of agencies and functions involved in processes of administration of criminal justice.

CRJ 104 Introduction to Corrections (3-0) 3 hrs.

Provides the student with an integrated knowledge about the system through which the criminal offender is processed. Emphasis will be placed upon the philosophical bases of punishment and treatment techniques in institutional community-based programs plus parole programs.

CRJ 105 Criminal Courts of the U.S. (3-0) 3 hrs.

Provides the student with a broad body of knowledge concerning the court structures of the United States. The course will examine the historical development of the judicial branch of government, the role of the courts in the criminal justice system, levels of courts and roles of persons employed in this unit of the Criminal Justice program.

CRJ 116 Introduction to Forensics (3-0) 3 hrs.

Introduces student to the use of scientific disciplines in crime investigation. Identifies the variety of sources of evidence and the means by which comparative analysis can be made. Introduces student to probability theory. Develops skills in crime scene technology, fingerprinting, photography and recording.

CRJ 201 Criminal Law I (3-0) 3 hrs.

Studies the principles of administration and criminal law, theory, history and purpose. Substantive crimes and their punishment, rules of evidence and general criminal procedures.

CRJ 202 Criminal Law II (3-0) 3 hrs.

Continues CRJ 201. Principles of arrest, search and seizure; evaluation of evidence and proof, including kinds, degrees, admissibility and competence. Rules of evidence of particular importance of operational level in law enforcement. Courtroom and criminal trial procedures. Prerequisite: CRJ 201 with a grade of "C" or better or consent of coordinator.

CRJ 203 Law and Society (3-0) 3 hrs.

Focuses on the concept of law and its relationship to crime and the administration of criminal justice in a democratic society. Attention is directed toward the historical background of American law, social norms, criminal law, law and force, morals, justice, freedom and custom. An examination of the functions of the executive, legislative and judicial branches of government is made in relationship to law and the administration of criminal justice in present and future societal problems.

CRJ 205 Juvenile Delinquency (3-0) 3 hrs.

Examines organization, jurisdiction and functions of juvenile agencies. Juvenile court movement, juvenile detection, processing and treatment. Statutes and court procedures for juveniles. Problems of juvenile delinquency, theories of causation and prevention programs. Police responsibilities and contacts, current community, state and federal prevention programs.

CRJ 207 Vice and Drug Control (3-0) 3 hrs.

Studies historical and sociological development problems in drug addiction and vice control; fundamental understanding of narcotic addiction and effects of hypnotic drugs; the operation of lotteries, bookmaking and other types of gambling and prostitution as these factors are involved in the daily routine of police work.

CRJ 209 Police-Public-Community Relations (3-0) 3 hrs.

Examines current issues in relationships between the police and the community, with emphasis on distinguishing between the concepts of public and community relations, problem areas of racial minority groups, juveniles, the adult criminal offender, the press and the prevention of crime.

CRJ 210 Introduction to Criminology (3-0) 3 hrs.

Examines the nature and extent of crime in American society, theories of crime causation and control of criminal behavior.

CRJ 213 Crime Prevention (3-0) 3 hrs.

Studies crime prevention as a specific function of police service requiring inputs from both private and public interests. Explores deterrent-reducing programs and introduces contemporary concepts of site-hardening and opportunity education. Examines the philosophy and organization structure of crime prevention units, their service targets and potential problem areas.

CRJ 215 Alternatives to Confinement (3-0) 3 hrs.

Studies formal and informal alternatives to custodial handling of offenders. Takes systems approach to examine traditional and contemporary offender diversion programs. Theories, objectives and the systematic consequences of change are examined.

CRJ 216 Investigative Process (3-0) 3 hrs.

Studies the art of investigation to reconstruct facts and circumstances of any event. Prepares students to plan and execute investigations commonly performed in civil and criminal work with concentration on obtaining direct evidence through interviewing, interrogation, observation and the use of documents and records.

CRJ 220 Police Administration (3-0) 3 hrs.

Introduces basic principles of police administration and management as applied to the police function. Emphasis on organization structure and management processes, identifying the police role in staff functions.

CRJ 222 Police Operations (3-0) 3 hrs.

Examines police operations, including patrol, investigation, traffic, juvenile and special operations. Manpower distribution, analysis of operations and enforcement policy will be stressed.

CRJ 224 Police Supervision (3-0) 3 hrs.
Focuses on supervisory problems within a police organization, equating sound principles of human relations and supervisory techniques to effective police performance. Course includes the topics of morale and discipline motivation, authority and control, the supervisory process and its responsibilities, principles of communications, professional ethics and the decision-making process.
Prerequisite: CRJ 101 with a grade of "C" or better or consent of coordinator.

CRJ 226 Case Management (3-0) 3 hrs.
Studies the investigative process from a supervisory and managerial perspective. Emphasizes means of assessing case priorities, resource allocation, performance evaluation and the investigator's relationships with others, influencing the successful completion and prosecution of criminal investigation.

CRJ 235 Street Procedures (3-2) 4 hrs.
Introduces techniques and procedures used by police and security personnel in job-related activities. Includes discussion and practice in areas such as vehicle stops, initiating investigations, responding to calls, building checks, emergency situations, crowd control and report preparation.
Prerequisite: Sophomore standing.

CRJ 238 Defensive Techniques (2-2) 3 hrs.
Introduces principles of self-defense and weaponless control for police and security personnel. Includes psychology, physical and mental preparation, practice in defense and control techniques.
Prerequisite: Sophomore standing and consent of instructor.

CRJ 250 Industrial Security Administration (3-0) 3 hrs.
Studies the organization and management of industrial security units including government security; protection of commercial and industrial manpower, facilities, and installations; security and police operations; administrative, legal and technical problems; specialized programs for factories, railroads, retail stores, insurance firms, credit bureaus, etc.

CRJ 252 Industrial Fire Protection Disaster and Control (3-0) 3 hrs.
Studies the administration of fire and accident prevention programs; development of policy, rules, and regulations; operations for fire and accident control; equipment facilities, inspections, investigations and records. Special problems and hazards.

CRJ 253 Safety Management (3-0) 3 hrs.
Principles, responsibility and procedures of management for controlling operations to provide safety in business and industry. Analysis of accident costs, organization and operation of a safety program, psychological aspects, physical conditions and radiation hazards.

CRJ 299 Criminal Justice Practicum (1-10) 3 hrs.
Provides students with a broad educational experience through appropriate observation and directed experience in operating segments of the criminal justice agency in addition to participation in a seminar.
Prerequisite: Sophomore standing and consent of coordinator.

CSC Computer Science

CSC 121 Computer Science I (3-2) 4 hrs.
Introduces a disciplined approach to problem solving and algorithm development. Introduces procedural approach; data abstraction; selection, repetition and sequence control structures; arrays, records and files; and an introduction to recursion. Emphasizes program design, testing and documentation using good programming style in a block-structured, high-level programming language. Designed as the first of a sequence of courses (CSC 121, CSC 122, CSC 216 and CSC 217) for students majoring in Computer Science.
Prerequisite: MTH 103 and MTH 104 with grades of "C" or better or consent of instructor.

CSC 122 Computer Science II (3-2) 4 hrs.
Introduces the design and implementation of large scale problems. Introduces data structures: files, sets, pointers, lists, stacks, queues, trees and graphs. Introduces program verification and complexity. Builds previous knowledge of recursion, text processing, and searching and sorting algorithms. Designed as the second of a sequence of courses (CSC 121, CSC 122, CSC 216, CSC 217) for students majoring in Computer Science.
Prerequisite: CSC 121 and MTH 200 with grades of "C" or better or consent of instructor.

CSC 208 Problem Solving for Science and Engineering Using FORTRAN (3-2) 4 hrs.

Emphasizes problems analysis and problem solving. Includes problem formulation, data storage and retrieval techniques, algorithm analysis and development, flow chart or pseudocode construction. Introduces the student to numerical methods and simulations. Develops working knowledge of current version of FORTRAN. Designed to use the computer in the study of problems in engineering, mathematics and/or physical sciences. Intended for the mathematics, science, computer science or engineering student.

Prerequisite: MTH 200 with a grade of "C" or better or consent of instructor.

CSC 211 Introduction to "C" Programming and UNIX (3-2) 4 hrs.

Develops working knowledge in the use of the computer in the "C" programming language. Includes problem formulation, data storage and retrieval, algorithms, flowcharts or pseudocode, numerical analysis and structured programming, lexical analysis and string manipulation.

Introduces student to a UNIX-like operating system environment. Intended for the computer science or engineering student.

Prerequisite: CSC 121 or CSC 208 with grade of "C" or better or consent of instructor.

CSC 216 Data Structures and Algorithm Analysis (2-2) 3 hrs.

Provides exposure to techniques for storing and manipulating data. Includes discussion of addition, deletion and insertion algorithms for stacks, queues, dequeues, linked lists and trees.

Emphasizes algorithm analysis as it builds on topics from previous course, CSC 122. Designed as the third of a sequence of courses (CSC 121, CSC 122, CSC 216 and CSC 217).

Prerequisite: CSC 122 with a grade of "C" or better or consent of instructor.

CSC 217 Assembler Programming and Machine Organization (3-2) 4 hrs.

Emphasizes machine-level programming, instruction sets, data representation, subroutines, I/O hardware and software, linking and loading related to higher level languages. Designed as the fourth in a sequence of courses (CSC 121, CSC 122, CSC 216 and CSC 217) for students majoring in Computer Science.

Prerequisite: CSC 216 with a grade of "C" or better or consent of instructor.

CWE Cooperative Work Education

CWE 220 Cooperative Education I 2-5 hrs.

Provides cooperative work experience integrating classroom theory with on-the-job training. The college will assist in securing employment related to the student's major field of study and/or career interest. A training plan is developed by the student, employer and Cooperative Faculty Advisor. One hour per week is required for a seminar devoted to issues dealing with job preparation and success. This course is not a substitute for a required internship, externship or practicum and will not be applicable to certain career programs.

Two Credits: A minimum of 120 training hours is required.

Three Credits: A minimum of 240 training hours is required.

Four Credits: A minimum of 400 training hours is required.

Five Credits: A minimum of 560 training hours is required.

Prerequisite: Approval of the Program Coordinator/Department Chair and Cooperative Education office. See program enrollment guidelines for major field of study or career programs.

CWE 221 Cooperative Education II 2-5 hrs.

Continues CWE 220. A student can continue employment with current employer or select a different area of concentration related to major field of study or career interest. Work experience must go beyond what was learned in CWE 220 or consist of an entirely different learning experience. A training plan is developed by the student, employer and Cooperative Faculty Advisor. One hour per week is required for a seminar devoted to issues dealing with job success.

Two Credits: A minimum of 120 training hours is required.

Three Credits: A minimum of 240 training hours is required.

Four Credits: A minimum of 400 training hours is required.

Five Credits: A minimum of 560 training hours is required.

Prerequisite: CWE 220 and approval of the Program Coordinator/Department Chair and Cooperative Education office. See program enrollment guidelines for major field of study or career programs.

DHY Dental Hygiene

DHY 100 Pre-Clinic (3-6) 5 hrs.

Introduces the student to clinical dental hygiene with emphasis on the role of the dental hygienist in the control and prevention of dental disease.

Prerequisite: Freshman standing in Dental Hygiene program.

DHY 101 Clinical Dental Hygiene I (2-9) 5 hrs.

Applies theoretical concepts in a clinical setting and introduces periodontology. Refines clinical skills and emphasizes the preventive aspects of dentistry. The student performs traditional dental hygiene clinical functions.

Prerequisite: Freshman standing in Dental Hygiene program.

DHY 104 Interpretation of Scientific Literature (2-0) 2 hrs.

Reviews and interprets dental scientific literature including an introduction to the utilization of research tools and statistical analysis. Strategies to conduct an in-depth scientific investigation are introduced.

Prerequisite: Successful completion of first year of Dental Hygiene program or consent of coordinator.

DHY 111 Dental Radiology (2-3) 3 hrs.

Provides theory in radiation physics, safety and the biological effects of ionizing radiation.

Intraoral exposure techniques, darkroom procedures and film interpretation are emphasized in the laboratory. Practical experience provided on manikins and selected patients.

Prerequisite: Freshman standing in Dental Hygiene program.

DHY 151 Clinical Dental Hygiene II (0-6) 2 hrs.

Provides clinical practice in oral prophylaxis on adult patients, including preventive techniques, exposing radiographs and patient management.

Prerequisite: Completion of first year of Dental Hygiene program.

DHY 159 Head and Neck Anatomy (3-0) 3 hrs.

Introduces anatomy of the head and neck regions with special emphasis on the human dentition.

Skeletal, muscular, glandular, circulatory, nervous and epithelial structures are considered in detail. Also includes introductory material on human histology and orofacial embryology.

Prerequisite: Freshman standing in Dental Hygiene program.

DHY 161 Dental Anatomy (1-2) 2 hrs.

Introduces the student to terms and anatomic structures of the oral cavity including a detailed study of crown and root morphology of both primary and permanent dentitions.

Prerequisite: Freshmen standing in Dental Hygiene program.

DHY 190 General and Oral Pathology (2-0) 2 hrs.

Studies fundamentals of microscopic and gross pathology and general pathological processes. Specifically emphasizes diseases of dental and periodontal tissues and of the supporting oral structures. Correlates clinical manifestations of disease with dental hygiene practice.

Prerequisite: Freshmen standing in Dental Hygiene program.

DHY 200 Periodontology (1-2) 2 hrs.

Reviews etiological and histological components of periodontal disease emphasizing current theoretical concepts in treatment and management of periodontally involved patients. Provides laboratory experience to refine non-surgical techniques.

Prerequisite: Sophomore standing in Dental Hygiene program.

DHY 201 Ethics, Jurisprudence and Practice Management (2-0) 2 hrs.

Studies the development of dental office and clinic practice management procedures and professional interrelationships. Considers the role of the dental hygienist in the various dental specialties and various employment modalities.

Prerequisite: Sophomore standing in Dental Hygiene program.

DHY 202 Radiology I (0-2) 1 hr.

Continues practice in the techniques of exposing, processing, mounting and evaluating dental radiographs.

Prerequisite: DHY 111 with a grade of "C" or better, DHY 151 with a grade of "P" and sophomore standing in Dental Hygiene program.

DHY 203 Radiology II (0-2) 1 hr.

Continues DHY 202.

Prerequisite: DHY 202 with a grade of "C" or better and sophomore standing in Dental Hygiene program.

DHY 220 Community Dentistry I (1-2) 2 hrs.

Introduces public health principles, emphasizing the development of planning a community program, dental delivery systems, third party payments, fluoridation and other preventive measures. Discusses characteristics and needs of special populations and provides field experiences with these individuals.

Prerequisite: Successful completion of DHY 104 or consent of coordinator.

DHY 221 Community Dentistry II (1-2) 2 hrs.
Emphasizes the skill development of a dental health educator and resource person for the individual patient and in group situations. Specific teaching/learning strategies, communication skills and motivation techniques are explored in depth. The utilization and construction of visual aids are also implemented. Health promotion strategies and consumer advocate activities are introduced. Students also continue their field experiences with special populations.
Prerequisite: Successful completion of DHY 104 and DHY 220 with grades of "C" or better or consent of coordinator.

DHY 240 Dental Pharmacology (2-0) 2 hrs.
Examines the principles of drug actions and characteristics of major drug groups. Emphasis is placed on drugs used in dentistry and the management of dental patients who receive drug treatment for medical problems.
Prerequisite: Sophomore standing in Dental Hygiene program.

DHY 250 Clinical Dental Hygiene III (1-12) 5 hrs.
Continues clinical practice of dental hygiene with emphasis on the comprehensive treatment of periodontally involved patients.
Prerequisite: DHY 151 with a grade of "P" and sophomore standing in Dental Hygiene program.

DHY 251 Clinical Dental Hygiene (V (1-12)) 5 hrs.
Continues DHY 250.
Prerequisite: DHY 250 with a grade of "C" or better and sophomore standing in Dental Hygiene program.

DHY 269 Science of Dental Materials (1-0) 1 hr.
Studies the characteristics, properties, composition and function of materials used in dentistry. Includes familiarization with techniques and procedures used in the dental profession.
Prerequisite: Sophomore standing in the Dental Hygiene program or consent of coordinator.

DHY 270 Dental Materials Laboratory Techniques (0-2) 1 hr.
Introduces the student to the use of manipulation of materials used in dentistry, with an emphasis on the clinical application of materials that relate directly to the functions of the dental hygienist.
Prerequisite: Sophomore standing in the Dental Hygiene program or consent of coordinator.

DIT Dietetic Technician

DIT 100 Introduction to Dietetics (2-0) 2 hrs.
Introduces the profession of dietetics, career opportunities, relationship to other health care professions and the nutritional care planning process with emphasis on the role of the dietetic technician.

DIT 101 Basic Nutrition (3-0) 3 hrs.
Introduces the principles of human nutrition and their application to the needs of normal individuals of all age groups.

DIT 102 Advanced Nutrition (3-0) 3 hrs.
Studies the nutritional care of a patient through the prescription of modified diets.
Prerequisite: DIT 101 with a grade of "C" or better.

DIT 110 Principles of Food Preparation (2-2) 3 hrs.
Introduces the scientific principles of food preparation; retail labeling, supermarket shopping; and menu planning for individuals and families of different socioeconomic backgrounds. Laboratory practice includes preparation of foods, sensory evaluation, adjusting recipes for modified diets, along with demonstration and use of equipment.
Prerequisites: Prior or concurrent enrollment in DIT 101 and FSM 114 with grades of "C" or better or consent of instructor.

DIT 150 Dietetic Clinical Laboratory I (1-6) 3 hrs.
Offers integrated clinical approach to the nutritional care of patients in a community hospital. Provides practice processing diet orders, assisting patients with menu selection, checking meal trays, taking diet histories and making nutrient analyses.
Prerequisite: BIO 135 and DIT 100 with grades of "C" or better and prior or concurrent enrollment in BIO 136 and DIT 102 with grades of "C" or better.

DIT 200 Dietetic Clinical Laboratory II (1-12) 5 hrs.
Offers clinical experience in community agencies that include nutrition as one of their services. Assigned progression can include school lunch, day care centers, retirement centers, home-delivered meals, commercial processors and hospitals.
Prerequisite: DIT 150 and HSC 112 with grades of "C" or better and prior or concurrent enrollment in DIT 201 with a grade of "C" or better, or consent of instructor.

DIT 201 Nutritional Services in Institutions (3-0) 3 hrs.

Surveys institutions, agencies and organizations that assist the community in meeting nutritional needs of its people. Emphasis will be placed on developing appropriate educational techniques for individuals and groups of various backgrounds. Prerequisite: DIT 150 with a grade of "C" or better or consent of instructor.

DIT 202 Nutrition Care Seminar (2-0) 2 hrs.

Reviews planning, implementing and evaluating nutrition care given to individuals and groups of people having specific disease conditions, both acute and chronic. Prerequisite: DIT 201 with a grade of "C" or better.

DIT 203 Dietetic Technician Seminar (1-0) 1 hr.

Covers current topics related to the dietetic technician in the workplace. Prerequisite: DIT 201 with a grade of "C" or better. Concurrent enrollment in DIT 250 is strongly recommended.

DIT 220 Food Systems Administration (3-0) 3 hrs.

Introduces the principles of administering food systems, with emphasis on menu planning, procurement of quantity foods, quantity foods equipment, staffing and financial controls. Includes an introduction to computer use within food systems. Prerequisite: Prior or concurrent enrollment in DIT 110 or consent of instructor.

DIT 250 Dietetic Clinical Laboratory III (1-12) 5 hrs.

Offers student assigned clinical laboratory experience in approved community agencies. Provides opportunity to reach entry-level position competence by practicing skills under the supervision of a registered dietitian. Prerequisite: DIT 200 with a grade of "C" or better or consent of instructor.

ECO Economics

ECO 115 Consumer Economics (3-0) 3 hrs.

Introduces the concepts of personal financial planning within the current economic environment. Emphasizes topics such as basic macro-economic theory, obtaining credit, purchasing insurance, investment alternatives, basic real estate finance and tax planning.

ECO 200 Introduction to Economics (3-0) 3 hrs.

Descriptive rather than a quantitative approach to the study of economics. Major topics cover economic history, the elements of macroeconomics,

microeconomics and a comparative look at other economic systems. Specifically designed for students in career-vocational curricula.

ECO 210 Money and Banking (3-0) 3 hrs.

Stresses the practical aspects of money and banking, and emphasizes the basic monetary theory needed by the banking student to apply his knowledge to his particular job. Historical treatment has been kept to a minimum. Emphasis is placed on such problems as economic stabilization, types of spending, the role of gold, limitations of central bank control, governmental fiscal policy, balance of payments and foreign exchange, showing their repercussions on the banking industry in affecting yield curves and the structuring of portfolios.

Prerequisite: ECO 200 or ECO 212 with a grade of "C" or better.

ECO 211 Microeconomics (3-0) 3 hrs.

Covers economic problems faced by the individual and the firm. Examination of market structures, price and output determination. The microeconomic approach. (Formerly ECO 202.)

ECO 212 Macroeconomics (3-0) 3 hrs.

Covers economic problems faced by our society. Examination of resource allocation, national income and economic development, from a macroeconomic approach. (Formerly ECO 201.) Recommended Prerequisite: ECO 211 with a grade of "C" or better.

ECO 225 Introduction to Comparative Economic Systems (3-0) 3 hrs.

Compares and analyzes economic conditions as they exist in different economic systems. Emphasizes the trade-offs between efficiency and equity, between economic freedom and economic order. Compares the working of the "market" system with that of "central planning." The approach to these topics will utilize both the theoretical and the case study method.

Prerequisite: ECO 211 with a grade of "C" or better.

EDU Education

EDU 201 Introduction to Education (3-0) 3 hrs.

Covers organization, structure and operation of schools in the United States, including elementary, secondary, college and adult education. Evaluation of each student's potential for this occupation.

EDU 202 Pre-Student Teaching Clinical Experience (0-2) 1 hr.

Provides an in-depth study of classroom practices in the subject and age category that each student is training to teach. Students will observe classrooms in their area of interest and will attend a seminar once weekly to discuss their experience.

EDU 211 Educational Psychology (3-0) 3 hrs.

Psychology principles as applied to education. Assessment of attitudes, capacities, interests and achievements. Educational implications of physical, emotional and social development. Student, teacher, school and home as factors in educative process. Prerequisite: PSY 101 or consent of instructor.

EGR Engineering

EGR 100 Introduction to Engineering (1-1) 1 hr.

Introduces engineering techniques, methods and history. Explores career options and requirements for various engineering fields. Covers interrelationships within and between engineering, technology and science to allow differentiation between various career choices.

EGR 120 Engineering Graphics I (1-5) 3 hrs.

Covers freehand sketching, theory of orthographic projection and analysis and synthesis of problems involving size, shape and/or spatial properties of common geometrical entities. Includes theory of pictorial projections, basic dimensioning and tolerancing. Prerequisite: MET 101 with a grade of "C" or better or drafting assessment test.

EGR 121 Engineering Graphics II (1-5) 3 hrs.

Covers analysis of common geometric magnitudes of points, planes and curved surfaces. Includes cutting planes, auxiliary views, intersections and development. Introduces applications of geometrical methods in projections, assemblies and details. Prerequisite: EGR 120 with a grade of "C" or better.

EGR 122 Introduction to CAD/Graphics (2-3) 3 hrs.

Surveys components and concepts of computer graphic systems. Applies principles of engineering graphics to create dimensional drawings using graphics, terminals, digitizers, plotters and related software. Emphasizes general applications on various computer systems. Prerequisite: EGR 120 with a grade of "C" or better or consent of instructor.

EGR 210 Analytical Mechanics (Statics) (3-0) 3 hrs.

Covers resultants of force systems using vectors. Emphasizes analysis of these systems acting on members of trusses, frames and machines. Includes forces due to friction, centroids and moments of inertia. Prerequisite: PHY 201 with a grade of "C" or better or consent of instructor.

EGR 211 Analytical Mechanics (Dynamics) (3-0) 3 hrs.

Covers displacement, velocity and acceleration of a particle; relation between forces acting on rigid bodies and changes in motion produced; translation, rotation, planar motion; solutions using principles of force, mass and acceleration; work energy and impulse momentum solutions. Prerequisite: EGR 210 with a grade of "C" or better.

EGR 212 Mechanics of Deformable Bodies (3-0) 3 hrs.

Covers elastic and inelastic relationships between external forces (loads) acting on deformable bodies. Explores stresses and deformations produced, tension and compression members, members subjected to torsion and to bending, buckling (columns), combined stresses, repeated loads (fatigue), energy methods, impact and influence of properties of materials. Prerequisite: EGR 210 with a grade of "C" or better.

EGR 260 Introduction to Circuit Analysis (4-0) 4 hrs.

Introduces electric circuits, electrical components, network theorems, phasor representation of signals and steady state response. Covers power, transformers and network topology. Includes computer analysis techniques. For engineering transfer students. Prerequisite: PHY 202 with a grade of "C" or better and concurrent registration in MTH 212 or consent of instructor.

EGR 262 Electrical Circuits Laboratory (1-2) 2 hrs.
 Introduces standard electrical instruments and measurement techniques. Includes practical applications to topics of EGR 260. Covers circuit response, elementary filter response and resonance measurements. Includes basis measurements of transistors and operational amplifiers.
 Prerequisite: EGR 260 with a grade of "C" or better or concurrent enrollment.

EGR 270 Introduction to Digital Systems (3-2) 4 hrs.
 Introduces binary arithmetic and codes, logic gates, Boolean functions and minimization. Covers analysis and synthesis of combinatorial gates and sequential circuits using integrated circuit components. Introduces computer organization and microprocessors. For engineering transfer students.
 Prerequisite: PHY 202 with a grade of "C" or better or consent of instructor.

ELT Electronics

ELT 100 Electronics Career Exploration (.5-10) 1 hr.
 Studies career and employment possibilities in the electronics industry. Includes observation of practices in electronics and attendance at a seminar to discuss related experiences. (NOTE: Summer semester only.)
 Prerequisite: For students with no prior courses or work experience in the electronics field, and consent of coordinator.

ELT 101 Circuits I, Resistive Circuit Analysis (3-4) 5 hrs.
 Studies resistive circuits with time-varying source voltage. Physics of electricity, definitions, symbols and notations for electrical quantities are taught. Circuit properties and their applications to significant circuit configurations are examined.
 Prerequisite: High school algebra or consent of instructor and placement test with acceptable score.

ELT 102 Circuits II, Single Time Constant Circuits (3-3) 4 hrs.
 Examines R-C and R-L single time constant circuits. Treats these circuits with sinusoidal square wave and step voltages as sources.
 Prerequisite: ELT 101, MTH 106 with a grade of "C" or better or consent of instructor.

ELT 103 Circuits III, Networks (3-4) 5 hrs.
 Covers resonance, factors affecting Q and bandwidth, RLC filters, power matching with pi, T and L networks. In addition, double tuned circuits, ringing and transient response of RLC circuits are discussed.
 Prerequisite: ELT 102 with a grade of "C" or better or consent of instructor.

ELT 105 Electro-Mechanical Drafting (1-6) 3 hrs.
 Introduces drafting fundamentals for electronic design and packaging. Introduces computer aided design of printed circuit boards. Basic fabrication processes are covered. The course focus is the design and construction of an individual project.

ELT 110 Introductory Electronics (2-4) 4 hrs.
 Introduces laboratory instruments, circuit components, basic measuring techniques and basic circuits used as building blocks in any electronic system.

ELT 111 Electronics I, Resistive (2-3) 3 hrs.
 Resistive circuits involving electronic devices. Volt-ampere characteristics and physics of diodes, transistors and other semiconductor devices. The emphasis is upon biasing and the setting of DC levels to make the device function.
 Prerequisite: ELT 110 with a grade of "C" or better or consent of instructor.

ELT 142 Basic Electricity (Residential/Commercial) (1-2) 2 hrs.
 Introduces students to basic electrical terminology and principles along with working knowledge of tools and techniques used in the installation, maintenance of residential/commercial electrical service and distribution. Select portions of the National Electrical Code are selected.

ELT 200 Electronics Internship (1-15) 2 hrs.
 Applies appropriate skills to the electronics technology field. (NOTE: Summer semester only.)
 Prerequisite: Successful completion of at least 80 percent of courses in first and second semesters of the electronics program and consent of coordinator.

ELT 203 Electronics II, Digital (3-4) 5 hrs.
 Examines the building blocks of digital circuits. These elements are then blended into topics and applications. Topics include Boolean algebra, Karnaugh mapping, counters and microprocessors.
 Prerequisite: ELT 110 with a grade of "C" or better.

ELT 204 Electronics III, Advanced Electronics (3-4) 5 hrs.

Examines electronic circuits using diodes, transistors and operational amplifiers. Applies linear equivalent circuits as an analysis tool. Studies amplifiers, feedback principles and operational amplifier configurations as practical applications of the linear analysis techniques.

Prerequisite: ELT 111 with a grade of "C" or better or consent of instructor.

ELT 205 Electronic Instrumentation (3-4) 4 hrs.

Studies methods of sending and controlling physical industrial processes. Components involved are transducers, indicators, recorders and programmable controllers.

Prerequisite: ELT 215 with a grade of "C" or better or consent of instructor.

ELT 206 Electronic Computers (3-4) 5 hrs.

Studies computer architecture through the use of microprocessors, digital computer algorithms and software programming. The utilization of microprocessors is extensive.

Prerequisite: ELT 203 and ELT 210 with a grade of "C" or better or consent of instructor.

ELT 207 UHF Communications and Reception (3-4) 5 hrs.

Emphasizes design techniques in communication circuits, the relationship of modulation systems to bandwidth requirements and frequency spectrum. A design project is part of the course work.

Prerequisite: ELT 103 with a grade of "C" or better or consent of instructor.

ELT 210 Computer Programming (3-0) 3 hrs.

Presents the use of the computer and micro-processor as special tools and introduces the student to computer architecture, languages and programming with emphasis on electronic applications.

Prerequisite: Placement test with acceptable score.

ELT 215 Industrial Controls and Motors (3-4) 5 hrs.

Examines industrial pneumatic and hydraulic control circuits. Covers an introduction to fractional horsepower and programmable logic controllers (PLC). Process control applications are introduced.

Prerequisite: ELT 110 with a grade of "C" or better or consent of instructor.

