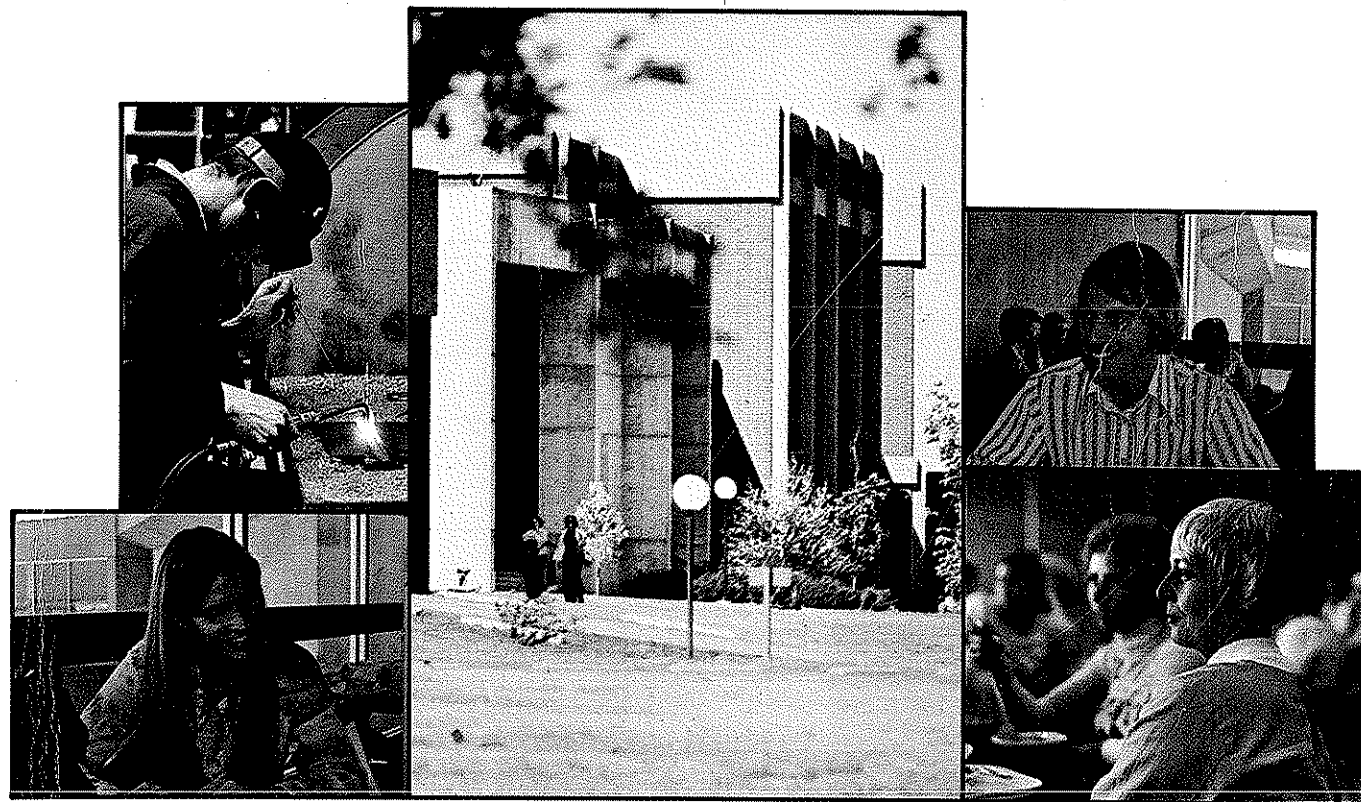


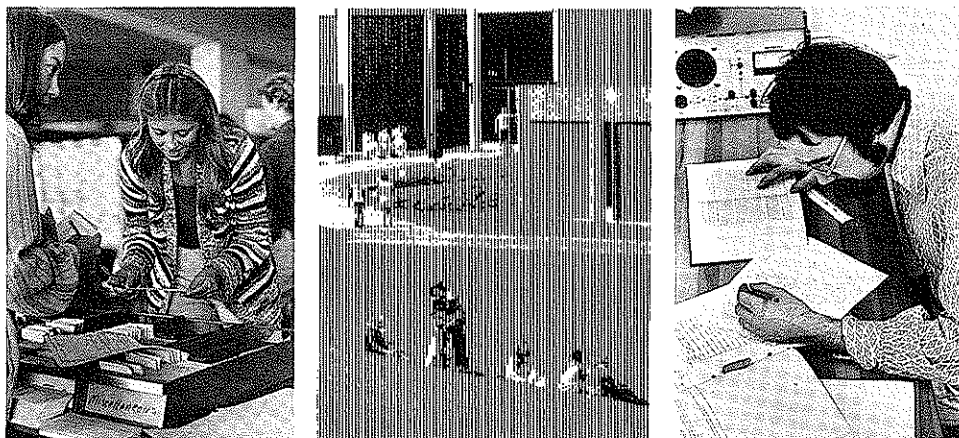
KIRKWOOD COMMUNITY COLLEGE

1977-78
CEDAR RAPIDS, IOWA





1977-78 CATALOG



KIRKWOOD community college

6301 KIRKWOOD BLVD. S.W. • CEDAR RAPIDS, IOWA 52406
PHONE (319) 398-5517

The information contained in this catalog is subject to change without notice. This catalog cannot be considered as an agreement or contract between individual students and Kirkwood Community College or its administrators.

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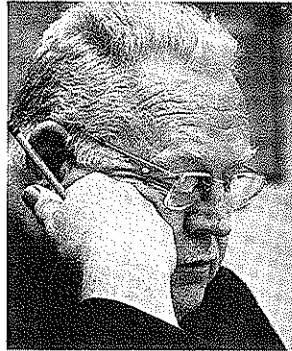
John Blong
Associate Superintendent, Ancillary Services



A publicly supported
community college serving
the Iowa counties
of merged Area Ten.

A SECOND DECADE

SUPERINTENDENT'S MESSAGE



This edition of the college catalog is being issued as Kirkwood embarks on its second decade of educational service to the people of Area Ten. Kirkwood's tenth anniversary year in 1976 presented an opportunity to reflect on the college's early growth and to assess its achievements. The college has steadily expanded its educational offerings and community service programs, in addition to adding new campus facilities with modern learning aids.

However, it is important to realize that the real story of Kirkwood's early years is one of people. Kirkwood belongs to the people and their community. It was brought into existence to serve the needs and aspirations of the residents in the seven-county area, especially those who were unable to attend our colleges and universities or did not have easy access to the educational and training programs they needed. The dedication to quality educational opportunities, accessible to all individuals, is the foundation of the two-year community college concept. That objective grows more vital as the demand for better educated and more highly trained individuals increases. Thus, you find the community college offering a diversity of programs that appeal to a variety of interests and talents--from persons seeking to complete high school, to adults seeking career advancement; from programs to develop basic skills in reading, writing and math, to special programs to assist the elderly.

Look over our many programs that are described in the following pages. We hope there is some way we can serve you, whatever your age or goals may be.

Selby A. Ballantyne
Superintendent

ACADEMIC CALENDAR

Fall 1977

August 29, 30 Registration
 August 31 Classes Begin
 September 5 College Holiday, no classes, offices closed
 September 7 Last day to register or add classes
 November 2 Last day to drop classes
 November 11 College Holiday, no classes, offices closed
 November 23 End classes
 November 24, 25 College Holiday, no classes, offices closed

WINTER 1977-78

November 28, 29 Registration Days
 November 30 Classes Begin
 December 6 Last day to register late or add classes
 December 26 College Holiday, no classes, offices closed
 December 23-30 Student Recess Days
 January 2 College Holiday, no classes, offices closed
 February 8 Last day to drop classes
 February 20 College Holiday, no classes, offices closed
 March 1 End Classes

SPRING 1978

March 2, 3 Registration Days
 March 6 Classes Begin
 March 10 Last day to register late or add classes
 March 24 College Holiday, no classes, offices closed

April 3-7
 May 12
 May 29

June 2
 June 3

June 5
 June 6
 June 12

July 4

August 4
 August 25
 August 26

Student Recess Days
 Last day to drop classes
 College Holiday, no classes, offices closed
 End classes
 Commencement

SUMMER 1978

Registration day
 Classes Begin
 Last day to register late or add classes
 College Holiday, no classes, offices closed
 Last day to drop classes
 End classes
 Commencement

FALL 1978

August 28, 29 Registration
 August 30 Classes Begin
 September 4 College Holiday, no classes, offices closed
 September 6 Last day to register late or add classes
 November 1 Last day to drop classes
 November 10 College Holiday, no classes, offices closed
 November 22 Quarter Ends
 November 23, 24 College Holiday, no classes, offices closed

WINTER 1978-79

November 27, 28 Registration Days
 November 29 Classes Begin
 December 5 Last day to register late or add classes
 December 25 College Holiday, no classes, offices closed

December 26-29 Student Recess Days
 January 1 College Holiday, no classes
 January 2 Student Recess Day
 February 19 College Holiday, no classes
 February 28 Quarter Ends

SPRING 1979

March 1, 2 Registration Days
 March 5 Classes Begin
 March 9 Last day to register late or add classes
 April 9-12 Student Recess Days
 April 13 College Holiday, no classes
 May 10 Last day to drop classes
 May 28 College Holiday, no classes
 May 31 Quarter Ends

SUMMER 1979

June 1 Registration
 June 4 Classes Begin
 June 8 Last day to register late or add classes
 July 4 College Holiday, no classes
 August 3 Last day to drop classes
 August 24 Quarter Ends

FALL 1979

August 27, 28 Registration Days
 August 29 Classes Begin
 September 3 College Holiday, no classes
 September 5 Last day to register late or add classes
 October 31 Last day to drop classes
 November 12 College Holiday, no classes
 November 21 Quarter Ends
 November 22, 23 College Holiday, no classes

WINTER 1979-80

November 26, 27 Registration Days
 November 28 Classes Begin
 December 4 Last day to register late or add classes
 December 24 Student Recess Day
 December 25 College Holiday, no classes
 December 26-28 Student Recess Days
 December 31 Student Recess Day
 January 1 College Holiday, no classes
 February 6 Last day to drop classes
 February 18 College Holiday, no classes, offices closed
 February 27 Quarter Ends

SPRING 1980

February 28, 29 Registration Days
 March 3 Classes Begin
 March 7 Last day to register late or add classes
 April 4 College Holiday, no classes, offices closed
 April 7-11 Student Recess Days
 May 9 Last day to drop classes
 May 26 College Holiday, no classes, offices closed
 May 30 Quarter Ends

SUMMER 1980

June 2 Registration
 June 3 Classes Begin
 June 9 Last day to register late or add classes
 July 4 College Holiday, no classes, offices closed
 August 1 Last day to drop classes
 August 22 Quarter Ends

THE COLLEGE RESERVES THE RIGHT TO MODIFY THE ABOVE CALENDARS.

CONTENTS

The College	8
Student Life	
Student Services	15
Policies and Regulations	21
Instructional Program	
Arts and Sciences	36
Vocational-Technical	45
Developmental Program	83
Community Education	85
Course Descriptions	89
Administrative Staff and Faculty	163
Index	177

CATALOG GUIDE TO CAREER AREAS

Agribusiness and Natural Resources	Page
Agribusiness	45
—Agribusiness Management	46
Animal Health Management	46
Farm Equipment Mechanics	47
Grounds and Recreational	
Vehicle Repair	48
Horse Husbandry	49
Horticulture and Natural Resources	50
—Landscape/Nursery/Garden Center	50
—Grounds and Turf Management	50
—Parks and Natural Resources	50
Production Agriculture	51
Veterans Farm Management	52
Arts and Sciences Division	
College Parallel—Transfer Curricula	36
—Career Areas	36
—College Majors	36
College Parallel—Career Programs	36
English as a Second Language	41
Developmental Program	41
Business and Office Careers	
Accounting Specialist	53
Computer Operations	54
Computer Programmer/Analyst	55
Junior Accounting	54
Keypunch	56
Office Education (Secretarial)	56-59
Management Development	59

Construction Careers	
Architectural Drafting	62
Rural Building Construction	63
Welding.....	63
Environmental Careers	
Environmental Health Assistant	64
Environmental Health Technology	65
Water & Wastewater Technology.....	65
Health Careers	
Dental Assistant.....	66
Dental Laboratory Technician	67
Dental Management	67
Medical Assistant.....	68
Preventive Dentistry	68
Occupational Therapy Assistant	71
Orthopaedic Physician's Assistant.....	71
Practical and Associate Degree Nursing	69-70
Respiratory Therapy	72
Manufacturing Production Careers	
Electronics Engineering Technology.....	73
Machinist	73
Mechanical Engineering Technology.....	74
Manufacturing Service Careers	
Automotive Collision Repair.....	75
Automotive Mechanics.....	75
Communications Electronics	76
Electrical Equipment Servicing	77
Marketing & Distribution Careers	
Fashion Merchandising	77
Floriculture	79
Food Service Training/Management	78

Food Store Management	79
Graphic Arts.....	80
Home Furnishings	81
International Trade	38
Retail Management	82
Public Service Careers	
Aide for the Handicapped	37
Law Enforcement/Corrections.....	37-38
Legal Assistant.....	39
Library Services	39
Teacher Associate.....	40



THE COLLEGE



Kirkwood Community College is a publicly supported college serving the Iowa counties of Benton, Linn, Jones, Iowa, Johnson, Cedar and Washington as well as portions of nine adjacent counties which are part of the merged area. The total land area of the seven major counties served is 4,408 square miles or 7.8 percent of the total land area of the state of Iowa.

The college operates under the regulations of the Iowa State Board of Public Instruction with the board of directors of merged Area Ten as its governing board.

HISTORY

The history of Kirkwood began in January, 1965 when a steering committee was formed to establish a vocational school to serve Area Ten. Work on the study began almost immediately and was completed by July, 1965.

Soon after, the Iowa General Assembly passed enabling legislation which made possible the establishment of a system of community colleges and area vocational-technical schools throughout the state. Educators and laymen in Area Ten recognized the need for a comprehensive community college which would provide college transfer and adult education curricula as well as vocational-technical curricula. Therefore, the nine-man board of directors elected by the citizens of the area asked for and received permission from the State Board of Public Instruction to establish Kirkwood Community College. The college was formally established on July 1, 1966.

The college immediately assumed responsibility for federally funded vocational-technical programs which had been provided by the Cedar Rapids Community School District since 1964.