ELT 216 Microprocessor Software Applications (3-4) 5 hrs.

Applies assembly language programming to practical software problems. Studies computational algorithms in depth. May develop monitor programs along with multi-programming examples.

Stresses debugging and documentation. Prerequisite: ELT 206 with a grade of "C" or better or consent of instructor.

ELT 217 Microprocessor Peripheral Systems (3-4) 5 hrs.

Examines interfacing and operation of peripheral systems commonly used with microprocessor and minicomputers. Includes video displays, teleprinters, modems, codecs and smart terminals.

Prerequisite: ELT 206 with a grade of "C" or better or consent of instructor.

ELT 218 Principles of Micro-processor Systems Design (3-4) 5 hrs.

Examines central processor unit architecture, monitor program structure, system control timing, input-output control and data bus structures. Considers input-output hardware design, interrupts, hardware and software design.

Prerequisite: ELT 206 with a grade of "C" or better or consent of instructor.

ENG English

ENG 098 Composition (3-0) 3 hrs.

Provides instruction in developing basic writing skills essential for effective written discourse by giving students the conceptual tools necessary for developing a basic framework for writing.

Prepares students for entry into ENG 100. Carries no transfer credit.

Prerequisite: English placement exam.

Recommended corequisite: RDG 090.

ENG 100 Composition (3-0) 3 hrs.

Develops skills in reading and writing standard effective English. Includes language studies, sentence structure, paragraphs, short essays, mechanics and reading. This course carries no transfer credit and does not meet the general education communications requirement for the A.A. and A.S. degrees.

Prerequisite: Satisfactory score on English placement test or grade of "C" or better in ENG 098.

ENG 101 Composition (3-0) 3 hrs.
Emphasizes the organization and development of expository prose. Introduction to the critical reading of selected essays.
Prerequisite: Satisfactory score on English placement test or grade of "C" or better in ENG 100.
ESL students who have achieved a grade of "B" or better in ESL 073 and a grade of "B" or better in ESL 074 or ESL 099 will be admitted.

ENG 102 Composition (3-0) 3 hrs.
Continues ENG 101. Reading and writing of various types of prose. Introduces methods used in writing investigative papers.
Prerequisite: ENG 101 with a grade of "C" or better or consent of instructor or department chair.

ENG 103 Technical and Report Writing (3-0) 3 hrs.
Introduces the various types of writing and communication used in business and technology. Includes instructions, procedures, abstracts, proposals, visuals and reports.
Prerequisite: ENG 101 with a grade of "C" or better or consent of instructor or department chair.

ENG 130 Business Writing (3-0) 3 hrs.
Teaches formal and psychological aspects of business correspondence. Introduction to various kinds of business letters, memoranda and reports. Improvement of grammar, spelling and word usage.
Prerequisite: Satisfactory score on English placement test or ENG 100 with a grade of "C" or better.

ENG 201 Advanced Composition (3-0) 3 hrs.
Teaches advanced skills in expository and argumentative writing.
Prerequisite: ENG 102 with a grade of "C" or better or consent of instructor.

ENG 220 Creative Writing (3-0) 3 hrs.
Provides guided practice in various types of creative writing. Emphasizes skills common to creative expression, including description, plotting, narration, dialogue and verse.
Prerequisite: ENG 102 with a grade of "C" or better or consent of instructor.

ESL English as a Second Language

ESL 010 ESL: Core Language Skills (1-0 to 6-0) 1-6 hrs.
Focuses on grammatical structures and patterns of English for high beginning English as a Second Language students. Emphasizes communicative activities. Includes listening, speaking, reading and writing skills. Carries no transfer credit.
Prerequisite: Native language literacy, placement test.

ESL 015 ESL: Listening and Speaking I (1-0) 1 hr.
Focuses on listening and speaking skills for high beginning English as a Second Language students who read and write proficiently in their native languages. Includes pronunciation skills. Carries no transfer credit.
Corequisite: ESL 016.

ESL 016 ESL: Grammar I (2-0) 2 hrs.
Focuses on grammatical structures and patterns of English for high beginning English as a Second Language students who read and write proficiently in their native languages. Emphasizes listening, comprehension and speaking ability. Carries no transfer credit.
Prerequisite: Completion of foreign or American secondary school; placement test.

ESL 020 ESL: Core Language Skills II (1-0 to 6-0) 1-6 hrs.
Continues grammatical structures and patterns of English for high beginning English as a Second Language students. Emphasizes communicative activities. Includes listening, speaking, reading and writing skills. Carries no transfer credit.
Prerequisite: Placement tests or ESL 010 or ESL 016 with a grade of "C" or better.

ESL 023 ESL: Reading and Writing I (2-0) 2 hrs.
Develops reading and writing skills for high beginning English as a Second Language students who read and write proficiently in their native languages. Includes sentence patterns and paragraph structure. Carries no transfer credit.
Prerequisite: Completion of foreign or American secondary school; placement test.

ESL 024 ESL: Reading and Writing II (2-0) 2 hrs.
Continues reading and writing skills for high beginning English as a Second Language students who read and write proficiently in their native languages. Continues sentence patterns and paragraph structure. Introduces multiparagraph compositions. Carries no transfer credit.
Prerequisite: ESL 023 with a grade of "C" or better.

ESL 025 ESL: Listening and Speaking II (1-0) 1 hr.
Continues listening and speaking skills for high beginning English as a Second Language students who read and write proficiently in their native languages. Includes pronunciation skills. Carries no transfer credit.
Corequisite: ESL 020 or ESL 026.

ESL 026 ESL: Grammar II (2-0) 2 hrs.
Continues grammatical structures and patterns of English for high beginning English as a Second Language students. Includes practice of patterns presented previously. Emphasizes listening comprehension and speaking ability. Carries no transfer credit.
Prerequisite: ESL 016 with a grade of "C" or better.

ESL 030 ESL: Core Language Skills I (1-0 to 6-0) 1-6 hrs.
Focuses on increasingly complex grammatical structures and patterns of English for intermediate English as a Second Language students. Includes practice of patterns presented previously. Emphasizes listening comprehension and speaking ability. Carries no transfer credit.
Prerequisite: ESL 020 or ESL 026 with a grade of "C" or better.

ESL 033 ESL: Reading III (2-0) 2 hrs.
Develops reading skills for intermediate English as a Second Language students. Focuses on the reading of narratives. Carries no transfer credit.
Prerequisite: Placement test or ESL 020 or ESL 024 with a grade of "C" or better.

ESL 034 ESL: Reading IV (2-0) 2 hrs.
Continues the development of reading skills for intermediate English as a Second Language students. Focuses on the reading of more complex narratives. Carries no transfer credit.
Prerequisite: Placement test or ESL 033 with a grade of "C" or better.

ESL 035 ESL: Listening and Speaking III (1-0) 1 hr.
Develops listening and speaking skills for intermediate English as a Second Language students. Includes pronunciation skills and conversation skills in the context of American culture. Carries no transfer credit.
Corequisite: ESL 030 or ESL 036.

ESL 036 ESL: Grammar III (2-0) 2 hrs.
Focuses on increasingly complex grammatical structures and patterns of English for intermediate English as a Second Language students. Includes practice of patterns presented previously. Emphasizes listening comprehension and speaking ability. Carries no transfer credit.
Prerequisite: Placement test or ESL 026 with a grade of "C" or better.

ESL 040 ESL: Core Language Skills IV (1-0 to 6-0) 1-6 hrs.
Continues increasingly complex grammatical structures and patterns of English for intermediate English as a Second Language students. Emphasizes communicative activities. Includes

listening, speaking, reading and writing skills. Carries no transfer credit.
Prerequisite: Placement test or ESL 030 or ESL 036 with a grade of "C" or better.

ESL 043 ESL: Writing III (2-0) 2 hrs.
Focuses on the writing of paragraphs and short compositions for intermediate English as a Second Language students. Continues study of sentence patterns and introduces editing skills. Carries no transfer credit.
Prerequisite: Placement test or ESL 024 or ESL 030 with a grade of "C" or better.

ESL 044 ESL: Writing IV (2-0) 2 hrs.
Continues the writing of paragraphs and short compositions for intermediate English as a Second Language students. Continues study of sentence patterns and editing skills. Carries no transfer credit.
Prerequisite: Placement test or ESL 043 with a grade of "C" or better.

ESL 045 ESL: Listening and Speaking IV (1-0) 1 hr.
Continues the development of listening and speaking skills for intermediate English as a Second Language students. Includes pronunciation and conversation skills in the context of American culture. Carries no transfer credit.
Corequisite: ESL 040 or ESL 046.

ESL 046 ESL: Grammar IV (2-0) 2 hrs.
Continues increasingly complex grammatical structures and patterns of English for intermediate English as a Second Language students. Includes practice of patterns presented previously. Emphasizes listening comprehension and speaking ability. Carries no transfer credit.
Prerequisite: Placement test or ESL 036 with a grade of "C" or better.

ESL 048 ESL: American Culture I (2-0) 2 hrs.
Explores contemporary American culture for high intermediate English as a Second Language students. Focuses on areas necessary for successful communication, classroom practices and work values. Emphasizes and enhances listening comprehension and speaking skills. Carries no transfer credit.
Prerequisite: Placement test or ESL 040 or ESL 046 with a grade of "C" or better.

ESL 050 ESL: Core Languages Skills V (1-0 to 6-0) 1-6 hrs.

Focuses on complex grammatical structures and patterns of English for high intermediate to advanced English as a Second Language students. Emphasizes communicative activities. Includes listening, speaking, reading and writing skills. Carries no transfer credit.
Prerequisite: Placement test or ESL 040 or ESL 046 with a grade of "C" or better.

ESL 053 ESL: Reading V (2-0) 2 hrs.

Develops reading techniques for intermediate to advanced English as a Second Language students. Focuses on the reading of a variety of materials. Promotes independent reading in English. Carries no transfer credit.
Prerequisite: Placement test or ESL 034 or ESL 040 with a grade of "C" or better.

ESL 054 ESL: Reading VI (2-0) 2 hrs.

Continues reading techniques for intermediate to advanced English as a Second Language students. Focuses on the reading of a variety of materials in their original form. Promotes independent reading in English. Carries no transfer credit.
Prerequisite: Placement test or ESL 053 with a grade of "C" or better.

ESL 055 ESL: Listening and Speaking V (1-0) 1 hr.

Develops listening and speaking skills for high intermediate English as a Second Language students. Includes pronunciation and conversation skills in the context of American culture. Carries no transfer credit.
Corequisite: ESL 050 or ESL 056.

ESL 056 ESL: Grammar V (2-0) 2 hrs.

Focuses on complex grammatical structures and patterns of English for high intermediate English as a Second Language students. Includes practice of patterns presented previously. Emphasizes listening comprehension and speaking ability. Carries no transfer credit.
Prerequisite: Placement test or ESL 046 with a grade of "C" or better.

ESL 058 ESL: Spelling Strategies (0-4) 2 hrs.

Focuses on the spelling system of American English for high intermediate and advanced students of English as a Second Language who are having difficulty with American English spelling. Includes memory techniques, dictionary use, study of word parts and spelling aids in word processing programs. Carries no transfer credit.
Prerequisite: Placement test or ESL 040 or ESL 044 with a grade of "C" or better.

ESL 060 ESL: Core Language Skills VI (1-0 to 6-0) 1-6 hrs.

Focuses on complex grammatical structures and patterns of English for advanced English as a Second Language students. Emphasizes communicative activities. Includes listening, speaking, reading and writing skills. Carries no transfer credit.
Prerequisite: Placement test or ESL 050 or ESL 056 with a grade of "C" or better.

ESL 063 ESL: Writing V (2-0) 2 hrs.

Develops academic writing for high intermediate to advanced English as a Second Language students. Emphasizes expository paragraph and introduces essays. Carries no transfer credit.
Prerequisite: Placement test or ESL 044 or ESL 060 with a grade of "C" or better.

ESL 064 ESL: Writing VI (2-0) 2 hrs.

Continues academic writing for high intermediate to advanced English as a Second Language students. Emphasizes expository essays. Carries no transfer credit.
Prerequisite: ESL 063 with a grade of "C" or better.

ESL 065 ESL: Listening and Speaking VI (1-0) 1 hr.

Develops listening and speaking skills for advanced English as a Second Language students. Includes pronunciation and conversation skills in the context of American culture. Carries no transfer credit.
Corequisite: ESL 060 or ESL 066.

ESL 066 ESL: Grammar VI (2-0) 2 hrs.

Continues complex grammatical structures and patterns of English for high intermediate to advanced English as a Second Language students. Includes practice of patterns presented previously. Emphasizes listening comprehension and speaking ability. Carries no transfer credit.
Prerequisite: ESL 056 with a grade of "C" or better.

ESL 068 ESL: Reading VII (2-0) 2 hrs.

Develops reading techniques for advanced English as a Second Language students. Focuses on the reading of college textbooks and academic discussion of literature. Carries no transfer credit.
Prerequisite: Placement test or ESL 054 or ESL 060 with a grade of "C" or better.

ESL 069 ESL: Writing VII (2-0) 2 hrs.

Focuses on academic writing for advanced English as a Second Language students. Emphasizes expository essays. Carries no transfer credit.
Prerequisite: Placement test or ESL 064 with a grade of "C" or better.

ESL 073 ESL: Reading VIII (2-0) 2 hrs.
Continues the development of reading techniques for advanced English as a Second Language students. Focuses on the reading of college textbooks and academic discussion of literature. Carries no transfer credit.
Prerequisite: Placement test or ESL 068 with a grade of "C" or better.

ESL 074 ESL: Writing VIII (2-0) 2 hrs.
Continues academic writing for advanced English as a Second Language students. Emphasizes development of argumentative essays. Carries no transfer credit.
Prerequisite: Placement test or ESL 069 with a grade of "C" or better.

ESL 075 ESL: Listening and Speaking VII (2-0) 2 hrs.
Continues the development of listening and speaking skills for advanced English as a Second Language students. Includes pronunciation and conversation skills in the context of American culture. Carries no transfer credit.
Prerequisite: Placement test or ESL 060 or ESL 066 with a grade of "C" or better.

ESL 076 ESL: Grammar VII (2-0) 2 hrs.
Focuses on complex grammatical structures and patterns of English for advanced English as a Second Language students. Includes practice of patterns presented previously. Emphasizes structures of formal written English. Distinguishes formal English from informal English. Carries no transfer credit.
Prerequisite: Placement test or ESL 060 or ESL 066 with a grade of "C" or better.

ESL 077 ESL: Advanced Vocabulary I (2-0) 2 hrs.
Focuses on the vocabulary of formal American English speech and writing for advanced English as a Second Language students. Emphasizes words and expressions associated with academic style and register. Carries no transfer credit.
Prerequisite: Placement test or ESL 060 or ESL 066 with a grade of "C" or better.

ESL 078 ESL: American Culture II (2-0) 2 hrs.
Explores contemporary American culture for advanced English as a Second Language students. Focuses on areas necessary for successful communication in American society including basic American values and the roles of government and the family. Emphasizes and enhances listening comprehension and speaking skills. Carries no transfer credit.
Prerequisite: Placement test or ESL 060 or ESL 066 with a grade of "C" or better.

ESL 079 ESL: Preparation for TOEFL (0-2) 1 hr.
Focuses on the English listening and reading comprehension skills, grammar and vocabulary needed for the TOEFL (Test of English as a Foreign Language). Includes test-taking skills. Carries no transfer credit.
Prerequisite: Placement test or ESL 060 or ESL 066 with a grade of "C" or better.

ESL 085 ESL: Listening and Speaking VIII — Pronunciation Skills (2-0) 2 hrs.
Focuses on improvement of pronunciation skills for advanced English as a Second Language students. Emphasizes connected speech, including such features as sounds, stress, intonation, timing and juncture.
Prerequisite: Placement test or ESL 060 or ESL 066 with a grade of "C" or better.

ESL 086 ESL: Editing Skills (2-0) 2 hrs.
Provides intensive writing practice with a focus on editing skills for advanced English as a Second Language students. Review essay development, mechanics and the features of American English grammatical structure that are most difficult for ESL students. Carries no transfer credit.
Prerequisite: ESL 076 and ESL 074 or ESL 099 with grades of "C" or better.

ESL 087 ESL: Advanced Vocabulary II (2-0) 2 hrs.
Focuses on the vocabulary of informal American English speech and writing for advanced English as a Second Language students. Emphasizes the high-frequency idiomatic expressions that are most troublesome for advanced ESL students. Carries no transfer credit.
Prerequisite: Placement test or ESL 060 or ESL 066 with a grade of "C" or better.

ESL 098 ESL: Listening and Speaking IX (2-0) 2 hrs.
Focuses on listening and speaking skills specific to the American college classroom for advanced English as a Second Language students. Includes note taking skills, class discussion practice and formal speaking. Carries no transfer credit.
Prerequisite: Placement test or ESL 060 with a grade of "C" or better.

ESL 099 ESL: Writing IX (2-0) 2 hrs.
Focuses on research skills and preparation of the American research paper for advanced English as a Second Language students. Reviews essay development. Carries no transfer credit.
Prerequisite: Placement test or ESL 074 with a grade of "C" or better.

FAS Fashion Design

FAS 101 Flat Pattern Design and Draping I (1-4) 3 hrs.

Introduces basic industrial techniques of pattern making and draping. Variety of slopers (bodices, skirts, sleeves, etc.) developed. Accuracy and professional standards stressed. Patterns tested in muslin for fit.

Corequisite: FAS 103 or consent of instructor.

FAS 102 Flat Pattern Design and Draping II (2-4) 4 hrs.

Develops further basic sloper set. Patterns tested in muslin for fit.

Prerequisite: FAS 101 with a grade of "C" or better.

Corequisite: FAS 104.

FAS 103 Apparel Design and Construction I (1-4) 3 hrs.

Introduces basic principles of using master basic sloper set to develop patterns for original designs. Professional design room techniques.

Corequisite: FAS 101 or consent of instructor.

FAS 104 Apparel Design and Construction II (2-4) 4 hrs.

Develops patterns from basic sloper set. Actual construction of finished garments. Emphasis on styling, fit and professional finishing.

Prerequisite: FAS 103 with a grade of "C" or better.

Corequisite: FAS 102.

FAS 105 Fashion Design and Illustration I (0-2) 1 hr.

Introduces basic fashion sketching — front, back and side views. Relationship of figure and garment. Sketching of original design.

FAS 106 Fashion Design and Illustration II (0-2) 1 hr.

Focuses on advanced fashion sketching and fabric rendering. Emphasis on development of individual style. Basic layout and presentation.

Prerequisite: FAS 105 with a grade of "C" or better.

FAS 107 Textiles I (1-2) 2 hrs.

Studies basic design and color principles in development of creative fabrics. General analysis and identification of fabrics and employment of various methods such as weaving, printing and dyeing.

FAS 108 Textiles II (1-2) 2 hrs.

Continues FAS 107. Contemporary fabrics analyzed and studied.

Prerequisite: FAS 107 with a grade of "C" or better.

Corequisite: FAS 109.

FAS 109 Fashion Arts and Design (2-0) 2 hrs.

Focuses on theory and principles of design for fashion. The elements of design and color are covered. Develops the perception and awareness to judge good design and to analyze potential trends. Studies the influence of present-day cultural trends on the field of design.

Corequisite: FAS 108.

FAS 110 Costume History (2-0) 2 hrs.

Introduces the elements of design and color in historical perspective. A survey of historical periods of design focusing on costumes. Examines the influences of social, political and economic forces on these periods.

FAS 111 Twentieth Century Costume and Trends (3-0) 3 hrs.

Presents an overview of fashion history and current trends in the 20th century. Includes fashion design, merchandising and factors which influence fashion from the merchandiser's point of view such as arts, technology and socioeconomic aspects. Students participate in video production.

FAS 112 Fashion Basics (3-0) 3 hrs.

Presents fashion merchandise through evaluation of fashion products. Develops awareness of construction, as well as workmanship and design elements, such as fabric, color silhouette and taste.

FAS 114 Fashion Modeling (0-2) 1 hr.

Introduces the art of modeling for career or personal enrichment. Provides practice to achieve grace, assurance, poise and polish. Studies the mood of showing clothes and fashion shows.

FAS 116 Fashion Industries Career Practicum and Seminar (1-10) 3 hrs.

Studies an overview of career and employment possibilities in the fashion businesses and industries. Places emphasis on individual career path selections through interest testing and career counseling.

FAS 201 Advanced Flat Pattern Design and Draping I (2-4) 4 hrs.

Continues advanced development of basic sloper set, including coat and suit slopers, basics of grading (sizing). Patterns tested in muslin for fit and accuracy.

Prerequisite: FAS 101 and FAS 102 with a grade of "C" or better.

Corequisite: FAS 203.

FAS 202 Advanced Flat Pattern Design and Draping II (2-4) 4 hrs.
Continues FAS 201. Studies advanced techniques of pattern making and draping, such as trend jacket and coat. Actual construction of jacket and coat will be involved.
Prerequisite: FAS 201 with a grade of "C" or better.
Corequisite: FAS 204.

FAS 203 Advanced Diversified Apparel Design I (2-4) 4 hrs.
Develops patterns for the translation of original designs into completed garments. Includes visits to manufacturers and speakers from industry.
Prerequisite: FAS 103 and FAS 104 with grades of "C" or better.
Corequisite: FAS 201.

FAS 204 Advanced Diversified Apparel Design II (2-4) 4 hrs.
Continues FAS 203. Works on collection of individual design and actual construction of coordinated garments.
Prerequisite: FAS 203 with a grade of "C" or better.
Corequisite: FAS 202.

FAS 205 Tailoring Techniques I (0-4) 2 hrs.
Introduces professional assembling procedures, details and finishes. Particular emphasis on coats and suits.

FAS 206 Tailoring Techniques II (0-4) 2 hrs.
Continues FAS 205. Tailoring of original garments.
Prerequisite: FAS 205 with a grade of "C" or better.

FAS 209 Advanced Fashion Illustration I (0-2) 1 hr.
Emphasizes work on a professional studio level. Focuses on work sketches as well as finished art. Fashion illustration as advertising, publicity, promotion and display.
Prerequisite: FAS 106 with a grade of "C" or better or consent of coordinator.

FAS 210 Advanced Fashion Illustration II (0-2) 1 hr.
Continues FAS 209. Preparation of professional portfolio.
Prerequisite: FAS 209 with a grade of "C" or better.

FAS 212 Visual Fashion Merchandising (2-0) 2 hrs.
Studies the communications of design. Determining and interpreting consumer needs and motivations. Exploring the methods and techniques of educating the consumer and promoting good design through advertising, publicity, display, fashion shows, special events, employee development, etc.
Prerequisite: FAS 110 with a grade of "C" or better.

FAS 229 Promotion of Fashion (3-0) 3 hrs.
Introduces various techniques and media for methods to sell fashion. Emphasis on advertising: newspapers, magazines, direct mail, catalogs, radio and television. Includes sales promotion in window displays, interior displays, shops; special events, fashion shows and publicity. Analysis of practical creative assignments developed by the students.

FAS 230 Contemporary Living (3-0) 3 hrs.
Focuses on the social, economic, political and psychological forces that influence fashion. The shifting patterns and population profiles will be examined. The consumer point of view of fashion in contemporary living will be observed by studying characteristics of Chicago and suburban stores. Fashion presented by these stores and those accepted by customers in their lifestyles of today will also be analyzed.

FAS 240 Fashion Projects (3-0) 3 hrs.
Studies the use of oral and written communication in a fashion career with special emphasis on preparing for and staging fashion shows. Also, practice in effective speaking in small groups or to individuals; effect of grooming and etiquette on communication; style and technique in getting a job; and performing effectively in the fashion industry.

FIS Fire Science

FIS 100 Introduction to Fire Science (3-0) 3 hrs.
Examines the basic fundamentals of fire protection. Studies briefly the many facets of fire protection.

FIS 101 Municipal Fire Administration I (3-0) 3 hrs.
Organization and function for fire protection, personnel management, distribution of equipment, records and fire safety problems.

FIS 102 Fire Management I (3-0) 3 hrs.
Discusses the function of the fire officer, focusing on the officer's role and responsibilities. Introduces management theories, practices and the function of management including planning, organizing, staffing, directing and controlling.

FIS 103 Fire Fighting Tactics (3-0) 3 hrs.
Examines the fire ground situation and the tactical deployment of manpower and equipment. Studies the leadership styles and techniques dictated by differing conditions.
Prerequisite: FIS 100 with a grade of "C" or better.

FIS 105 Fire Science Career Exploration (.5-10) 1 hr.

Studies career and employment possibilities in the fire science industry. Includes observation of practices in fire science and attendance at a seminar to discuss related experiences. (NOTE: Summer semester only.)
Prerequisite: For students with no prior courses or work experience in the fire science field and consent of coordinator.

FIS 121 Principles of Combustion (3-0) 3 hrs.

Introduces and familiarizes the student with the combustion process. Presents principles necessary for the oxidation and reduction of fuels. Considers various mechanical and chemical sources of heat and fire problems of solids, liquids and gases. Introduces basic computer applications for understanding combustion.

FIS 122 Fire Prevention Principles I (3-0) 3 hrs.

Introduces fire prevention, inspection, and investigation practices and procedures. Considers fire and building codes, fire protection systems and devices and the development and management of a fire prevention bureau.

FIS 123 Fire Prevention Principles II (3-0) 3 hrs.

Introduces principles of building construction as they relate to the fire officer, fire inspector and fire investigator. Demonstrates the plan review process, introduces N.F.P.A. Life Safety Code, and considers building occupancy requirements. Prerequisite: FIS 122 with a grade of "C" or better.

FIS 132 Hazardous Materials I (3-0) 3 hrs.
Review of basic chemistry, storage, handling, laws, standards and fire fighting practices pertaining to hazardous materials.

FIS 133 Hazardous Materials II (3-0) 3 hrs.
Second semester course in hazardous materials covering storage, handling, laws, standards and fire fighting practices with emphasis on fire fighting and control at the company officer level. Prerequisite: FIS 132 with a grade of "C" or better.

FIS 145 Fire Instructor I (3-0) 3 hrs.
Introduces the fundamentals of developing, organizing and delivering training and instruction to fire service personnel. Emphasizes manual skills training and provides the fundamentals of fire service training necessary to meet the requirements for Fire Officer I certification.

FIS 200 Fire Science Internship (1-15) 2 hrs.

Applies appropriate skills to the fire science technology field. (NOTE: Summer semester only.)
Prerequisite: Successful completion of at least 80 percent of courses in first and second semesters of the fire science program and consent of coordinator.

FIS 201 Municipal Fire Administration II (3-0) 3 hrs.

Examines and defines management topics that involve fiscal budgeting, personnel management and labor relations, measuring and evaluating productivity. Also examines resource management such as fire station locations and design, fire apparatus, communication and data collection and processing systems.
Prerequisite: FIS 101 with a grade of "C" or better.

FIS 202 Fire Management II (3-0) 3 hrs.

Examines and discusses supervisory and various forms of communications that occur in the work setting. Examines work group dynamics and assists the fire officer to understand and function within the work group. Introduces health and safety within the work setting.
Prerequisite: FIS 102 with a grade of "C" or better.

FIS 203 Fire Fighting Tactics II (3-0) 3 hrs.

Examines the tactical deployment of manpower and equipment for extra alarm fires, high-rise fires and often extraordinary incidents. Studies manpower and equipment necessary for large-scale fire ground operations.
Prerequisite: FIS 103 with a grade of "C" or better.

FIS 212 Fire Alarm and Suppression Systems (3-0) 3 hrs.

Studies the function, classification and operating principles of fixed extinguishing systems, detection systems, alarm systems, signaling systems and portable extinguishing equipment installed for fire protection purposes. (Formerly FIS 112.)
Prerequisite: One year of practical experience in a fire protection career field or equivalent academic experience.

FIS 220 Fire Instructor II (3-0) 3 hrs.

Introduces advanced instructional skills necessary in a vocational setting. Familiarizes the student with behavioral objectives, cognitive and psychomotor skills and different teaching methods and their applications in training sessions. Includes lesson plans, lesson development and production of instructional aids. Stresses use of reference materials and research for lesson plan development. Familiarizes the student with training records and reports and in the development and administration of test instruments.

FIS 222 Fire Prevention Principles III (3-0) 3 hrs.
 Considers advanced fire prevention, inspection and investigation practices and procedures. Emphasizes laws, codes and standards which dictate recognized fire prevention practices.
 Prerequisite: FIS 123 with a grade of "C" or better.

FIS 223 Fire Prevention Principles IV (3-0) 3 hrs.
 Emphasizes advanced fire protection, inspection, and investigation principles, procedures and techniques. Emphasizes practices which work toward a reduction in fire incidents.
 Prerequisite: FIS 222 with a grade of "C" or better.

FIS 224 Fire Prevention Principles V (3-0) 3 hrs.
 Concentrates on advanced training in installed extinguishing systems, alarm systems, detection devices and portable fire extinguishers. Examines certain hazards requiring installed systems, and covers specific inspection techniques.
 Prerequisite: FIS 222 with a grade of "C" or better.

FIS 242 Fire Hydraulics (3-0) 3 hrs.
 Review of basic mathematics, hydraulic laws and formulas as applied to the fire service, application of formulas and metal calculation to hydraulic problems, water supply problems, underwriter's requirements for pumps.

FIS 252 Fire Sprinkler Design and Layout I (2-3) 3 hrs.
 Familiarizes the student with the various types of automatic sprinkler systems and how to select the most appropriate system based upon the occupancy and hazard classification. The course considers hydraulic calculations, design and installation requirements, and the production, use and interpretation of sprinkler drawings.
 Prerequisite: FIS 224, MET 101 with a grade of "C" or better or consent of instructor.

FIS 253 Fire Sprinkler Design and Layout II (2-3) 3 hrs.
 Familiarizes the student with special fire protection systems and devices used with automatic sprinkler systems. These specialized water storage devices include fire pumps, standpipe systems, water storage tanks, and alarm signaling devices. High pile, rack storage and exposure protection systems are considered.
 Prerequisite: Prior or concurrent enrollment in FIS 252 with a grade of "C" or better.

FIS 262 Water Supply Analysis (3-0) 3 hrs.
 Study of municipal water supply requirements, system design and flow measurements for fire protection.