The Arts and Sciences, Student Services and Community Education Divisions were established in 1967. Later, Wednesday College and Future College were developed through the 2-3-2 program, which enables a student to complete two years of college in three years by taking

two classes each quarter.

Thus, in the college's short history, the foundation has been established for expanded educational opportunities in vocational-technical education, college parallel and career-oriented programs, adult and continuing education, student services, and community services.

MISSION AND PURPOSES

Merged Area Ten represents an emerging socio-politico-economic unit. It is an area in transition, mingling rapidly developing urban centers and rich farm lands dotted with small rural communities. Within its borders are many space-age industries, prosperous farms, a major state university, several private liberal arts colleges, and myriad supportive and service institutions and industries. In this setting of vigorous economic expansion and rapid population growth, advancing technology has created unprecedented demands for formal education and training programs. This same technology has simultaneously placed greater demands upon the individual in his role of responsible citizen.

For years, American society has taken for granted the importance of secondary schooling for the many and higher education for the few. Only recently, however, has recognition been extended to the need for post-high school education for the majority of adults. Accordingly, institutions of higher education, although well suited to the service of a relatively select few, have not been prepared to satisfy the needs of the growing numbers of individuals who desire to participate in post-high school education. Thus, the citizens of Iowa have delegated this responsibility to the comprehensive community college.

Kirkwood Community College is charged by law with the responsibilities of identifying the educational needs and desires of adult citizens and of designing educational programs which will help them fulfill their goals. Specifically, the law directs community colleges to pro-

vide the following: the preparation necessary for the productive employment of every citizen; vocational and technical training for persons who wish to enter the labor force, for persons already employed who need additional training or re-training, and for those who are handicapped; programs for first two years of college-parallel study; programs for high school completion; and student personnel and community services. To fulfill these responsibilities, the college must remain a flexible and responsive institution, willing to depart from educational traditions, whenever necessary, in order to meet the interests of the people it serves. Kirkwood Community College, therefore, is guided in this effort by the following purposes:

- 1) To serve educational needs and interests of all people of post-high school age without regard to educational, social, economic, racial or religious backgrounds.
- 2) To provide individuals with the technical knowledge and skills necessary to enter into and progress in gainful employment.
- 3) To qualify individuals to cross changing thresholds of employment.
- 4) To extend individuals' awareness of the prerogatives and responsibilities of citizenship in contemporary society.
- 5) To provide a setting in which individuals may increase their awareness of themselves and their varied environments and examine ideas freely and critically without threat or fear of recrimination.
- 6) To serve as a center for creative expression and participation in the fine arts and applied arts.
- 7) To provide individuals with avenues of exploration which lead to enjoyable and self-fulfilling use of leisure time.

- 8) To help the community of Area Ten, and as appropriate, the larger society, to enhance the quality of its intellectual, social, cultural and economic life through the provision of educational programs and services.

ACCREDITATION

Kirkwood Community College is accredited by, and is a member of, the North Central Association of Colleges and Secondary Schools. Kirkwood is also approved by the Board of Regents and the State Board of Public Instruction. Individual programs within the college are accredited by appropriate associations within their respective fields. Many programs are approved for veterans.

KIRKWOOD FOUNDATIONS

The primary objective of the Kirkwood Community College Foundation and the Kirkwood Community College Facilities Foundation is the strengthening of Kirkwood's scientific, literary and educational pursuits. As two private non-profit corporations, the foundations are empowered to solicit and receive tax deductible gifts and bequests, and trusts; all for the benefit of Kirkwood Community College. Any gift to Kirkwood, restricted or unrestricted, may be made through the foundations.

The foundations encourage voluntary giving to provide more funds for scholarships, fellowships, student loans, library acquisitions, faculty grants, and other college needs for which tax dollars are limited or unavailable.

Voluntary board members from Kirkwood's seven-county area assist in the many fund raising efforts.

ANNUAL FUND DRIVES

The foundations serve to channel gifts from alumni, friends, corporations and foundations to the college through annual fund drives. Many gifts are received each year as a result of these campaigns.

The foundations also coordinate planned giving in the form of deferred gifts through bequests, living trusts, testamentary trusts, life insurance agreements, life income contracts and gift annuities.

MEMORIAL FUNDS

Permanent memorials on the campus, "named" scholarships, professorships, facilities, or areas in buildings also are coordinated through the foundations.

KIRKWOOD ALUMNI ASSOCIATION

The Alumni Association was founded to serve the needs and interests of students who complete programs at Kirkwood.

A 14-member Alumni Board of Directors meets twice monthly to plan and manage the comprehensive alumni program, which includes social activities and service projects for Kirkwood students and area residents, as well as Kirkwood graduates. In addition, two major fund raising events are conducted each year to solicit alumni support for the Kirkwood Alumni Scholarship Fund. The alumni Directors are initiating new projects in such areas as student recruitment, legislation and audio visual/broadcast presentations.

Membership in the Alumni Association is open to any person who subscribes to the purposes of the organization. Copies of the alumni constitution and bylaws can be obtained through the Kirkwood Alumni Office in Linn Hall.

EXPANDING HORIZONS FOR WOMEN

Kirkwood offers a year-round program of activities for adult women. The program features a luncheon discussion series that is held each Wednesday noon in Iowa Hall. A different topic is explored at each meeting by speakers from the Area Ten community and Kirkwood staff. A series of Expanding Horizons Workshops also is

offered each quarter. It is designed to provide an opportunity for women to explore various subject areas in-depth. Approximately four workshops are held each quarter in Iowa Hall, and each is about four hours in length. A special information brochure is published each quarter listing all women's activities, as well as Arts and Sciences credit courses, Community Education classes and Business Development seminars that might be of interest to women. It also provides information on counseling and vocational-technical programs. The college's Child Care Center is available to women participating in Kirkwood classes and activities.

FACILITIES

The Kirkwood main campus, located at 6301 Kirkwood Boulevard S.W., is a 315-acre site on the south edge of Cedar Rapids. The first permanent building, Linn Hall, was completed in the fall of 1969. It contains 40 classrooms, 35 laboratories and offices and two large multi-purpose rooms.

The building houses over 40 full-time vocational-technical offerings plus science and foreign language laboratories and classrooms. Some day and evening adult education classes are also offered in Linn Hall.

Iowa Hall, completed in January of 1975, is the second permanent building to be built on the Kirkwood campus. It contains the college cafeteria, bookstore, coffee house, student work areas, conference rooms, multi-purpose rooms, lounges, study areas and the Student Affairs Office.

An area designated as East Campus consists of 22 relocatable buildings and is located within walking distance of Linn Hall. This portion of the campus consists of classrooms, laboratories, a student lounge and offices of the Arts and Sciences and Community Education Divisions.

12

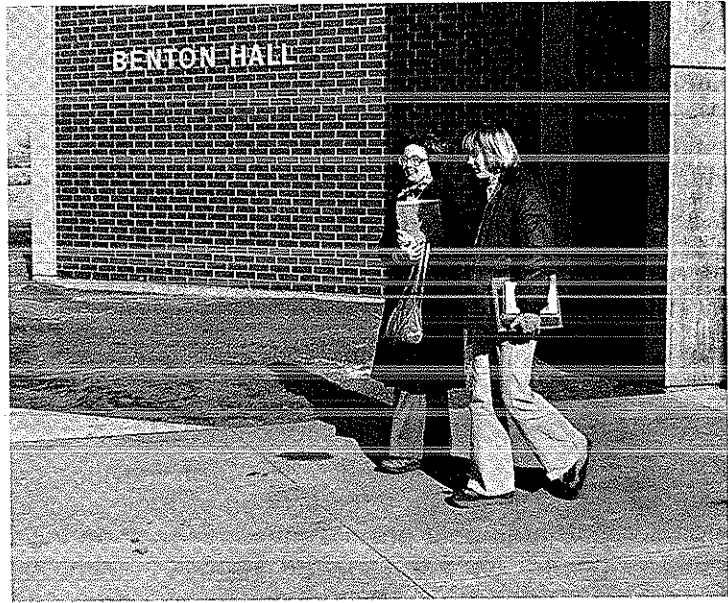
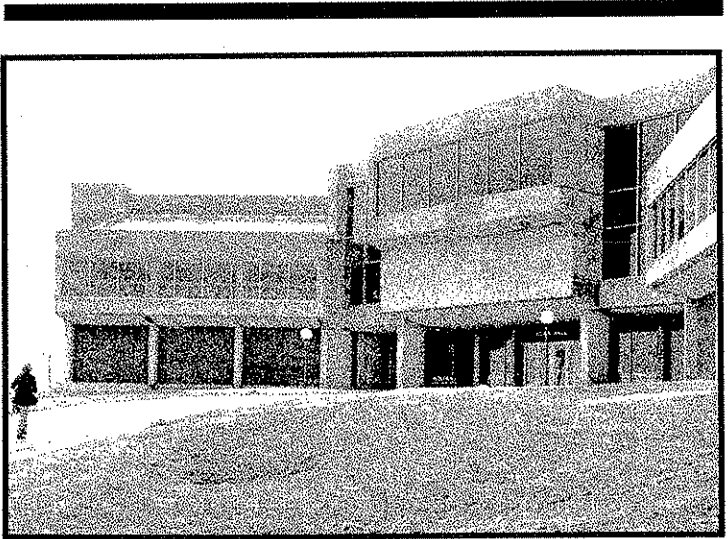
An area adjacent to the East Campus is the site of the new Skills Center, which offers a program of services for the handicapped. It is named Jones Hall and also houses Kirkwood's welding and building trades facilities.

Benton Hall is the college's new Learning Resource Center, or library. It was completed in the spring of 1977 and serves to connect the east and west campuses. It is adjacent to Iowa Hall.

The farm programs on campus are located on the south side of the campus. The buildings include the college's new mechanics building, Washington Hall. When completed in 1978, it will house the farm mechanics program and other classes related to farm mechanization. Other programs having facilities on the farm site include Agribusiness and Natural Resources, Rural Building Construction, Horse Husbandry (including barn, stall and arena). There are also hog farrowing houses, beef feed lots and a feed mixing laboratory for the beef testing station.

Kirkwood maintains an education center in Iowa City at 1816 Lower Muscatine Road; in Cedar Rapids, at Sixteenth Avenue and Ninth Street, S.W.; and in Anamosa, at the State Men's Reformatory. These centers offer a full educational program, including adult basic education classes, high school completion, vocational-technical training and Arts and Sciences courses. A child care center was opened at the Cedar Rapids Community Education Center in 1976.

Other off-campus facilities include a 22-acre recreational area, and more than 75 high school buildings, churches, neighborhood opportunity centers, elementary schools, and other facilities which are made available to the college through cooperation with school districts in Kirkwood's seven-county area. This makes educational opportunities available to all people of the area.



BENTON HALL LEARNING RESOURCE CENTER

The Learning Resource Center (LRC) is located in Benton Hall, a new facility occupied in the spring of 1977 and situated in the center of Kirkwood's main campus. Benton Hall, a 33,000 square foot building, is designed to be a multi-functional center. It houses the traditional functions of a library with the varied components of a learning resource center.

Public services are located on the first floor. These include the circulation department, the card catalog and the reference department. A periodical collection of 300 titles, microforms, and readers, a teacher-preparation room, archives, music listening area, a copy machine, and work space for the LRC staff are also on this floor.

The second floor contains a flexible arrangement of non-traditional learning spaces, geared for individualized modular learning and includes teacher stations and distribution centers for tapes and films. Also, on the second floor are five personal typing stations, a film and videotape viewing area, a classroom, and four group study rooms.

The 30,000-volume book collection is located on both the first and second floors as are the study and lounge areas for students. The LRC provides the services of professional librarians and a support team of technicians, clerical staff and work-study students.

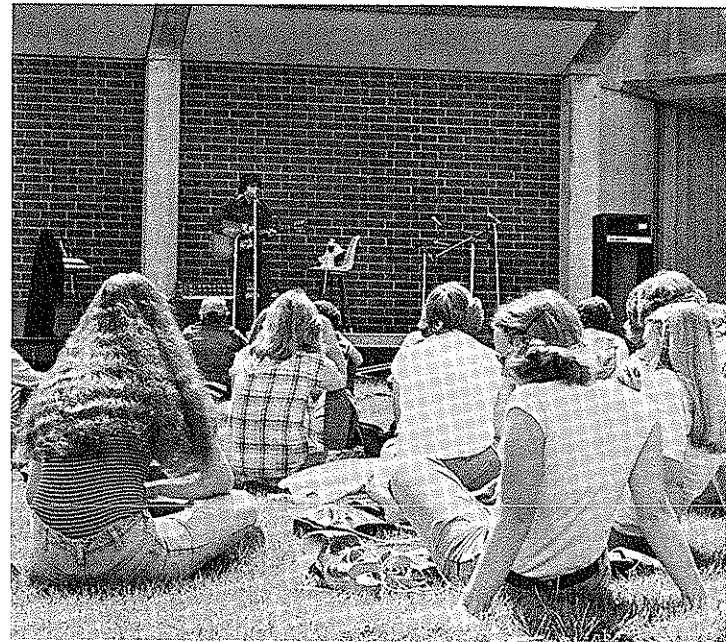
BOOKSTORE

The College Bookstore is located in Iowa Hall. It is owned and operated by Kirkwood Community College with all of its assets, obligations and policies under administrative control. All earnings are returned to student-related functions.

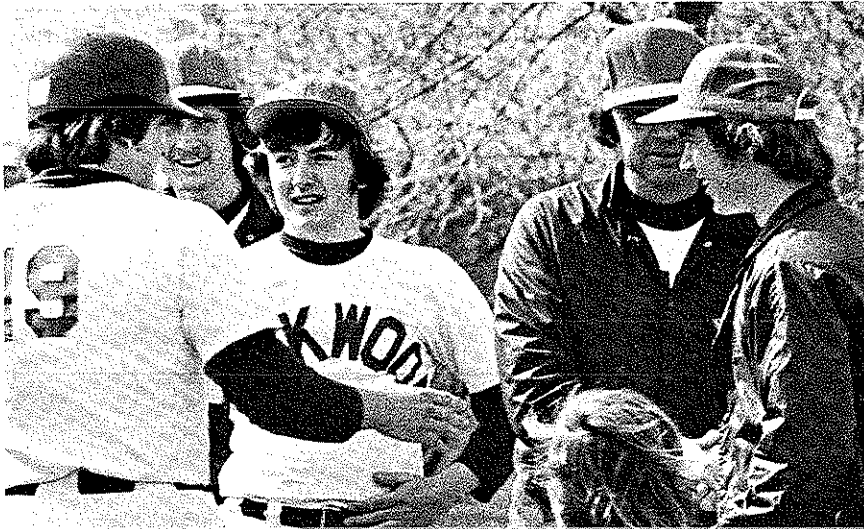
Besides maintaining a sufficient supply of textbooks needed for all courses at Kirkwood Community College, the bookstore carries a full complement of supplies, soft goods, class jewelry and course-supporting paperbacks.