FNA Fine Arts

FNA 111 History of Art I (3-0) 3 hrs.
 History of art from 20,000 B.C. to 1400 A.D. A survey of the outstanding works of art produced by Western civilizations presented inseparably with the cultural backgrounds of civilizations from the prehistoric age to Gothic Italy. Recommended for art majors as a sequential course after ART 105.

FNA 112 History of Art II (3-0) 3 hrs.
 History of art from 1400 to 1890. A survey of the outstanding works of art produced in the Renaissance tradition presented inseparably with the cultural backgrounds of Western Europe from the Renaissance to Art Nouveau.
 Recommended Prerequisite: FNA 111.

FNA 113 History of Art III (3-0) 3 hrs.
 History of art from 1900 to the present. An historical critical analysis of the "isms" of modern art both stylistically and ideologically as it relates to our own century.
 Recommended Prerequisite: FNA 112.

FNA 114 Introduction to Film (2-2) 3 hrs.
 Examines different ways of looking at film to improve understanding and appreciation of the medium as an art form and social phenomenon as well as entertainment. Includes lecture/discussion and critical analysis of different directors, stars, film genres, historical trends, aesthetics and the technique and process of filmmaking. Approximately ten feature films will be screened each semester.

FRN French

FRN 101 Elementary French I (4-0) 4 hrs.
Beginning course in the language skills of listening, understanding, speaking, reading and writing in their logical sequence. Designed for students with no previous experience in French.

FRN 102 Elementary French II (4-0) 4 hrs.
Continues FRN 101. Situational conversations in French; reading and writing stressed.
Prerequisite: FRN 101 with a grade of "C" or better, one year of high school French or consent of instructor.

FRN 201 Intermediate French (4-0) 4 hrs.
Conversation with emphasis on pronunciation, intonation, stress and rhythm. Introduction to composition, reading of short stories and grammar review.
Prerequisite: FRN 102 with a grade of "C" or better, two years of high school French or consent of instructor.

FRN 202 Intermediate French (4-0) 4 hrs.
Follows FRN 201. Increases knowledge of the language and focuses on the culture of the French speaking countries. Continues grammar study.
Prerequisite: FRN 201 with a grade of "C" or better, three years of high school French or consent of instructor.

FRN 205 Intensive Oral Practice (3-0) 3 hrs.
Conversational practice to develop oral facility; specially designed exercises in pronunciation, stress and rhythm. Individual readings of modern French works discussed in class. Written and oral compositions based on readings. Designed to help students bridge the gap between the intermediate and advanced levels.
Prerequisite: FRN 202 with a grade of "C" or better or equivalent or consent of instructor.

FRN 210 Introduction to Modern French Literature (3-0) 3 hrs.
Reading of selected 20th century masterpieces. Introduction to poetry and "analyse de texte." Oral readings stressing pronunciation and diction. Speaking based on discussion works read. Writing based on readings and class discussions. Designed to help students bridge the gap between the intermediate and advanced levels.
Prerequisite: FRN 202 or equivalent with a grade of "C" or better or consent of instructor.

FSM Hospitality Management

FSM 100 Hospitality Career Exploration (.5-10) 1 hr.
Studies an overview of career and employment possibilities in the hospitality industry, its organizational structure, and integration of the modern industry components. Career opportunities and progress are reviewed. Each student will observe practices in this industry and attend a seminar to discuss the experience. (NOTE: Summer semester only.)
Prerequisite: For students with no prior courses or work experience in the hospitality field, and interview with coordinator.

FSM 107 Basic Quantity Bread and Pastry Arts (2-5) 4 hrs.
Introduces basic quantity baking of breads and pastries. Students will learn the fundamentals of baking science, terminology, ingredients, weights and measures, formula conversion, and storage. Sanitation and hygienic work habits conforming to health regulations are emphasized.
Prerequisite: Consent of coordinator or instructor.

FSM 108 Advanced Quantity Bread and Pastry Arts (2-5) 4 hrs.
Continues instruction in the finer arts of breads and pastry preparation, including emphasis on pastry arts work, pastries and breads as used in exclusive establishments and ornamental skills for culinary exhibits.
Prerequisite: FSM 107 with a grade of "C" or better.

FSM 109 Introduction to Food Prep/Production (2-5) 4 hrs.
Introduces basic training in the elements of quantity culinary production arts. The student will learn kitchen equipment operation and the principles of the culinary arts. Basic food production will occur with demonstrations, food labs, and lectures used to present the material.
Prerequisite: Consent of coordinator or instructor.

FSM 110 Advanced Quantity Culinary Arts (2-5) 4 hrs.
Continues FSM 109 with special emphasis in the dining experiences. Students will prepare meals for the college dining room, banquets, catered functions and special culinary arts events. Students will discuss theory as well as procedures in the "back of the house."
Prerequisite: FSM 109 with a grade of "C" or better.

FSM 111 Introduction to the Hospitality Industry (3-0) 3 hrs.

Orients students to the hospitality industry, its organizational structure and integration of the modern industry components. Operational considerations are discussed. Career opportunities are explored.

FSM 113 Dining Room Operations (1-5) 3 hrs.

Introduces theory and practice of quantity food serving including practical experience in dining rooms and catering services. Involves set-up, tableside preparation and presentation of food and beverage. Examines various roles of dining room personnel.

FSM 114 Food Standards and Sanitation (2-0) 2 hrs.

Introduces the function of food ingredients, evaluation of finished products including convenience food products and uses, food service sanitation standards and procedures.

FSM 115 Menu Planning (3-0) 3 hrs.

Studies practical applications of nutrition as related to food service operations; menu planning theory and methods for all types of food preparations and special events; and menu planning as a determination of food cost.

FSM 120 Front Office Operations (3-0) 3 hrs.

Establishes a systematic approach to front office operations detailing the flow of business through the hotel from reservations to checkout. Front office management is placed within the context of the overall operation of the hotel. Methods of handling guest folios, reservation systems, property management systems, and cash controls are discussed.

FSM 162 Classical Cuisine (2-5) 4 hrs.

Introduces comprehensive integration of previous culinary production course work or work experience and provides food production for the department's special events, culinary competitions, and the college dining room. Demonstrations, food labs, and lectures are used to present the material.

Prerequisite: Consent of coordinator or instructor.

FSM 163 Garde Manger (1-3) 2 hrs.

Provides students with skills and knowledge in the preparation of cold hors d'oeuvres, sandwiches, salads, garnishes, pates, terrines, mousses, vegetable carving, chaud froid sauce, tallow and ice carving.

Prerequisite: FSM 109 with a grade of "C" or better.

FSM 172 Classical Baking (1-3) 2 hrs.

Concentrates on methods and procedures for producing high quality specialty tortes and buffet items for bakeries and fine dining clubs, hotels and restaurants. Pulled sugar, pastillage, nougat, marzipan, chocolate, ice cream, candies and desserts are included. Emphasis is on individual skill development through practice.

Prerequisite: FSM 108 with a grade of "C" or better or consent of coordinator or instructor.

FSM 173 Cake Decoration (1-3) 2 hrs.

Presents methods and procedures for producing high quality wedding and specialty cakes for bakeries and fine dining clubs, hotels and restaurants. Emphasis is on individual skill development through practice.

FSM 210 Hospitality Facility Maintenance (3-0) 3 hrs.

Focuses on the organization, duties and administration of a restaurant and lodging facility maintenance department. Discusses purchasing, furniture, carpeting, linens and supplies. Identifies and evaluates care and maintenance techniques of the areas serviced by a facility maintenance department.

FSM 211 Purchasing and Storage (3-0) 3 hrs.

Standards and identification of quality meats, dairy products, produce, groceries, frozen foods and supplies. Methods of purchasing, purveyor relations and proper storage techniques and purchase standards for convenience foods.

FSM 212 Hospitality Supervision (3-0) 3 hrs.

Studies the theory and techniques of supervision as related to the hospitality industry.

FSM 213 Seminar and Internship (1-15) 3 hrs.

Furnishes participation in a supervised cooperative work experience program in a College approved hospitality operation. Enrollment is restricted to sophomores in the Hospitality Management program.

Prerequisite: FSM 212 with a grade of "C" or better or consent of instructor.

FSM 214 Hospitality Operations Analysis (3-0) 3 hrs.

Provides practical application of operational analysis used by food, lodging and travel-related fields. Use of ledgers, automated information systems and basic financial statements are discussed.

FSM 215 Restaurant Layout and Equipment (3-0) 3 hrs.

Maximizing employee productivity through various types of food equipment and proper equipment arrangement. Effects of use of convenience foods on equipment planning.

FSM 216 Introduction to Wines, Spirits and Beverage Management (3-0) 3 hrs.

Studies alcoholic beverage classifications, alcoholic beverage laws, wine regions, purchasing and control, promotion and service. Beverage management principles and theories are presented which support and reinforce the practical aspects.

Prerequisite: Minimum age of 21.

FSM 220 Hospitality Promotions (3-0) 3 hrs.

Provides Hospitality Management majors with a solid background in hospitality promotions. Focuses on promoting highly perishable, people-intensive intangibles in a highly competitive environment.

Prerequisite: MKT 140 or consent of coordinator.

FSM 230 Hospitality Law and Risk Management (4-0) 4 hrs.

Surveys our legal system as applied to the hospitality industry. Examines contracts, torts and various labor laws pertinent to the industry. Analyzes insurance costs, including fire, accident, worker's compensation and employee liability and their effect on various types of facilities.

FSM 255 Contract/Institutional Food Service (3-0) 3 hrs.

Studies the historical significance of contract (non-commercial) and institutional food service management, its system approach, the career opportunities in this segment, the technical skills that differ from other food service segments, and the requirements for success as an institutional or contract food service manager.

GEG Geography

GEG 101 World/Regional Geography (3-0) 3 hrs.

Analyzes the geography of the nations divided into regions of the world emphasizing their physical environments and their economic, political and social organization.

GEG 103 The Developing World (3-0) 3 hrs.

Surveys the technologically less developed regions of the World, including East Asia, South Asia, Middle and South America, Southwest Asia and North Africa, and Subsaharan Africa. Emphasis is placed on the spatial arrangement of resources, population, human institutions, economic activities, political patterns, religion, and cultural and physical landscapes. Each cultural realm is analyzed in respect to the larger international community with special attention to current events and issues.

GEG 104 The Developed World (3-0) 3 hrs.

Surveys the technologically more developed regions of the world, including Europe, the United States and Canada, the former Soviet Union, Japan and Australia and New Zealand. Emphasis is placed on the spatial arrangement of resources, population, human institutions, economic activities, political patterns, religion, and cultural and physical landscapes. Each cultural realm is analyzed in respect to the larger international community with special attention given to current events and issues.

GEG 108 Cultural Geography (3-0) 3 hrs.

Provides a comprehensive overview of the relationship of land to life, emphasizing man's dependence on, and his manipulation of land for his survival. The subject of agriculture and other types of food production throughout the world will be of central importance.

GEG 210 Economic Geography (3-0) 3 hrs.

Studies the spatial distribution and interaction of economic activities. Emphasis is on land use patterns, population movement, the principles governing the location of agricultural, manufacturing and commercial centers and the impact of economic activity on the environment.

GEO Geology

GEO 101 Physical Geology (3-2) 4 hrs.

Materials, structure and sculpture of the earth's surface. One-day field trip required.

GEO 102 Historical Geology (3-2) 4 hrs.

Geological history of the earth including principles employed to reconstruct this history. One-day field trip required.

Prerequisite: GEO 101, high school earth science or consent of instructor.

GEO 201 Rocks and Minerals (3-2) 4 hrs.

Physical description of minerals and rocks. Introduction to crystallography, economic minerals, natural resources. Field trip required.

Prerequisite: GEO 101, CHM 121 or consent of instructor.

GEO 202 Paleontology (3-2) 4 hrs.

Fossil record of life, principles of evolution and ecology. One-day field trip required.

Prerequisite: GEO 102, BIO 101, BIO 140 with grades of "C" or better or consent of instructor.

GER German

GER 101 Elementary German I (4-0) 4 hrs.

Beginning course in the language skills of listening, understanding, speaking, reading and writing in their logical sequence. Designed for students with no previous experience in German.

GER 102 Elementary German II (4-0) 4 hrs.

Continues GER 101. Situational conversations in German; reading and writing stressed.

Prerequisite: GER 101 with a grade of "C" or better, one year of high school German or consent of instructor.

GER 201 Intermediate German (4-0) 4 hrs.

Conversation with emphasis on pronunciation, intonation, stress and rhythm. Introduction to composition, reading of short stories and grammar review.

Prerequisite: GER 102 with a grade of "C" or better, two years of high school German or consent of instructor.

GER 202 Intermediate German (4-0) 4 hrs.

Provides a crucial bridge between the basic grammar and language structure that is taught in the first three semesters and the more in-depth study of history, geography, literature and culture that is taught in the advanced German courses.

Integrates students' basic German language skills and applies them to everyday living situations.

Begins the study of German literature, focusing on

the modern history and culture of the German-speaking people.

Prerequisite: GER 201 with a grade of "C" or better, three years of high school German or consent of instructor.

GER 205 Intensive Oral Practice (3-0) 3 hrs.

Conversational practice to develop oral facility; specially designed exercises in pronunciation, stress and rhythm. Individual readings of modern German works discussed in class. Written and oral compositions based on readings. Designed to help students bridge the gap between the intermediate and advanced levels.

Prerequisite: GER 202 with a grade of "C" or better, or equivalent or consent of instructor.

GER 210 Introduction to Modern German Literature (3-0) 3 hrs.

Readings of selected 20th century masterpieces.

Introduction to poetry. Oral readings stressing pronunciation and diction. Speaking based on discussion of works read. Writing based on readings and class discussions. Designed to help students bridge the gap between the intermediate and advanced levels.

Prerequisite: GER 202 with a grade of "C" or better, or equivalent or consent of instructor.

HPI Cardiac Technology

HPI 100 Introduction to the Cardiac Technology Program (1-0) 1 hr.

Defines areas of specialization within the Cardiac Technology program. Identifies major organizations in the cardiac technology field and examines their potential benefits to the technologist.

Explains the role of the technologist in various health and fitness settings. Exposes the student to laboratory procedures and cardiac instrumentation. Provides students the opportunity to visit a host of health centers to get a better appreciation of the day-to-day responsibilities of the cardiac technologist.

HPI 101 Fundamentals of Exercise Testing (2-2) 3 hrs.

Provides a fundamental understanding of the physiological parameters measured to assess physical fitness, the importance of each measurement and the significance of abnormal findings. In addition, considerable laboratory experience is offered in the operation of sophisticated diagnostic physiological instrumentation.

HPI 102 Exercise Physiology (2-2) 3 hrs.
Examines the effects of muscular activity on basic human functions and relates such effects directly to practice in physical education, athletic coaching and rehabilitative conditioning. Provides laboratory experience examining procedures for assessing health and physical fitness status.
Prerequisite: BIO 160, BIO 161, HPI 101 with grades of "C" or better.

HPI 103 Prevention and Treatment of Cardiac Emergencies (2-2) 3 hrs.
Trains and certifies students in basic cardiopulmonary resuscitation. Provides practice in the recognition of cardiac arrhythmias, familiarizes students with the primary cardiac medications, defines the exercise technician's role in emergency procedures and in the use of emergency equipment, and identifies the legal responsibilities and guidelines under which the exercise technician must function.
Prerequisite: BIO 160, BIO 161, HPI 101 and HPI 105 with grades of "C" or better.

HPI 104 Data Analysis and Exercise Prescription (3-0) 3 hrs.
Defines guidelines for conducting physical fitness tests, provides an in-depth understanding of the physiological significance of data generated during fitness testing and outlines methods for translating such data into exercise prescriptions both for patients afflicted with cardiovascular disease and for noncardiac subjects.
Prerequisite: HPI 101 with a grade of "C" or better.

HPI 105 Electrocardiography (3-2) 4 hrs.
Provides instruction and practice in the performance of both resting and exercise diagnostic electrocardiograms, develops skills in basic arrhythmia detection and ST segment analysis and examines the role of the cardiac exercise specialist in cardiovascular preventive/rehabilitative exercise programs.
Prerequisite: HPI 101 and BIO 160 with grades of "C" or better.

HPI 106 Cardiovascular Physiology and Pathology (3-0) 3 hrs.
Provides an in-depth understanding of the anatomy and physiology of the cardiovascular system, discusses the risk factors associated with the development and progression of coronary artery disease, examines the effects of coronary artery disease on heart pump function and evaluates the roles of exercise and pharmacotherapeutics in enhancing cardiovascular efficiency.
Prerequisite: HPI 102 and BIO 161 with grades of "C" or better.

HPI 107 Internship (0-20) 4 hrs.
Provides students with practical experience in diagnostic exercise testing, exercise prescription and class supervision with both cardiac and non-cardiac subjects.
Prerequisite: DIT 101, HPI 102, HPI 103, HPI 104, HPI 105, HSC 112, PED 204, PSY 230 with grades of "C" or better.

HPI 108 Practical Experience in Administering Health Promotion Programming (2-2) 3 hrs.
Provides practical experience in organizing and administering a comprehensive cardiac rehabilitation/diabetic exercise therapy program, in instructing a variety of exercise programs, in administering fitness assessment tests, in conducting one-on-one fitness consultations and in leading group discussions.

HPI 109 Diagnostics I (2-2) 3 hrs.
Introduces the fundamentals of the application of ultrasound to obtain anatomical and hemodynamic data of the heart and great vessels in adult subjects. Emphasis will be placed on the normal and normal variant M-Mode, two-dimensional and Doppler data acquisition.
Prerequisite: BIO 160, HPI 105 and HPI 113 with grades of "C" or better.

HPI 110 Diagnostics II (2-2) 3 hrs.
Introduces the application of ultrasound to obtain anatomical and hemodynamic data in adult patients with anomalies of the heart and great vessels.
Prerequisite: HPI 109 with a grade of "C" or better.

HPI 111 Medical-Legal Aspects (1-0) 1 hr.
Introduces basic legal concepts and terminology, examines statutes applicable to members of the allied health professions and examines standards of practice and competency.

HPI 112 Health Facility Management (3-0) 3 hrs.
Provides instruction and practical experience in the areas of needs assessments, design, operation and management of health and fitness facilities. Distinctions in programming related to commercial, corporate, hospital and community settings will be discussed.

HPI 113 Ultrasound Physics (2-0) 2 hrs.
Introduces the basic principles of ultrasound physics and the application to M-Mode, two-dimensional and Doppler echocardiographic instrumentation.
Prerequisite: General physics (high school level) or consent of instructor.

HPI 114 Hospital Procedures and Patient Care (1-0) 1 hr.
 Introduces the fundamentals of standard clinical procedures and routine patient care associated with the patient population that the cardiovascular technologist may encounter in a hospital or clinical setting. Emphasis will be placed on the importance of professionalism, ethical behavior, interdisciplinary communications and patient confidentiality. Hospital structure, medical delivery systems, and patient/staff safety procedures will also be addressed.

HSC Human Services

HSC 100 Computer Usage in Health Services (0-2) 1 hr.
 Offers a generalized brief orientation to computer utilization with specific software applications pertaining to careers in the health care field.
 Recommended prerequisite: Knowledge of touch system on the keyboard.

HSC 105 Introduction to the Health Care Field (3-0) 3 hrs.
 Surveys many careers and career skills within the health care team. Emphasizes the health care professional's responsibilities to the community, health care trends and professionalism. Introduces medical communications and records.

HSC 110 Emergency Medical Technician Training (4-4) 6 hrs.
 Offers study and practice of the principles and fundamental basic skills necessary to render emergency basic life support care to patients of all ages, including recognition of the nature and seriousness of illness and injury. Health and safety precautions of the caregiver are identified and demonstrated in simulated situations and written testing throughout the course. Leads to licensure as an EMT-B.

(NOTE: This course has special admission requirements. Contact the Admissions Office for details.)

HSC 112 Medical Terminology (1-2) 2 hrs.
 Emphasizes the basic structure of medical words, including prefixes, suffixes, roots, combining forms and plurals. Offers pronunciation, spelling, and definition of medical terms. Emphasis on rendering a professional vocabulary required for work in the health care field, including computer-assisted instruction.

HSC 151 Math Applications in Health Care (1-0) 1 hr.
 Develops skill necessary to calculate medication dosages and solutions. A basic math ability, including decimals, fractions and percentages, is necessary to be successful in this course. Use of electronic calculators emphasized with health care-related applications.
 Prerequisite: Prior or concurrent enrollment in math elective or successful completion of math competency exam, or consent of instructor.

HSC 213 Medical Law and Ethics (3-0) 3 hrs.
 Acquaints the student with the legal and ethical responsibilities of the physician, patient, and allied health personnel in the health care team. Emphasis given to professional attitudes and behavior.
 Recommended Prerequisite: Sophomore standing.

HSC 220 Health, Nutrition and Safety for the Young Child (3-0) 3 hrs.
 Focuses on common health problems of young children, principles of nutrition and elements of safety in early childhood education programs. Emphasis will be placed on prevention of health problems, the specifics of a healthy diet and the treatment of childhood accidents.

HST History

HST 111 The American Experience to 1877 (3-0) 3 hrs.
 Survey of the American experience through the pre-revolutionary period, the expansion westward and the Civil War. Special stress is placed upon the social, economic, cultural, political and constitutional development of the United States.

HST 112 The American Experience Since 1877 (3-0) 3 hrs.
 End of Reconstruction to the present, with primary stress on political and economic development. Also includes social, intellectual and cultural phases, expanded role of government in national affairs and the participation of the United States in international relations.

HST 121 History of Latin America (3-0) 3 hrs.
 Surveys the political and constitutional history of the principal Latin American nations. The course will cover movements leading to independence and social and economic events which are pertinent to relationships with the United States.

- HST 141 History of Western Civilization to 1650 (4-0)** 4 hrs.
Stresses political, social, cultural, economic and technological developments from prehistoric times and concludes with the last manifestation of essentially medieval ideology; i.e., the Protestant Reformation.
- HST 142 History of Western Civilization Since 1650 (4-0)** 4 hrs.
Continues HST 141. Commences with the emergence of modern times, i.e., the development of royal absolutism and the beginnings of the modern nation state and concludes with the 20th century and the modern world.
- HST 151 History of England Norman Conquest to 1600 (3-0)** 3 hrs.
Surveys the social, cultural, economic, political and religious history of England from the Norman Conquest through the age of Elizabeth I.
- HST 152 History of England 1600 to Present (3-0)** 3 hrs.
Surveys the social, cultural, imperial, economic and political history of England from the Stuart Dynasty through the present era.
- HST 153 British Culture and Society (3-0)** 3 hrs.
Surveys the culture and society of England from the Norman Conquest to the present.
- HST 210 Women: The American Experience (3-0)** 3 hrs.
History of the status, roles and contributions of women in America, and a survey of the attitudes and movements that have affected the lives of women in America.
- HST 214 African-American History (3-0)** 3 hrs.
Studies African-Americans from African slave trade through slavery, reconstruction, years of neglect and civil rights revolution in the United States and their contributions to American culture.
- HST 243 The Far East in the Modern World (3-0)** 3 hrs.
History of East Asia since 1800. The traditional cultures of China and Japan, the Western impact and the Asian response will be covered.

HUM Humanities

- HUM 101 Introduction to Western Culture I (3-0)** 3 hrs.
Surveys the humanities: architecture, art, history, literature, music, philosophy and theatre of Western culture from the beginnings to the Renaissance.
- HUM 102 Introduction to Western Culture II (3-0)** 3 hrs.
Surveys the humanities: architecture, art, dance, film, history, literature, music, philosophy and theatre of Western culture from the Renaissance to the present.
- HUM 110 Women and Creativity (3-0)** 3 hrs.
Explores the nature of female creativeness, focusing on women in the traditionally male arenas of art and literature and on areas in which the female creative impulse manifests itself under other names: the shaping of social attitudes, domestic arts and religious experiences.
- HUM 115 International and Regional Studies in Humanities** 1-4 hrs.
Students travel with faculty to international or regional locations which may vary from year to year to study the humanities. May emphasize the literature, language, philosophy or humane arts of the locale visited. Presentation by onsite individualized study, lectures, field trips. Classes held on campus prior to and following the off-campus learning experience. Travel expenses are paid for by the student.
- One Credit:** Students must attend all classes and field trips, submit a daily log covering one week of travel and write a personal essay of at least five typewritten pages.
- Two Credits:** Students must attend all classes and field trips, submit a log covering one-two weeks of travel and write a research paper of at least eight typewritten pages, plus bibliography and footnotes.
- Three Credits:** Students must attend all classes and field trips, submit a log covering three weeks of travel and write a research paper of at least 10 typewritten pages, plus bibliography and footnotes.

Four Credits: Students must attend all classes and field trips, submit a log covering four weeks of travel and write a research paper of at least 12 typewritten pages, plus bibliography and footnotes.

HUM120 Classical Mythology (3-0) 3 hrs.
Studies the myths of Greece and Rome. Focuses on the stories of gods and heroes in classical literature and art. Considers the influence of classical mythology on later Western culture.

IDS Independent Study

IDS 290 Independent Study 1-4 hrs.
Designed to permit the student to pursue a course of study not typically available under traditional course structure. The student will contract with the appropriate faculty member for the objectives to be accomplished in the course. May be repeated up to a maximum of four credit hours. Prerequisite: Sophomore standing, "C" average or consent of instructor.

IND Interior Design

IND 101 Basic Interior Design I (2-2) 3 hrs.
Studies interior design room arrangement and furniture selection. Investigates the elements and principles of design as they relate to interiors. Studies aesthetic aspects of interior design. Develops interior projects using space planning, furniture selection, the development of furniture elevations, and presentation techniques. Recommended corequisite: IND 105.

IND 102 Basic Interior Design II (2-2) 3 hrs.
Continues the study of interior space planning and furniture selection as it relates to a functional and aesthetic interior. Investigates the use of fabric, finishes, color, and texture to complement the interior. Explores aesthetic application of color in interior design. Prerequisite: IND 101, IND 105 and IND 106 with grades of "C" or better. Recommended corequisite: IND 103.

IND 103 Furniture History (3-0) 3 hrs.
Surveys furniture, design motifs and structures from antiquity to the present. Studies authentic designs and their relationship to contemporary applications. Examines the basis for determining the taste level and quality of reproductions and adaptations to the market today.

IND 105 Interior Design Theory (1-1) 1 hr.
Introduces theories pertaining to design elements and principles, human environment, proxemics and behavior. Studies barrier free design and basic building codes. Recommended corequisite: IND 101.

IND 106 Materials and Sources (3-0) 3 hrs.
Studies the construction and finishing of materials other than those of a structural nature, including limitations, quality control, application, uses, installation methods, and quantity calculations. Examines sources available to the designer.

IND 107 Interior Perspective and Rendering (1-2) 2 hrs.
Studies drawing and sketching methods of furniture and interior spaces. Develops drawing techniques for interior perspective views of buildings. Explores the use of various medias to present the three-dimensional delineation of interior design. Examines balance and proportions of interior items within a three-dimensional space. Uses drawing techniques and color to define light and shadow, textures, and material characteristics. Prerequisite: ART 121 and either ATE 107 or IND 101 with grades of "C" or better, or consent of coordinator.

IND 108 Color for Interior Design/CAD (2-2) 3 hrs.
Introduces color theories, analysis and visualization techniques for interior design. Emphasizes visualization through studio methods and computer aided design. Develops awareness of spatial planes and relationships of color for interiors. Introduces lighting and its effect on interior colors. Prerequisite: ART 121, IND 101 and IND 105 with grades of "C" or better, or consent of coordinator.

IND 203 3-D Design for Interiors (1-2) 2 hrs.
Studies advanced problems in three-dimensional interior design which concentrate on the development of relationships of interior furnishings, walls, floors and ceilings into a unified design. Applies principles and elements of design theory within a three-dimensional volume of space. Prerequisite: ATE 107, IND 102, IND 108 and IND 107 with grades of "C" or better, or consent of coordinator.

IND 205 Interior Design Historic Styles (2-2) 3 hrs.
Reviews furniture history. Students recreate historic interior designs. Explores creation of interior design through the mixing and stylizing of furniture and finishes. Prerequisite: IND 102, IND 103, IND 106 and IND 108 with grades of "C" or better.

IND 206 Lighting for Interior Design (2-1) 2 hrs.

Examines artificial and natural lighting in interior design. Considers environmental comfort, effects on colors and information required for selection of lamps and fixtures. Acquaints students with the basic calculation methods as they relate to the lighting design process.

Prerequisite: ATE 107 and IND 102 with grades of "C" or better, or consent of coordinator.

IND 207 Interior Design Internship (1-10) 3 hrs.

Provides an opportunity for selected students to work with professionals in selected and/or approved residential and contract design firms or a retail store, wholesale store, or showroom specializing in interior design and related products. Students are exposed to various aspects of the interior design field and present a report about their experience.

Prerequisite: ATE 108, IND 205 and IND 206 with grades of "C" or better, consent of coordinator, plus 3.5 Interior Design GPA and Harper 3.0 GPA cumulative.

IND 208 Advanced Residential Interiors (2-2) 3 hrs.

Applies interior design skills to residential interior projects, including floor plans, elevations or perspectives, budgets, cabinet drawings, lighting plans, mixing and stylizing of furnishing and finishes.

Prerequisite: ATE 108, IND 203, IND 205 and IND 206 with grades of "C" or better.

IND 209 Contract Interior Design (2-2) 3 hrs.

Applies interior design skills to contract interior projects, including floor plans, elevations or perspectives, cabinet drawings, lighting plans, selection of contract furnishings and finishes. Applies disabled access to a contract design project.

Projects may include office spaces, restaurants and other public buildings.

Prerequisite: ATE 108, IND 203 and IND 206 with grades of "C" or better, or consent of coordinator.

IND 211 Professional Practices for Interior Design 3 hrs.

Examines the business principles required for a successful interior design practice, including establishing an interior design practice, carrying through a job and charging for it, writing client contracts, interviewing and job opportunities.

Prerequisite: IND 205 with a grade of "C" or better, or consent of coordinator.

INS Insurance

INS 100 Insurance Career Exploration (.5-10) 1 hr.

Studies an overview of career and employment possibilities in the insurance industry. Each student will observe practices in this industry and attend a seminar to discuss his/her experiences. (NOTE: Summer semester only.)

Prerequisite: For students with no prior courses or work experience in the insurance field, and interview with coordinator.

INS 121 Principles of Property and Liability Insurance (3-0) 3 hrs.

Presents the basic principles of insurance, provides an introduction to insurance contracts and surveys the nature and operation of the insurance business. Meets the requirements for the Insurance Institute of America's Program in General Insurance INS 21 national examination.

INS 122 Principles of Personal Insurance (3-0) 3 hrs.

Analyzes personal loss exposures and personal insurance coverages including homeowners, personal liability, inland marine, auto, life, health and government programs. This course meets the preparation requirements of the Insurance Institute of America's Program in General Insurance INS 22 national examination.

Prerequisite: INS 121 with a grade of "C" or better.

INS 123 Principles of Commercial Insurance (3-0) 3 hrs.

Analyzes commercial coverages including property, business income, inland and ocean marine, crime, boiler-and-machinery, general liability, auto, workers compensation and package policies. Meets the requirements for the Insurance Institute of America's Program in General Insurance INS 23 national examination.

Prerequisite: INS 121 with a grade of "C" or better.

INS 124 Principles of Life and Health Insurance (3-0) 3 hrs.

Presents the fundamental principles of life and health insurance, the process of becoming insured and the policyholder's rights. Acquaints the students with the features of the life insurance, health insurance and annuity products. This course meets the preparation requirements of the Life Management Institute/LOMA Course One national examination.

Prerequisite: INS 121 with a grade of "C" or better.

INS 125 Life and Health Insurance Company Operations (3-0) 3 hrs.

Presents the organization of insurance companies and the environment in which they operate, focusing on specific company operations such as marketing, actuarial, underwriting and financial activities. This course meets the preparation requirements of the Life Management Institute/LOMA Course Two national examination.

Prerequisite: INS 124 with a grade of "C" or better.

INS 200 Insurance Internship (1-15) 2 hrs.

Applies appropriate skills to the insurance workplace setting. (NOTE: Summer semester only.)

Prerequisite: Successful completion of the 30-credit hours of the first and second semesters of the insurance program, and interview with coordinator.

ITP Sign Language Interpreting

ITP 101 Introduction to Interpreting (3-0) 3 hrs.

Provides students with a working knowledge of the interpreting profession and examines basic principles and practices of interpreting, as well as roles and responsibilities of the interpreter. The course covers the history and development of the interpreting profession, the professional interpreter organizations, terminology and RID Code of Ethics. Introduces pre-interpreting skill development activities, i.e., shadowing, visualization, paraphrasing and cloze and introduces the student to interpretation process models. Designed as a lecture course.

Prerequisite: SGN 202 with a grade of "C" or better or consent of coordinator.

Corequisite: SGN 205 or consent of coordinator.

ITP 110 Interpreting I: Voice to Sign (3-0) 3 hrs.

Focuses on the development of consecutive expressive interpreting and transliterating skills in rehearsed and spontaneous texts. Text analysis and review and continued development of pre-interpreting skills—cloze, short term memory, chunking, shadowing, paraphrasing, dual task training—are emphasized prior to the consecutive interpreting task.

Prerequisite: Assessment and acceptance into the Sign Language Interpreting program and ITP 101 with a grade of "C" or better or consent of coordinator.

ITP 111 Interpreting I: Sign to Voice (3-0) 3 hrs.

Focuses on the development of consecutive sign to voice interpreting and transliterating skills in rehearsed and spontaneous texts. Receptive skills (including fingerspelling) and vocal performance skills are emphasized.

Prerequisite: Assessment and acceptance into the Sign Language Interpreting program and ITP 101 with a grade of "C" or better or consent of coordinator.

ITP 120 Interpreting II: Voice to Sign (3-0) 3 hrs.

Emphasizes the development of expressive simultaneous transliterating and interpreting skills in rehearsed and spontaneous interpreting situations. Students develop skills in assignment preparation, team interpreting techniques and interpreting performance analysis, as well as practice in application of specific ASL principles.

Prerequisite: ITP 110 with a grade of "C" or better or consent of coordinator.

ITP 121 Interpreting II: Sign to Voice (3-0) 3 hrs.

Focuses on the development of simultaneous interpreting and transliterating skills in rehearsed and spontaneous texts. Professional and culturally appropriate behavior is emphasized.

Prerequisite: ITP 111 with a grade of "C" or better or consent of coordinator.

ITP 201 Topics in Interpreting (3-2) 4 hrs.

Covers a variety of topics aimed at preparing the student for entry into the work environment of the professional interpreter. Provides students with opportunities to work on the Registry of Interpreters for the Deaf evaluation practice tapes.

Prerequisite: ITP 211 and ITP 215 with a grade of "C" or better or consent of instructor.

ITP 210 Special Areas of Interpreting (3-0) 3 hrs.

Focuses on skills and knowledge necessary to interpret and transliterate in a variety of specialized settings/forms: business, educational, medical, mental health, oral, tactile, etc. Specific English and American Sign Language vocabulary development appropriate to the setting is also stressed.

Prerequisite: ITP 211 and ITP 215 with a grade of "C" or better or consent of instructor.

ITP 211 Interpreting III: Sign to Voice (3-0) 3 hrs.

Focuses on the development of simultaneous interpreting and transliterating skills in spontaneous small and large group texts. Problem-solving and preparation strategies will be stressed.

Prerequisite: ITP 121 with a grade of "C" or better or consent of instructor.

ITP 215 Interpreting III: Voice to Sign (3-0) 3 hrs.

Provides instruction and practice in the development of interactive interpreting and transliterating skills in a variety of spontaneous interpreting situations. Participation from members of the deaf community provides opportunities for assessment of language preferences, practice in meeting these language needs with a variety of skills and strategies, application of guidelines of professional conduct and articulation of role and ethics.

Prerequisite: ITP 120 with a grade of "C" or better or consent of coordinator.

ITP 220 Practicum (1-10) 3 hrs.

Provides opportunity for students to apply their knowledge, skills and experiences in a variety of interpreting settings: business, education, free lance, public service agencies, etc. Students will participate in supervised interpreting field experience. In addition to field work, students are expected to meet with the instructor throughout the semester.

Prerequisite: ITP 201 and ITP 215 with a grade of "C" or better and consent of instructor.

JNM Journalism

JNM 130 Fundamentals of Journalism (3-0) 3 hrs.

Focuses on the history and current role of the newspaper. Emphasizes grammar and writing skills through assignments and a major project.

JNM 131 News Reporting and Writing (3-0) 3 hrs.

Presents theory and techniques for gathering and writing news in political, police, social and civic coverage. Develops advanced reportorial and writing skills. Uses industry standard computer hardware and software.

JNM 133 Feature Writing (3-0) 3 hrs.

Stresses the feature approach to non-fiction writing for magazines and newspapers. Develops techniques for writing and selling freelance articles.

JNM 136 Broadcast Writing (3-0) 3 hrs.

Develops skills needed to write for the broadcast media including television, radio and film. Focuses on the oral style. Emphasizes gathering of information, interviewing, writing and editing scripts and writing for continuity for video or film. Examines the legal, ethical and social implications of broadcast writing and programming.

JNM 137 Media Writing (3-0) 3 hrs.

Provides an overview of the various formats and structures used in writing for the media. Includes writing for newspapers, radio and television stations, advertising and public relations agencies and for business and industrial communications. Focuses on information gathering, the elements of good writing and matching message and audience.

JNM 232 Advertising Copywriting and Design (3-0) 3 hrs.

Explores the theory and practice of the advertising industry. Introduces students to the business and creative aspects of advertising. Students prepare original advertising campaigns from market and product research to evaluation. Familiarizes the student with desktop publishing on MacIntosh computers using various software programs. (Formerly JNM 134.)

JNM 233 Public Relations Writing and Design (3-0) 3 hrs.

Explores the theory and practice of public relations—its functions, roles and applications. Introduces students to the business and creative aspects of public relations. Students will prepare original public relations campaigns from research to evaluation. Familiarizes the student with desktop publishing on MacIntosh computers using various software programs. (Formerly JNM 134.)

JNM 234 Mass Communications (3-0) 3 hrs.

Impact of modern media, subtle and overt, on affairs of men. Influence of potential, social and commercial campaigns and trends on human beings in international, national, regional and local settings.

JNM 235 Publications Editing and Design (3-0) 3 hrs.

Introduces advanced writing, rewriting and editing practices. Teaches students how to produce various publications using computer applications. Focuses on preparation and production of magazines, brochures, newsletters and annual reports. Incorporates writing, copy editing, photography and illustrations, typography, page design and printing. Students produce a publication as a class project.

JPN Japanese

JPN 101 Elementary Japanese I (4-0) 4 hrs.

Introduces the language skills of pronunciation and useful expressions, listening, speech patterns, syllabary reading and writing, basic vocabulary and grammar. Cultural and sociolinguistic orientation.

JPN 102 Elementary Japanese II (4-0) 4 hrs.

Continues JPN 101. Skill developments in simple, everyday conversation and contemporary and idiomatic expressions; continued mastery of beginning grammar, reading and writing, and more vocabulary. Orientation in verbal and non-verbal skills and simple composition. Prerequisite: JPN 101 with a grade of "C" or better or consent of instructor.

JPN 201 Intermediate Japanese I (4-0) 4 hrs.

Continues JPN 102. Emphasis on more complex conversation and advanced grammatical components; continued reading and writing. Emphasis on advanced composition. Prerequisite: JPN 102 with a grade of "C" or better or consent of instructor.

JPN 202 Intermediate Japanese II (4-0) 4 hrs.

Continues JPN 201. Accuracy and ease in more complex conversation; advanced study of reading and writing. Study of more complex syntax and composition. Prerequisite: JPN 201 with a grade of "C" or better or consent of instructor.

LIT Literature

LIT 105 Poetry (3-0) 3 hrs.

Emphasizes enjoyment, appreciation and understanding of poetry. The course may include the study of poets and their work from the time of Chaucer to the 20th century. Typical of the various areas which may be studied are the Romantic and Victorian periods as well as schools of poetry such as the Imagist. Among the techniques presented to aid the student's understanding are diction, meter, rhythm, theme and symbol.

LIT 110 Drama (3-0) 3 hrs.

Presents a survey of drama from various countries and eras. The course will include representative selections from such modes as tragedy, comedy, melodrama, romance, satire and social commentary as well as absurdist drama. The selections would include such authors as Ibsen, Miller, Moliere and Shakespeare. (See SPE 111 for theatrical study of drama.)

LIT 112 Literature and Film (3-0) 3 hrs.

Introduces methods of reading, interpreting and analyzing literary works as well as examining methods used in translating those works to the media of film. Presents the short story, the novel and the drama in conjunction with their cinematic counterparts. Focuses on understanding and appreciating each form on its own and in relation to the other through reading, viewing and writing.

LIT 115 Fiction (3-0) 3 hrs.

Presents short stories and novels of high interest level. The selections typify authors and styles representative of major American and European literary movements and philosophies. Challenges the student to develop skills in literary analysis. Students will study characterization, narration, dialogue, plot and various other techniques of fiction. Individual sections may concentrate on particular periods, authors or topics.

LIT 206 World Literature to 1800 (3-0) 3 hrs.

Selected works of universal significance contributed by people and civilizations from ancient times to 1800.

LIT 207 World Literature Since 1800 (3-0) 3 hrs.

Continues LIT 206. Selected works of universal significance contributed by people and civilizations from 1800 to the present.

LIT 208 Non-Western Literature (3-0) 3 hrs.

Studies selected works from non-western civilizations, such as Africa, China, India, Japan and the Middle East. Fiction, poetry and drama will be included.

LIT 210 Introduction to Shakespeare (3-0) 3 hrs.

Introduces Shakespeare's acting company, theater and audience. Discusses his techniques in building scenes, developing characters, handling dialogue. Readings and interpretations will consist of representative comedies, tragedies, histories and problem plays.

LIT 216 Science Fiction (3-0) 3 hrs.

Surveys science fiction short stories and novels. Considers science fiction as popular literature and assesses its unique contribution to the history of ideas.

LIT 217 Detective and Mystery Fiction (3-0) 3 hrs.

Presents detective and mystery fiction from its beginning to the present. Includes long and short works representing the various types of mystery fiction. Examines the literature's contributions to, and influences upon, contemporary popular fiction.

LIT 219 Children's Literature (3-0) 3 hrs.

Introduces the various types of children's literature. Includes the history of children's literature, as well as the classic and current authors and illustrators. Covers such areas as picture and concept books, myths, poetry, fantasy and realism.

LIT 221 American Literature Colonial Days to Civil War (3-0) 3 hrs.

American literature as an expression of American life through early social and political documents, novels, short stories and poems.

LIT 222 American Literature the Civil War to 1914 (3-0) 3 hrs.

American prose and poetry to the turn of the century, including regional literature, literary journalism, criticism and social and historical novels. Established criteria for judging American literary output.

LIT 224 Women in Literature (3-0) 3 hrs.

Examines the many images, impressions and stereotypes of women presented in literature. Includes literature written about women and by women, encompassing many countries, eras, authors and genres. The student will read selections from such authors as Chekov, Chopin, Colette, Flaubert and Porter.

LIT 231 English Literature to 1800 (3-0) 3 hrs.

Survey of English writers from beginning English literature to 1800. Reading and interpretation of writers such as Austen, Boswell, Chaucer, Congreve, Donne, Dryden, Johnson, Jonson, Malory, Milton, Pope and Swift.

LIT 232 English Literature 1800-1914 (3-0) 3 hrs.

Survey of English writers from Romantic Period to World War I. Reading and interpretation of such writers as Austen, Browning, Byron, Conrad, Dickens, Hardy, Keats, Shaw, Tennyson and Wordsworth.

LIT 241 20th Century British and American Literature (3-0) 3 hrs.

Survey of important writers and writings in British and American literature since World War I.

LNG Linguistics

LNG 105 Introduction to General Linguistics (3-0) 3 hrs.

Explores language—its origins, properties, use, structure and meaning. Studies sound systems, word-formation systems, syntactic systems and derivation of meaning from spoken and written forms. Includes first and second language acquisition and properties of visual languages.

LNG 205 Language and Culture (3-0) 3 hrs.

Explores the relationship between language and culture. Includes the language socialization of children, gender differences in language, standard varieties and dialects of language and the effect of language on thought. Examines the nature of language in power relationships.

LTE Legal Technology

LTE 101 Introduction to Legal Technology (3-0) 3 hrs.

Surveys the functions of law; courts and lawyers in modern society; analysis of the origin, training and role of the legal technician; professional responsibilities of the lawyer; outline of the fields and specializations within the practice of law; and instruction in legal research and writing upon a review of the sources and works of law. Prerequisite: Legal Technology entrance examination and consent of coordinator.

LTE 102 Fundamentals of Legal Research (3-0) 3 hrs.

Orients students to law library and a variety of legal publications, treatises and other legal writings encountered in day-to-day practice of law. Emphasizes developing student capability to analyze, interpret and communicate facts, ideas and law through comprehension of legal research techniques. Prerequisite: LTE 101 with a grade of "C" or better or consent of coordinator.

LTE 103 Litigation (3-0) 3 hrs.

Analyzes civil procedures and instruction in preparation of documents used in lawsuits, covering pre- and post-trial matters, evidentiary problems and assistance during trials. Prerequisite: LTE 101 with a grade of "C" or better or consent of coordinator.

LTE 105 Family Law (3-0) 3 hrs.

Examines domestic relations law with emphasis on marriage, divorce, annulment, separation agreements, adoption and other legal matters involving the family. Prerequisite: LTE 101 with a grade of "C" or better or consent of coordinator.

LTE 123 Real Property Law (3-0) 3 hrs.
Provides historical study of common law estates and interests, and statutes. Emphasizes the role of and relationship between the attorney and the paralegal in preparing the more common types of real property transactions and conveyances, such as deeds, contracts, leases; drafting problems involving these various instruments; special research projects related to the subject matter; and a study of the system of recording and search of public documents.
Prerequisite: Legal Technology entrance examination or consent of coordinator.

LTE 200 Probate (3-0) 3 hrs.
Surveys the principles, history and sources of probate law; examination of probate court forms and tax returns; and detailed instruction in gathering information and preparing documents for the paralegal assistant's supervising attorney.

LTE 201 Tort and Insurance Law (3-0) 3 hrs.
Studies basic tort and insurance law principles; examines insurance claim procedures and pleading forms used in litigation of various actions.

LTE 202 Estate Planning (3-0) 3 hrs.
Examines common forms of wills and trusts; surveys of legal principles applicable thereto; and provides instruction in draftsmanship of documents by the paralegal assistant for the supervising attorney.

LTE 203 Income Taxation I (3-0) 3 hrs.
Examines in detail federal and state income taxation as applicable to individuals, and instruction in preparation of returns and forms; surveys of administrative and judicial procedures relative thereto.

LTE 204 Income Taxation II (3-0) 3 hrs.
Examines in detail federal, state and local taxes with instruction in preparation of corporate, partnership, fiduciary and other returns and forms.

LTE 208 Externship in Legal Technology (1-10) 3 hrs.
Provides supervised experience in a legal setting to enhance students' technical paralegal skills. One-hour seminar each week devoted to paralegal issues.
Prerequisite: Completion of a minimum of four LTE courses. LTE 101, LTE 102, LTE 103, and an elective LTE course with grades of "C" or better.

LTE 210 Corporate and Securities Law (3-0) 3 hrs.
Prepares paralegal student to aid in incorporation, corporate recordkeeping and compliance with administrative regulations. This includes the understanding of statutes, rules, forms and releas-

es pertaining to the principal acts administered by the Securities and Exchange Commission.

LTE 212 Law Office Systems (3-0) 3 hrs.
Studies law office management relying on the systems analysis approach to examine design, methods and processes necessary for integrating the paralegal into the hierarchy of the organization of a law office with emphasis on defining functions of the lawyer, paralegal and legal secretary.

LTE 220 Community Law (3-0) 3 hrs.
Develops skills and competencies needed to recognize legal problems and comply with the procedures relating to various government agencies. Emphasis will be on federal housing and landlord-tenant law; mental and civil commitments; welfare laws; labor law; social security law; and consumer protection law.

LTE 230 Topics in Legal Technology 1-6 hrs.
Studies selected problems or topics in legal technology. The exact content and instructional methodology will vary semester to semester depending on the material to be studied. A syllabus or course outline containing additional information will be available with pre-registration materials each time that the course is offered. This course may be taken from one to six credit hours.

MAT Materials/Logistics

MAT 101 Fundamentals of Materials/Logistics Management (3-0) 3 hrs.
Provides an introduction and overview of the field of materials/logistics management. Topics covered include objectives, benefits, relationships with other functions, organization, planning, inventory control, production control purchasing, receiving and stores, material handling, physical distribution, computer applications, implementation and pitfalls, measurement and control and finance.

MAT 120 Production Control Concepts (3-0) 3 hrs.
Describes the development, scope and objectives of production control. Specific attention will be given to scheduling, control, critical path, machine loading, materials requirements planning and other techniques, functions, and activities which are implicit in this aspect of material management operations.
Prerequisite: MAT 101 or consent of coordinator.

MAT 121 Principles of Physical Distribution (3-0) 3 hrs.

Movements of goods from production to delivery to distribution of channel intermediaries. Attention is focused upon distribution channels, traffic management, warehousing, inventories, organization, control and communication. Heavy emphasis is given to distribution system design and distribution system analysis.

Prerequisite: MAT 101 or consent of coordinator.

MAT 122 Inventory Control (3-0) 3 hrs.

Provides an overview of the dynamics of managing inventory in the constantly changing industrial and commercial environment. Topics include forecasting sales and inventory requirements, computer applications to inventory control problems, building inventory models, simulation and the relationships of inventory control to marketing management and production control.

Prerequisite: MAT 101 or consent of coordinator.

MAT 123 Traffic and Transportation (3-0) 3 hrs.

Overview of transportation systems and the impact on cost and service that each system provides. Examines costs in various modes and routings. Reviews operational aspects of the transportation function.

Prerequisite: MAT 101 or consent of coordinator.

MAT 124 Material Handling and Packaging (3-0) 3 hrs.

Presents material handling and packaging as tools for use in a total system of material management. Material handling concepts include palletization, containerization, conveyor systems, fully automated warehousing and integrated production lines. Packaging is treated as a function with ramifications far beyond mere protection of a product.

Prerequisite: MAT 101 or consent of coordinator.

MAT 125 Purchasing (3-0) 3 hrs.

Covers the nature and importance of the procurement function in modern business organizations. Principles, tools, methods and techniques employed for the acquisition of materials, supplies and equipment.

Prerequisite: MAT 101 or MKT 245.

MAT 226 Material Requirements Planning (MRP) (3-0) 3 hrs.

Covers computer based Material Requirements Planning (MRP) systems, important to modern material management. Focuses on using MRP systems to reduce inventories, set priorities, initiate orders, purchase requirements and develop master production schedules.

Prerequisite: MAT 122 or consent of coordinator.

MAT 227 Just-In-Time (JIT) (3-0) 3 hrs.
Provides a comprehensive study of the JIT philosophy/technique for improving manufacturing practices. Results in improved material flow systems, low inventories, improved manufacturing activities, increased capital turnover and maximized profits.

MAT 230 International Materials/Logistics Management (3-0) 3 hrs.

Provides a comprehensive study of the materials/logistics management function related to the international environment: business/cultural customs, legal considerations, purchasing strategies, financial aspects, international distribution and counter-trade.

Prerequisite: MAT 101 or consent of instructor.

MAT 259 Advanced Purchasing (3-0) 3 hrs.

Continues MAT 125. Emphasis to be given to managerial aspects of purchasing, contract negotiation and administration and speculative purchasing.

Prerequisite: MAT 125.

MAT 281 Topics in Materials/Logistics Management 1-3 hrs.

Studies selected problems or topics in materials/logistics management. The exact content and instructional methodology will vary semester to semester depending on the material to be studied. A syllabus or course outline containing additional information will be available with preregistration materials each time that the course is offered. This course may be repeated to a maximum of 3 credit hours.

Prerequisite: 12 semester hours in MAT course work or consent of coordinator.

MET Mechanical Engineering Technology

MET 100 Mechanical Design Career Exploration (.5-10) 1 hr.

Studies career and employment possibilities in the mechanical design industry. Includes observation of practices in mechanical design and attendance at a seminar to discuss related experiences. (NOTE: Summer semester only.)

Prerequisite: For students with no prior courses or work experience in the mechanical design field and consent of coordinator.

MET 101 Applied Mechanical Drafting (1-4) 3 hrs.

Introduces lettering, orthographic projection, dimensioning techniques and drawing interpretation based upon national standards. Emphasizes blueprint reading, shop schematics, developments and intersections. Individual sections of this course may be identified for special interest applications such as refrigeration/air conditioning, fire code compliance, welding or automated machining.

MET 102 Technical Drafting (1-5) 3 hrs.

Covers lettering, orthographic projection, size and location, dimensioning, auxiliary and section view, and sketching.

Prerequisite: MET 101 with a grade of "C" or better or drafting assessment test.

MET 103 Descriptive Geometry (0-6) 3 hrs.

Analysis of common geometrical magnitudes of points, planes and curved surfaces. Includes rotations, auxiliary views, developments and nomography. Applications of geometrical methods in projections, assemblies and details.

Prerequisite: MET 102, MTH 106 with a grade of "C" or better or consent of instructor.

MET 200 Mechanical Drafting and CAD Internship (1-15) 2 hrs.

Applies appropriate skills to the mechanical drafting and CAD technology field. (NOTE: Summer semester only.)

Prerequisite: Successful completion of at least 80 percent of courses in first and second semesters of the mechanical technology program and consent of coordinator.

MET 201 Mechanisms (3-3) 4 hrs.

Fundamentals of displacement, velocity and acceleration of rigid bodies as a basis for the study of the kinematics of mechanisms. Motion analysis of cams, gears and linkages. Study of conjugate shapes and gear tooth development.

Prerequisite: MTH 107 with a grade of "C" or better or consent of instructor.

MET 202 Advanced Technical Drafting (1-5) 3 hrs.

Orthographic considerations of mechanical and tooling systems, limit and tolerance dimensioning, sketching, product illustration and assembly drafting presentations.

Prerequisite: MET 102 with a grade of "C" or better.

MET 207 Machine Design (2-4) 4 hrs.

Covers design principles applied to machine elements with respect to size, shape, material, geometry, environment and economy. Covers clutches, brakes, belts, chains, fasteners, gear shafts and gears. Emphasis is on principles and calculations necessary to determine fits, stresses, loads, deformations and finishes.

Prerequisite: MET 201 and MET 240 with grades of "C" or better.

MET 235 Computer Graphics (2-4) 4 hrs.

Surveys components and concepts of computer graphics systems. Applies principles of engineering graphics to create two-dimensional drawings using graphics terminals, digitizers, plotters and related software. Emphasizes application of various computer design systems.

Prerequisite: MET 102 with a grade of "C" or better or drafting assessment test.

MET 236 Three-Dimensional Graphics Applications (1-5) 3 hrs.

Provides detailed study of graphical modeling, surface considerations and generation of engineering drawings using 3-D computer graphic methods. Examines methods and solutions to individual problems using a variety of techniques and commercial CAD packages. Emphasis is on the process from design concept through the preparation of engineering drawings.

Prerequisite: MET 103 and MET 235 with grades of "C" or better or consent of instructor.

MET 237 Advanced Modeling Techniques (1-5) 3 hrs.

Provides a detailed study of advanced modeling techniques including various solid modeling systems, advanced surface techniques and use of these systems to generate engineering drawings. Special problems related to specific industrial applications will be addressed.

Prerequisite: MET 103 and MET 235 with grades of "C" or better.

MET 240 Statics and Strength of Materials (5-0) 5 hrs.

Introduces the concepts of force systems, equilibrium of force systems, analysis of forces acting on members of trusses, frames, etc., and forces due to friction. Includes elastic relationships between external forces acting on deformable bodies; stresses and deformations produced; tension and compression members; members subjected to torsion and bending; buckling; combined stresses; and influence of properties of materials. Prerequisite: MTH 106, PHY 101 or PHY 121 with grades of "C" or better.

MET 245 Applied Digital Control (3-4) 5 hrs.

Studies the principles and techniques of controls applied to mechanical systems, electrical motors and electro-mechanical systems. Consists of topics in motors and controls, hydraulic and pneumatic components, open-closed loop systems, programmable microprocessor controllers, and robotic control devices (limit switches, relays, solenoids, end-of-arm sensors). Includes control logic and Boolean algebra. Prerequisite: MTH 106 with a grade of "C" or better or consent of instructor.

MFG Manufacturing

MFG 100 Manufacturing Career Exploration (5-10) 1 hr.

Studies career and employment possibilities in the manufacturing industry. Includes observation of practices in manufacturing and attendance at a seminar to discuss related experiences. (NOTE: Summer semester only.) Prerequisite: For students with no prior courses or work experience in the manufacturing field and consent of coordinator.

MFG 101 Introduction to NC/CAM (3-0) 3 hrs.

Introduces information on numerical control, computer aided manufacturing and robotics applications; introduces manual and computer programming for numerical control; discusses the relationship of computer-aided manufacturing (CAM) and robotics to modern manufacturing.

MFG 105 Machining Processes I (1-5) 3 hrs.

Covers fundamentals of machine shop theory and practices. Provides familiarization with tools, equipment, and practices of tool, die and precision metal working industries. Students make working tools and fixtures. Prerequisite: Math assessment test; reading assessment test; MET 101 with a grade of "C" or better or consent of instructor.

MFG 108 Manufacturing Processes and Materials (3-0) 3 hrs.

Introduces materials, principles, utilization, expectations and evaluation of principal manufacturing processes. Emphasizes manufacture of metals, alloys, iron and steel types, classification systems and elements of metrology. Covers machinability, cutting, fluids, power requirements, production and facilities planning. Prerequisite: MTH 106 or concurrent enrollment with a grade of "C" or better or consent of instructor.

MFG 110 Basic Welding (1-5) 3 hrs.

Covers fundamentals of welding theory and practices. Includes equipment, set-up procedures and practice of oxyacetylene and electric arc welding techniques. Includes practice welding of various horizontal joints; butt; fillet; lap and tent. Prerequisite: MET 101 with a grade of "C" or better, math assessment test, reading assessment test, or consent of instructor.

MFG 115 Part Programming I (2-2) 3 hrs.

Covers manual programming of point-to-point and contouring CNC systems. Includes machine language and graphics programming with program trouble-shooting and editing using state-of-the-art techniques. Prerequisite: MFG 101 with a grade of "C" or better.

MFG 200 Manufacturing Internship (1-15) 2 hrs.

Applies appropriate skills to the manufacturing technology field. (NOTE: Summer semester only.) Prerequisite: Successful completion of at least 80 percent of courses in first and second semesters of the manufacturing program and consent of coordinator.

MFG 205 Machining Processes II (1-5) 3 hrs.

Covers advanced applications of machine shop theory and practice. Includes lathes, O.D. and I.D. grinders, tool grinder and mills. Studies production machining, feed and speed application and quality control techniques. Prerequisite: MFG 105 with a grade of "C" or better, or consent of instructor.

MFG 206 Metallurgy and Heat Treatment (2-3) 3 hrs.

Covers selected principles and concepts of physical metallurgy. Principles are applied to heat treatment of metals. Prerequisite: MFG 108 with a grade of "C" or better or consent of instructor.

MFG 210 Advanced Welding (1-5) 3 hrs.

Covers advanced welding theory and practice. Includes equipment, setup procedures and unusual welding positions and joints. Uses oxy-acetylene, electric arc, MIG and TIG techniques. Prerequisite: MFG 110 with a grade of "C" or better or consent of instructor.

MFG 211 Process Planning and Tool Design (3-3) 4 hrs.

Studies topics in production and tooling systems design. Includes graphic presentation of tooling details, jigs and fixtures, and geometric tolerancing. Emphasizes organization of the manufacturing sequence and process planning with resultant documentation.

Prerequisite: MET 202 and MFG 108 with grades of "C" or better or consent of instructor.

MFG 215 Part Programming II (2-2) 3 hrs.

Introduces use of APT programming languages for controlling metalcutting machines. Emphasizes PATTERN, COPY, TRACUT and LOOP features. Introduces other interactive languages.

Prerequisite: MFG 115 with a grade of "C" or better.

MFG 216 Computer-Aided Manufacturing (1-4) 3 hrs.