To help reduce textbook costs, the bookstore operates a used book facility which allows a student to sell back a previously purchased book. This also affords other students the opportunity of purchasing these used copies at reduced prices. A reputable used book company representative is on campus at the end of each quarter during final week for several days. He will buy back those books being dropped from course schedules, providing no new edition is pending and providing the book has a market value.

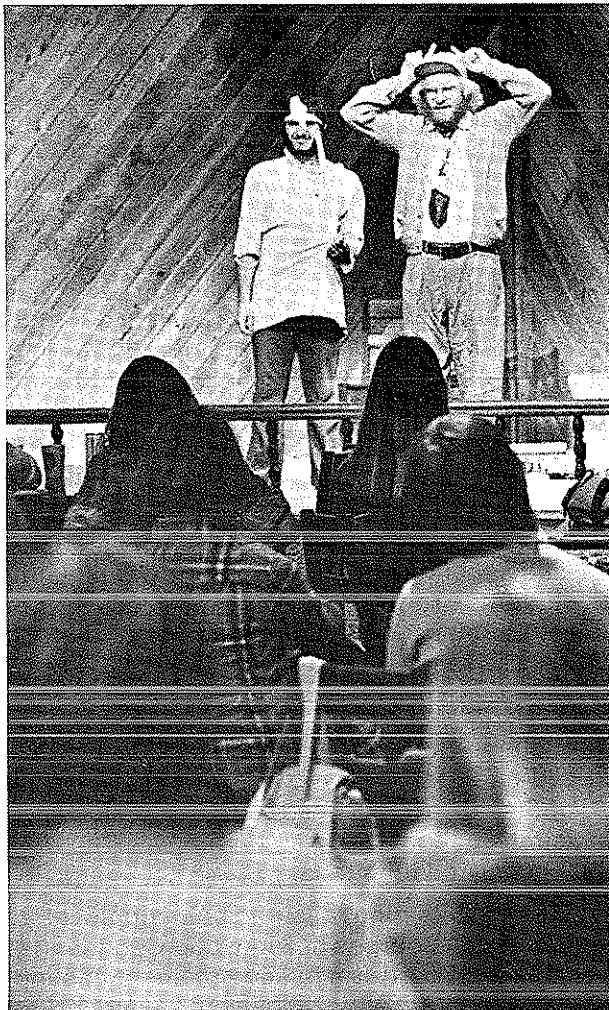
The bookstore hours are 9 a.m. to 4 p.m. Monday through Friday and 5:30 to 7:30 p.m. Tuesday and Wednesday evenings during the school year. Evening hours are subject to change during registration days and summer quarter.



STUDENT LIFE



This section is divided into two parts: services to students and policies and regulations. It is important for students to become familiar with both of these parts since they contain information that is critical for student success at Kirkwood. This Student Life section describes the ways in which the college attempts to meet the non-instructional needs of students, and how the college operates to ensure equal and fair treatment for all students.



STUDENT SERVICES

COUNSELING SERVICES

The college provides a staff of professional counselors to assist students in vocational and educational planning and in solving problems of a personal or social nature.

The counselors seek to help students make decisions and plan for their future. Upon application to the college, students have an opportunity for an individual conference with a member of the counseling staff to consider their high school background, appropriate test results, interests, aptitudes and goals. They are assisted in selecting an appropriate curriculum and in determining their course of study.

A student who experiences difficulty or dissatisfaction with a particular curriculum that he or she has selected is encouraged to use the counseling service for further discussion with the counselor and—for individualized aptitude, interest and personality testing.

Assistance is also available to all students who desire help in acquiring better study habits, developing satisfactory personal and social relationships, solving financial problems, selecting a transfer school, and learning about employment possibilities. The counseling service maintains a file of occupational information as well as catalogs of representative colleges and universities.

Counselors are available in several locations on campus. Students in all programs have access to counseling services, including those students enrolled in evening classes. In addition to providing services to enrolled students, counseling is available to any individuals from

7:30 a.m. to 8:30 p.m. Monday through Thursday and 8 a.m. to 5 p.m. on Friday.

HUMAN POTENTIAL LABS

Human Potential Laboratories are offered by the Counseling Department. Over 5,000 persons have participated in these labs since 1971. The laboratories are led by a member of the professional counseling staff and carry two hours of pass-fail transfer credit. Some students may find it advantageous to enter one of the labs prior to, or concurrently with, enrollment in a regular academic program. The laboratories are based on the principle that everyone operates with underdeveloped strengths, and that individuals are capable of aiding themselves and others in the realization of these strengths. Other credit course offerings include a two-credit-hour course in a life-style planning and assertiveness training and a three-credit-hour course in career decision making.

SUCCESS GROUPS

A recent innovation is the non-credit Success Groups offered for students who are experiencing, or have experienced, a lack of academic success. Accountability and responsibility, as well as personal goal setting, are points of emphasis in these groups.



REHABILITATION SERVICES

Within the Counseling Department, specialized counseling services on educational, vocational and personal matters are provided by two full-time rehabilitation counselors to students who meet the eligibility requirements for assistance from the Iowa Rehabilitation Education and Services Branch (RESB). In addition, financial assistance may be arranged. Students who have physical or mental disabilities which prevent them from getting or keeping certain jobs may apply for these services which also include diagnosis and treatment through community agencies and medical personnel. Further information can be obtained from the RESB counselors.

FINANCIAL AID

The financial aid program at Kirkwood Community College exists to make possible a college education for qualified students. Each *student* and his or her *family* is expected to make a maximum effort to meet college expenses. However, if it is determined that a family cannot meet the full costs for a year, assistance will be provided to the greatest extent possible from the following sources:

Basic Educational Opportunity Grants: Grants to needy students.

Supplemental Educational Opportunity Grants: \$200 to \$1,000 grants to students of *exceptional financial need*.

National Direct Student Loans: Low-interest loans through the college; long-term repayments.

College Work—Study Program: Fifteen to twenty hours of work per week, built around the student's class schedule.

Law Enforcement Assistance Program: For up-grading of existing officers

Federally Insured Student Loans: Borrowing from a bank or credit union; long-term repayments

State of Iowa Scholarship Program: Upper 15 per cent of high school seniors.

Iowa Vocational-Technical Tuition Grants: Full-time Vocational-Technical students.

Veterans education benefits: G.I. Bill.

Rehabilitation services (Also see Rehabilitation Counseling under Counseling Services.)

ADN Nursing Scholarships: Limited funds are available to students in the Associate Degree Nursing (ADN) program. These scholarships are based on need.

Short term loans and scholarships

KIRKWOOD SCHOLARSHIPS

The following scholarships are awarded through Kirkwood Community College:

The Kirkwood Scholar: This scholarship is awarded to applicants that have demonstrated outstanding career and leadership potential. Awards are made to Vocational-Technical and Arts and Sciences students. Competition is held each spring for these awards.

The Community Scholar: This award is given through local service clubs and organizations throughout the seven-county area. Information on criteria and participating communities may be obtained from the Financial Aids Office.

The Departmental Scholar: Department scholarships are awarded in certain programs that have obtained sponsors from business and industries that support Kirkwood. The Financial Aids Office has information on these scholarships.

General Mills Minority Scholarships:

Each year the General Mills Foundation provides several scholarships for minority students applying to Kirkwood. Application forms may be obtained by contacting the Financial Aids Office.

Kirkwood Alumni Scholarship:

Kirkwood alumni sponsor a scholarship program for the purpose of financially assisting needy students. Students must be full time and have completed at least one quarter at Kirkwood.

GENERAL REQUIREMENTS:

Any student seeking financial aid at Kirkwood must:

- Be enrolled or accepted for enrollment in an approved program, (one that is at least six months in length and leading to a degree or certificate).
- Be a citizen or permanent resident of the United States.
- Be pursuing at least a half-time load. (Some programs require *full-time attendance*, such as the Basic Educational Opportunity Grant program for the larger awards.)

APPLICATION PROCEDURES

The dates for requesting financial aid at Kirkwood Community College are *January 1 to June 1*. Applications received after June 1 will be processed if funds are available. Applications are processed in the order in which they are received, so students should apply early. *ALL students seeking financial aid must complete the Kirkwood Financial Aid Application and submit it to the Kirkwood Financial Aids Office in order to complete their application file.* It also is the responsibility of ALL financial aid applicants to complete the following forms:

- Financial Aid Form (FAF), College Scholarship Services
- Independent Student Status Document (Required if you are not dependent upon your parents.)

Aid funds are awarded to students in July when government funds are made available. All forms may be obtained from the Kirkwood Financial Aids Office, Room 134 in

Linn Hall, or call 319-398-5488

Remember, **grants are gifts, but loans must be repaid.**

PLACEMENT SERVICES

The placement Office fulfills the following functions:

- Helps students to find part-time employment.
- Assists graduates to secure full-time employment.
- Helps to locate suitable work for students who leave school prior to graduation.
- Assists former Kirkwood Community College students to find employment.
- Conducts follow-up studies of former students.
- Endeavors to maintain an accurate picture of employment needs and trends in the community.

In order to utilize the services of the Placement Office, students should complete the appropriate forms for either part-time or full-time employment. Registration forms are available in the Placement Office. The Placement Office should be notified promptly of job acceptances.

STUDENT HOUSING

Kirkwood Community College does not provide on-campus housing, and therefore all student housing is located in private facilities off-campus.

The college itself does not directly place students in off-campus housing. The Student Affairs Office located in Iowa Hall does maintain a listing of housing which is available to students. It is suggested that prospective students and or their parents obtain a copy of this list, visit the facilities and reach agreement with the householder concerning rental, policies, privileges and responsibilities. If at all possible, housing arrangements should be made prior to the date of registration. The cost of housing is generally in the range of \$15 to \$25 per week, depending on whether kitchen privileges or meals are included.

OTHER SERVICES**STUDENT ACCIDENT AND HEALTH INSURANCE**

Students may participate in an optional accident and health insurance plan. The plan is based on a group policy, and provides both an accident only, as well as comprehensive accident and health coverage. Students may enroll in either plan at registration or by contacting the Student Affairs Office at other times.

HEALTH SERVICE

Kirkwood's student health service is staffed daily by a registered nurse under the direction of a consulting college physician. The service offers emergency treatment for injury and illness and assistance in obtaining the services of local physicians if necessary. It will cooperate in every way possible to administer medical care or carry out instructions of the student's personal or family physician. Confidential counseling on a variety of health-related problems is available. Cost of hospitalization, doctor's appointments, prescription medicine, x-rays and laboratory fees must be handled by the student.

CHILD CARE CENTER

Licensed, quality child care is available at a minimal fee to all persons attending Kirkwood classes or activities. Kirkwood's child care center is designed to provide care in a warm learning environment. Kirkwood students are entitled to use the center on a full-time or part-time basis and are not limited to only using the center while attending classes. The child care center serves pre-school children and is open day and evening depending on the needs of parents.

Professional staff workers qualified in early childhood education operate the center. They are assisted by students in Kirkwood's preparatory programs in education, nursing and social services. The center is located

at Kirkwood's Lincoln Community Education Center, Sixteenth Avenue and Ninth Street S.W. in Cedar Rapids.

PARKING

Kirkwood provides campus parking for students and strives to maintain, through car registration and regulation, a parking program which allows maximum use for all concerned. Parking space is limited and with increasing enrollment will undoubtedly continue to be so.

Each person's full cooperation is needed if the problem of parking is to be kept manageable. Parking regulations and vehicle registration are strictly enforced and fines assessed for all violations. Parking regulation handbooks may be obtained by contacting the Student Affairs Office.

BUS SERVICE

Bus transportation between Cedar Rapids and Kirkwood is provided by the city bus company. The bus arrives on campus on an hourly basis, beginning at 6:30 a.m. and ending at 5:40 p.m. It will stop in front of Linn Hall and also at the East Campus. Special rates are available to Kirkwood students, and bus schedules may be obtained in the Student Affairs Office.

FOOD SERVICE

Cafeteria service is available in Iowa Hall from 10:30 a.m. to 1:30 p.m. weekdays. An array of ala carte, grill and deli-bar selections, as well as salads, desserts and beverages are available. Coffee and pastry is available from 7:30 a.m. to 10:30 a.m.

Vending machines are available in the Iowa Hall Coffeehouse, Linn Hall Lobby and East Campus lounge, at all hours that those buildings are open.

Catering services ranging from coffee to complete meals may be arranged through the Iowa Hall Facilities Coordinator, located in the Student Affairs Office.

CO-CURRICULAR ACTIVITIES

STUDENT CONGRESS

Each fall a Student Congress is elected by the student body. The Congress is composed of a president, vice-president, secretary, treasurer, and representatives from the different divisions of the college. Much of the responsibility for the success of the activity program depends upon the representatives of the student body. The purpose of the Student Congress shall be:

- 1) To provide a means of organized student expression in college.
- 2) To encourage and promote interest in college affairs and activities.
- 3) To provide a means whereby the administration of the college may be aware of student needs, opinions, and attitudes.
- 4) To develop and promote activities that will enrich the social, cultural and academic life at Kirkwood Community College

PUBLICATIONS

Student Newspaper: *Communique*, a weekly community college newspaper is written and edited by a student staff with the consultation of a faculty advisor. Any student interested in working on the staff, or in submitting material for publication, should contact the Student Development Center.

College Magazine: The College Magazine, *Bicycle*, is also published by a student staff with the consultation of a faculty advisor. Any student interested in contributing or working on the staff should contact the Student Development Center.

Registration Bulletin: This bulletin is published prior to the start of each quarter and includes all information on

registration procedures, classes to be offered and other pertinent information regarding college policies that new and continuing students should know.

Activities Calendar: The Activities Calendar is published monthly by the Student Development Center. The calendar contains dates for various college events, including athletic contests, meetings, concerts, films, special programs, as well as other community events.