Continues MFG 215. Advanced problems in APT and/or COMPACT II using computer graphic programming techniques of a total CAD/CAM system. Advanced features such as axis contouring, tool design and planning, scheduling and efficient use of the language will be included.

Prerequisite: MFG 101 and MFG 215 with grades of "C" or better.

MFG 228 Automated Manufacturing and Robotics (2-3) 3 hrs.

Covers advanced concepts of manufacturing systems with automation techniques, robotics applications and flexible manufacturing systems.

Introduces automation controls, robotic cell design, automatic storage/automatic retrieval and automated quality control. Includes the interdependent relationship of industrial robots, microprocessors and advanced numerical control.

Prerequisite: MFG 108 with a grade of "C" or better.

Corequisite: MET 245 or ELT 215.

MGT Management**MGT 111 Introduction to Business Organization (3-0) 3 hrs.**

Nature of business and the environment in which it operates. Forms of business ownership, introduction to operative and facilitating facets of business operation, management, marketing, accounting, statistics, business law, finance, investments, insurance and labor-management relations.

MGT 115 Introduction to International Business (3-0) 3 hrs.

Provides introductory concepts, principles and practice of the international business environment. The issues include the nature of international business; international organizations and monetary systems; the various foreign forces such as labor, legal, political, and cultural; and the impact on the U.S. economy and business.

MGT 120 Records Management Basics (3-0) 3 hrs.

Introduces the student with little or no experience in the field of records management. Includes the creation, protection, storage and disposition of business records. The course will address how information technology such as computer and word processing systems, microimage systems and optical disks, are impacting the records management field. This course is designed for those students interested in the records management field, but with limited or no practical experience.

MGT 140 Practical Management Interaction (3-0) 3 hrs.

Focuses on the various types of communication skills that a small business owner/manager needs. Two-way communication skills, both listening and informing, are vital. The student will examine the importance of communication when dealing with employees, general public, customers and business resources. Modern office electronic communications will be examined.

MGT 150 Business Math (3-0) 3 hrs.

Introduces arithmetic as a tool of business. Topics include fractions, decimals and percentages, computations of interest, bank discounts, depreciation, commissions, compound interest, payrolls and taxes and graph and chart design.

Prerequisite: Students must score satisfactorily on a mathematics placement test.

MGT 154 Small Business Management (3-0) 3 hrs.

Organization and operation of the small-scale retail, trading, service or manufacturing business. Location, financing, marketing, labor, accounting, and in the case of manufacturing, production, plus related problems of stock control, taxes and insurance.

Prerequisite: MGT 111 or consent of instructor.

MGT 160 Principles of Supervision (3-0) 3 hrs.

Introduces the responsibilities of the first or second echelon supervisor in either the industrial or administrative environment. Leadership qualities, human relations skills, motivation, communications, training techniques and problems of the work group are discussed.

MGT 165 International Management (3-0) 3 hrs.

Analyzes the problems and practices in international business management activities. The issues include American management techniques in foreign settings, comparative management among different countries and the complexity introduced by the course focuses on international organizational functioning to help the student gain a diversity of views.

Prerequisite: MGT 111.

MGT 167 Records and Information Management I (3-0) 3 hrs.

Provides an overview of the scientific and systematic management techniques needed to control recorded information in an organization. All of the elements of records/information management are covered from creation through maintenance and protection to final disposition.

MGT 168 OSHA Standards and Compliance Procedures (3-0) 3 hrs.

Development of skills and competencies needed in instituting proper occupational safety and health environment in commercial and manufacturing business establishments for compliance with federal OSHA standards.

MGT 170 Principles of Individual Financial Planning (3-0) 3 hrs.

Introduces the student to the fundamentals of equity and fixed income investing. The course will also explore other investment management subjects such as mutual funds, international investing and retirement planning as well as tax-advantaged investments. Basic derivatives such as futures and options will also be discussed. Credit will be given for either MGT 170 or BFC 200, but not both.

MGT 172 Records and Information Management II (3-0) 3 hrs.

Provides an in-depth study of records management principles and techniques used during the establishment and maintenance of a records management program. The techniques outlined in this course will apply to both public and private sector organizations.

Prerequisite: MGT 167 or consent of instructor.

MGT 173 Forms Management (3-0) 3 hrs.

Studies the concept of forms management. Emphasis will be placed on the procedures to follow in order to implement forms management within an organization; forms construction, printing technology, and paper types; and forms development and management technology. The course will also cover how records management retention policies and laws affect the forms management function.

Prerequisite: MGT 172 or consent of instructor.

MGT 174 Records Management Technology (3-0) 3 hrs.

Studies alternative record technologies including automated records retrieval systems, micrographics and electronic document imaging.

Prerequisite: MGT 173 or consent of instructor.

MGT 204 Training and Development (3-0) 3 hrs.

Introduces the student to the principles of training practices with emphasis on the concerns of human learning: acquisition, retention and transfer of skills. Includes supervisory and management skills, designing performance goals, MBO - Management by Objectives, forming lesson plans, mechanics of training, experiential instruction, role playing, case studies and technologies available.

MGT 211 Internship in Small Business (1-15) 3 hrs.

Provides cooperative work experience working in a small business. Credit is given for participation in a supervised work experience. The work must take place in a college-approved work station.

Prerequisite: Consent of the coordinator.

MGT 218 Introduction to Finance (3-0) 3 hrs.

Methods of financing business enterprises and their relationships to personal and company investment policies.

Prerequisite: ACC 101 and MGT 111.

MGT 225 Applied General Statistics (3-0) 3 hrs.

Introduces both descriptive and inductive statistics. Collection of data; frequency distributions and measures of data; frequency distributions and measures of location (mean, median, mode); measures of variation; probability, theoretical distributions including sampling distributions, estimation, tests of hypotheses; correlation, regression analysis and index numbers; and time series. Computer applications are included. Prerequisite: MTH 124 with a grade of "C" or better.

MGT 230 Topics in Business .5-3 hrs.

Studies selected problems or topics in business. The exact contents and instructional method will vary from semester to semester. A syllabus or course outline containing additional information will be available with pre-registration materials each time that the course is offered. This course may be repeated two times to a maximum of three credit hours.

MGT 250 Franchising (3-0) 3 hrs.

Introduces the student to the principles, practices and activities involved in selecting, negotiating the purchase, starting and managing a franchise. Special attention is given to the following: characteristics of the franchise, evaluation of the franchise, opportunities available, legal concerns of franchising, development of strategies, and successful planning and implementation of the business. Prerequisite: MGT 154 or consent of the instructor.

MGT 254 Small Business Formation (1-4) 3 hrs.

Examines the problems in starting, expanding, and diversifying a small business. Includes forms of ownership; evaluation of risk in various types of businesses; performance measurement and market research; site location and layout; growth and trend analysis. Prerequisite: Consent of coordinator.

MGT 265 Human Resources Management (3-0) 3 hrs.

Addresses personnel problems and labor relations. Employment techniques, wages and hours, job evaluation, training, rating, collective bargaining, pensions, and fringe benefits will be examined. Prerequisite: MGT 270 or consent of instructor.

MGT 266 Wage Analysis and Administration (3-0) 3 hrs.

Studies the compensation process: wage, salaries, wage theory and legal considerations. Examines various fringe benefits, profit sharing, job analysis and its evaluations. Prerequisite: MGT 265.

MGT 267 Office and Administrative Management (3-0) 3 hrs.

Application of fundamental management practices to administrative type work both in the office and throughout the organization. Planning, organizing and controlling business services, systems and procedures, office automation, cost reduction and human relations practices. Prerequisite: MGT 270 or consent of instructor.

MGT 270 Principles of Management (3-0) 3 hrs.

Presents the theory and major functions of management and describes the role of the manager. Major concepts in organization are developed along with an understanding of the decision-making process and consideration of the human factor in management. Prerequisite: MGT 111.

MGT 274 Operations Management (3-0) 3 hrs.

Introduces the student to operations management stressing operational problems. The characteristics of industrial enterprise, the problems of materials procurement, plant organization and layout, labor relations and personnel policies, efficiency techniques, automation and production development are considered. Related problems of inventory control, quality control, production control and budgetary control are included. Prerequisite: MGT 270 or consent of instructor.

MGT 275 Labor-Management Relations (3-0) 3 hrs.

Deals with the processes and the framework that influence both the day-to-day and the long-run relationships between management and labor. The history of the union movement, collective bargaining, arbitration procedures, labor legislation, union organization and the characteristics of the labor market are discussed. Prerequisite: MGT 270 or consent of instructor.

MGT 276 Collective Bargaining (3-0) 3 hrs.

Studies the collective bargaining method preparations and patterns; strategies and tactics of negotiations; and the use of mediators and arbitrators. Prerequisite: MGT 265.

MGT 280 Human Relations in Business (3-0) 3 hrs.

Emphasizes a managerial and interpersonal relations process approach to problem solving, communication and group dynamics. Specific treatment is given to managing change, appraisal and reward, solving communication problems, status needs of the work force, understanding individuals, group dynamics and reducing conflict. Prerequisite: MGT 160 or MGT 270.

MGT 291 Problems in Management and Supervision (3-0) 3 hrs.

Provides the student with a logical integration of management principles with representative supervisory problems found in business firms. Emphasis is given to decision making. Case problems, simulation and directed reading. Prerequisite: MGT 160 and MGT 270 or consent of the instructor.

MKT Marketing

MKT 100 Marketing Career Exploration (1-0) 1 hr.

Studies an overview of career and employment possibilities in the marketing industry. Careers in sales, advertising and sales promotion, marketing, retailing and other specialized areas of marketing will be reviewed. Emphasis on individual career path selection through interest testing and career exploration. Prerequisite: For students with limited prior marketing courses or marketing work experience, and interview with program coordinator.

MKT 106 Retail Merchandising (3-0) 3 hrs. Focuses upon the merchandising activities related to hardlines, apparel and other softline merchandise. Examines the role and qualifications of the buyer and the influence of consumer preference. Includes budgeting by dollars and assortment, pricing strategy, managing assortments, the selection and promotion of merchandise, and the coordinator of merchandising functions and processes.

MKT 110 Retail Store Layout and Imaging (2-0) 2 hrs. Examines the importance and relationship of store layout, image projection, interior merchandise presentation and site location to store success. This course is designed to allow the learner to understand the relationship of image and product positioning to sales and profit. Emphasis is placed on layout, space allocation, interior merchandise presentation and store operations.

MKT 120 Customer Service (1-0) 1 hr. Studies the importance of customer service satisfaction and the functions of various customer relation systems. This course is designed to promote an understanding of customer service in general and how it specifically contributes to the success of the marketplace and individual businesses. Emphasis is placed on the importance of striving for excellence in service to win and hold customers and to gain a competitive advantage.

MKT 140 Principles of Professional Selling (3-0) 3 hrs.

Focuses upon the principal factors of successful selling of goods or ideas. Examines buying motives, sales psychology, customer approach and sales techniques.

MKT 141 Sales Management (3-0) 3 hrs. Focuses on the responsibilities of the sales executive in planning and evaluating sales activities as well as supervision of a sales force. Attention is given to the administrative activities of sales managers at all levels with emphasis directed to the management of sales forces of manufacturers, service marketers and wholesaling middlemen. Prerequisite: MKT 140 or consent of coordinator.

MKT 190 Export Documentation (3-0) 3 hrs. Provides an understanding of the procedures and necessary documentation for exporting both goods and services. Course content will cover shipping documentation as well as insurance, banking and finance and governmental forms required for export marketing. Prerequisite: MKT 260 or consent of instructor.

MKT 217 Advertising (3-0) 3 hrs. Purposes of advertising, how advertisements are prepared and delivered in media, and how effectiveness of advertising is measured and evaluated in relation to the selling and marketing process. Prerequisite: MKT 245 or consent of instructor.

MKT 240 Advanced Sales Strategies (3-0) 3 hrs. Develops and refines sales techniques established in previous course work and/or on-the-job sales experience. Opportunities will be available to apply specific selling skills to various sales situations and product categories through presentations and term projects. Prerequisite: MKT 140 or consent of coordinator.

MKT 245 Principles of Marketing (3-0) 3 hrs. Focuses on the methods involved in distribution of goods and services. Roles and functions of marketing institutions in business system. Product, price, promotion and distribution channel policies. Prerequisite: MGT 111 or consent of coordinator.

MKT 246 Business to Business Marketing (3-0) 3 hrs. Provides a comprehensive understanding of industrial marketing by analyzing concepts and techniques in each of the major functional areas of industrial marketing. Topics to be investigated would include market development, product planning, price competition, promotional strategies, customer relations and marketing logistics. Prerequisite: MKT 245 or consent of coordinator.

MKT 247 Consumer Buying Behavior (3-0) 3 hrs.

Reviews and analyzes areas of consumer and organizational buying behavior that guide marketing management decisions. The focus of this course will be directed toward the application of concepts on buying behavior to specific functional areas of marketing management in both the industrial and consumer markets.

MKT 248 Direct Marketing (3-0) 3 hrs.

Explores the principles involved in the introduction of goods and services directly to the customer through various media sources without the use of a retail facility. Emphasis is placed on determining the correct target market, creating a measurable database, measuring the rate of response, selection and planning of media, and strategic implementation of a planned campaign. Development of direct mail pieces, telemarketing tools and broadcast and print media will be covered. Prerequisite: MKT 245 or consent of coordinator.

MKT 250 Retailing (3-0) 3 hrs.

Surveys types of retail institutions, including consideration of store location and organizational procedures, buying and merchandising practices, promotional and personnel policies.

MKT 251 Retail Merchandise Management (3-0) 3 hrs.

Emphasizes the nature and importance of retail merchandise management in relation to the success of the retail firm. The student will demonstrate knowledge and decision making skills of retail management by using case study and problem solving activities to interpret and analyze information faced by merchandise department managers, buyers and independent retailers. The focus will be on strategic merchandise planning; advanced purchasing and pricing strategies; inventory valuation and analysis of profit and productivity performance. Prerequisite: MKT 106 or MKT 250.

MKT 255 Marketing Research (3-0) 3 hrs.

Provides students with a basic overview of marketing research. Includes an understanding of how and why marketing research is conducted and how it interacts with marketing decision making. Prerequisite: MKT 245 or consent of coordinator.

MKT 260 International Marketing (3-0) 3 hrs.

Allows students to gain a broad understanding of the field of international marketing. It also provides insight into how international marketing is conducted, the requisites for effective performance and a knowledge of the special problems involved in language, finance and customs. Most impor-

tantly, it assists students in understanding international marketing problems and how marketing procedures apply to international business.

MKT 265 Strategic Market Planning (3-0) 3 hrs.

Centers around three major activity areas: managerial analysis of the marketing environment; marketing opportunity analysis; and design, implementation and control of marketing strategy — all consistent with the organizational framework of the mission of the organization.

MKT 280 Marketing Problems (3-0) 3 hrs.

Focuses on the application of marketing skills and knowledge to marketing problems, case studies, projects or decision-making simulation. Prerequisite: MKT 245 and nine hours of marketing courses, or consent of coordinator.

MKT 281 Internship in Marketing (1-15) 3 hrs.

Provides work experience in a marketing related field. Credit is given for participation in a supervised work experience wherein an organized training plan will be followed at a College approved training station. One lecture hour per week for a seminar devoted to issues dealing with preparation for success in a marketing career. Prerequisite: Consent of coordinator.

MKT 285 Topics in Marketing (.5-3) .5-3 hrs.

Studies selected problems or topics in marketing. The exact content and instructional methodology will vary semester to semester depending on the material to be studied. A syllabus or course outline containing additional information will be available with pre-registration materials each time that the course is offered. This course may be repeated two times to a maximum of three credit hours.

MKT 290 Principles of Exporting (3-0) 3 hrs.

Provides a conceptual overview of the world market environment with emphasis on recognition of overseas marketing opportunities. Introduces students to marketing program strategy and procedures to capitalize on overseas business potential. Prerequisite: Prior or concurrent enrollment in MKT 260.

MKT 292 International Marketing Research (3-0) 3 hrs.

Provides the student with the concepts and procedures for successfully completing international marketing research studies. Specific marketing research subject areas studied will include marketing problem definition, international information source definition, utilizing governmental data, survey design, collection and analysis techniques. Prerequisite: MKT 290 and MKT 260.

MKT 293 International Marketing Channel Strategy (3-0) 3 hrs.

Provides a comprehensive understanding of the strategies for exporting both goods and services through alternative marketing channels of distribution. Will address both cost and profit considerations in utilizing multi-level marketing channel intermediaries. Prerequisite: MKT 290.

MOA Medical Office Assistant

MOA 145 Health Care Records Management (1-2) 2 hrs.

Offers introduction to the types of patient care records prepared and maintained by health care personnel. Includes elements of records, record-keeping, correction techniques, equipment and use of references, with computer applications. Prerequisite: Typing speed of 30 words per minute, and prior or concurrent enrollment in HSC 100, HSC 105 and HSC 112 with grades of "C" or better.

MOA 190 Basic Clinical Procedures (1-3) 2 hrs.

Introduces basic clinical procedures in the physician's examination suite. Includes medical asepsis, patient history, communication, and assisting the physician with patient preparation, including vital signs. Emphasis placed on demonstration of clinical office skills. Prerequisite: Prior or concurrent enrollment in HSC 105, HSC 112 and MOA 145 with grades of "C" or better.

MOA 195 Health Insurance and Coding (1-2) 2 hrs.

Compares the major classes of health insurance contracts and describes their benefits and limitations. Provides practice in systematizing and processing insurance claim forms. Offers CPT and ICD-9 coding procedures and practice for optimal reimbursement. Prerequisite: Typing speed of 30 words per minute and prior or concurrent enrollment in HSC 105 and HSC 112 with grades of "C" or better.

MOA 201 Advanced Clinical Principles (2-3) 3 hrs.

Offers the principles, theories and terminology of the advanced clinical techniques utilized in the physician's examining rooms. Includes the principles of diagnostic testing and medications, as well as the principles of specialty examinations, minor surgical procedures and maintenance of proper safety guidelines. Prepares health care personnel for office work without patient contact. Prerequisite: MOA 145 with a grade of "C" or better and prior or concurrent enrollment in NUR 200 with a grade of "C" or better.

MOA 202 Clinical Laboratory Principles (2-2) 3 hrs.

Offers the principles, theories and terminology of basic laboratory tests which are requested by the physician such as urinalysis, hematology, venipuncture and blood chemistries. Includes principles of specimen handling, techniques and reports, and the concepts regarding proper patient and technician protection guidelines. Prepares health care personnel for office work without patient contact. Prerequisite: Prior or concurrent enrollment in HSC 105, HSC 112 and MOA 145 with grades of "C" or better.

MOA 204 Electrocardiography and Dysrhythmias (.50-3) 2 hrs.

Offers electrocardiographic principles and techniques. Demonstration of clinical skills emphasized. Includes normal rhythms and dysrhythmias. Prerequisite: Prior or concurrent enrollment in HSC 105, HSC 112 and HSC 151 with grades of "C" or better or consent of coordinator.

MOA 211 Advanced Clinical Procedures (2-6) 4 hrs.

Offers advanced clinical techniques in the physician's examining room. Includes diagnostic testing, principles in specialty examinations and minor surgical procedures. Demonstration of clinical skills utilized in out-patient care is emphasized with maintenance of proper patient and technician protection guidelines. Prerequisite: HSC 151 and MOA 190 with grades of "C" or better and prior or concurrent enrollment in NUR 200 with a grade of "C" or better, or consent of instructor.

MOA 212 Clinical Laboratory Procedures (2-4) 4 hrs.

Offers basic medical laboratory procedures requested by the physician, including urinalysis, hematology, venipuncture, and blood chemistries. Emphasis placed on various specimen collections, specimen handling, techniques and reports,

with maintenance of proper patient and technician protection guidelines.

Prerequisite: HSC 151 and MOA 190 with grades of "C" or better.

MOA 235 Office Procedures in Health Care (3-3) 4 hrs.

Offers development of skills in the office procedures used in a health care facility. Emphasizes patient relations in health care and office simulations with extensive use of transcriber and computer.

Prerequisite: Typing speed of 40 words per minute, and HSC 100, HSC 105, HSC 112, HSC 151 and MOA 145 with grades of "C" or better.

MOA 240 Introduction to Medical Transcription (2-2) 3 hrs.

Develops speed and accuracy in transcribing a variety of basic medical reports using a transcribing machine and computer. Familiarizes student with medical report formats.

Prerequisite: Typing speed of 40 words per minute and MOA 235 with a grade of "C" or better; MOA 211 and MOA 212 or MOA 190, MOA 202 and NUR 200 with grades of "C" or better.

MOA 242 Medical Transcription for the MT (2-2) 3 hrs.

Offers speed and accuracy development in transcribing various basic medical reports and familiarizes student with many medical report formats, using a transcribing machine and computer. Progresses to advanced, specialized hospital dictation.

Prerequisite: Typing speed of 50 words per minute and HSC 100, MOA 201 and MOA 202 with grades of "C" or better.

MOA 245 Health Care Office Management (3-0) 3 hrs.

Introduces the qualities of a health care supervisor which are necessary to manage effectively the physician's office or other health care facility.

Includes human relations skills, personnel recruitment, coordinating and supervising office personnel, office facilities, the office policy manual, records management, patient education, time management and software applications utilized in health care.

Corequisite: Enrollment in externship or permission of coordinator.

MOA 250 Health Insurance Coder Seminar and Externship I (1-5) 2 hrs.

Provides supervised coding practice in an insurance office, HMO or large group practice to enhance the student's technical skills in coding

CPT and ICD-9. One-hour seminar each week devoted to health care issues.

Prerequisite: Prior or concurrent enrollment in HSC 100, HSC 105, HSC 112, MOA 145, MOA 195 and MOA 201 with grades of "C" or better.

MOA 255 Health Insurance Coder Seminar and Externship II (1-10) 3 hrs.

Provides supervised coding practice and health care claims approval in the office of a large insurance carrier to enhance the student's technical skills in coding CPT and ICD-9. One-hour seminar each week devoted to health care issues.

Prerequisite: MOA 250 with a grade of "C" or better.

Corequisite: MOA 245.

MOA 260 Medical Transcriptionist Seminar and Externship (1-10) 3 hrs.

Provides supervised transcription experience in at least one hospital or large health care facility to enhance the student's technical skills. One hour seminar each week devoted to health care issues. (NOTE: CPR Basic Rescuer certification and the program's health requirements must be completed prior to placement in externship.)

Prerequisite: MOA 201 and MOA 202 with grades of "C" or better or consent of coordinator.

Corequisite: MOA 245.

MOA 270 Medical/Dental Secretarial Seminar and Externship (1-10) 3 hrs.

Provides supervised administrative experience in at least one health care facility to enhance the student's technical skills. One hour seminar each week devoted to health care issues. (NOTE: CPR Basic Rescuer certification and the program's health requirements must be completed prior to placement in externship.)

Prerequisite: MOA 190, MOA 202 and MOA 235 with grades of "C" or better and consent of coordinator.

Corequisite: MOA 245.

MOA 280 Medical Office Assistant Seminar and Externship (1-10) 3 hrs.

Provides supervised administrative and clinical experience in at least one health care facility to enhance the student's technical skills. One hour seminar each week devoted to health care issues. (NOTE: CPR Basic Rescuer certification and the program's health requirements must be completed prior to placement in externship.)

Prerequisite: MOA 211, MOA 212 and MOA 235 with grades of "C" or better and consent of coordinator.

Corequisite: MOA 245.

MOA 283 Phlebotomist Seminar and Externship (1-5) 2 hrs.

Provides supervised clinical experience in a hospital to enhance the student's technical skills in phlebotomy. One-hour seminar each week devoted to health care issues.

(NOTE: CPR Basic Rescuer certification and the program's health requirements must be completed prior to placement in externship.)

Prerequisite: Prior or concurrent enrollment in MOA 212 with a grade of "C" or better and consent of coordinator.

MOA 284 ECG Seminar and Externship (1-5) 2 hrs.

Provides supervised clinical experience in a hospital to enhance the student's technical skills in electrocardiography. One-hour seminar each week devoted to health care issues.

(NOTE: CPR Basic Rescuer certification and the program's health requirements must be completed prior to placement in externship.)

Prerequisite: MOA 204 with a grade of "C" or better or consent of coordinator.

MTH Mathematics

MTH 051 Arithmetic of Whole Numbers (1-0) 1 hr.

Covers reading and writing whole numbers and whole number operations. In addition to the four basic processes of addition, subtraction, multiplication, and division, estimation is introduced as an aid to better computation. The use of hand held calculators is required. Course material will be individualized. Carries no transfer credit.

Prerequisite: Math placement test.

MTH 052 Arithmetic of Fractions and Decimals (1-0) 1 hr.

Covers the operations associated with addition, subtraction, multiplication, and division of common fractions, mixed numbers and decimals. Includes work with word problem applications. Course material will be individualized. Carries no transfer credit.

Prerequisite: MTH 051 with a grade of "C" or better.

MTH 053 Arithmetic of Ratio, Percent and Measurement (1-0) 1 hr.

Covers operations of ratio and proportion, percent, English measurement, metric measurement and geometric measurement. Course material will be individualized. Carries no transfer credit.

Prerequisite: MTH 052 with a grade of "C" or better.

MTH 060 Elementary Algebra (3-0) 3 hrs.

Introduces operations with signed numbers, linear equation, inequalities, word problems, exponents, operations with polynomials, factoring, quadratic equations, linear equations in two variables, graphing linear equations and inequalities and systems of linear equations. Equivalent to the first year of high school algebra, this course includes MTH 061, MTH 062 and MTH 063, and is offered as a lecture course. Carries no transfer credit.

Prerequisite: MTH 053 with a grade of "C" or better or math placement test.

MTH 061 Elementary Algebra: Basic Concepts and Components (1-0) 1 hr.

Introduces basic algebraic vocabulary, operations with signed numbers, linear equations and word problems. Course is individualized and is offered in the Math Laboratory. Carries no transfer credit.

Prerequisite: MTH 053 with a grade of "C" or better or math placement test.

MTH 062 Elementary Algebra: Equations, Inequalities and Polynomials (1-0) 1 hr.

Continues MTH 061 and covers ratio and proportion, linear inequalities, exponents, operations with polynomials and factoring. Course is individualized and offered in the Math Laboratory. Carries no transfer credit.

Prerequisite: MTH 061 with grade of "C" or better.

MTH 063 Elementary Algebra: Quadratic Equations, Linear Equations in Two Variables and Systems of Equations (1-0) 1 hr.

Continues MTH 062 and covers quadratic equations, rectangular coordinates, linear equations in two variables, graphing slope of a line, equation of a line, linear inequalities, systems of linear equations and word problems. Course material is individualized and offered in the Math Laboratory. Carries no transfer credit.

Prerequisite: MTH 062 with a grade of "C" or better.

MTH 070 Plane Geometry (3-0) 3 hrs.

Introduces concepts of Euclidean plane geometry, including lines, angles, polygons and circles.

Carries no transfer credit (Formerly MTH 096)
Prerequisite: MTH 060 or MTH 063 with grade of "C" or better or math placement test.

MTH 080 Intermediate Algebra (4-0) 4 hrs.
Introduces roots of quadratic equations, complex numbers, rational exponents, radicals, logarithms and inequalities. (Formerly MTH 102.)
(NOTE: Credit cannot be given for both MTH 080 and MTH 086. Also, credit cannot be given for both MTH 080 and MTH 087. Credits earned in this course cannot be applied toward an Associate in Arts or an Associate in Science degree.)
Prerequisite: MTH 060 or MTH 063 with a grade of "C" or better or math placement test.

MTH 086 Intermediate Algebra I (1-2) 2 hrs.
Introduces first degree equations and inequalities, inequalities concepts of relations and functions, polynomials, rational expressions, and linear equations and inequalities in two variables. (This material reflects the content covered in the first half of the current MTH 080 course.) (Formerly MTH 113.) (NOTE: Credit cannot be given for both MTH 086 and MTH 080. Credits earned in this course cannot be applied toward an Associate in Arts or an Associate in Science degree.)
Prerequisite: MTH 060 or MTH 063 with a grade of "C" or better or math placement test.

MTH 087 Intermediate Algebra II (1-2) 2 hrs.
Continues MTH 086. Introduces quadratic equations, integer and rational exponents, radicals complex numbers, exponential and logarithmic functions. (This material reflects the content covered in the second half of the current MTH 080 course.) (Formerly MTH 114.)
(NOTE: Credit cannot be given for both MTH 087 and MTH 080. Credits earned in this course cannot be applied toward an Associate in Arts or an Associate in Science degree.)
Prerequisite: MTH 086 with a grade of "C" or better.

MTH 100 Basic Applied Mathematics (3-0) 3 hrs.
Introduces topics in arithmetic, algebra, trigonometry and problem solving with calculators. Intended for students in career-vocational programs.
(NOTE: Cannot be used for Group II or V General Studies requirement for A.A. or A.S. degree.)

MTH 103 College Algebra (4-0) 4 hrs.
Studies equations and inequalities, polynomial, rational, exponential and logarithmic functions, inverse functions, systems of equations, determinants and matrices, sequences and series and theory of equations.
Prerequisite: MTH 080 or MTH 087 with a grade of "C" or better or placement test.

MTH 104 Plane Trigonometry (3-0) 3 hrs.
Develops trigonometric functions and relations, solutions of triangles, complex numbers, identities, equations and applications.
Prerequisite: MTH 080 or MTH 087 with grade of "C" or better or placement test.

MTH 105 Analytic Geometry (4-0) 4 hrs.
Develops rectangular and polar coordinate systems, the straight line and conic sections. Introduces vectors, coordinate transformations, parametric equations and analytic geometry in three dimensions.
Prerequisite: MTH 103 and MTH 104 with grades of "C" or better, or placement test.

MTH 106 Mathematics I (5-0) 5 hrs.
Introduces topics in algebra, vectors, trigonometry and problem solving by computer using FORTRAN or BASIC language. For students in Electronics Technology or Mechanical Engineering Technology.
Prerequisite: Two years of high school mathematics or consent of instructor.

MTH 107 Mathematics II (5-0) 5 hrs.
Continues MTH 106 with additional topics in trigonometry, analytic geometry, logarithms, differential and integral calculus.
Prerequisite: MTH 106 with a grade of "C" or better or consent of instructor.