CLUBS AND ORGANIZATIONS

Many clubs and organizations which meet the mutual interests of various student groups are in operation on campus. Recognition of such clubs may be gained by securing application forms from the Student Development Center and petitioning the Student Congress for recognition. Faculty advisors are designated as sponsors upon request of the club. Such groups participate in the areas of art, music, political and international affairs, departmental or professional subject groups and religious activities. Co-curricular activities are an integral part of student life at Kirkwood.

SOCIAL AND SPECIAL EVENTS

Activities are coordinated by the Student Affairs Office, the Student Congress and the Student Development Center. A program of social and special events is provided both by the college and in the local communities. These programs include music, art, drama, concerts, plays, films and other events.

Use of any facilities by student groups is cleared through the Student Affairs Office.

INTRAMURALS—RECREATION

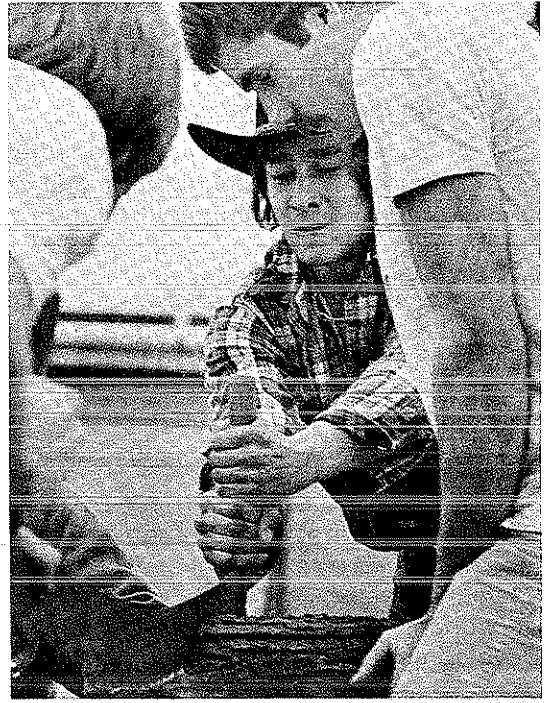
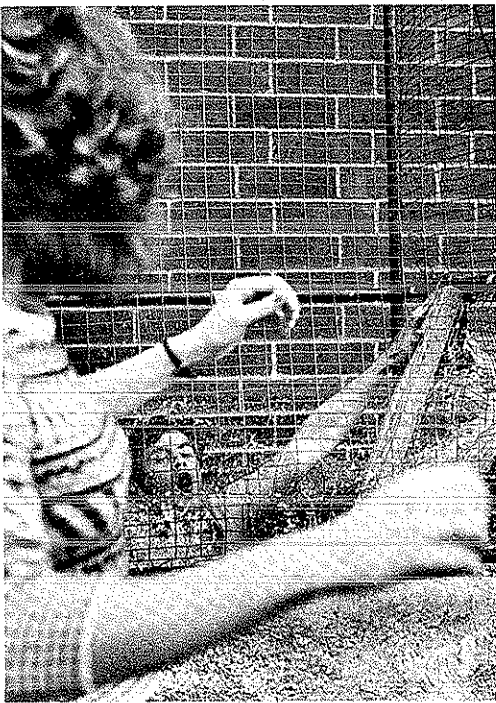
All full-time Kirkwood students may take Community Education general interest classes or participate in recreational leagues, tuition-free each quarter. A validated student I.D. card will be required at the time of

registration as proof of student status. This program has been instituted to make recreational extracurricular activities more geographically accessible to all Kirkwood students.

INTERCOLLEGIATE ATHLETICS

Kirkwood belongs to the Iowa Area Community Athletic Association, and participates in tournaments sponsored by the associations.

The college initiated an intercollegiate athletic program in the spring of 1969, fielding teams in baseball and golf. Basketball, tennis and wrestling were added to the program in the 1969-70 school year. Women's basketball was added during 1976-77, with women's softball being the next area of athletic program to be expanded. The Kirkwood Eagles compete with teams from community and junior colleges in Iowa and bordering states as well as freshmen and junior varsity teams of four-year institutions.



POLICIES AND REGULATIONS

ADMISSION TO THE COLLEGE

It is the policy of Kirkwood Community College to accept for admission into its Arts and Sciences and Vocational-Technical Divisions all individuals with either a high school diploma or its equivalent, as determined by the General Education Development testing program. Mature adults who have not completed high school may be admitted, on an individual basis, to various programs offered by the college.

Admission to the college does not, however, insure admission to all programs offered. The college reserves the right to guide the placement of students on the basis of counseling, examination, pre-enrollment interviews, and past academic achievement.

It is the policy for the college to consider the total individual in admission to the various programs. There are, therefore, no absolute admission standards concerning performance on required admission tests and past academic record. Each person possesses multi-potentialities and, as an applicant, must be viewed in the broadest way in relation to admission to any and all of the college's programs. Students will be admitted to programs without regard to sex, race, color, creed, or national origin.

Generally admission to programs is granted on a continuous basis as applicants complete required admissions procedures. Applicants will, therefore, find it to their advantage to apply as soon as they have decided to seek admission to a program. Prospective students may apply at any time after March 1 of their junior year in high

school and gain an early admissions decision. Applications are accepted up to the day of registration in many college programs; however, if the college staff is to be of maximum assistance with pre-enrollment matters, an applicant should complete his application well in advance of the expected entrance quarter.

ADMISSIONS OFFICE

The Office of Admissions is located in Linn Hall, 6301 Kirkwood Boulevard S.W. For admissions information, call the Office of Admissions, 398-5517.

ADMISSION REQUIREMENTS AND PROCEDURES

Materials and procedures required for admission are listed below. All admissions materials are to be submitted to the Admissions Office, Kirkwood Community College, P.O. Box 2068, Cedar Rapids, Iowa 52406.

ARTS & SCIENCES ADMISSION

Kirkwood has an "open door" policy. This permits high school graduates or equivalent to apply and be accepted regardless of past academic achievements. The procedure includes:

- 1) Application Form
May be obtained from the Admissions Office.
- 2) Application Fee
A fee of \$15 must accompany all application forms which are completed and returned. This is a non-returnable non-refundable processing fee and does not apply toward tuition.
- 3) High School Transcript
Prospective students should request their high school counselor or principal to send their final high school transcript to the Office of Admissions.
- 4) College Transcripts
Each applicant shall submit an official

transcript from each college or university which the student has attended previously.

5) Student Health Form

The completed student health form is not required until after a student has been notified of acceptance. The form should be sent to the student health center.

VOCATIONAL-TECHNICAL

Shortly after all admissions materials are received, an applicant will be notified regarding admission. The procedure includes:

1) Application Form

May be obtained from the Admissions Office.

2) Application Fee

A fee of \$15 must accompany all application forms which are completed and returned. This is a non-refundable processing fee and does not apply toward tuition.

3) High School Transcript

Prospective students should request their high school counselor or principal to send their final high school transcript to the Office of Admissions.

4) College Transcripts

Each applicant shall submit an official transcript from each college or university which the student has attended previously.

5) Health Certificates

A health exam is required in some programs but not until after a student has been notified of acceptance. The health certificate should be sent to the student health center.

6) Personal Interview

A personal interview is required before a stu-

dent may be admitted to some of the vocational-technical programs. Upon receipt of all materials, applicants will be asked to schedule a personal interview as appropriate for the program to which they are applying.

FOREIGN STUDENTS

Students from foreign countries who wish to be admitted into regular credit programs and courses must submit:

- 1) Secondary school and college transcripts.
- 2) Evidence of adequate financial resources.
- 3) Health Certificate.
- 4) Information showing the degree of mastery of the English language. A minimum total score of 500 on the Test of English as a Second Language (TOEFL).

Students from foreign countries or refugees in the United States who wish to be admitted to the credit program in English as a Second Language must be 18 years or older and must submit the following:

- 1) Application form
- 2) \$15 application fee
- 3) Secondary and college transcripts
- 4) Evidence of adequate financial resources

Refugees in the United States who wish to be admitted in the English as a Second Language program on a non-credit basis should enroll under the procedures that apply to Adult Basic Education. Interested persons should contact the Community Education Division.

COMMUNITY EDUCATION

Admission to adult education programs is varied and flexible. Individuals interested in admission to General Studies, general adult education, and adult part-time vocational programs are advised to contact the Com-

munity Education Division at 398-5548 for information regarding admission and course offerings. See the Community Education section of this catalog for information on Kirkwood's Community Education programs.

TUITION AND FEES —CREDIT PROGRAMS*

Residents of Iowa (See "Residence Qualifications")

Full-time study**

\$160.00 per 12-week quarter

Part-time study**

\$14.35 per credit hour.

Audit course work

Students "auditing" or carrying courses for "no credit" are assessed tuition at the same rates as regular credit course work.

Non-Iowa Residents (See "Residence Qualifications")

Full-time study**

\$240.00 per 12-week quarter.

Part-time study**

\$21.50 per credit hour.

Audit course work

Out-of-state students "auditing" or carrying courses for "no credit" are assessed tuition at the same rate as regular credit course work.

*Tuition & Fees are subject to change at any time.

** Definitions:

"Full-time study"—12 quarter hours credit or more in Arts and Sciences. All regular Vocational-Technical Division programs are considered full-time except those less than 12 weeks in length. In these cases, tuition is pro-rated based on the length of the program.

"Part-time study"—less than 12 quarter hours of credit;

"audit" courses are figured at the usual credit hours applicable.

RESIDENCE QUALIFICATIONS

Students enrolling at Kirkwood Community College shall be classified as residents or nonresidents of Iowa for admission, fee, and tuition purposes by the Registrar's office. The decision shall be based upon information furnished by the student and all other relevant information. The Registrar is authorized to require such written documents, affidavits, verifications, or other evidence as are deemed necessary to establish the domicile of a student, including proof of emancipation, adoption, award of custody, or appointment of a guardian. The burden of establishing that a student is exempt from paying the nonresident tuition is with the student.

The decision of the Registrar's Office on the residence of a student for admission, fee, and tuition purposes may be appealed to a review committee. The finding of the review committee shall be final.

For further information on residence classifications, contact the Registrar's Office.

SPECIAL FEES

Certain courses in the Arts and Sciences Division and programs in the Vocational-Technical Division carry special fees. These fees are assessed only in cases where special equipment and/or consumable supplies and materials are used and help to offset the cost of these items. Such fees are paid quarterly and are nominal. Students should check individual program brochures for the latest figures on fees for courses and programs they plan to enter.

All students pay a student fee each quarter according to the schedule below:

Seven or more enrolled hours \$10

Less than seven enrolled hours \$ 2

This fee covers a variety of items and services, e.g., parking, activities, ID card, student newspaper, etc.

GRADUATION FEE

Students who have completed a course of study in Arts & Sciences or Vocational-Technical and wish to receive a certificate, diploma, or degree, must pay a \$6 graduation fee.

OTHER FEE ARRANGEMENTS

Part-time Vocational — Tuition for part-time vocational programs depends upon the length and nature of the course. Normally, books and materials are not included in tuition.

REFUND OF TUITION

Students who withdraw from the college will receive a tuition refund according to the following schedule:

Time of Withdrawal	Percentage of Refund
— 1st through 5th day of term	75%
— 6th through 10th day of term	50%
— 11th through 15th day of term	25%
— 16th through last day of term	5%

Refunds will be made only when an "Exit Interview Form," signed by a Kirkwood counselor, is filed in the Registrar's Office. Refunds will be computed based on the date that the forms are received by the Registrar's Office.

Full refunds will be made only for students who: (a.) pre-register and withdraw before the start of the quarter, (b.) withdraw for reasons of personal health as certified by a licensed physician on a form provided by the Registrar's Office, (c.) are inducted, but not enlisted, into the nation's services, (d.) are forced to do so by college-initiated action, i.e. cancellation of a course. Fees other than tuition are non-refundable.

ACADEMIC REGULATIONS AND POLICIES**UNIT OF CREDIT**

A unit of credit is a quarter hour. A quarter hour of credit is normally given for one hour in class each week for a period of twelve weeks. A unit of credit awarded in the adult high school is based on the student's ability in relation to his achievement.

COURSE LOAD**Arts and Sciences Division:**

Individuals pursuing 12 quarter hours or more during any quarter will be considered full-time students. To earn a degree in six quarters, students should plan to enroll for an average of at least 15 hours per quarter.

Students may not carry more than 18 hours of credit in any quarter without approval of their advisor and the director of credit programs.

Students may not take a course for more or less credit than that assigned in the college catalog or the schedule of courses.

Vocational-Technical Division:

A student in the Vocational-Technical Division normally enrolls for the number of credit hours required in each program of study. Refer to the section on vocational-technical programs of study in the latter part of this catalog for information concerning credits and/or course load.

Part-time course work may be undertaken in some programs. Students with an interest in attending part-time in the Vocational-Technical Division are advised to contact the Office of Admissions for details.

GRADING SYSTEM

The Kirkwood grades or marks and their meanings are given below:

A	Excellent
B	Above Average
C	Average
D	Below Average
P	Passing-Credit
T	Credit by examination
E	Excused without credit
N	Audit
Q	No credit
W	Withdrew from course
I	Incomplete
X	Course repeated
L	**Credit for prior education or experience (11/24/76)
F	**Failing (8/26/72)
FW	**Failure to withdraw (3/1/71)
NI	**Irresponsible Audit (3/1/71)

**Discontinued grades — discontinuation date shown

The grades A, B, C, D, are included in computing the grade point average.

Credit toward graduation is granted for A, B, C, D, P and L.

GRADE REPORTS

Grade reports are mailed to students approximately one week after the close of a quarter. Grades will not be given out over the phone.

REPEATING COURSES

Students who achieve a personally unsatisfactory grade in a course may, according to procedures described below, repeat the course in an attempt for a better grade and have the original grade removed and replaced by "X".

Students wishing to take advantage of this policy must file a notification with the Office of the Registrar. Forms for this purpose are available in that office.

Provisions of this policy are as follows:

- 1) Students may repeat a course as many times as they wish in an effort for a better grade.
- 2) Students must file notification of their repeat of a course for a better grade with the Office of the Registrar for each course repetition.
- 3) The original grade will be changed automatically to an "X". (The "X" carries no credit nor does it affect a student's grade point average.) A student may not repeat a course and then choose the better of the two grades. The repeat grade is always the one that will be computed as part of his record.
- 4) Students who withdraw from a course which they are repeating for a better grade under this policy will have the original grade re-entered on their record.

This policy in no way prevents a student from repeating a course and retaining both the original and the repeat grade. Where no notification of repeat is filed, the original and repeat grades are averaged; however, the student may not receive credit for the same course twice.

In any case, students who fail to successfully complete a required course must repeat the course until a passing mark is achieved if they expect to graduate. Students are not required to repeat elective courses that they do not successfully complete.

Students who have questions regarding how this policy applies to their own situation should discuss it with a member of the counseling staff.

INCOMPLETE GRADES

A student who fails to complete the assigned work of a course during a quarter or session will be assigned the

mark "I" ("incomplete"). The length of time a student will be permitted to complete the course work must be worked out with the instructor assigning the "I". The "I" may be changed to a "Q" if the student hasn't, after a period of time deemed reasonable and sufficient, made up the incomplete work.

AUDITING COURSES

Audit enrollment in courses provides students the opportunity to attend a class as a non-credit participant, usually as a listener-observer. This kind of enrollment may have value for the student who wants an introduction to a subject outside his major field, a review or refresher in a subject, or other purposes where credit and grade either are not needed or would pose an unnecessary academic threat.

With the permission of the instructor and/or the department head, a student may enroll in any course on an audit basis. It is required of audit enrollments that the student and instructor agree about what portion(s) of the course the student plans to audit and the requirements the instructor has about the student's class attendance and participation in class work. If the student fulfills the agreement for the audit, he or she will receive the grade of "N" ("audit") for the course and it will be entered on the student's academic transcript. If the student does not fulfill the audit agreement, the Registrar, upon request of the instructor, will delete the course from entry on the student's academic transcript.

Audit enrollments and grades carry no credit nor grade point value. No inference is made, nor should conclusions be drawn, about the quality or quantity of student's mastery of the course subject matter.

Standard tuition and lab charges apply to all audit enrollments regardless of the length or scope of the audit.

CREDIT ASSIGNMENT IN EMERGENCY SITUATIONS

Upon request of the student and after the two-thirds point of a quarter, a student may be given a grade and, therefore, credit for all courses he or she has in progress at the time of:

- His or her induction but not enlistment into the Armed Forces;
- Serious personal or family illness requiring the student to discontinue his or her studies;
- A death in the immediate family;
- Other "emergency circumstances" that preclude a student finishing the quarter.

ADDS AND DROPS

Students may add a course at any time through the fifth class day of a quarter or session, subject to the course load conditions and tuition schedule listed earlier.

Students may drop individual courses from their schedule any time up to 8 p.m. of the last drop day of the quarter or session as indicated in the official college calendar. After these times, students must remain in courses. Students who quit attending a class without officially dropping it will receive, at the discretion of the instructor, an "I" or a "Q" grade.

A change in registration is not official until it is received in the Office of the Registrar, and all deadlines as stated herein apply to the day by which it must be received in that office. It is the responsibility of the student to see that all necessary forms reach that office and that they carry signatures as indicated on the form.

Dates, as indicated herein, are listed on the college calendar.

A charge of \$2 for each "drop" and each "add" is assessed and must be paid at the time of making the

change in registration. "Change in Registration" forms are available from counselors and the Office of the Registrar.

WITHDRAWAL POLICY

A student may withdraw, that is, cancel his entire registration, at any time up to the final exam period of session. Students officially withdrawing through the Office of the Registrar will be assigned a "W" for all courses for which they are then registered. In all cases of withdrawal, except in cases of physical or circumstantial impossibility, a student must secure the "approval" of a counselor. In cases of tragedy (death, disability, etc.), the Office of the Registrar can initiate a withdrawal for the student, even retroactively when the situation becomes known.

Students failing to withdraw officially will receive, at the discretion of the instructor, either "I" or "Q" for all courses for the quarter.

CHANGE OF MAJORS

Vocational-technical students who change their major or arts and sciences students who change to a major in the Vocational-Technical Division will be accountable in terms of graduation requirements only for work done in the new major. The course work and grade point average earned in the initial major will continue as part of their transcript and record, but will not affect them in meeting graduation requirements of the new major. If course work successfully completed in the initial major is applicable to the new major, a student may petition the division director or the department head for permission to apply these credits toward graduation requirements of the new major. Where permission is granted, the courses and the earned grades for those courses would be credited toward the new major.

As a prerequisite to taking advantage of this policy, students must complete certain forms in the Office of

the Registrar. This should be done in advance of making the change in majors.

Students who contemplate a change of major under this policy are advised as an initial step to discuss their plans fully with a member of the counseling staff.

SCHOLASTIC PROBATION AND SUSPENSION

Full-time students (enrolled for 12 or more quarter hours in any quarter) who do not achieve at least a 1.5 grade point average in a given quarter will be placed on probation for the following quarter. If at the end of the probation quarter, they have brought their total grade point average up to 1.5, they may be removed from probation for the following quarter. However, if a student's grade point is not 1.5 or higher after the probation quarter, his or her case will be reviewed by a faculty committee for whatever action it deems necessary, including possible suspension.

Part-time students (enrolled for less than 12 credit hours in any quarter) who, after being enrolled for 12 quarter hours, do not have and maintain a cumulative grade point average of at least 1.5 will be placed on probation for the following quarter. If, at the end of the probation quarter, they have brought their total grade point average up to 1.5, they may be removed from probation for the following quarter. However, if a student's grade point is not 1.5 or higher after the probation quarter, his or her case will be reviewed by a faculty committee for whatever action it deems necessary, including possible suspension.

In some programs, students may be placed on probation or suspension because of failure to maintain satisfactory progress in completing courses in their proper sequence in the program. Such a recommendation would be made by an appropriate faculty-staff committee to central administration.

RE-ADMISSION

Students who have been suspended for academic reasons may petition to the Office of the Registrar for re-admission. There is a mandatory period of one quarter before petitions for re-admission will be considered.

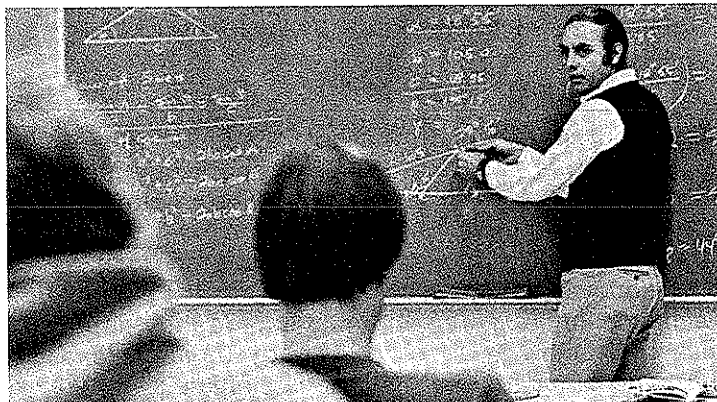
Students who have withdrawn from the college in good standing, and who desire to be re-admitted, should apply to the Office of Admissions. If they have attended another college or university, they must file an official transcript from that institution. Students who are re-admitted after absence from the campus and who desire an associate degree will be required to fulfill the current graduation requirements.

ACADEMIC HONORS

Graduates who have maintained a 3.0 grade point average during their work at Kirkwood are granted recognition by inclusion of their names on the list of those who have graduated with honors. Graduates who have maintained a 3.5 or better grade point average are given recognition by inclusion of their names on the list of those who have graduated with high honors. Grades which are accepted by Kirkwood for transfer from other institutions are also included in the computation of grade point averages for these honors.

ASSIGNMENTS AND EXAMINATIONS

Students are expected to complete all class assignments and examinations on time. It is the student's responsibility to contact his instructor to make up any work missed during absence from each class. In cases where a test is given during the absence of a student, it is sometimes possible for the instructor to substitute another test at a later date. There may be occasions, however, when substitution of a test may not be feasible. When a student anticipates missing a test, a telephone call in advance to the instructor may save a great deal of difficulty later and prevent a possible lower-



ing of the grade for that course in cases when a test is of a type that is difficult to make up.

A student must be present as scheduled for the final examinations. In cases of illness or emergency during examination times, a student may be excused and rescheduled by his instructor. In cases where such illness or emergency may extend more than a few days, the procedure for incomplete course work should be followed.

STUDENT RECORD RETENTION POLICY

Kirkwood Community College retains the official academic record (transcript) of enrollment and credit earned in Kirkwood's credit programs in perpetuity. All other student record documents are destroyed three years after the student's last enrollment at Kirkwood.

Students who believe there is any inaccuracy in their official academic record (transcript) must notify the Registrar's Office immediately. Upon the destruction of the supporting student record documents three years after the student's last enrollment at Kirkwood, the official academic transcript is regarded to be the final accurate record of academic accomplishment.

**NOTICE TO STUDENTS REGARDING
FAMILY EDUCATIONAL RIGHTS & PRIVACY ACT OF 1974**

In accordance with provisions of Public Law 93-380, Family Educational Rights and Privacy Act of 1974, commonly known as the "Buckley Amendment," notice is hereby given to Kirkwood Community College students and their parents as follows:

It is the intention of the college to comply with provisions of this law. The college rules and regulations to implement compliance procedures are available to interested parties, and may be reviewed during normal business hours in the following campus locations: Registrar's Office, Student Affairs Office, and the Learning Resources Center. Students who believe the college is not complying with this law are hereby informed of their right to file a complaint with the U.S. Department of Health, Education & Welfare.

The college maintains only those "Education Records," within the definition of this law, which are essential to the process and procedures required to develop and maintain an accurate academic record for each student and to support such student accounting needs and requirements as are imposed by law, state and federal regulations, and college operational procedures. These

records may be found in some or all of the following offices: Registrar, divisional, departmental, major program, Student Affairs, and advisors. Subject to provisions of the college rules, they may be reviewed by students upon request.

This law permits the college to make public certain "directory information" about students. It is the intention of the college to do so, within the scope of regular college policies and as may be appropriate to the normal course of college business and operations. The following information is regarded to be "directory" type, and some or all of it may be made public: name, address, telephone listing, major field, class schedule, courses of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, age and/or date of birth, dates of attendance, degrees and awards received, and previous educational programs and institutions attended by the student. Any student objecting to his or her directory information being made public must file notice of such objections with the Registrar's Office.

S. A. Ballantyne, Superintendent

**DEGREE AND GRADUATION
REQUIREMENTS**

ARTS AND SCIENCES DIVISION

**TRANSFER OF CREDIT FROM
OTHER INSTITUTIONS**

The Arts and Sciences Division will accept the credits given to a student who has done successful work at any

properly accredited college provided that the work was part of the curriculum of a two-year associate degree — equivalent to any of the associate degrees offered at Kirkwood or a baccalaureate degree or was part of such a program. Courses in any of these degree programs will transfer even though the student may have been involved in non-degree work at that institution. In order to receive the associate degree granted by the Arts and Sciences Division the student must also fulfill the requirements for those degrees as are listed in this catalog.

In the evaluation of transfer students' transcripts from institutions previously attended, Kirkwood applies the following general policies:

- 1) *Grades of "F" (or any other "failing" grades) of transfer students will be ignored in the computation of a cumulative transfer grade point average if any of the following conditions are met:
 - A. The courses involved were taken during or after the first session of the 1972-73 academic year (corresponding to Kirkwood's fall quarter); or
 - B. The student has not been enrolled in any program of higher education leading to an associate or baccalaureate degree for a period of at least three consecutive years; or
 - C. The student has served in the Armed Services of the United States for at least two years or any smaller portion thereof if discharged with a service-connected disability.
- 2) Grades corresponding to "D" or better will be accepted for transfer if from a properly accredited institution.
- 3) Decisions about the applicability of transfer courses toward Kirkwood requirements will be made by the Office of the Registrar and reported to the student. Any question regarding this should be directed to that office.

When a transfer student's credits are accepted toward the associate degree at Kirkwood, the college cannot guarantee how other colleges will treat these same credits.

*This provision applies in equal measure to Kirkwood students.

ACCEPTANCE OF VOCATIONAL-TECHNICAL CREDIT TOWARD AA OR AAS DEGREES

Kirkwood Community College will accept, for credit toward Associate of Arts or Associate of Science degrees, vocational-technical credits earned in courses which are part of two-year Associate of Applied Science degree technical programs at Kirkwood or other accredited Iowa Area Schools. (Such credits are hereinafter referred to as "technical" credits.) These technical credits are acceptable toward Associate of Arts or Associate of Science degrees subject to the following provisions and conditions.

- 1) All technical credits earned in resident course work will be accepted toward Associate of Arts or Associate of Science degrees. They may not be used to satisfy core or general education requirements.
- 2) Any variation of these provisions in relation to the transfer (from another accredited Iowa Area School) of vocational-technical credits acceptable toward Kirkwood Associate of Arts or Associate of Science degrees will be decided in favor of the sending Area School's internal articulation policy provided that:
 - A. A statement of that Area School's policy on internal articulation of vocational-technical credits toward their own Associate of Arts and Associate of Science degrees is on file with the Registrar's Office at Kirkwood.
 - B. The sending Area School's transcript clearly indicates which vocational-technical courses are acceptable toward their Associate of Arts or Associate of Science degrees.

After application of technical credits, a student must complete the following requirements to receive an

Associate of Arts or Associate of Science degree:

- 1) Satisfactorily complete all general education requirements established for the degree being sought: 8 credit hours in English composition, 3 credit hours in speech, and 8 credit hours in humanities, social sciences, and math-sciences (30 credit hours in math-science for the Associate of Science degree).
- 2) Earn a minimum of the last 24 quarter credit hours of degree applicable course work in residence in transfer-credit courses in the Arts & Sciences Division at Kirkwood and achieve a minimum grade point average of 1.80 on all such course work.
- 3) Earn a minimum of 90 quarter hours of credit acceptable toward the Associate of Arts or Associate of Science degrees (as defined under this and any other applicable policies of Kirkwood).
- 4) Earn a minimum cumulative grade point average of 1.80 on all course work applied toward the degree sought. This cumulative grade point average will be computed using as many of the last earned technical credits as required to bring the degree applicable credit total to 90 quarter hours.

GENERAL REQUIREMENTS FOR THE ASSOCIATE OF ARTS, OR SCIENCE DEGREES:

- 1) Earn a minimum of 90 quarter hours of credit.
- 2) Earn the last 24 credit hours in residence at Kirkwood in a degree program for which the degree is sought.
- 3) Maintain a minimum cumulative grade point average of 1.80.

- 4) Complete satisfactorily eight quarter hours in composition and three quarter hours in speech.