MTH 108 BASIC Computer Programming (1-2) 2 hrs.
Introduces computer programming in the BASIC language. Emphasizes applications in fields other than business data processing.
Prerequisite: MTH 103 or consent of instructor.

MTH 120 Introduction to Modern Mathematics (3-0) 3 hrs.
Introduces sets and logic, numeration systems and number theory, algebraic and geometric modeling, probability and statistics and topics in consumer mathematics. A general education course in mathematics.
Prerequisite: MTH 080 or MTH 087 with a grade of "C" or better or math placement test.

MTH 124 Finite Mathematics (3-0) 3 hrs.
Develops the mathematics of simple models in behavioral, social and management sciences. Studies applications of set theory, vectors and matrices, linear programming, probability rules, and Markov chains with computer assistance.
Prerequisite: MTH 080 or MTH 087 with a grade of "C" or better or placement test.

MTH 130 Math for Elementary Teachers (3-2) 4 hrs.
Provides prospective elementary teachers with the background needed for teaching the content of the contemporary elementary math program. Includes the development of the whole number system, number theory, geometry, measurement, problem solving, ratios and probability, and statistics.
Prerequisite: MTH 070 and MTH 080 (or MTH 087 in lieu of MTH 080) with grades of "C" or better, or equivalent and placement test.

MTH 134 Calculus for Social Scientists (4-0) 4 hrs.
Develops an intuitive approach to concepts of differential and integral calculus. Applies these concepts to problems in social, behavioral and management sciences. Not for physical science or mathematics majors.
Prerequisite: MTH 103 with a grade of "C" or better or placement test.

MTH 165 Elementary Statistics (3-0) 3 hrs.
Introduces representation and analysis of data statistical inference, sampling distribution of means, regression and correlation analysis and probability. Demonstrates use of statistics in education, business, natural and social sciences. Computer software is used throughout the course.
Prerequisite: MTH 080 or MTH 087 with a grade of "C" or better or consent of instructor.

MTH 200 Calculus with Analytic Geometry I (5-0) 5 hrs.
Studies vectors, limits, the derivative and the definite integral with applications to geometry, science and engineering.
Prerequisite: MTH 103 and MTH 104 with a grade of "C" or better or placement test.

MTH 201 Calculus with Analytic Geometry II (5-0) 5 hrs.
Continues MTH 200. Studies differentiation of transcendental functions, techniques of integration, series, conics, polar coordinates and parametric equations with applications to science and engineering.
Prerequisite: MTH 200 with a grade of "C" or better.

MTH 202 Calculus with Analytic Geometry III (4-0) 4 hrs.
Continues MTH 201. Studies vector functions, multivariable functions, differentials, multiple integration and vector calculus with applications to science and engineering.
Prerequisite: MTH 201 with a grade of "C" or better.

MTH 203 Linear Algebra (3-0) 3 hrs.
Introduces vector spaces, linear dependence, bases and transformations using systems of linear equations, matrices and determinants. Studies geometric, physical and business applications.
Prerequisite: MTH 134 or MTH 200, or concurrent enrollment, or consent of instructor.

MTH 206 Mathematics III (3-0) 3 hrs.
Continues MTH 107. Introduces differential equations and Laplace transforms. For students in Electronics Technology.
Prerequisite: MTH 107 with a grade of "C" or better or consent of instructor.

MTH 212 Differential Equations (3-0) 3 hrs.
Continues MTH 202. Emphasizes solutions of first order differential equations, linear differential equations, special second order equations and series solutions. Studies selections from these topics: Laplace transforms, Fourier series, numerical methods and applications of matrix algebra.
Prerequisite: MTH 202 with a grade of "C" or better.

MTH 265 Statistics (3-0) 3 hrs.
Includes the study of probability spaces, random variables and distributions, laws of large numbers and central limit theorem, joint probability distributions, sampling distributions, theory of estimation, simple linear regression and introduction to SPSS.
Prerequisite: MTH 202 with a grade of "C" or better.

MUS Music

MUS 100 Introduction to Music Careers (1-0) 1 hr.
Explores issues relating to the successful pursuit of a career in music. Recommended for anyone pursuing a professional music career.

MUS 101 Fundamentals of Music Theory (3-0) 3 hrs.
Suitable for pre-teachers and non-music majors. Provides background to interpret and understand language of music through the study of notation, rhythm, scales, intervals, triads, cadences, basic forms and musical terms. Students prepare for study of harmony and for practical music activity.

MUS 102 Introduction to Electronic/Computer Music (3-1) 3 hrs.
Introduces basic computer applications in music. Explores electronic music technology, MIDI instruments, sequencing, music notation and educational software.
Corequisite: MUS 165 or consent of instructor.

MUS 103 Music Appreciation (3-0) 3 hrs.
Surveys music from primitive to modern times through listening to outstanding examples of the various periods, with explanations of content and structure. Vocal and instrumental works, examples of folk music, church music and symphonic forms for non-music majors.

MUS 104 Introduction to American Music (3-0) 3 hrs.

For non-music majors. Develops a stylistic frame of reference for judging popular music. Surveys characteristic elements of jazz, rhythm and blues, popular music and their relation to western classical music.

MUS 111 Theory of Music I (3-1) 3 hrs.

Begins an intensive study of the structure of music of the Common Practice period. Examines, through analysis and composition, the musical practice of the late 17th and early 18th centuries. Corequisite: MUS 115.

MUS 112 Theory of Music II (3-1) 3 hrs.

Continues the study of the structure of music of the Common Practice period. Examines, through analysis and composition, the musical practice of the middle to late 18th and early 19th centuries, paying particular attention to harmonic language and its effect upon musical form.

Prerequisite: MUS 111 with a grade of "C" or better.

Corequisite: MUS 116.

MUS 115 Aural Skills I (0-2) 1 hr.

Develops skills in melodic, harmonic and rhythmic dictation and sight singing.

Corequisite: MUS 111.

MUS 116 Aural Skills II (0-2) 1 hr.

Develops skills in melodic, harmonic and rhythmic dictation and sight singing.

Corequisite: MUS 112.

MUS 120 Introduction to Music Literature (3-0) 3 hrs.

Surveys the styles, periods, literature and personalities in each of the commonly accepted music periods, with primary emphasis on hearing music of each style.

MUS 130 Choir (0-3) 1 hr.

Provides mixed voice choral experience for singers of average or above average ability. Stresses fundamentals of good choral diction and tone through choral works of various styles and types. May be repeated up to a maximum of 4 credit hours.

Prerequisite: Consent of instructor.

MUS 136 Community Chorus (0-3) 1 hr.

Provides a variety of choral experience including larger choral works such as oratorios and cantatas, and selections from grand opera, comic opera and musical comedy. May be repeated up to a maximum of 4 credit hours.

MUS 140 Band (0-3) 1 hr.

Open to all students proficient in playing of band instruments. Band music of various types and styles. Sight reading and musicianship stressed. May be repeated up to a maximum of 4 credit hours.

Prerequisite: Consent of instructor.

MUS 145 Ensembles (0-3) 1 hr.

Features ensembles such as string or vocal quartets, brass or voice ensembles, stage bands, madrigal groups or other combinations. For students with advanced proficiency on an instrument or in voice. To further skills, musical understanding and enjoyment. May be repeated up to a maximum of 4 credit hours.

Prerequisite: Consent of instructor.

MUS 150 Orchestra (0-3) 1 hr.

Open to all students proficient in playing orchestral instruments. Orchestral music of various types and styles. Sight reading and musicianship stressed. May be repeated up to a maximum of 4 credit hours.

Prerequisite: Consent of instructor.

MUS 161 Woodwind Instrument Class I (1-2) 2 hrs.

Provides instruction for students who have had no experience playing an orchestral or band instrument and for instrumentalists already proficient but who desire to play several instruments. May be repeated up to a maximum of 4 credit hours.

MUS 162 Brass Instrument Class I (1-2) 2 hrs.

Provides instruction for students who have had no experience playing an orchestral or band instrument and for instrumentalists already proficient but who desire to play several instruments. May be repeated up to a maximum of 4 credit hours.

MUS 163 Percussion Instrument Class I (1-2) 2 hrs.

Provides instruction for students who have had no experience playing an orchestral or band instrument and for instrumentalists already proficient but who desire to play several instruments. May be repeated up to a maximum of 4 credit hours.

MUS 165 Class Piano I (1-2) 2 hrs.
Develops a rudimentary knowledge of the keyboard and playing skills sufficient to cope with simple, practical situations. Emphasis is on tonal notation, harmonization, transposition, sight reading, improvisation, ensemble playing and basic piano literature.

MUS 166 Class Piano II (1-2) 2 hrs.
Continues MUS 165.
Prerequisite: MUS 165 with a grade of "C" or better or proficiency examination.

MUS 167 Class Guitar (1-2) 2 hrs.
Provides instruction for students who desire to learn to play the classical guitar. May be repeated up to a maximum of 4 credit hours.

MUS 168 String Instrument 2 hrs.
Class I (1-2)
Provides instruction for students who desire to learn to play a string instrument. May be repeated up to a maximum of 4 credit hours.

MUS 169 Class Voice (1-2) 2 hrs.
For students who have no refined skills in vocal technique and who desire to sing.
Prerequisite: MUS 101 with a grade of "C" or better.

MUS 180-199 Minor Applied 2 hrs.
Music Subject (1-6)
Provides instruction for those majoring in music education, musicology and for those desiring to improve their skills on a particular instrument. One half-hour lesson per week. Minimum of six hours of practice per week. Jury examination required. May be repeated up to a maximum of eight credit hours.

Flute and Piccolo, 180; Oboe and English Horn, 181; Clarinet, 182; Bassoon and Contra Bassoon, 183; Saxophone, 184; French Horn, 185; Trumpet, 186; Trombone, 187; Baritone, 188; Tuba, 189; Percussion, 190; Violin, 191; Viola, 192; Cello, 193; String Bass, 194; Harp, 195; Piano, 196; Organ, 197; Voice, 198; and Classical Guitar, 199.

MUS 211 Theory of Music III (3-1) 3 hrs.
Completes the study of the structure of music of the Common Practice period and begins the study of subsequent periods. Examines, through analysis and composition, the musical practice of the 19th and early 20th centuries.
Prerequisite: MUS 112 with a grade of "C" or better.
Corequisite: MUS 215.

MUS 212 Theory of Music IV (3-1) 3 hrs.
Completes the study of the structure of classical and avant garde music in the 20th century. Explores the structure of tonal music from a linear perspective.
Prerequisite: MUS 211 with a grade of "C" or better.
Corequisite: MUS 216.

MUS 215 Aural Skills III (0-2) 1 hr.
Develops skills in melodic, harmonic and rhythmic dictation and sight singing.
Corequisite: MUS 211.

MUS 216 Aural Skills IV (0-2) 1 hr.
Develops skills in melodic, harmonic and rhythmic dictation and sight singing.
Corequisite: MUS 212.

MUS 223 Instrumental 3 hrs.
Literature (3-0)
Surveys the music literature available for performance by musical instruments, excluding keyboard instruments and voice.

MUS 224 Keyboard and Vocal 3 hrs.
Literature (3-0)
Surveys music literature available for performance by keyboard and voice, including opera.

MUS 265 Class Piano III (1-2) 2 hrs.
Continues MUS 166. Greater emphasis on keyboard harmony, ensemble playing and jazz improvisation.
Prerequisite: MUS 166 with a grade of "C" or better or proficiency examination.

MUS 266 Class Piano IV (1-2) 2 hrs.
Continues MUS 265.
Prerequisite: MUS 265 with a grade of "C" or better or proficiency examination.

MUS 271 Piano Pedagogy I (3-0) 3 hrs.
Surveys the basic teaching philosophies, methods, materials and skills needed to teach the beginning piano student. Observation of individual and group instruction.
Prerequisite: MUS 265 with a grade of "C" or better or consent of instructor.

MUS 272 Piano Pedagogy II (2-2) 3 hrs.
Continues development of skills begun in MUS 271. Emphasis will be placed on methods and materials for teaching the intermediate piano student. Lab includes supervised student teaching to aid in individual development.
Prerequisite: MUS 271 with a grade of "C" or better.

MUS 280-299 Minor Applied 4 hrs.
Music Subject (2-12)
 Provides instruction for those desiring to become professional performers. One hour lesson per week. Minimum of 12 hours of practice per week. Jury examination required. May be repeated up to a maximum of 16 credit hours.
 Prerequisite: Successful audition.
 Flute and Piccolo, 280; Oboe and English Horn, 281; Clarinet, 282; Bassoon and Contra Bassoon, 283; Saxophone, 284; French Horn, 285; Trumpet, 286; Trombone, 287; Baritone, 288; Tuba, 289; Percussion, 290; Violin, 291; Viola, 292; Cello, 293; String Bass, 294; Harp, 295; Piano, 296; Organ, 297; Voice, 298; and Classical Guitar, 299.

NUR Nursing

NUR 101 Nursing 9 hrs.
Fundamentals (4-15)
 Introduces the student to the nursing process and the roles as member of the discipline of nursing and provider of care. Emphasizes assessment and intervention in caring for adult clients. Provides theory and practice in assisting clients to meet basic needs.
 Prerequisite: Admission into the Nursing program.
 Corequisite: BIO 160, NUR 200 and PSY 101.

NUR 102 Nursing Care of Clients with 9 hrs.
Commonly Occurring Health
Needs (4-15)
 Focuses on utilization of the full nursing process in providing care for adults, children, childbearing women and infants. Introduces a framework for ethical decision making to expand the role as member of the discipline. Continues emphasis on basic needs and examines common problems causing health interferences.
 Prerequisite: BIO 160, NUR 101, NUR 200 with grades of "C" or better.
 Corequisite: BIO 161, PSY 228, computer elective.

NUR 104 Nursing Field 4 hrs.
Experience (0-12)
 Utilizes the nursing process to provide care for clients with commonly occurring problems causing health interferences. Provides opportunity for supervised experience as a member of the nursing care team in the acute care setting, assuming the role and responsibilities of the practical nurse.
 Prerequisite: BIO 161, NUR 102, PSY 228, and computer elective with grades of "C" or better.

NUR 200 Pharmacology (2-0) 2 hrs.
 Examines the mechanism of action of the major drug groups and relates the action to use in physiological and psychological disorders. Identifies

examples of drugs in each category, common dosage ranges, routes of administration and side effects.

NUR 201 Advanced Nursing I (5-12) 9 hrs.
 Examines client teaching and discharge planning in the application of the nursing process. Provides opportunity to care for clients of all ages with more complex interferences, including chronic illnesses and complications of child-bearing. Examines related ethical issues.
 Prerequisite: BIO 161, NUR 102, PSY 228, computer elective with grades of "C" or better.
 Corequisite: BIO 130 and ENG 101.

NUR 202 Advanced 10 hrs.
Nursing II (5-15)
 Focuses on the nurse as the manager of care. Provides opportunity to utilize the nursing process in caring for groups of clients with multisystem interferences in the psychiatric, acute, and long term care settings. Emphasizes responsibilities of members of the discipline of nursing.
 Prerequisites: BIO 130, ENG 101, NUR 201 with grades of "C" or better.
 Corequisite: ENG 102 and SOC 101.

OFC Office Careers

OFC 102 Survey of Law Office 3 hrs.
Practice (3-0)
 Surveys office procedures and vocabulary used in various types of law. Familiarizes the student with the court process and ethical considerations in the legal field. (Formerly SEC 102.)

OFC 104 Introduction to Office 1 hr.
Careers (1-0)
 Provides insight into the role of the professional secretary in today's office. Explores job opportunities and interviewing techniques.

OFC 105 Human Relations for Office 1 hr.
Careers (1-0)
 Emphasizes human relations. Focuses on telephone skills, public relations responsibilities, incoming and outgoing communications in a business office. Develops awareness of the importance all types of communications play in daily business transactions.

OFC 106 Time Management for 1 hr.
Office Careers (1-0)
 Presents current methods of office organization. Focuses on office efficiency involving the organization of time and work, with emphasis on setting priorities and managing stress.

OFC 110 Keyboarding I (0-2) 1 hr.
Provides students with basic keyboarding skill on the personal computer for personal use or for vocational use other than secretarial. Includes only speed and accuracy instruction on alphabetic and top line numeric/symbol keys. (Formerly SEC 110.)

OFC 111 Keyboarding II (3-1) 3 hrs.
Provides basic touch keyboarding skill and applications for personal and professional use on the personal computer. Keying by the touch system and learning basic applications for personal and professional use will be emphasized. (Formerly SEC 111.)

OFC 112 Keyboarding III (1-2) 2 hrs.
Teaches use of personal computer and a popular software package to key basic office/personal exercises. Helps students to develop speed and accuracy through software designed for high speed production work. Aids students interested in learning the basics of computer word processing or entering OFC 113 or OFC 133. (Formerly SEC 112.)

Prerequisite: Knowledge of touch system on the typewriter or computer with an approximate speed of 25 words per minute.

OFC 113 Keyboarding IV (2-2) 3 hrs.
Develops speed and production for professional office workers on personal computers. Using a popular word processing software package, office production applications will be emphasized. (Formerly SEC 122.)

Prerequisite: Typing speed of 40 words per minute and prior or concurrent enrollment in OFC 133 with a grade of "C" or better.

OFC 125 Shorthand (4-2) 5 hrs.
Introduces theory leading to development of skill in reading, fluency in writing shorthand, vocabulary development, mechanics of English and transcription techniques. (Formerly SEC 125.)

Prerequisite: Typing speed of 50 words per minute, or prior or concurrent enrollment in OFC 113 with a grade of "C" or better.

OFC 130 Survey of Word Processing Software Applications (.5-1) 1 hr.

Explores the efficient use of word processing software applications utilized by anyone with a personal computer. Combines hands-on practice on an IBM personal computer with demonstrations, discussions and lecture on how software packages may be used more efficiently. (Formerly SEC 150.)

OFC 133 Word Processing Software I (2-0) 2 hrs.

Introduces the features and operation of the IBM personal computer with the most popular word processing software programs to prepare busi-

ness correspondence and reports with extensive editing. May be repeated up to a maximum of six credit hours utilizing different software programs for each unit of credit. Software programs introduced are different from those taught in OFC 134. (Formerly SEC 133.)

Prerequisite: Touch typing speed of 30 words per minute.

OFC 134 Word Processing Software II (2-0) 2 hrs.

Introduces the features of the currently most popular word processing software programs to prepare business correspondence and reports. May be repeated up to a maximum of six credit hours utilizing a different software program for each unit of credit. Software programs introduced are different from those taught in OFC 133. (Formerly SEC 141.)

Prerequisite: Touch typing speed of 30 words per minute.

OFC 201 Advanced Features in Word Processing (2-0) 2 hrs.

Provides the student with the knowledge to create envelopes and label forms, merge documents, create and edit macros, sort and select, generate outlines, format tables, generate a table of contents, indexes and lists. May be repeated up to a maximum of six credit hours utilizing different software programs for each two hours of credit. (Formerly SEC 201.)

Prerequisite: OFC 133 or OFC 134 with a grade of "C" or better or consent of instructor or program coordinator.

OFC 202 Desktop Publishing Using Word Processing (2-0) 2 hrs.

Provides the student with the knowledge to incorporate graphics within a document, use special characters, create styles, generate charts and graphs, create parallel and newspaper columns, change fonts, place lines and borders within a document. May be repeated up to a maximum of six credit hours utilizing different software programs for each two hours of credit. (Formerly SEC 202.)

Prerequisite: OFC 133 or OFC 134 with a grade of "C" or better or consent of instructor or program coordinator.

OFC 203 Proofreading and Editing (2-0) 2 hrs.

Emphasizes the importance of proofreading and editing skills within the workplace. The course provides a thorough review of grammar rules including punctuation, number expression, capitalization, correct business word usage. Additionally, the course provides exposure to a non-traditional approach to proofreading, based on machine-assisted proofreading drills. (Formerly SEC 203.)

OFC 204 Macros for Word Processing (2-0) 2 hrs.
 Enables students to utilize word processing macro features from the very basic commands to advanced commands. They will be able to create their own macros as well as complete macros assigned in the class. (Formerly SEC 204.)
 Prerequisite: OFC 201 with a grade of "C" or better or consent of instructor.

OFC 205 Using Tables in Word Processing (2-0) 2 hrs.
 Enables students to utilize word processing features to increase their speed and ability to create and edit tables. (Formerly SEC 205.)
 Prerequisite: OFC 201 with a grade of "C" or better or consent of instructor.

OFC 206 Using Merges in Word Processing (2-0) 2 hrs.
 Provides students with additional word processing skills using merges with a popular software. Each student will receive 30 hours of hands-on training. Emphasis will be on the features most commonly used in the office. (Formerly SEC 206.)
 Prerequisite: OFC 201 with a grade of "C" or better or consent of instructor.

OFC 220 Automated Office Practices (2-4) 4 hrs.
 Simulates an electronic office utilizing the personal computer for word processing, spreadsheet and database software packages to produce materials found in executive, professional and technical offices. Emphasis includes office management, records control, telecommunications, networking and human relations.
 (Formerly SEC 220.)
 Prerequisite: OFC 113 with a grade of "C" or better or consent of instructor.

OFC 228 Records Control for the Office (1-0) 1 hr.
 Introduces alphabetic, subject, numeric and geographic methods of storage. Includes micro-computer applications with current indexing, coding and filing rules.

OFC 229 Meeting and Conference Planning (1-0) 1 hr.
 Outlines the role the office employee plays in preparing meetings, conferences and travel arrangements. Highlights agenda and itinerary preparation, reservations, site selection, transportation arrangements and follow-up evaluation.

OFC 230 Executive Machine Transcription (1-2) 2 hrs.
 Provides training and extensive skill building in machine transcription including the operation of machine transcribers and application of correct grammar, punctuation, spelling and format in transcripts. (Formerly SEC 230.)
 Prerequisite: OFC 113 with a grade of "C" or better or a minimum typing speed of 40 words per minute.

OFC 233 Document Processing in the Law Office (3-0) 3 hrs.
 Surveys computer hardware and software uses within the law office. Provides an opportunity for the student to view selected legal timekeeping, billing and docket control software applications of word processing, desktop publishing software and other office software used in the law office.

OFC 234 Legal Office Procedures (3-0) 3 hrs.
 Presents the organization and operation of a law office with emphasis on management, records control and procedures used in the preparation of legal documents. (Formerly SEC 234.)
 Prerequisite: Typing speed of 40 words per minute.

OFC 235 Legal Transcription (2-2) 3 hrs.
 Introduces legal terminology frequently dictated in a law office. Develops speed and accuracy in transcribing legal correspondence, documents and forms using a transcription machine and automated office equipment. (Formerly SEC 235.)
 Prerequisite: OFC 133 with a grade of "C" or better or equivalent and typing speed of 40 words per minute.

OFC 237 Secretarial Seminar and Internship I (1-15) 3 hrs.
 Preparation for, and cooperative work experience in, office careers. Part of the credit for this course will be given for participation in supervised cooperative work experience wherein an organized training plan will be followed in a College approved training station. One lecture hour per week for a seminar devoted to issues in a secretarial career. (Formerly SEC 237.)
 Prerequisite: Consent of instructor and admission to either the Executive Secretarial or Legal Secretary program.

OFC 238 Secretarial Seminar and Internship II (1-15) 3 hrs.
 Continues OFC 237. (Formerly SEC 238.)
 Prerequisite: Consent of instructor.

OFC 247 Professional Development (2-0) 2 hrs.
Provides an awareness of the "people" skills essential for job success. Emphasis is on business ethics, business and social etiquette, influencing behavior of others, listening and non-verbal skills, office politics and power, problem solving, teamwork, employer/employee rights and professional image and growth.
(Formerly SEC 247.)

OFC 260 Behavioral Science in Business (CPS) (1-0) 1 hr.
Offers an understanding of human relations, group dynamics and effective communications as they contribute to the success of the role and function of the secretary in dealing with people in the office environment. Emphasizes the relationship between the secretary or administrative assistant, the supervisor and people the secretary comes in contact with in the business setting. This course prepares the student for a portion of Part III of the Certified Professional Secretary Exam.
(Formerly SEC 260.)
Prerequisite: One year of full-time secretarial experience or consent of instructor.

OFC 261 Business Law (CPS) (1-0) 1 hr.
Emphasizes knowledge of business law as it applies in the secretary's employment and the implications of governmental controls as they impact upon business and office operations. This course prepares the student for a portion of Part I of the Certified Professional Secretary Exam.
(Formerly SEC 261.)
Prerequisite: One year of full-time secretarial experience or consent of instructor.

OFC 262 Economics and Management (CPS) (1-0) 1 hr.
Furnishes an understanding of the basic concepts of economics and management underlying the U.S. business system as they relate to the secretary's role in business. This course prepares the student for a portion of Part I of the Certified Professional Secretary Exam. (Formerly SEC 262.)
Prerequisite: One year of full-time secretarial experience or consent of instructor.

OFC 263 Accounting (CPS) (1-0) 1 hr.
Stresses fundamental accounting principles that a secretary must possess in order to assist the supervisor in the preparation, summarization and interpretation of financial data. Emphasizes the secretary's application of basic math to business situations. This course prepares the student for a portion of Part I of the Certified Professional Secretary Exam. (Formerly SEC 263.)
Prerequisite: One year of full-time secretarial experience or consent of instructor.

OFC 264 Office Administration and Communication (CPS) (1-0) 1 hr.
Emphasizes office administration and communication skills including executive travel, office management, records management and reprographics as well as written business communication, editing, abstracting and preparing communications in final format. This course prepares the student for a portion of Part II of the Certified Professional Secretary Exam. (Formerly SEC 264.)
Prerequisite: One year of full-time secretarial experience or consent of instructor.

OFC 265 Office Technology (CPS) (1-0) 1 hr.
Emphasizes the secretary's responsibilities created by computer information systems, communications media, advances in office management, technological applications, records management technology and office systems. This course prepares the student for a portion of Part II of the Certified Professional Secretary Exam. (Formerly SEC 265.)
Prerequisite: One year of full-time secretarial experience or consent of instructor.

ORN Orientation

ORN 101 Orientation 101 (1-0) 1 hr.
Focuses on helping new students clarify reasons for being in college and providing initial exposure to the strategies necessary to adapt to the college environment. Topics include examination of the value of a college education; introduction to college procedures, policies, programs and services; career and educational goal setting; educational advising and an introduction to healthy lifestyles and relationships.

PED Physical Education*

PED 100 Nutrition and Exercise for the Adult (1-2) 2 hrs.
Provides an individual assessment of physical fitness level and dietary habits of each student. Exercise programming and diet recommendations are outlined and encouraged through topical lectures and active participation in exercise.

PED 101 Selected Exercises for Occupations (0-2) 1 hr.
Provides instruction in a program of exercises to increase the physical fitness levels necessary to meet the physical demands of various occupations. May be repeated up to a maximum of 2 credit hours.

PED 104 Basic Weight Training (0-2) 1 hr.
Provides the basic knowledge of the proper use of weight training equipment. Students will learn about the specific muscle groups used during training and the different methods of developing muscular strength and endurance. Students will also be able to apply the principles they have learned and ultimately develop their own individualized program. May be repeated up to a maximum of 2 credit hours.

PED 105 Basketball (0-1) .50 hr.
Provides instruction in the basic skills, rules, scoring and terminology. May be repeated up to a maximum of 1 credit hour.

PED 106 Weight Training — Olympic and Power (0-2) 1 hr.
Provides weight training instruction with an emphasis on olympic and power lifts. Students will have the opportunity to develop advanced weight training skills as well as practice olympic and power techniques. May be repeated up to a maximum of 2 credit hours.

PED 109 Volleyball (0-1) .50 hr.
Provides instruction in basic skills, rules, scoring and terminology. May be repeated up to a maximum of 1 credit hour.

PED 120 Team Sports (0-2) 1 hr.
Provides instruction in team sports, fundamental skills, offensive tactics of play, strategy, rules and terminology selected from one or two of the following sports: competitive volleyball, floor hockey, soccer, softball and touch football. May be repeated up to a maximum of 2 credit hours.

PED 130 Individual Sports (0-2) 1 hr.
Provides instruction in individual sports, fundamental skills, offensive and defensive tactics of play, strategy, rules, terminology and practice in one or two of the following sports: cross-country skiing, fencing, horseback riding, ice skating, judo, snow skiing. May be repeated up to a maximum of 2 credit hours.

PED 131 Lifeguarding (0-2) 1 hr.
Provides instruction in the skills, methods and techniques involved in lifesaving and water safety. This course provides the skills necessary for a student to qualify as a nonsurf lifeguard. The American Red Cross Lifeguard Training Certification is awarded upon successful completion of this course.
(NOTE: Students must be at least 15 years of age to qualify for American Red Cross Lifeguard Training Certification.)

PED 133 Advanced Scuba Diving (0-2) 1 hr.
Provides advanced instruction in scuba, emergency lifesaving skills, navigation, search and recovery, deep diving and night diving procedures. Advanced national certification is provided to those who qualify.
Prerequisite: Certified diver from national certifying agency.

PED 135 Skin Diving (0-2) 1 hr.
Provides basic instruction in the principles, safety procedures and techniques of skin diving. Included will be the practical use of the mask, fins, snorkel, weight belt and buoyancy compensator.

PED 139 Aquasize (0-1) .50 hr.
Provides an in-water exercise program which emphasizes the development of cardiopulmonary endurance, flexibility, muscle strength, muscle endurance and general movement efficiency. Music is used to help motivate the students. The fitness guidelines followed in this course are designed for the apparently healthy individual and are not designed for individuals with known cardiovascular, pulmonary or metabolic diseases. Students are encouraged to see a physician before embarking on any exercise program. Students need not be able to swim to participate. May be repeated up to a maximum of 1 credit hour.

PED 140 Sculpturing Muscle Strength and Tone (0-1) .50 hr.
Provides students the opportunity to sculpture the entire body through muscle strength and endurance exercises to music. Flexibility and proper stretching exercises are emphasized. This course utilizes a variety of exercise equipment to accomplish personal exercise goals.

PED 149 Prescribed Exercises (0-2) 1 hr.
Provides specialized therapeutic programs of prescribed exercises and sports activities to meet individual needs. May be repeated up to a maximum of 2 credit hours.

*Some, but not all, physical education courses can be taken more than one time for credit. Course descriptions indicate which courses are approved for repeating.