ADDITIONAL REQUIREMENTS FOR THE ASSOCIATE OF ARTS DEGREE:

- 1) Complete general requirements indicated above.
- 2) Complete group requirements as follows:¹

Humanities	8 credit hours
Social Sciences	8 credit hours
Math-Science	8 credit hours
- 3) Complete satisfactorily a college parallel with major emphasis in the humanities and/or social sciences.

ADDITIONAL REQUIREMENTS FOR THE ASSOCIATE OF SCIENCE DEGREE:

- 1) Complete general requirements listed above.
- 2) Complete group requirements as follows:¹

Humanities	8 credit hours
Social Sciences	8 credit hours
Math-Science	30 credit hours

¹For complete definition of which courses fulfill which group requirements, see the Arts and Sciences course description section.

VOCATIONAL-TECHNICAL DIVISION

REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE DEGREE:

This degree is issued to those individuals who satisfactorily complete a two-year technical curriculum. Since technical programs vary in terms of their content, each program should be checked for specific course requirements for graduation.

Towaz will only accept 24 hrs. of "U" courses
UNP
ISU
(16)

only 12 hrs. of Co-op accepted towards grad.

32
GENERAL REQUIREMENTS FOR THE ASSOCIATE OF APPLIED SCIENCE DEGREE COMMON TO ALL PROGRAMS:

- 1) Successful completion of all specific curricular course requirements.
- 2) Maintain a minimum cumulative grade point average of 1.80.
- 3) Satisfaction of the greater of the following two residence requirements:
 - A. Earn a minimum of the last 24 credit hours in no less than two quarters of resident course work at Kirkwood Community College in the program for which the degree is sought.
 - B. Meet, through residence course work at Kirkwood Community College, the minimal core and specialty course requirements established by the major department for the degree program.

(In some cases, some credits earned toward an Associate of Applied Science degree may be transferable to some baccalaureate degree-granting institutions).

REQUIREMENTS FOR A DIPLOMA

Diplomas are issued to individuals who satisfactorily complete full-time vocational or technical curricula of at least three quarters but less than two years (six quarters) duration. They must maintain a cumulative grade point average of 1.80.

Normally, a student must take all of the courses required for a diploma program through course work in residence at Kirkwood. Individual exceptions to this requirement may be possible upon petition by the student to a committee composed of the program coordinator and/or the department head and the director of the Vocational-Technical Division.

REQUIREMENTS FOR A CERTIFICATE

A certificate of completion is issued to signify that a student has satisfactorily completed a program of instruction other than those listed above. Certificates are generally issued to students at the completion of a specific short-term program of study.

A student must complete all of the courses required in a certificate program in residence at Kirkwood Community College.

OTHER GRADUATION INFORMATION

FILING A GRADUATION APPLICATION

Each student who plans to earn an associate degree, diploma, or certificate of program completion, must file a "graduation application" with the Office of the Registrar at the beginning of the quarter in which he plans to complete his course work.

"Graduation applications" should be submitted at the time that students register for classes in the quarter that requirements for graduation will be completed. However, applications will be accepted if filed with the Registrar's office (123, Linn Hall) within one week of the close of registration. Applications must be accompanied by a \$6 graduation fee.

While students may complete their requirements for graduation during any quarter, commencement exercises will be held at the end of the spring and summer terms. Students completing requirements in the fall or winter terms are encouraged to participate in the spring commencement exercises.

TRANSCRIPTS

Official transcripts are available through the Office of the Registrar. Students may pick them up there or request that they be mailed to another institution. Each transcript

U-courses are those that are part of a two-year AAS degree program

costs \$2.50 and must be paid for at the time it is requested.

REQUIREMENTS FOR THE ADULT HIGH SCHOOL DIPLOMA

- 1) A Kirkwood High School diploma will be granted when the student meets the requirements toward graduation.
- 2) The high school completion program is operated on the quarter system (12 weeks). The students will have 36 hours of classroom instruction per quarter.
- 3) The student must earn a minimum of 48 quarter hours of credit.
- 4) Six quarter credits, in residence at Kirkwood Community College, are required in the High School Completion program regardless of the number of remaining credits needed.
- 5) A student doing normal work may earn 1 credit for 12 weeks' work with grades A, B, C, and D. Due to a great deal of individualized instruction, students may earn 1½ maximum quarter credits in this 12-week period if the instructor feels they have achieved much more than normally achieved in that length of time. No one fails.
- 6) Credit awarded for military school, vocational training and work experience (includes housewife) are evaluated by the counselor before credit will be given. Any questions regarding credits or grades are considered by the counselor or area supervisor.
- 7) A High School Equivalency Certificate will not be given until an applicant has reached his or her eighteenth birthday and his or her high school class is one year out of high school.
- 8) The counselor or coordinator in each high

school completion center will make out a rough work-up sheet showing credits already earned and those that will be required for graduation. Also, a new student must fill out a No. 283 form. This form will initiate a process by which a copy of the student's previous high school work will be returned to the counselor.

REQUIREMENTS FOR THE IOWA HIGH SCHOOL EQUIVALENCY CERTIFICATE:

The Iowa High School Equivalency Certificate is granted on the basis of the attainment of an average standard score of 45 on the General Education Development (GED) Test. The test is offered at the Iowa City Career Center, Anamosa Reformatory, Kirkwood's Monticello Learning Center, and daily at the Cedar Rapids Career Center and the Kirkwood Main Campus.

A regular high school diploma issued by the Iowa Department of Public Instruction is awarded and a permanent transcript file is maintained by the college. Local school districts may issue an adult high school diploma if they choose. Conditions for granting the local adult high school diploma will be specified by the local Board of Education. Further information is available through Kirkwood's Community Education Division.

STUDENT RESPONSIBILITY FOR CATALOG INFORMATION

Each student is responsible for being familiar with the information appearing in this catalog. Failure to read the regulations will not be considered an excuse for non-compliance.

The college reserves the right to change policies or revise curricula as necessary due to unanticipated circumstances.

WAIVER OF REGULATIONS

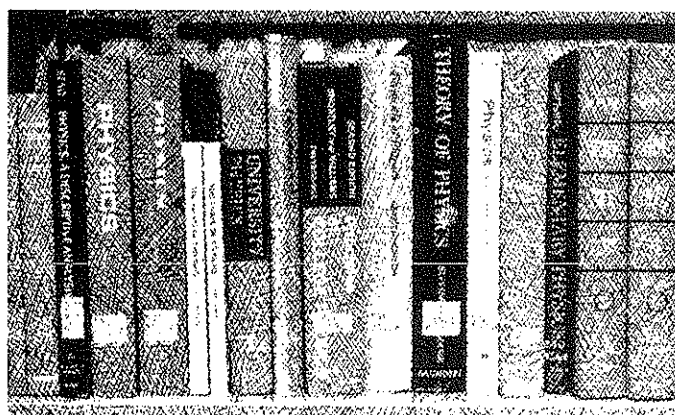
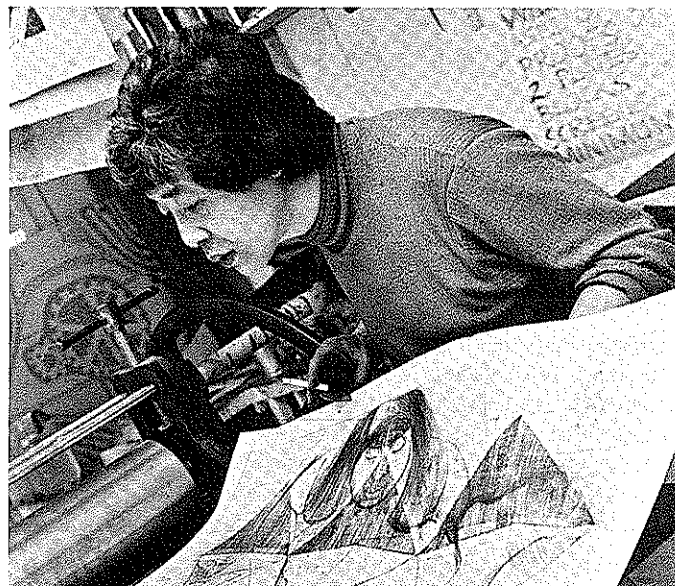
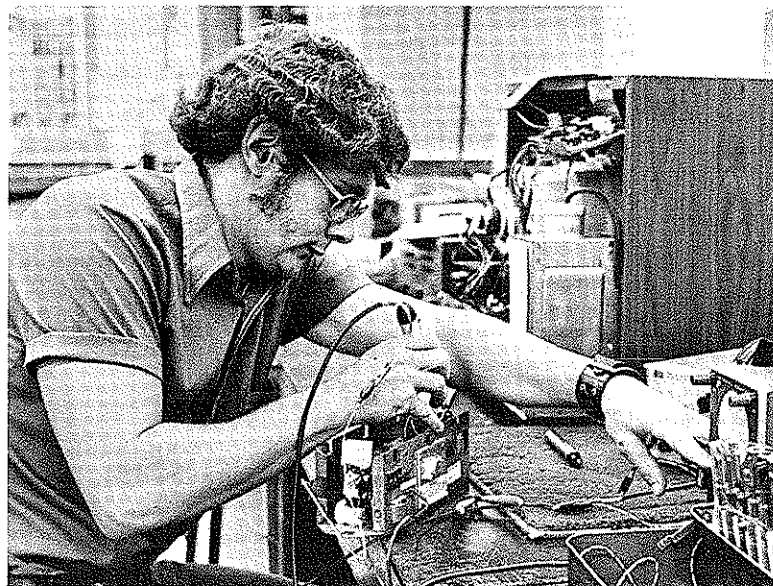
Rules and regulations in this catalog have been adopted

by the faculty, administration, and board of directors of the college. When a student finds that extenuating circumstances might justify the waiver of a particular col-

lege regulation, however, the student may file a petition with the director of student services, according to established procedures.



INSTRUCTIONAL PROGRAM



Information
in this section
is subject to change
without notice.

ARTS & SCIENCES PROGRAMS

The Arts and Sciences Division offers three types of programs, college parallel-transfer, college parallel-career, and developmental.

COLLEGE PARALLEL-TRANSFER CURRICULA

College Parallel-Transfer curricula permit completion of the first two years of a bachelor's degree program. Students can begin their preparation for post baccalaureate careers by carefully selecting courses in their Associate of Arts (AA) degree program. Kirkwood Arts & Sciences curricula can provide the initial course work leading to any of the career areas listed below.

The Arts & Sciences curricula also provides students with courses appropriate to most baccalaureate majors. With careful planning, students can complete the first two years of most college majors listed below. Faculty advisors and counselors can provide valuable assistance to students planning to transfer. Students should consult with an advisor or counselor when making course selections.

CAREER AREAS

Communication and Media
Broadcasting
Journalism

Business
Management

Banking & Finance
Accounting

Marketing & Distribution
Manufacturing

Construction
Engineering

Public Service
Social Work
Education
Law
Government

Environment
Fisheries & Wildlife
Biologies
Forestry

Health
Dentistry
Medicine

COLLEGE MAJORS

Accounting
Agricultural Science
Anthropology
Art
Bio Chemistry
Biology
Bio Physics
Business Administration
Chemistry
Computer Science
Economics
Education
English
Environmental Studies

Nursing
Pharmacy
Medical Technology
Physical Therapy

Consumer & Homemaking
Fine Arts & Humanities
Marine Science

Transportation

Personal Services

Agribusiness & Natural
Resources

Veterinary Medicine

Resources Horticulture

Finance
Foreign Language
Forestry
History
Journalism
Liberal Arts
Literature
Math
Music
Political Science
Psychology
Sociology
Speech
Statistics

COLLEGE PARALLEL-CAREER PROGRAMS

Several college parallel-career programs are available to students. Persons who wish to study for one or two years in college parallel courses, but who also want to develop occupational skills suitable for employment im-

mediately upon completion of one or two years, may find the career oriented programs especially attractive. Credits earned in these programs may be applied towards a baccalaureate degree program.

AIDE FOR THE HANDICAPPED

Aide for the Handicapped program prepares students to work, after one year, as paraprofessionals in a variety of school or community agencies serving the handicapped. Students learn to carry out special programs designed by a variety of professionals. After two years of study, the student also may be employed, or he or she may go on to pursue a four-year degree in a related field such as a special education, social services, or some form of therapy. After successful completion of the first year program, the student will be awarded a diploma.

FIRST YEAR

		Credits	Hrs.
PY027T	Skill Development in Human Services I	4	48
PY029T	Practicum and Seminar I	4	132
PY028T	Skill Development in Human Services II	4	48
PY026T	Orientation to Human Services	2	24
PY030T	Skill Development in Human Services III	4	48
PY030T	Practicum and Seminar II	8	252
MS001T	First Aid	2	24
PD005T	Human Potential Lab	2	36

REQUIRED RELATED COURSES

PY002T	General Psychology	4	48
PY020T	Psychology of Growth & Development	4	48
PY024T	Exceptional Child	4	48
CM101T	Composition I	4	48

SECOND YEAR

Students planning to receive an AA degree need 23 credits to complete the core requirements and 21 credits of electives.

RECOMMENDED ELECTIVES

PY004T	Educational Psychology	4	48
PY009T	Introduction to Teaching	4	48

PY005T	American Public Education	4	48
SO004T	Introduction to Sociology	4	48
SW002T	Community Agencies	3	36
PY025T	The Young Child	4	48
SW001T	Introduction to Social Welfare	3	36
SO013T	Sociology of Poverty	4	48
PS002T	American Government	4	48
PS006T	Iowa Government Today and Tomorrow	4	48

CRIMINAL JUSTICE

The Criminal Justice program has two areas of emphasis, Law Enforcement and Corrections. The student need not select which area to emphasize until completion of approximately one-third of the program, thus providing each student the maximum opportunity to determine which career area has the most personal appeal.

The emphasis is on individual interests and to this end the program offers internships, experience credit examinations and certification procedures. All are designed to assist the student to prepare for a career in the criminal justice system, either after completion of the Associate of Arts degree or after transfer to a four-year college or university.

LAW ENFORCEMENT

FIRST YEAR

REQUIRED TECHNICAL COURSES*

		Credits	Hrs.
LE009T	Introduction to Criminal Justice	4	48
LE012T	History of Police in America	4	48
LE010T	Traffic Safety & Accident Investigation	3	36
LW001T	Criminal Procedural Law	4	48
LE011T	Traffic Regulation Procedures	3	36

RECOMMENDED ELECTIVES

PY002T	General Psychology	4	48
SO011T	Juvenile Delinquency and Deviance	4	48
SW001T	Introduction to Social Welfare	3	36
PS002T	American Government	4	48

SECOND YEAR

REQUIRED TECHNICAL COURSES

LW002T	Criminal Evidence	4	48
LW003T	Criminal Law	4	48
LW004T	Applications of Criminal Law	4	48
LE002T	Patrol Procedures	4	48
LE004T	Criminal Investigation	4	48
LE005T	Crime Scene Investigation	4	48

*During the two years, Introduction to Criminal Justice must be taken along with seven of the courses listed under the "Required Technical" category.

RECOMMENDED ELECTIVES

SO007T	Criminology	4	48
PS003T	State and Local Government	4	48
SO004T	Introduction to Sociology	4	48
SO006T	Social Problems	4	48

CORRECTIONS

REQUIRED TECHNICAL COURSES*

FIRST YEAR

LE009T	Introduction to Criminal Justice	4	48
CO004T	Penology	4	48
CO002T	Probation, Parole & Pardons	4	48
CO003T	Management in Correctional Institutions	4	48
PY020T	Psychology of Growth & Development	4	48
SO0135	Sociology of Poverty	4	48

RECOMMENDED ELECTIVES

PY002T	General Psychology	4	48
SO004T	Introduction to Sociology	4	48
SO006T	Social Problems	4	48
SO001T	Introduction to Social Welfare	3	36

SECOND YEAR

REQUIRED TECHNICAL COURSES

LW003T	Criminal Law I	4	48
LW004T	Criminal Law II	4	48
SO011T	Juvenile Delinquency & Deviance	4	48
PY021T	Personality & Social Psychology	4	48

RECOMMENDED ELECTIVES

SO007T	Criminology	4	48
PS006T	Iowa Government Today and Tomorrow	4	48

LW002T	Criminal Evidence	4	48
LW001T	Criminal Procedural Law	4	48

*During the two years, Introduction to Criminal Justice must be taken along with seven of the courses listed under the "Required Technical" category.

INTERNATIONAL TRADE

The International Trade program, six quarters in length, is designed to prepare people and businesses to meet the challenge of increasing world trade in the years ahead. Students who complete the program will find employment managing export and import functions in American industry. Positions are open equally to men and women.

The program is structured to prepare people for employment upon receiving the Associate of Arts degree. Students who desire increased opportunities for advancement may transfer to baccalaureate degree granting institutions.

Enrollment may be on a part-time or full-time basis. All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 14 to 16 hours per quarter.

		Credits	Hrs.
TECHNICAL COURSES			
MK014T	Exploring World Trade	3	36
MK017T	Techniques of Exporting	3	36
MK021T	Foreign Trade Documentation	3	36
MK022T	International Transportation	3	36
MK024T	International Business	3	36
SO008T	Cultural Anthropology	3	36
AM003T	Business Internship	12	480
RELATED COURSES			
CM101T	Composition I	4	48
CM117T	Composition II	4	48
CM201T	Speech	3	36
	Humanities (foreign language is recommended)	8	96

Social Science (Macro Economics is recommended) Math/Science	8	96
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RECOMMENDED ELECTIVE COURSES

Choose 25 credit hours from the following with advisor approval.

AC001T	Principles of Accounting I	4	48
AC002T	Principles of Accounting II	4	48
AC003T	Principles of Accounting III	4	48
MK002U	Salesmanship	4	48
AM032T	Introduction to Business	4	48
MK001T	Principles of Marketing	4	48
AM005T	Principles of Management	4	48
DP006T	Computer and Data Processing Concepts	3	36
OE009T	Office Machines	3	36
	Typing	3-6	
	Geography	4	48
LW005T	Business Law	4	48
	Foreign Language (fulfills humanities requirement)	8 or more	
	Other courses as approved by advisor		

LEGAL ASSISTANT

The legal profession has recognized that there are many tasks in serving a client's needs which can be performed by a trained, non-lawyer assistant working under the direction of an attorney.

The Legal Assistant program trains people for work in law offices as "lawyer assistants." Under the direction of a lawyer, the legal assistant performs many functions including preparation of routine documents, preliminary drafting of legal briefs, legal research, etc.

The Legal Assistant program is a seven-quarter program leading to an Associate of Arts degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 15 to 17 hours per quarter.

		Credits	Hrs.
	TECHNICAL COURSES		
LW008T	Introduction to Law	3	36

LW010T	Legal Processes	3	36
LW009T	Legal Systems	3	36
LW011T	Estates and Trusts I	3	36
LW012T	Estates and Trusts II	3	36
LW013T	Estates and Trusts III	3	36
AC018T	Income Tax I	4	48
AC017T	Income Tax II	4	48
LW015T	Torts and Trials I	3	36
LW016T	Torts and Trials II	4	48
LW017T	Business Organizational Law I	3	36
LW018T	Business Organizational Law II	4	48
LW014T	Legal Internship Research	6	
LW021T	Law of Commerce I	3	36
LW022T	Law of Commerce II	3	36
LW019T	Modern Real Estate Transactions	4	48
LW020T	Law Office Management		

RELATED COURSES

AC001T	Principles of Accounting I	4	48
EC013T	Principles of Economics	4	48
CM101T	Composition I	4	48
CM117T	Composition II	4	48
CM203T	Speech I	3	36
DP001T	Introduction to Data Processing	3	36
SO004T	Introduction to Sociology	4	48
PS002T	American Government	4	48
PY002T	General Psychology or		
PY022T	Psychology of Human Relations	4	48
	Math/Science Requirements	8	96
	Humanities Requirements	8	96

LIBRARY SERVICES

The Library Services program at Kirkwood is a 13-credit-hour library technicians program designed to prepare students for para-professional work in all types of libraries. Persons who wish to work in libraries, but do not want to complete the five years of collegiate work normally required of Masters of Library Sciences Librarians, will find this program particularly appealing.

The purpose of this program is to prepare individuals to work with professional librarians in ordering and processing books and materials for shelves, typing cards for the catalogue, checking and preparing periodical

materials, keeping files and shelves up-to-date, and working at circulation. The program also familiarizes students with audio-visual operations and procedures.

Students may complete the required 13 credit hours of course work for a Library Services Certificate or complete the Library Services courses along with course work for an Associate of Arts Degree in Library Services.

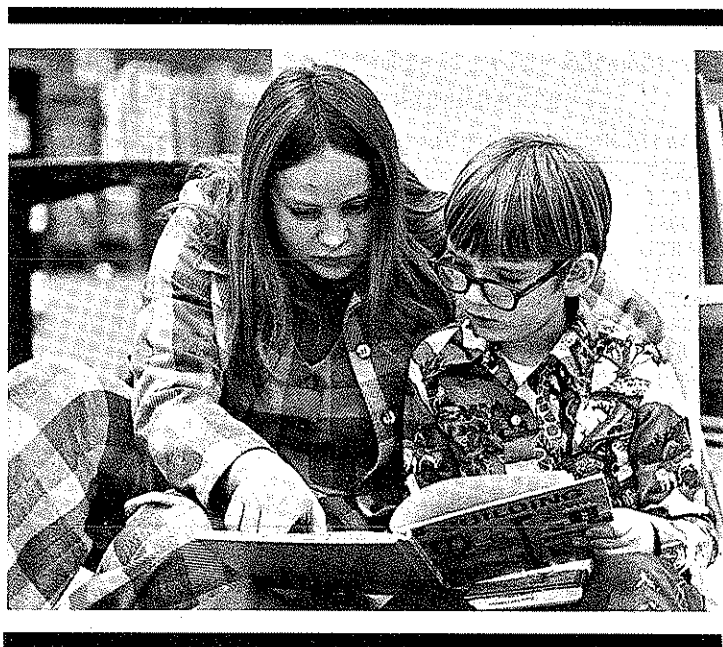
FIRST YEAR

		Credits	Hrs.
REQUIRED TECHNICAL COURSES			
LS008T	Introduction to Uses of the Library I	1	12
LS009T	Introduction to Uses of the Library II	1	12
LS010T	Introduction to Uses of the Library III	1	12
LS006T	Technical Processes	2	36
LS003T	Library Literature	3	36
LS004T	Library Procedures	2	36
LS001T	Instruction in Educational Media	3	36
ELECTIVES			
LS007T	School Library Operations	3	36
LT001T	Children's Literature	4	48

If a student chooses to complete the AA degree, the core requirements and an additional 35 hours of electives must be completed.

TEACHER ASSOCIATE

This program is designed to prepare students to work in schools, day care centers and other "educational" settings as paraprofessionals. The program consists of specific skills training, general education working with children or youth in a school setting. In addition, the student will have the option of transferring the credits earned as the first two years of a teacher certification program. The student who completes the program should be prepared to function in a variety of roles as part of a teaching team and would typically work as an aide or associate to a teacher.



FIRST YEAR

		Credits	Hrs.
REQUIRED RELATED COURSES			
PY002T	General Psychology	4	48
PY020T	Psychology of Growth & Development	4	48
LS008T	Introduction to Uses of Library	2	24
ELECTIVES			
LT001T	Children's Literature	4	48
PY004T	Educational Psychology	4	48
PD005T	Human Potential Lab	2	36

SECOND YEAR

REQUIRED TECHNICAL COURSES			
PY007T	Teacher Associate Practicum	4	100
REQUIRED RELATED COURSES			
PY005T	American Public Education	4	48
PY009T	Introduction to Teaching	3	36

LS001T	Instruction in Educational Media	3	36
OE014T	Typing	2	36

ELECTIVES

AT001T	Art Appreciation	4	48
PY025T	The Young Child	4	48
PY024T	The Exceptional Child	4	48
SO001T	Juvenile Delinquency	4	48

ENGLISH AS A SECOND LANGUAGE (ESL)

The English program is a full-time English and orientation program for non-English speaking persons.

The English as a Second Language program is designed to provide instruction to help the non-English speaker to reach a level of proficiency in speaking English that is necessary for employment or attending school. Students may learn at their own pace and stay in the program until reaching the level of proficiency necessary to enter a credit program.

New students are required to complete two quarters of Orientation to American Culture. This course is intended to supplement instruction received through the English as a Second Language program. The course presents information that will help the student to understand the American educational system, United States government and institutions, and American customs. Program planning is the principal concern of the second quarter of the course. Students participate in conversations, take quizzes, make oral reports and learn notetaking.

DEVELOPMENTAL PROGRAM

Students at Kirkwood Community College enter programs with a wide range of ability levels. In order to help students achieve the kinds of proficiency skills they need to succeed in college-level work, several special services are available.

- 1) The Writing Lab is a non-credit "open door" lab for students who feel insecure about their writing skills in general, and specific class related writing

assignments. The Writing Lab, located in the Learning Resource Center, operates on an individual tutorial basis.

- 2) Personal Achievement courses are valuable to students who want to improve their skills in reading, writing and math. The Personal Achievement Department offers the following courses: Personal Achievement Reading, Personal Achievement Writing, Personal Achievement Math, Basic Study Skills, Punctuation Review and Grammar Review. These courses are offered for .5 to 3 hours of developmental credit. The student's current skill level is determined, then a plan of instruction is developed with each student. The courses are individualized or on a small group basis.
- 3) The courses Effective Reading and Study and Reading Lab are college credit courses for students who want to improve their study techniques and reading comprehension.
- 4) The Student Tutor Bureau operates under the auspices of the Student Affairs Office and the Personal Achievement Department. The purpose of the Tutor Bureau is to match, on a one-to-one basis, students who are having difficulty in a specific subject with a student tutor who has some expertise in that particular area. This service is provided free to Kirkwood students.
- 5) Referral systems are made to other Kirkwood Services, such as Community Education development materials or the specific tutorial programs of the Skills Center. Kirkwood is committed to the idea that the quality of the person that it turns out is more important than the ability level of a person who comes in. Education at Kirkwood is designed on the belief that there is a way to teach everyone almost anything.

CREDIT BY EXAMINATION

Students in the Arts and Sciences Division may earn up to 40 quarter hours of credit through the College Level Examination Program (CLEP) of the College Entrance Examination Board through its general examinations. In addition, a wide variety of subject matter examinations are available for earning credit by testing out of individual courses. Information about these examinations and the procedure for taking any of the examinations may be obtained from the office of the head of counseling.

CORE REQUIREMENTS

All students seeking Associate of Arts and Associate of Science degrees need to complete certain "core" requirements as part of their degrees need to complete certain 90 credit hours. The core requirements for the Associate of Arts and Associate of Science degrees are as follows:

ASSOCIATE OF ARTS	CR. HRS.	ASSOCIATE OF SCIENCE	CR. HRS.
Composition I, II	8	Composition I, II	8
Speech	3	Speech	3
Humanities	8	Humanities	8
Social Science	8	Social Science	8
Math or Science	8	Math or Science	30

COMPOSITION I, II AND SPEECH I: 11 Credits

Composition I must be taken before Composition II. Students can choose between Speech I (Interpersonal Communications) and Speech I (Public Speaking). Speech may be taken before Composition. It is recommended that students complete their requirement during their first 45 credit hours at Kirkwood.

HUMANITIES: 8 Credits

The Humanities required can be completed by taking eight credit hours from the following list of courses. Some courses can satisfy **either** the Humanities **or** the Social Science requirements. However, one course cannot to be counted in both areas simultaneously.

COURSE	CREDITS
Introduction to Fiction	4
Introduction to Dramatic Literature	4
Introduction to Poetry	4
Critical Reading	4
Children's Literature	4
Masterpieces of Literature I	4
Masterpieces of Literature II	4
Masterpieces of Literature III	4
Elementary French (or Spanish or German) I	4
Elementary French (or Spanish or German) II	4
Elementary French (or Spanish or German) III	4
Intermediate French (or Spanish or German) I	3
Intermediate French (or Spanish or German) II	3
Intermediate French (or Spanish or German) III	3
French Civilization I	3
French Civilization II	3
French Civilization III	3
Czech Ethnic Heritage Studies I	1
Czech Ethnic Heritage Studies II	2
Czech Ethnic Heritage Studies III	3
Czech Ethnic Heritage Studies IV	4
U. S. History: 17th and 18th Century	4
U. S. History: 19th Century	4
U. S. History: 20th Century	4
Science Fiction	4
Literature of Terror	4
Art History I	3
Art History II	3
Art History III	3
Black Literature	4
Popular Literature	4
Europe in the Age of Monarchy	4
Europe in the Age of Liberalism	4
Europe in the Age of Totalitarianism	4
Spanish-American Civilization	3
Spanish Civilization	3
Advanced German I	3
Advanced German II	3

<i>Age of Uncertainty</i>	4
Advanced German III	3
Introduction to Theatre	3
Music Appreciation	4
Introduction to Folk Music	4
Introduction to Philosophy	4
Introduction to Religion	4
Art Appreciation	4
Introduction to Film	4

Foreign Language requirements differ in the various four-year institutions. In general, a bachelor of arts degree requires two years of foreign language, and a bachelor of science degree requires one year of foreign language study.