PED 150 Bowling (0-2) 1 hr.
All-levels class with beginners grouped separately for special attention. Etiquette, scoring and techniques according to present ability. Intramural competition afforded. May be repeated up to a maximum of 2 credit hours.

PED 152 Golf (0-1) .50 hr.
Introduces golf fundamentals of grip, stance and swing using irons and woods; terminology, etiquette, scoring and safety standards. May be repeated up to a maximum of 1 credit hour.

PED 153 Swimming-Beginning (0-2) 1 hr.
Provides instruction for students who have never learned to swim or cannot swim one length of the pool. Instruction in basic swimming skills with emphasis on achievement and confidence in the water. May be repeated up to a maximum of 2 credit hours.

PED 154 Swimming-Intermediate and Advanced (0-2) 1 hr.
Provides instruction in front crawl, back crawl, side stroke, breast stroke, the butterfly, spring-board diving, skin diving skills and some racing techniques. May be repeated up to a maximum of 2 credit hours.
Prerequisite: Ability to swim 50 yards.

PED 156 Badminton (0-1) .50 hr.
Provides recreational and conditioning activity with singles and doubles play, strategy, serving, rules and interclass competition. May be repeated up to a maximum of 1 credit hour.

PED 157 Scuba (0-1) .50 hr.
Provides instruction in the basic principles and techniques of scuba diving. May be repeated up to a maximum of 1 credit hour.

PED 158 Tennis (0-1) .50 hr.
Provides theory and practice, rules and scoring, development of serve, forehand drive, backhand drive, lob, volley and footwork. Singles and doubles play and interclass competition. May be repeated up to a maximum of 1 credit hour.

PED 159 Competitive Tennis (0-1) .50 hr.
Provides rules, scoring, theory and practice of the skills of competitive tennis. Emphasizes game strategy in singles and doubles play. May be repeated up to a maximum of 1 credit hour.

PED 160 Modern Dance I (0-2) 1 hr.
Opportunity to explore movement potential, increase technical proficiency and broaden rhythm background; skills in technique and composition stressed. May be repeated up to a maximum of 2 credit hours.

PED 162 Introduction to Ballet (0-2) 1 hr.
Provides instruction for students with little or no previous training in ballet. May be repeated up to a maximum of 2 credit hours.

PED 163 Basic Aerobics (0-1) .50 hr.
Provides a wide variety of aerobic fitness programs structured to tone and trim the body. Vigorous exercise routines may be choreographed to music. Emphasis is on developing cardiovascular endurance, flexibility, muscular strength and endurance and movement efficiency. The fitness guidelines followed in this course are designed for the apparently healthy individual and are not designed for individuals with known heart, pulmonary or metabolic disease. May be repeated up to a maximum of 1 credit hour.

PED 166 Advanced Aerobics (0-1) .50 hr.
Provides a wide variety of advanced fitness programs structured to challenge the experienced student. Vigorous exercise routines may be choreographed to music. Emphasis is on developing a higher level of cardiovascular pulmonary endurance, flexibility, muscular strength and endurance and movement efficiency. The fitness guidelines followed in this course are designed for apparently healthy individuals and are not designed for individuals with known heart, pulmonary or metabolic disease.

PED 167 Jazz Dance I (0-2) 1 hr.
Provides students with the elements of ballet, modern dance and Afro-Haitian to combine them into a dance form that is idiomatic, syncopated and fast paced. May be repeated up to a maximum of 2 credit hours.

PED 168 Racquetball (0-1) .50 hr.
Offers theory and practice, rules and scoring, methods of serve, forehand drive, backhand drive, lob, volley and footwork. May be repeated up to a maximum of 1 credit hour.

PED 169 Competitive Racquetball (0-1) .50 hr.
Provides rules, scoring, theory and practice of the skills of competitive racquetball. Emphasis is on the strategy of singles and doubles play. May be repeated up to a maximum of 1 credit hour.

PED 178 Judo and Self-Defense/ Beginning (0-2) 1 hr.
Provides a basic understanding and practical application of judo and self-defense techniques. Includes proper training methods, physical conditioning, techniques and rules and regulations for contests.

PED 179 Judo and Self-Defense/ Advanced (0-2) 1 hr.
 Orientation and instruction in all aspects of judo and self-defense. Provides greater emphasis on Randori and preparation for competition.
 Prerequisite: PED 178 with a grade of "C" or better or consent of instructor.

PED 181 Jujitsu I (0-2) 1 hr.
 Introduces Jujitsu (Miyama Ryu) the art of the Japanese Samurai from which judo, aikido and karate were derived. Based on mechanical principles, jujitsu is designed for self-defense. This non-competitive art is suited for women and men, regardless of size and physical condition, stressing technique and attitude. Benefits are improved fitness, coordination, awareness and defense skills training.

PED 183 Jujitsu II (0-2) 1 hr.
 Continues PED 181. Building upon the skills obtained in PED 181, a broader range of more advanced techniques and applications are covered.
 Prerequisite: PED 181 with a grade of "C" or better or consent of instructor.

PED 195 Physical Fitness I (0-2) 1 hr.
 Provides a personalized fitness program utilizing aerobic and resistive equipment.
 (NOTE: Those over age 35 who have risk factors for heart disease such as diabetes, high blood pressure, and high cholesterol, men over age 41 and women over age 51 will be required to pass a physician-monitored stress test at the Harper College Human Performance Lab or any other certified testing facility. Following the stress test, students will be apprised of their results and recommendations will be made regarding their participation in the program.)

PED 196 Physical Fitness II (0-2) 1 hr.
 Provides continuation of PED 195 and healthy lifestyle training for lifelong application.
 Prerequisite: PED 195 with a grade of "C" or better.
 (NOTE: Those over age 35 who have risk factors for heart disease such as diabetes, high blood pressure, and high cholesterol, men over age 41 and women over age 51 will be required to pass a physician-monitored stress test at the Harper College Human Performance Lab or any other certified testing facility. Following the stress test, students will be apprised of their results and recommendations will be made regarding their participation in the program.)

Physical Education Courses — Theory — for Major and Minor Students

PED 200 Introduction to Physical Education (2-0) 2 hrs.

Provides orientation and history of physical education in the United States. Presents aims and objectives and new approaches to physical education as an academic discipline.

PED 201 Standard First Aid (3-0) 3 hrs.
 Provides the American Red Cross Standard First Aid course integrating adult cardiopulmonary resuscitation (CPR) with other first aid topics. This course is designed to prepare students to respond to emergency situations with confidence in their ability to perform the necessary skills. Two certificates are issued, Adult CPR and Standard First Aid certification, after successful completion of the skills and written tests.

PED 203 Health (3-0) 3 hrs.
 Provides an in-depth look at the physical, psychological, emotional, social, spiritual and environmental factors which contribute to the overall quality of a person's life. An investigation of how our lifestyle compares with other people in the world and the role and impact of the World Health Organization is emphasized. Mental health, nutrition, fitness, communicable and non-communicable diseases, killer diseases, drugs, human sexuality, family living (marriage, divorce, parenting), middle and old age issues and death and dying are some of the topics covered. Physical and psychological assessments are included in this class.

PED 205 Drugs in Our Culture (2-0) 2 hrs.
 Deals with material about which many individuals have strong and sometimes unfounded beliefs. The intent of this course is to provide a potpourri of the facts, attitudes and opinions necessary to understand what psychoactive drugs do, how they do it, who uses them and why.

PED 206 Athletic Training Techniques (2-2) 3 hrs.

Presents an introduction to the duties and responsibilities of an athletic trainer including: fundamental principles and techniques, injury prevention, recognition, emergency care, supportive taping and wrapping techniques, budgeting, ordering supplies and the general operation of a training room facility.

PED 207 Human Sexuality (2-0) 2 hrs.
 Acquaints students with the familial, sociological, biological and emotional implications of human sexuality. Attention is also given to such pathological conditions as venereal diseases.

PED 208 Bioscientific Foundations of Human Movement (2-2) 3 hrs.
 Provides analysis of basic human movement skills as they relate to exercise and physical fitness. Emphasis is on human anatomy, cardiorespiratory development, muscular strength and endurance. Guidelines for training and physical fitness are provided through laboratory experiences.

PED 209 Principles of Teaching Exercise to Music (1-2) 2 hrs.
 Provides the academic and practical knowledge to prepare students for certification to teach a variety of aerobic and toning classes (aerobic dance, firm and fit, step). Students will have the opportunity to learn how to instruct classes as well as practice-teach in a classroom setting.

PED 210 Sports Officiating (2-0) 2 hrs.
 Provides comprehensive instruction on rules and officiating techniques in interscholastic sports in preparation for Illinois High School Athletic Association certification. Officiating experience opportunities provided in college intramural and intercollegiate athletic programs.

PED 211 Physical Education in Elementary School (3-0) 3 hrs.
 Provides instruction on the growth and development of elementary school children and the planning and organizing of elementary physical education programs.

PED 220 Track and Field Techniques (2-0) 2 hrs.
 Provides an opportunity for students to learn the history of track and field as well as basic skill techniques, rules, training, conditioning, coaching techniques, meet administration and responsibilities of officials. Students are able to apply their skills by planning, participating and officiating their own track and field meet.

PED 222 Football Techniques (2-0) 2 hrs.
 Fundamental and organizational techniques of game skills, strategy, practice drills, conditioning, safety standards and officiating techniques.

PED 224 Basketball Techniques (2-0) 2 hrs.
 Knowledge and skill in fundamentals and in techniques of team organization; skills of each position, offensive and defensive skills and team play, strategy and officiating.

PED 226 Baseball Techniques (2-0) 2 hrs.
 Analysis, instruction and demonstration of fundamental skills, strategy, practice drills, conditioning, safety standards and officiating techniques in teaching and coaching baseball.

PED 228 Aquatics (2-0) 2 hrs.
 Provides instruction in the theory and practice of fundamental skills and approaches to various phases of swimming. Planning, organization, development and management of aquatic programs.
 Prerequisite: Ability to swim 50 yards.

PED 230 Water Safety Instructor (1-2) 2 hrs.
 Follows the standards established by the American Red Cross for the training of instructors for teaching swimming and water safety courses. (NOTE: Students must be at least 17 years of age to qualify for American Red Cross Water Safety Instructor Certification.)

PED 240 Dance Composition (0-4) 2 hrs.
 Provides instruction in basic dance composition. Includes the study of dance experience and offers opportunities to improvise and create compositions utilizing a variety of motivational and innovative techniques.
 Prerequisite: 100 or 200 level dance technique course or consent of instructor.

PED 241 Jazz Dance II (0-2) 1 hr.
 Provides a study of advanced techniques in jazz dance. Includes basic barre exercises, center floor exercises, dance combinations and choreographical techniques.
 Prerequisite: PED 167 with a grade of "C" or better or consent of instructor.

PED 242 Ballet II (0-2) 1 hr.
 Provides a study of advanced techniques of the art of ballet. Includes basic barre exercises, center floor exercises, dance combinations, terminology, movement patterns, allegro combinations and performing experience.
 Prerequisite: PED 162 with a grade of "C" or better or consent of instructor.

PED 243 Modern Dance II (0-2) 1 hr.
 Provides students with an opportunity to explore modern dance techniques in great depth. Emphasizes dance techniques, exploration and composition development.
 Prerequisite: PED 160, PED 162 with a grade of "C" or better or consent of instructor.

PED 244 Folk Dance II (1-2) 2 hrs.
 Provides an expanded repertoire of folk dances of varying difficulty from diverse cultures with emphasis on interrelationships with other folk arts, geography and history.
 Prerequisite: PED 173 with a grade of "C" or better or consent of instructor.

PED 246 Tap Dance (0-2) 1 hr.
Provides instruction in basic techniques of tap dance. Emphasizes the development of tap dance routines.

PED 270 Community Health (2-0) 2 hrs.
Presents basic principles of community living and examines scientific methods applied to environmental health in urban and rural communities. Focuses on the functions of community health organizations and the way they relate to individual health needs.

PHI Philosophy

PHI 105 Introduction to Philosophy (3-0) 3 hrs.

Principles and problems of philosophy as seen in different schools of thought. Topics: validity of human knowledge; nature of reality; mind and body; free will and determination; moral and aesthetic values; and religious belief.

PHI 110 Logic (3-0) 3 hrs.

Formal reasoning, including language and meaning, deduction and induction, evidence and the detection of fallacies. Traditional as well as modern modes of analysis.

PHI 115 Ethics (3-0) 3 hrs.

Consideration of problems of value and conduct, including the question of the "good life" or happiness; and contemporary moral issues such as war, violence, drugs, racism, crime and punishment.

PHI 120 Social and Political Philosophy (3-0) 3 hrs.

Focuses on the ideas of justice, liberty, equality, law and order, rights and privileges. This includes discussion of such issues as democracy, communism, nuclear war, capital punishment, sexual equality, hunger and drugs.

PHI 150 Business Ethics (3-0) 3 hrs.

Introduces philosophical ethical theory and its application to business decisions. Considers theories of economic justice, social responsibility, hiring practices and rights of employees and employers.

PHI 160 Non-Western Philosophy (3-0) 3 hrs.

Introduces selected philosophical concepts and value systems of several non-Western cultures. Gives attention to the Bhagavad Gita, Vedanta and other Hindu texts, Confucius, the Tao Te Ching and other Chinese classics and key texts from at least two other traditions.

PHI 170 Environmental Ethics (3-0) 3 hrs.

Introduces philosophical ethical theory and its application to environmental issues. Explores the roots of Western ideas about nature (Biblical, Greek, early Modern), the American environmental discussion and current positions including development, conservation, preservation and restoration. Considers issues including human-centered vs. life-centered views, whether species or habitats have value, appreciation vs. cost/benefit approaches, and bioregionalism.

PHI 180 Biomedical Ethics (3-0) 3 hrs.

Considers the ethics of the professional-patient relationship (confidentiality, informed consent, paternalism, truth-telling), the ethics of life and death (abortion, euthanasia, suicide), and the ethics of medicine on a social scale (the right to health care, the distribution of medical resources).

PHI 190 Philosophical Issues in Contemporary Feminism (3-0) 3 hrs.

Introduces philosophical thinking and its application to issues concerning women. Explores a variety of theories by and about women. Considers a number of issues including images of women, biological vs. social conditioning, the relation of gender to class and race, women's spirituality, education, family, work, violence and pornography. Men are welcome to take the course.

PHI 205 Religions of the World (3-0) 3 hrs.

Introduces the teachings, practices, social structures and histories of the religions of India (mainly Buddhism and Hinduism), and China and Japan (mainly Confucianism, Shinto and Taoism), and of the Middle East (mainly Christianity, Islam and Judaism).

PHI 210 Death and Dying (3-0) 3 hrs.

Presents an interdisciplinary approach to the meaning of death. Focuses on biological, psychological, legal, philosophical and religious aspects of the phenomena of death and dying.

PHI 220 Philosophy of Religion (3-0) 3 hrs.

Examines the nature and presuppositions of Western religions, especially the reasons which can be given for and against the existence of God. Selected further topics: the problem of evil, life after death, the nature of religious experience, language, knowledge, and authority, religion and science, major philosophical theories on the nature of religion.

PHI 231 History of Philosophy —
Ancient and Medieval (3-0) 3 hrs.

Surveys the major figures and schools in Western philosophical tradition from the pre-Socratic Greeks through the 14th century. Emphasis on interpreting philosophical reflection in light of the social, political, religious and cultural context from which it arises.

Prerequisite: A course in philosophy or consent of instructor.

PHI 232 History of Philosophy —
Modern (3-0) 3 hrs.

Surveys the major figures and schools in Western philosophical tradition from the 15th to the 20th century. Emphasizes interpreting philosophical reflection in light of the social, political, religious and cultural context from which it arises.

Prerequisite: A course in philosophy or consent of instructor.

PHS Physical Science

PHS 101 Physical Science 3 hrs.
Survey (3-0)

Designed to give the non-science major an understanding and appreciation of the universe, earth, energy and matter.

PHS 105 Energy and Society (3-0) 3 hrs.
Introduces non-science majors to topics from various sciences as they relate to energy resources and energy consumption. Connects the theory of energy to its practical applications. Examines the connection between science and economics, politics and other social issues, using energy as a focus.

PHS 111 Physical Science I (3-2) 4 hrs.
Motion, structure of matter, electricity and magnetism, waves and particles and the atom. Course for non-science majors fulfilling laboratory science requirements.

PHS 112 Physical Science II (3-2) 4 hrs.
Examines topics from basic chemistry, materials of the earth, earth forms and history, weather, the sun, stars and the universe. Course for non-science majors fulfilling laboratory science requirements.

PHT Pharmacy Technician

PHT 101 Introduction to 1 hr.
Pharmacy Technology (1-0)

Introduces the student to the field of pharmacy technology. Includes an overview of the program, definition of the pharmacy technician's role and a review of opportunities open to the certified pharmacy technician.

PHT 102 Pharmacy Law (1-0) 1 hr.
Presents an overview of legal aspects of pharmacy practice, including a review of the Federal Controlled Substances Act and Illinois statutes, rules and regulations.

PHT 110 Pharmacology I (3-0) 3 hrs.
Presents a general overview of the available strengths, generic/trade names, routes of administration and general classification of commonly used medications. Different mechanisms of action of major drug categories are discussed.

PHT 111 Pharmacy Operations I (2-3) 3 hrs.
Presents fundamentals of drug distribution in hospital and retail pharmacies through lecture and lab instruction in abbreviations, symbols and equivalent used in prescription writing, bulk compounding, repackaging, repackaging, the drug supply chain, purchasing and inventory control and available drug delivery systems.

PHT 112 Pharmacy 5 hrs.
Operations II (2-9)
Provides continuing information on basic as well as complex community pharmacy and hospital pharmacy operations. Emphasis on communication skills and the application of didactic knowledge gained to the clinical setting under the supervision of registered pharmacists.
Prerequisite: PHT 111 with a grade of "C" or better.

PHT 120 Pharmacology II (3-0) 3 hrs.
Presents a general overview of the available strengths, generic/trade names, routes of administration and general classification of commonly used medications. Different mechanisms of action of major drug categories are discussed.

PHT 140 Sterile Products and 3 hrs.
Aseptic Techniques (2-3)
Introduces major routes and types of parenteral drug administration. Presents equipment, supplies and technical skills used in preparing various intravenous solutions and other medications.
Prerequisite: PHT 112 and PHT 120 with grades of "C" or better or concurrent enrollment.

PHY Physics

- PHY 101 Technical Physics I — 4 hrs.**
Mechanics, Heat and Sound (3-2)
Covers statics, dynamics, energy, calorimetry, gas laws, waves and sound. Primarily for students in career programs. Other students see PHY 121 or PHY 201.
Prerequisite: MTH 106 with a grade of "C" or better or concurrent enrollment.
- PHY 102 Technical Physics II — 4 hrs.**
Electricity and Magnetism, Light (3-2)
Introduces theory of electricity and magnetism including fields, induction, capacitance, direct and alternating current theory, circuits and elements of electronics. Also covers theory of light including reflection, interference, resonance, lenses, diffraction, polarization and Doppler effect. Primarily for students in career programs.
Prerequisite: PHY 101 with a grade of "C" or better.
Corequisite: MTH 107.
- PHY 121 Introductory Physics I (4-3) 5 hrs.**
Covers mechanics, heat and sound. For students in arts, sciences and architecture. Other students see PHY 201.
Prerequisite: MTH 103 and MTH 104 with a grade of "C" or better.
- PHY 122 Introductory Physics II (4-3) 5 hrs.**
Continues PHY 121. Electricity, magnetism and light.
Prerequisite: PHY 121 with a grade of "C" or better or consent of instructor.
- PHY 201 General Physics I — 4 hrs.**
Mechanics (3-2)
Introduces foundations of kinematics, statics, dynamics and hydraulics. For students in engineering, mathematics, physics and chemistry.
Prerequisite: MTH 201 with a grade of "C" or better or concurrent enrollment.
- PHY 202 General Physics II — Heat 4 hrs.**
Electricity and Magnetism (3-2)
Continues PHY 201. Covers foundations of heat, thermodynamics, electricity and magnetism.
Prerequisite: MTH 202 with a grade of "C" or better or concurrent enrollment and PHY 201 with a grade of "C" or better.
- PHY 203 General Physics III — Wave 4 hrs.**
Motion, Sound, Light and Modern Physics (3-2)
Continues PHY 202. Covers foundations of wave motion, sound, geometrical and physical optics and modern physics.
Prerequisite: MTH 212 with a grade of "C" or better or concurrent enrollment and PHY 202 with a grade of "C" or better.

PKM Parks and Grounds Operation Management

- PKM 100 Park and Horticulture 1 hr.**
Careers (1-0)
Surveys the green industry in northern Illinois. Acquaints the student with the broad diversity of careers in park and grounds operation management and plant science technology. Identifies personal career aptitudes through computerized career exploration.
- PKM 140 Grounds Equipment and 4 hrs.**
Shop Operation (1-6)
Operation, maintenance, selection and care of equipment used in park management. Practical experience in the repair, adjustment and troubleshooting of engines and other specialized equipment.
- PKM 141 Basic Carpentry 2 hrs.**
Skills (1-2)
Covers basic working knowledge of the general principles, tools and techniques of carpentry used in park districts, grounds maintenance and landscape construction and repair situations. Includes selection of lumber materials, cutting, drilling, shaping methods, fastening methods and safety.
- PKM 143 Basic Plumbing 2 hrs.**
Skills (1-2)
Provides safe working knowledge of the general principles, tools and techniques of plumbing installations and maintenance. Includes system design, selection of piping materials and fittings assembly procedures and repairs commonly encountered in landscape construction, grounds maintenance and greenhouse operations.
- PKM 150 Park and Plant Science 5 hrs.**
Technology Internship (0-35)
Offers field training under the supervision of qualified green industry personnel to students completing a minimum of 15 semester hours of PKM or PST courses. Diversified field training will enable the student to acquire skills not thoroughly developed in the classroom-laboratory environment. Students will investigate the organizational structure of the enterprise and document the work processes during the internship.
Prerequisite: Minimum 15 semester hours of PKM or PST courses and consent of coordinator.
- PKM 210 Drainage and Irrigation (2-3) 3 hrs.**
Studies the design and installation of drainage and irrigation systems. Particular attention toward types of systems, materials and costs.

PKM 214 Principles of Landscape Design and Construction (3-3) 4 hrs.

Presents the fundamentals of construction as applied to landscape projects, the use of materials, installation techniques, tools, equipment, structures, surveys and grading used in landscape construction. Emphasizes basic drafting techniques and principles of landscape design. Prerequisite: PST 101 and PST 110 with grades of "C" or better.

PKM 220 Arboriculture (1-6) 4 hrs.

Care and management of ornamental trees. Techniques and demonstration of planting, staking, pruning, spraying, fertilizing and general care of shade and specimen trees. Instruction in the techniques of climbing and use of safety equipment, methods of bracing, cabling and guying of trees, cavity repair and surgical practices and the organization and management of municipal street tree departments. Prerequisite: PST 111 with a grade of "C" or better.

PKM 230 Contracts, Specifications, Estimating (2-3) 3 hrs.

Emphasizes interpretation of maps, grading plans, construction drawings and landscape design plans, especially specifications, cost estimates and client relationships. Additional topics which deal with land use, land acquisition, park planning and the legal aspects of park and landscape contracting. Prerequisite: PKM 214 with a grade of "C" or better.

PKM 240 Grounds Equipment Power Units (1-6) 4 hrs.

Explains the operation, servicing and preventive maintenance of power units, electrical systems, power trains, hydraulic systems and associated components commonly found on grounds equipment. Gives special attention to applied mechanical learning experiences similar to those a student can expect to encounter in a grounds equipment service operation. Prerequisite: PKM 140 with a grade of "C" or better.

PKM 242 Golf Course Management (3-3) 4 hrs.

Surveys daily activities and maintenance practices utilized in the operation of both public and private golf courses including associated elements of planning, design and construction.

PKM 250 Park Management Seminar (1-0) 1 hr.

Surveys the management principles of organizational behavior as it applies to the green industry. Prerequisite: Minimum 30 semester hours of PKM or PST courses.

PSC Political Science

PSC 101 American Politics and Government (3-0) 3 hrs.

Focuses on political involvement, elections, campaigns, interest groups, Congress, courts, the presidency and the constitution. Discusses how our government runs, as well as current political controversies. Utilizes political figures as guest speakers and offers opportunities for political participation, especially in election year.

PSC 210 Topics in Political Science 1-6 hrs.

Studies selected problems or topics in political science. The exact content and instructional methodology will vary from semester to semester depending on the material to be studied. A syllabus or course outline containing additional information will be available with pre-registration materials each time that the course is offered. This course may be taken from one to six credit hours.

PSC 220 Suburban, Urban and State Politics (3-0) 3 hrs.

Emphasizes politics in Illinois, Chicago and the suburbs. Delves into machine politics, taxes, housing and other issues. Provides opportunities for involvement in community politics and draws on elected officials and speakers.

PSC 250 Comparative Politics (3-0) 3 hrs.

Explores the politics of selected countries in Africa, Asia, Europe, Latin America and/or the Middle East. Examines economic, social and political patterns and problems in different nations.

PSC 260 Middle Eastern Politics (3-0) 3 hrs.

Examines political, social, economic, military, religious and terrorist forces in the Middle East. Investigates the politics of specific countries in the area.

PSC 270 Global Politics (3-0) 3 hrs.

Uses role playing to study how foreign policy is made. Explores human problems such as populations, food and energy on a global dimension. Examines international bodies, including the United Nations, and explores how nations interact.

PST Plant Science Technology

PST 101 Ornamental Plants (3-3) 4 hrs.
Identifies landscape plant materials, their growth habits and cultural requirements, and discusses the use of ornamental shrubs, trees, vines, ground covers and herbaceous plants adapted to Illinois and the Midwestern area.

PST 102 Plant Diseases and Pests (3-3) 4 hrs.
Identifies diseases and discusses methods of prevention and control used in landscape and park operations, pests significant to the turf, soils and plant materials found in parks and other landscape areas.

PST 104 Floral Design (2-3) 3 hrs.
Presents basic principles of floral design including classic designs, centerpieces, corsages, boutonnières, dried flower arrangements, holiday and special occasion designs. Emphasis is placed on design elements of color, line and form utilizing foliage and flowers of different varieties. Attention is given to commercial floral piece arrangements and mechanics of construction.

PST 106 Introductory Horticulture (2-0) 2 hrs.
Presents a general study of the fundamental knowledge essential for installation and maintenance of plants either as a hobby, as a necessity or as a cost saving measure. Emphasis is on the cultivation of certain plant varieties, techniques of improving established gardens, and methods of reducing expenses for landscaping and maintenance.

Recommended corequisite: PST 108.

PST 108 Introductory Horticulture Laboratory (0-4) 2 hrs.
Complements and reinforces concepts developed in PST 106, including actual hands-on planting and maintenance practices.
Prerequisite: PST 106 with a grade of "C" or better or concurrent enrollment.

PST 110 Soil Science (3-3) 4 hrs.
Studies the properties and use of soils in relation to plant growth and development. Special emphasis on soil texture, structure, moisture relations, biological activity, organic matter content and plant nutrients as they relate to park management.

PST 111 Basic Horticultural Skills (3-3) 4 hrs.
Develops specialized skills in ornamental horticulture including planting, transplanting, fertilizing, watering and pruning of trees, shrubs and herbaceous plants in both indoor and outdoor locations. Details seed and vegetable plant propagation

methods; causes of plant disorders; installation, care and maintenance of plants used in landscape.
Prerequisite: BIO 120 with a grade of "C" or better or concurrent enrollment.

PST 204 Advanced Floral Design (2-3) 3 hrs.
Presents advanced principles of floral design including wedding flowers, funeral arrangements, home interiors and current trends of floral art. Emphasis on design qualities, salesmanship and commercial floral accounts.
Prerequisite: PST 104 with a grade of "C" or better or consent of instructor.

PST 205 Master Floral Design I (1-2) 2 hrs.
Introduces techniques and procedures for using exotic flowers and materials in advanced floral design, includes traditional and contemporary styles of arrangements, adapting the unique attributes of exotic materials to the creative design process and proper care of these unusual foreign and domestic flowers and bulbs.
Prerequisite: PST 204 with a grade of "C" or better or consent of instructor.

PST 206 Master Floral Design II (1-2) 2 hrs.
Explores and develops the art and skills of arrangements of bouquets, creative hairpieces, corsages, ceremony decorations and reception designs for weddings. Practical experience in creating contemporary sympathy arrangements such as casket saddles, sprays and baskets.
Prerequisite: PST 204 with a grade of "C" or better or consent of instructor.

PST 207 Master Floral Design III (1-2) 2 hrs.
Develops mastery of the use of many kinds of silk and dried flowers for floral arrangements. The principles of design are applied to centerpieces, live arrangements, wreaths, swags and topiaries. Covers the acquisition, storage and special care that permanent flowers require.
Prerequisite: PST 204 with a grade of "C" or better or consent of instructor.

PST 212 Turfgrass Science (3-3) 4 hrs.
Identifies and discusses basic characteristics, soil requirements, environmental adaptation, propagation and uses of turfgrass. Special emphasis on the establishment of grasses and their identification. The management of established turfgrasses, emphasizing the essential maintenance practices of fertilization, weeds and their control, mowing, aerification, verticutting, renovation, and spraying for disease and insect control. A study of business procedures essential to turfgrass managers, including budgeting, recordkeeping, purchasing and time studies.
Prerequisite: PST 110 with a grade of "C" or better.

PST 244 Nursery Management (2-3) 3 hrs.
Studies operations fundamental to the nursery business including the propagation, planting, culture, harvesting and handling of nursery crops. Emphasis is placed on equipment, materials, procedures and ornamental plant dissemination through production and care of nursery plant materials.
Prerequisite: PST 111 with a grade of "C" or better.

PST 247 Floral Shop Management (2-3) 3 hrs.
Introduces floral shop operations which include equipment, materials used, plant and nonliving materials, floral shop design and construction and the operations which go on each day in the shop.
Prerequisite: PST 104 with a grade of "C" or better.

PST 248 Garden Center Operations (2-3) 3 hrs.
Details the fundamental skills and facilities required to properly plan and implement the operation of a garden center. Included are financing, material and supply selections, seasonal requirements and associated business needs.

PSY Psychology*

PSY 101 Introduction to Psychology (3-0) 3 hrs.
Human behavior with reference to perception, learning, individual differences, intelligence and personality. Developmental method stressed rather than experimental. Reference made to daily life and everyday problems.

PSY 106 Practical Psychology (3-0) 3 hrs.
Presents a practical application of the psychological principles that lead to efficiency of learning, adjustment, motivation, communication and attitudes in everyday life and classroom situations. This course does not meet Social Science requirements.

PSY 107 Humanistic Psychology (2-0) 2 hrs.
Focuses on various aspects of human behavior and personality. Several theories of psychosocial adjustment are presented and discussed. Through class discussion and structured activities in this workshop style course, students will examine their values, attitudes, experiences, strengths, weaknesses and interpersonal skills and how these affect themselves and others.

PSY 108 Topics in Psychology (2-0) 2 hrs.
Provides specific topic seminars which allow each student the opportunity to examine current issues, such as career development, developing self-esteem, or young adult development. The focus is on the analysis and organization of experiences for personal and positive growth. Goal setting, decision-making and lifestyle planning are emphasized.

PSY 145 Psychology in Business and Industry (3-0) 3 hrs.
Human behavior and its practical applications in business. Psychological applications in personnel and marketing problems, employee selection, morale and supervisory practices.
Prerequisite: PSY 101.

PSY 150 Psychology of Deafness (3-0) 3 hrs.
Considers the effects of prelingual and postlingual hearing impairment on the psychological and emotional development or adaptation of the individual. Study of cognitive and linguistic functioning, personality and interpersonal behavior.
Prerequisite: PSY 101.

PSY 210 Introduction to Research in Psychology (3-0) 3 hrs.
Introduction to the logic and theory of the scientific method. Emphasis on the basic statistical procedures and principles of experimental design. The purpose is to promote critical interpretations of behavioral data through an understanding of methods used in psychology.
Prerequisite: PSY 101.

PSY 216 Child Psychology I (3-0) 3 hrs.
Individual child from conception to fetal development, infancy and latency. Emphasis placed on child rearing practices and techniques that appear beneficial in creation of independent and well-adjusted personality. Child's interaction with parents, siblings, peers and greater community considered in the formation of the integrated self.
Prerequisite: PSY 101.

PSY 217 Adolescent Psychology (3-0) 3 hrs.
 Psychological study of the human organism from pubescence through adolescence and the beginnings of adulthood. Adolescence is studied as a time of rapid change resulting from increased drive state, physical maturity and changed social expectation. Emphasis is on how these changes are influenced by social institutions such as the family, the schools and the world of work, as well as by the divisions and conflicts taking place in society generally.
 Prerequisite: PSY 101.

*Educational Psychology, see EDU 211.
 Psychology of Exceptional Children, see CCA 219.

PSY 218 Adult Psychology (3-0) 3 hrs.
 Focuses on human psychological development from young adulthood to old age and adult psychological processes of personality. Emphasizes identity and intimacy of young adults and changing male and female roles with maturity; the family; work; personality and psychopathology; aging and death.
 Prerequisite: PSY 101 or consent of instructor.

PSY 220 Biological Basis of Behavior (3-0) 3 hrs.
 Studies the physiological aspects of behavior. Emphasizes the physiological foundations of motivation, consciousness, learning, emotion, aggression and stress. Clarifies the interaction between physiology, behavior and environment.
 Prerequisite: PSY 101.

PSY 225 Psychology of Personality (3-0) 3 hrs.
 Investigates the determining factors and dynamics of human personality. Studies major contemporary approaches such as psychoanalytic, humanistic learning as well as trait and factor theories. Also considers methods of personality assessment.
 Prerequisite: PSY 101.

PSY 228 Psychology of Human Development (3-0) 3 hrs.
 Introduces a complete coverage of human growth from conception to death. Emphasizes psychological and psychosexual developmental stages and crises. Incorporates interaction of biological factors with psychosocial stressors of one's environment.
 Prerequisite: PSY 101.

PSY 230 Psychology of Human Adjustment and Abnormal Behavior (3-0) 3 hrs.
 Studies scientifically the research and theories of psychology relevant to the dynamics of human adjustment. Emphasizes the meaning and con-

cept of adjustment applied to motivation, frustration, conflict, stress, anxiety, learning, personality, psychological diagnosis and psychotherapy.
 Prerequisite: PSY 101.

PSY 235 Learning Theory and Human Behavior (3-0) 3 hrs.
 Studies the basic principles of learning theory, particularly as they apply to human behavior. Includes application of these principles to the modification of human behavior.
 Prerequisite: PSY 101.

QUA Quality Assurance

QUA 130 Quality Assurance Concepts (3-0) 3 hrs.
 Introduces techniques of establishing and maintaining quality of products or services. Includes an introduction to statistical quality control applications.
 Prerequisite: MGT 150 or MTH 080 with a grade of "C" or better, or consent of coordinator.

QUA 160 Dimensional Metrology (2-2) 3 hrs.
 Introduces the basic concepts of dimensional metrology and inspection. Covers basic hand tools, reference surfaces, mechanical indicating equipment, optical equipment, fixed gauges and special measuring and inspection problems found in manufacturing applications. Includes use of a coordinate measuring machine along with the more common measuring equipment.
 Prerequisite: Blueprint reading experience and right angle trigonometry background.

QUA 230 Statistical Process Control (3-0) 3 hrs.
 Continues material introduced in QUA 130. Emphasizes statistical inference through the use of data, presentations, quantitative methods of summarizing data, probability theory, acceptance sampling, statistical process control methods, and trend analysis.
 Prerequisites: QUA 130, and MGT 225 or MTH 165 with grades of "C" or better.

QUA 235 Practical Problems of Quality Management (3-0) 3 hrs.
 Introduces the organization and operation of the quality function as it relates to both services and manufacturing. Emphasizes the various activities involved in managing the quality system including motivation for quality, quality improvement, customer relations and organization for quality.
 Prerequisite: QUA 130 with a grade of "C" or better or consent of instructor.

RAC Refrigeration and Air Conditioning

- RAC 100 Heating and Cooling Career Exploration (.5-10)** 1 hr.
Studies career and employment possibilities in the heating and cooling industry. Includes observation of practices in heating and cooling and attendance at a seminar to discuss related experiences. (NOTE: Summer semester only.)
Prerequisite: For students with no prior courses or work experience in the heating and cooling field and consent of coordinator.
- RAC 101 Refrigeration Fundamentals (3-3)** 4 hrs.
Introduces vocabulary, concepts and scientific principles used in the refrigeration industry. Develops skills in pipe fitting, use of hand tools and operation of instruments used in the refrigeration trade.
- RAC 102 Refrigeration Systems (3-3)** 4 hrs.
Continues to develop principles and concepts learned in RAC 101. Familiarizes students with components and accessories added to basic refrigeration systems for special applications. Develops trouble diagnosing procedures.
Prerequisite: RAC 101 with a grade of "C" or better.
- RAC 103 Heating Principles (3-3)** 3 hrs.
Describes sources and methods of producing heat for residential, commercial and industrial systems. Develops skills in testing, adjusting and replacing heating system components.
- RAC 104 Residential Comfort Systems (3-3)** 4 hrs.
Integrates concepts, principles and knowledge of equipment available for residential comfort systems including solar heat. Describes several residential systems and places emphasis on diagnosing system malfunctions.
Prerequisites: RAC 101 and RAC 103 with grades of "C" or better.
- RAC 105 Heating and Cooling Controls (3-3)** 4 hrs.
Describes the purposes and principles of operation and causes of failure in electrical components common to residential and small commercial systems. Emphasizes wiring schematics and diagrams.
- RAC 106 Advanced Controls (3-3)** 4 hrs.
Continues RAC 105. Includes electrical components. Emphasizes control systems, system malfunctions and proper repair procedures.

- RAC 200 Heating and Cooling Internship (1-15)** 2 hrs.
Applies appropriate skills to the heating and cooling technology field. (NOTE: Summer semester only.)
Prerequisite: Successful completion of at least 80 percent of the refrigeration and air conditioning program and consent of coordinator.
- RAC 201 Refrigeration System Design I (3-3)** 4 hrs.
Considers the factors in the selection of refrigeration compressors, evaporators, condensers and compressor oil, as well as the accessories used in commercial refrigeration. Examines the thermodynamic properties of the common refrigerants.
Prerequisite: RAC 102 with a grade of "C" or better or consent of instructor.
- RAC 202 Refrigeration System Design II (3-3)** 4 hrs.
Continues consideration of factors in the selection of metering devices, pipe sizing, motors and controls. Develops concepts of lubrication, multi-staging and cascade freezer systems.
Prerequisite: RAC 201 with a grade of "C" or better or consent of instructor.
- RAC 203 Air Conditioning Principles (3-3)** 4 hrs.
Examines the properties of air through the use of the psychometric chart and tables. Studies methods of computing heat gains and losses for residential and light commercial systems.
Prerequisite: RAC 104 with a grade of "C" or better or consent of instructor.
- RAC 204 Air Distribution (2-3)** 3 hrs.
Considers the factors in the selection of a duct system for efficient air distribution. Studies fan laws and pressure drops for proper fan and duct size selection. Describes types of registers and their location for optimum performance.
Prerequisite: RAC 104 with a grade of "C" or better or consent of instructor.
- RAC 208 Industrial Controls (3-0)** 3 hrs.
Describes the controls found in industrial HVAC and refrigeration systems. Emphasizes energy efficient systems.
Prerequisite: RAC 106 with a grade of "C" or better or consent of instructor.
- RAC 211 Residential Solar Heating (3-0)** 3 hrs.
Examines the nature of solar radiation and collections of solar energy. Studies existing systems for heating and cooling residential space and water.
Prerequisite: RAC 101 with a grade of "C" or better or consent of program coordinator.

RAC 290 Independent Study (3-0) 3 hrs.
For students with some experience who do not wish to duplicate their present knowledge, or who cannot attend classes regularly. Study plan to be worked out by instructor and student.

RDG Reading

RDG 090 Fundamentals of Reading (3-0) 3 hrs.
Presents instruction in the fundamental skills of reading. Designed for students whose linguistic and reading skills are insufficient for successful college work. Enrollment is determined by a score below the required score on the Harper College reading assessment test. Prepares students for RDG 097 or RDG 099. Carries no transfer credit.

RDG 097 Reading and the College Textbook (3-0) 3 hrs.
Provides classroom instruction in reading strategies to improve comprehension and vocabulary development in the college text. Utilizes a specific text from a selected college course and related readings with the goal to bring textbook reading skills to college level. Student must enroll in an identified course that is paired with RDG 097. Successful completion of RDG 097 fulfills the reading proficiency requirement of the Harper College assessment policy. Carries no transfer credit.
Prerequisite: RDG 090 or the Harper College reading placement test with an acceptable score.

RDG 099 Developmental Reading (3-0) 3 hrs.
Provides classroom instruction in comprehension utilizing a wide variety of written materials for students who need assistance in bringing their reading skills to college level. Enrollment in RDG 099 is determined by obtaining a score below the passing score on the Harper College reading placement test. Successful completion of RDG 099 fulfills the reading proficiency requirement of the Harper College assessment policy. Carries no transfer credit.
Prerequisite: RDG 090 or the Harper College reading placement test with an acceptable score.

RDG 100 Reading for the Technologies (3-0) 3 hrs.
Teaches reading, writing and problem-solving strategies appropriate to vocational/technical programs. Provides practice with applying skills necessary for success in specific career-vocational programs.
(NOTE: Cannot be used for Group II or V General Studies requirement for A.A. or A.S. degree.)

RDG 105 College Reading (2-0) 2 hrs.
Increases reading rate and flexibility and improves ability to interpret written materials critically. Emphasis is on improving rate while maintaining comprehension.
Prerequisite: 10th-grade reading level or above.

RDG 106 Critical College Reading Skills (3-0) 3 hrs.
Develops the full array of mature, fluent reading skills, including critical and analytical comprehension, content area reading, predictive reading, vocabulary development, speed and flexibility. Also covers theories of comprehension and language development.

RES Real Estate

RES 101 Real Estate Transactions (3-0) 3 hrs.
Provides instruction in basic real estate fundamentals for those who wish to qualify for a real estate license. Applies to both the salesperson's and broker's licenses. Surveys real estate law, interests in real estate, ownership, the real estate business, financing and appraisal.
(NOTE: Students must be 21 years of age to qualify for the State of Illinois Real Estate Exam.)

RES 105 Real Estate Math Applications (1-0) 1 hr.
Explains use of mathematics in the real estate business and drills in land area and volume, capitalization rates, computing valuations and proration. Emphasizes logical approach to arithmetic situations.
Recommended Corequisite: RES 101.

RES 110 Real Estate Survey (1-0) 1 hr.
Covers the most current real estate laws, both Illinois and federal, affecting the real estate business as well as the information required of real estate licensees.

RES 115 Brokers Preparation (4-0) 4 hrs.
Meets the State of Illinois educational requirements toward obtaining a real estate brokers license. Surveys advanced principles, contracts and conveyances, finance, and marketing.
Prerequisite: RES 101 with a grade of "C" or better.

RES 121 Advanced Principles, Marketing and Brokerage (3-0) 3 hrs.
Marketing applied to the real estate business. Sales planning, obtaining the qualifying prospects, securing listings, showing properties and motivation are considered. Procedural matters pertaining to the business such as office location, staffing and office systems are discussed, as well as the laws, regulations and ethics of the business. Samples of currently used forms are integrated into the course.
Prerequisite: RES 101 with a grade of "C" or better or consent of coordinator.

RES 123 Real Estate Law (3-0) 3 hrs.
Examines legal aspects of the real estate business, including contracts, interests in land, transactions, brokerage, leasing, closings, zoning, taxation and the legal forms and remedies relative thereto.
Prerequisite: RES 101 with a grade of "C" or better or consent of coordinator.

RES 124 Real Estate Finance (3-0) 3 hrs.
Analysis of the various financial aspects of owning, buying and marketing all types of real estate, including mortgages, construction loans, leasing, sales and leaseback, foreclosure, trading, governmental programs and contracts and taxation.
Prerequisite: RES 101 with a grade of "C" or better or consent of coordinator.

RES 140 Standards of Professional Appraisal Practice (1-0) 1 hr.
Familiarizes participants with the provisions and standards rules of the Uniform Standards of Professional Appraisal Practice and specific state regulations.
Corequisite: RES 101 with a grade of "C" or better.

RES 150 Appraisal Principles and Residential Appraisal Procedures (2-2) 3 hrs.
Introduces basic real estate appraisal principles. Includes math as used in valuation. Limited to single-family residential properties.
Prerequisite: RES 140 with a grade of "C" or better.

RES 160 Non-Residential Real Estate Appraisal (3-3) 4 hrs.
Features analysis of mathematical data to derive sound value estimates for income-producing properties. Requires use of financial function tables and calculators. Applies sound valuation analysis and effective communication.
Prerequisite: RES 150 with a grade of "C" or better.

RES 220 Real Estate Investment Analysis I (3-0) 3 hrs.
Presents the beginning skills used in interpreting investment potential of real property. Highly quantitative, requires advanced calculators and some knowledge of personal computers.
Prerequisite: RES 101 with a grade of "C" or better.

RES 221 Real Estate Investment Analysis II (3-0) 3 hrs.
Continues study of real estate investment potential. Case studies research into the current marketplace, and applications using modern methodology, calculators, and personal computers will be used.
Prerequisite: RES 220 with a grade of "C" or better.

RES 230 Property Management Methods (3-0) 3 hrs.
Covers property analysis, rental scheduling, collection and budgeting; maintenance and repair; insurance, advertising; techniques of handling tenants; executive and management control techniques. Course emphasizes procedures and methodology.
Prerequisite: RES 123 with a grade of "C" or better or consent of coordinator.

RES 233 Real Estate Problems Seminar (3-0) 3 hrs.
Contemporary issues in the real estate industry possibly including tax foreclosures, tax deeds, tax titles, special assessments, assessing methods and practices, legislative and judicial influences upon the industry and effects of the current economic situation upon the real estate industry. Directed readings and analysis of case studies will be used extensively.
Prerequisite: Previously completed nine credit hours of real estate course work.

SGN Sign Language

SGN 101 American Sign Language I (4-0) 4 hrs.
Introduces the student to American Sign Language with emphasis on receptive and expressive vocabulary skill development and appropriate use of grammatical structures. Information about the deaf community and its culture is also presented. Designed for students with no previous experience in American Sign Language.

SGN 102 American Sign Language II (4-0) 4 hrs.
Reviews American Sign Language vocabulary and grammar essentials presented in SGN 101 and continues receptive and expressive American Sign Language skill development and application

of increasingly complex grammatical structures. Additional cultural information is also presented. Prerequisite: SGN 101 with a grade of "C" or better or consent of department chairperson.

SGN 103 Fingerspelling (2-0) 2 hrs.
Provides instruction and intensive practice in the development of expressive and receptive skills at increasing levels of complexity. Receptive skill development focuses on whole word and phrase recognition, as well as reading fingerspelling embedded in signed sentences. Expressive skill development focuses on improved fluency, clarity and speed.

SGN 104 CASE: Signed English 1-3 hrs.
Provides instruction in conceptually accurate signed English and introduces students to deaf culture. Combines English grammatical structures with American Sign Language signs, initialized signs, fingerspelling and specific ASL linguistic principles. Designed for parents and teachers of the hearing impaired, other interested professionals and students preparing to enter the Interpretation/Transliteration program.

One Credit: Covers introduction to the manual alphabet and numbers 1-20, basic linguistic principles including signing space, sight line, sign parameters, Time Line and questions, and basic vocabulary skill development and introduces the student to deaf culture.

Two Credits: Covers preceding content along with numbers 20-30, linguistic principles: negation, present and absent referent, person affix/agency, additional lexical items and information regarding myths and stereotypes and conversation regulators.

Three Credits: Covers preceding content along with numbers 30-100, directional verbs, number incorporation, noun-verb pairs, classifiers, lexical development and cultural information, including the deaf community and deaf education.

SGN 201 American Sign Language III (4-0) 4 hrs.
Reviews American Sign Language vocabulary and grammatical structures presented in SGN 102 and focuses on grammatical and lexical expansion with emphasis on idiomatic usage and sociocultural communicative functions. Prerequisite: SGN 102 with a grade of "C" or better or consent of department chairperson.

SGN 202 American Sign Language IV (3-0) 3 hrs.
Reviews American Sign Language grammatical structures and lexical items presented in SGN 201. Focuses on conversational practice to develop expressive and receptive facility with the

language. Includes culturally significant topics and interaction with members of the deaf community. Prerequisite: SGN 201 with a grade of "C" or better or consent of department chairperson.

SGN 205 American Sign Language V (3-0) 3 hrs.
Provides an in-depth examination of the linguistic structure of American Sign Language and includes a contrastive analysis of English and American Sign Language syntax. Designed for students interested or currently enrolled in the Interpretation/Transliteration program. Prerequisite: SGN 202 with a grade of "C" or better or consent of department chairperson.

SGN 210 American Sign Language Community: A Cultural Perspective (4-0) 4 hrs.
Examines the history of American Sign Language, the emergence of the deaf community as a linguistic and cultural group, the cultural norms, values, traditions and rules of social behavior of the deaf community, minority dynamics and cross cultural interactions. Prerequisite: SGN 201 with a grade of "C" or better or consent of department chairperson.

SOC Sociology

SOC 101 Introduction to Sociology (3-0) 3 hrs.
Analysis and description of the structure and dynamics of human society. Application of scientific methods to the observation and analysis of social norms, groups, intergroup relations, social change, social stratification and institutions.

SOC 120 The Family in Contemporary Society (3-0) 3 hrs.
Examines the family as a social institution and as a dynamic interactive system. Topics include courtship, marriage, family systems, parenting, non-traditional forms of the family. Prerequisite: SOC 101 with a grade of "C" or better or consent of instructor.

SOC 205 Social Problems (3-0) 3 hrs.
Analysis of contemporary social problems. Investigation of theories dealing with conformity and deviance, racial and minority group prejudice, crime and delinquency, personality problems, urbanization and fundamental institutional problems due to social change. Prerequisite: SOC 101 with a grade of "C" or better.

SOC 210 Social Institutions (3-0) 3 hrs.
Primary social institutions, including family, religious, educational, economic and political. Questions considered: who participates, what are the functions, what are the consequences, and an evaluation of the effects of the institutions on the society.
Prerequisite: SOC 101 with a grade of "C" or better and sophomore standing.

SOC 215 Introductory Social Psychology (3-0) 3 hrs.
Introduces the methods used to understand, explain and predict how the thoughts, feelings and actions of individuals are influenced by the thoughts and actions of social groups. Investigates how attitudes, beliefs and behaviors are influenced by others within society and how society is influenced by the individual.
Prerequisite: PSY 101 or SOC 101 with a grade of "C" or better.

SOC 220 Topics in Social Science 1-6 hrs.
Studies selected problems or topics in social science. The exact content and instructional methodology will vary from semester to semester depending on the material to be studied. A syllabus or course outline containing additional information will be available with pre-registration materials each time that the course is offered. This course may be taken from one to six credit hours.

SOC 230 Sociology of Sex and Gender (3-0) 3 hrs.
Examines the social processes in society which translate biological differences (sex) between men and women into social and psychological categories or gender roles. Various theories will be considered in an attempt to understand the existence of gender inequality and how the process of socialization influences the proper "place" for men and women in society. Gender roles and power are considered when analyzing the marketplace, politics, marriage and family, or in considering issues such as the feminization of poverty, violence in the home, and male sensitivity.
Prerequisite: SOC 101 with a grade of "C" or better.

SPA Spanish

SPA 101 Elementary Spanish I (4-0) 4 hrs.
Introduces the language skills of listening, understanding, speaking, reading and writing in their logical sequence. Designed for students with no previous experience in Spanish.

SPA 102 Elementary Spanish II (4-0) 4 hrs.
Continues SPA 101. Situational conversations in Spanish; reading and writing stressed.
Prerequisite: SPA 101 with a grade of "C" or better, two years of high school Spanish or consent of instructor.

SPA 201 Intermediate Spanish (4-0) 4 hrs.
Conversation with emphasis on pronunciation, intonation, stress and rhythm. Introduction to composition, reading of short stories and grammar review.
Prerequisite: SPA 102 with a grade of "C" or better, two years of high school Spanish or consent of instructor.

SPA 202 Intermediate Spanish (4-0) 4 hrs.
Continues SPA 201. Increases the knowledge of the language and focuses on the culture of Spanish-speaking countries. Continues grammar study.
Prerequisite: SPA 201 with a grade of "C" or better, three years high school Spanish or consent of instructor.

SPA 205 Intensive Oral Practice (3-0) 3 hrs.
Conversational practice to develop oral facility; specially designed exercises in pronunciation, stress and rhythm. Individual readings of modern Spanish works discussed in class. Written and oral compositions based on readings. Designed to help students bridge the gap between the intermediate and advanced levels.
Prerequisite: SPA 202 with a grade of "C" or better, or equivalent or consent of instructor.

SPA 210 Introduction to Modern Spanish Literature (3-0) 3 hrs.
Reading of selected 20th century masterpieces. Introduction to poetry. Oral readings stressing pronunciation and diction. Speaking based on discussion of works read. Writing based on readings and class discussions. Designed to help students bridge the gap between the intermediate and advanced levels.
Prerequisite: SPA 202 with a grade of "C" or better, or equivalent or consent of instructor.

SPE Speech and Theatre

SPE 101 Fundamentals of Speech Communication (3-0) 3 hrs.

Theory and practice of oral communications. Development of poise, confidence and skill in speech organization and delivery. Emphasis on frequent speaking, development of standards of criticism and selection and organization of material.

SPE 102 Public Speaking and Communication Theory (3-0) 3 hrs.

Examination of communications principles underlying successful platform behavior. Development of proficiency in the logic of argument and skill of speaking. Consideration of forms of public address; analysis and delivery of one such form as a semester assignment.
Prerequisite: SPE 101 with a grade of "C" or better or consent of instructor.

SPE 107 Oral Interpretation (3-0) 3 hrs.

Provides the student an opportunity to select, prepare and perform various types of literature. Emphasizes the use of body and voice in oral reading.

SPE 111 Introduction to the Theatre (3-0) 3 hrs.

Introduces to theatrical and dramatic art. Emphasis on providing the student with the tools of analysis which give him or her insight into the total imaginative process that makes up the art of the theatre.

SPE 115 Interviewing (1-0) 1 hr.

Focuses on the unique demand of dyadic communication. The student will examine interview types, participate in model interview situations and identify and practice good listening skills.

SPE 180 Applied Forensics I (0-2) 1 hr.

Provides practical experience in the preparation of public speeches, oral interpretation programs, acting scenes, group performances and/or limited preparation speaking situations for public presentation in forensics/speech competition.

SPE 181 Applied Forensics II (0-2) 1 hr.

Continues SPE 180. Provides practical experience in the preparation of public speeches, oral interpretation programs, acting scenes, group performances and/or limited preparation speaking situations for public presentation in forensics/speech competition.
Prerequisite: SPE 180 with a grade of "C" or better.

SPE 182 Applied Forensics III (0-2) 1 hr.
Continues SPE 181. Provides practical experience in the preparation of public speeches, oral interpretation programs, acting scenes, group performances and/or limited preparation speaking situations for public presentation in forensics/speech competition.

Prerequisite: SPE 181 with a grade of "C" or better.

SPE 183 Applied Forensics IV (0-2) 1 hr.

Continues SPE 182. Provides practical experience in the preparation of public speeches, oral interpretation programs, acting scenes, group performances and/or limited preparation speaking situations for public presentation in forensics/speech competition.

Prerequisite: SPE 182 with a grade of "C" or better.

SPE 205 Discussion and Debate (3-0) 3 hrs.

Principles, techniques and types of discussion and debate; experience in various types of discussion and debate activities.

Prerequisite: SPE 101 with a grade of "C" or better.

SPE 212 Acting I (3-0) 3 hrs.

Methods used in the art of acting; stress on practical acting situations.

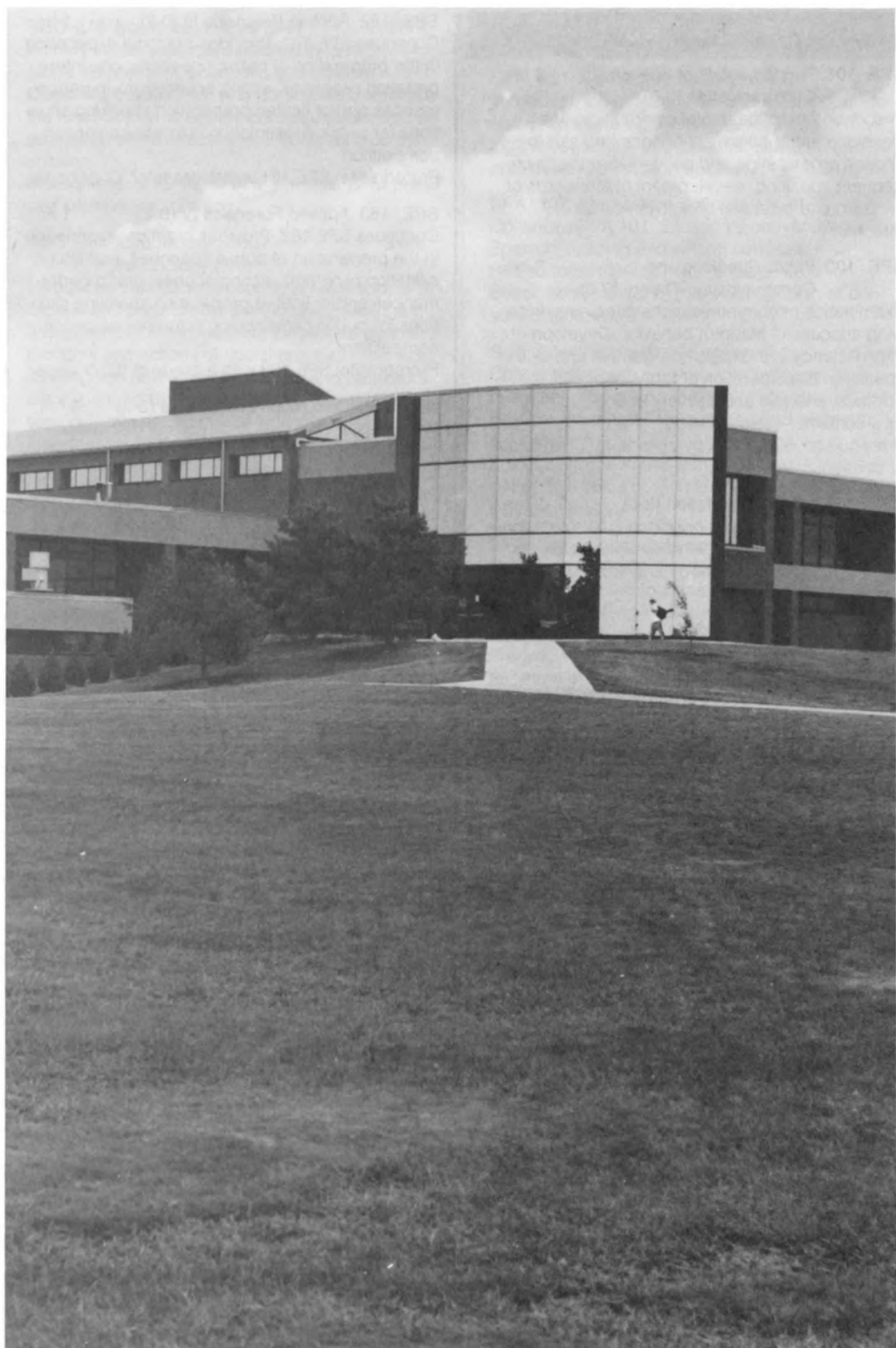
SPE 213 Acting II (3-0) 3 hrs.

Continues the development of acting skills introduced in SPE 212. Helps the student develop a believable character through play analysis and scene study. Introduces the student to acting styles.

Prerequisite: SPE 212 with a grade of "C" or better and consent of instructor.

SPE 216 Stagecraft (0-6) 3 hrs.

Emphasizes the technical processes of the stage. Includes stage structures and scenery, construction processes, lighting theory and practices, costuming and related equipment and hardware. Laboratory work will be correlated with the College's theatrical productions. (Formerly ART 270.)



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