SOCIAL SCIENCE: 8 Credits

The courses listed below satisfy the Social Science requirements. In order to meet requirements of four year institutions, it is often advisable to complete course sequences within a discipline rather than selecting one course from each of several disciplines. Some courses can satisfy either the Social Science or Humanities requirements. However, one course cannot be counted in both areas simultaneously.

COURSES	CREDITS
Intro. to Criminal Justice	4
U. S. History: 17th and 18th Century	4
U. S. History: 19th Century	4
U. S. History: 20th Century	4
World Politics	4
Introduction to Sociology	4
Social Problems	4
Marriage & the Family	4
Sociology of Poverty	4
Introduction to Teaching	4
Juvenile Delinquency & Deviancy	4
Criminology	4
Educational Psychology & Measurement	4
General Psychology	4
Principles of Economics (Macro)	4
Principles of Economics (Micro)	4
Contemporary Economics Problems	4
Biosocial Issues*	2

Intro. to Personality & Social Psychology	4
Europe in the Age of Monarchy	4
Europe in the Age of Liberalism	4
Europe in the Age of Totalitarianism	4
Biological and Cultural Man*	2
Psychology of Human Growth: Conception to Senescence	4
Human Geography	4
Iowa Government: Today & Tomorrow	4
American Federal Government	4
American Public Education	4
Man and the Environment: Atmosphere*	1
Man and the Environment: Hydrosphere*	1
Man and the Environment: Lithosphere*	2
Intro. to Cultural Anthropology	4
<i>Age of Uncertainty</i>	4

*Courses offer partial credit in the Science area and partial credit in the Social Sciences.

MATH/SCIENCE: 8 credits. (30 credits A.S.)

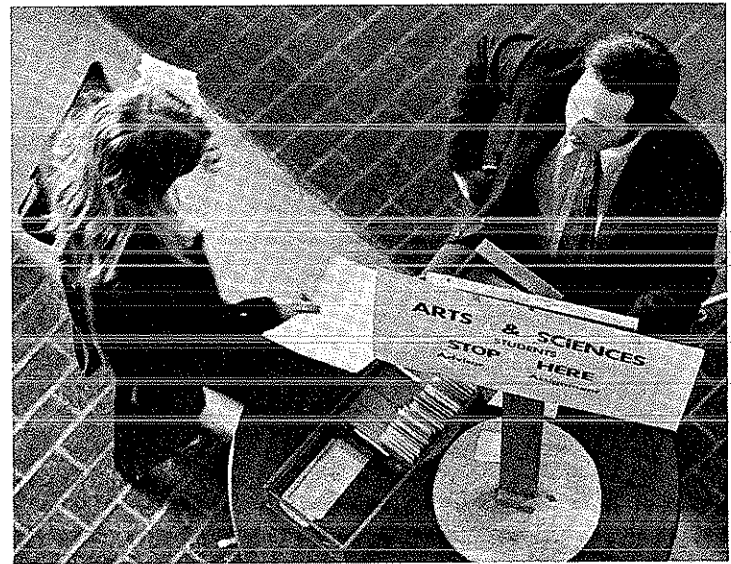
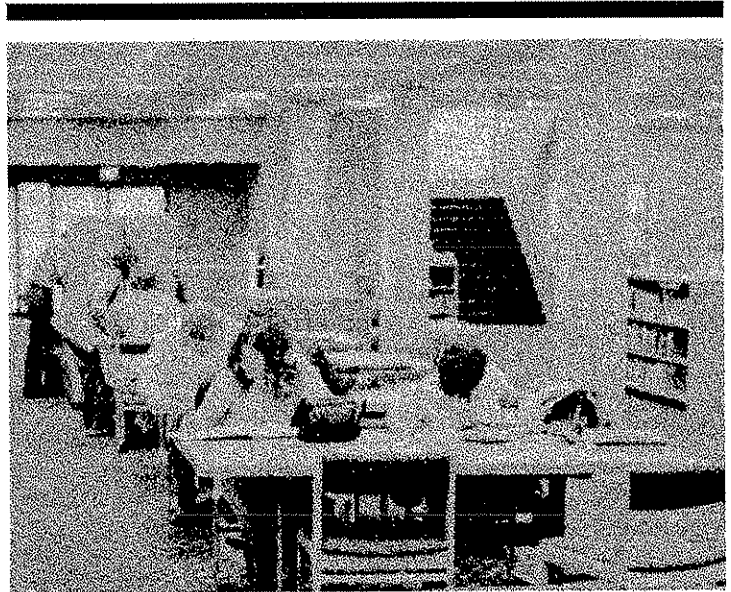
Many Math/Science courses have high school or college prerequisites. Students should check with an advisor before selecting courses.

COURSES	CREDITS
Models, Measurements & Mathematics	4
Intermediate Algebra	5
College Algebra	5
Trigonometry	5
Analytic Geometry	5
Calculus I	5
Calculus II	5
Calculus III	4
Differential Equations I	5
Differential Equations II	4
Linear Algebra	5
Fundamentals of Statistics	5
Math for Elementary School Teachers	5
Quantitative Methods I	5
Quantitative Methods II	4
Principles of Biology	4
Biology of Organisms	4
Environmental Biology	4
Man Evolving*	4
Biosocial Issues*	2

44 *Earth, Sea, & Sky*

Invetebrate Zoology I	4
Invertebrate Zoology II	4
Vertebrate Zoology I	4
Vertebrate Zoology II	4
General Botany	4
Human Anatomy & Physiology I	4
Human Anatomy & Physiology II	4
Human Anatomy & Physiology III	4
Man in the Environment: Atmosphere*	3
Man in the Environment: Hydrosphere*	3
Man in the Environment: Lithosphere*	2
Microbiology I	4
Microbiology II	3
Principles of Chemistry (lecture)	3
Principles of Chemistry (lab)	1
Fundamentals of Organic Chemistry	4
Fundamentals of Biochemistry	4
Nutrition	4
General Chemistry I	5
General Chemistry II	5
Quantitative Analysis	6
Organic Chemistry I	4
Organic Chemistry II	4
Organic Chemistry III	4
Astronomy	4
21st Century Introductory Physics	4
Science and Society	4
College Physics I	4
College Physics II	4
College Physics III	4
General Physics I	4
General Physics II	4
General Physics III	4
Engineering Graphics I	3
Statics	3
Dynamics	5
Thermodynamics I	6
Intro to Eng. Computations	3
Materials Science I	5

*Courses offer partial credit in the Science area and partial credit in the Social Sciences.



VOCATIONAL- TECHNICAL PROGRAMS

AGRIBUSINESS AND NATURAL RESOURCES

TOPDRESS

Is an advanced standing program designed to allow students having taken high school vocational agriculture to transfer their high school competencies into a similar or entirely unique career program at Kirkwood. In effect, college type credit will be awarded for their high school accomplishments in those areas of previous training. Interested students should contact the Office of Admissions for the exact procedures to follow.

AGRIBUSINESS

Agribusiness programs are designed to prepare students for a career in agricultural related sales and services. The curriculum is structured to give students courses which have practical application to the areas of feed, grain, fertilizer, chemicals, seed, hardware or animal health products. Students may take a combination of programs or select from two Agribusiness programs, depending on whether they wish to attend classes in the day or the evening, and depending on the nature of their previous occupational and educational experiences. Course needs of students vary a great deal, and an individual's program is designed with the help of his or her advisor.

AG. SUPPLY SALES AND SERVICES (DAY)

Students successfully completing 110 credits in this program receive an Associate of Applied Science degree. A diploma is awarded upon successful completion of 55 credits. A typical full-time student would take 12 to 19 credits per quarter and be in classes between 260 and 360 contact hours per quarter. It is recommended that students take a minimum of two six-week employment experience periods.

Students can get advanced standing credit for prior education or experience. This concept is called "TOPDRESS" and is discussed at the beginning of this section.

All veterans must take the required number of credit hours per quarter in order to graduate within the approved number of quarters for this program. This will be 16 to 19 credit hours per quarter.

The following are some approved and suggested courses. Students may select courses from the list below or others as stated earlier with approval of their associate department head and faculty advisor.

SUGGESTED FIRST-YEAR COURSES

TECHNICAL COURSES

		Credits	Hrs.
AC008U	Agribusiness Records	4	48
AM015U	Agribusiness Practices	4	60
PY004U	Psychology of Human Relations	3	36
MK002U	Basic Salesmanship	3	48
AG012U	Employment Experience	6	240

RELATED COURSES

MA001U	Ag Mathematics	2	24
AG263U	Agriculture Career Orientation	1	12

ELECTIVES

MK003U	Ag Product Marketing	3	48
AG064U	Beef Enterprise	1-6	24-144
AG115U	Crop Enterprise	1-6	24-144
AG072U	Swine Enterprise	1-6	24-144

AG006U	Career Planning Seminar	1	12
AG005U	Ag Chemicals	2	24
AG150U	Livestock Nutrition	3	72
AG200U	Animal Health Products	3	48
AG017U	Field Crop Production	1-6	24-144

SUGGESTED SECOND-YEAR COURSES

TECHNICAL COURSES			
AG003U	Agribusiness Procedures	4	36
AG221U	Special Projects-Agribusiness	1-9	24-216
AG012U	Employment Experience	6-12	240-480
MK035U	Agricultural Salesmanship	3	48
AG207U	Agribusiness Management	3	48
AM004U	Agriculture Foremanship	3	36
RELATED COURSES			
CM002U	Communication Skills	2	24
ELECTIVES			
AG103U	Agricultural Finance	3	48
AG208U	Animal Science Management	3-11	48-192
AG016U	Feed Rations	2	36
AG079U	Field Crop Planning	5	60
AG002U	Forage and Oat Production	3	24
AG179U	Advanced Livestock Evaluation	3	36

AGRIBUSINESS MANAGEMENT (EVENING)

This program is a mid-management program. It is designed for those who desire to enter or those already employed in retail business serving farmers. Probably the most unique part of the program is that it is designed so that students already employed can have a more compatible schedule, attending classes in the evening and begin provided with a schedule whereby they can attend one to four nights per week at hours that don't conflict with their work schedule.

The average student in this program would take 12 credit hours of courses per quarter for a total of eight quarters. Students would graduate with an Associate of Applied Science degree with the successful completion of 100 credits. A diploma is awarded for completing 55 credits.

Agribusiness Management is an eight-quarter program. A veteran must take 12 to 15 credit hours per quarter in order to graduate within eight quarters.

The following are some approved and suggested courses. Students may select 12 to 19 credit hours of courses per quarter with approval of their associate department head and faculty advisor. Students may select from this list or from courses in other programs. These courses are not in sequence and a student may take them when offered.

TECHNICAL COURSES			
		Credits	Hrs.
AG207U	Agricultural Supply Management Fall	4	48
AM025U	Agribusiness Practices	4	48
MK002U	Basic Ag Salesmanship	4	48
AG003U	Agribusiness Procedures	4	48
AG107U	Futures Market	4	48
EC004U	Agricultural Economics	4	48
AG221U	Special Projects: Agribusiness	1-9	24-216
AG005U	Agricultural Chemicals	4	48
AG112U	Agribusiness Management	4	48
MK035U	Agricultural Salesmanship	4	48
AG016U	Feed Rations	4	48
AM004U	Agricultural Foremanship	4	48
RELATED COURSES			
CM002U	Communication Skills	4	48
PY004U	Psychology of Human Relations	4	48
MA001U	Agricultural Mathematics	4	48
ELECTIVES			
AG053U	Soil Fertility	4	48
AG103U	Agricultural Finance	4	48
AG042U	Weed Identification	4	48
AG086U	Ruminant Nutrition	4	48
AG088U	Swine Production	4	48
AG005U	Animal Health Products	4	48
AG079U	Field Crop Planning	4	48
AG094U	Grain Marketing	4	48
LW003U	Agricultural Law	4	48

ANIMAL HEALTH MANAGEMENT

The Animal Health Management program provides instruction to students in preparation for careers in kennel shops, health product services and sales as well as farm health management programs. Course work covers

disease prevention, parasites and health regulations for both large and small animals. Courses also cover genetics and facilities in relationship to the health of animals. Animal Health Management is a three-quarter program which is unique in that, depending upon the student's background, it can be taken in several ways. Students can successfully complete three quarters and receive a diploma or may choose to combine the program with Production Agriculture or Agribusiness and receive the Associate of Applied Science degree. This program may also be taken as a top-dress program to give students specialized training in selected areas such as small animal health, swine and beef health, or horse health.

The central farm laboratory is used in the course of study as a live laboratory supplying some of the problem areas used in instruction by staff. Throughout the course of study, veterinarians are employed to provide the necessary in-depth instruction in selected areas. There are 260 to 360 contact hours offered per quarter in this program.

All veterans must take the required number of hours per quarter in order to graduate within three quarters. This will vary from 240 to 336 contact hours per quarter.

The following are approved and suggested courses. Students may select from them with approval of their associate department head and faculty advisor.

		Credits	Hrs.
AG238U	Cattle Health	5	96
AG231U	Animal Health Lab	5	96
AG248U	Beef Cattle Environment & Facilities	4	72
AG234U	Small Animal Psychology	4	72
AG237U	* Special Projects, Animal Health	3	36
AG232U	Swine Health	5	96
AG231U	Animal Health Lab	5	96
AG233U	Swine Environment & Facilities	4	72
AG236U	Kennel Management	4	72
AG237U	*Special Projects, Animal Health	3	36
AG078U	Horse Health	6	96

AG231U	Animal Health Lab	5	96
AG204U	Horse Breeding	6	96
AG235U	Small Animal Health	4	36

*Courses allow additional skill development for students who wish to cover a specialized area of animal health.

FARM EQUIPMENT MECHANICS

The Farm Equipment Mechanics program is designed to prepare individuals for entry-level employment or provide employment advancement as specialized farm machinery mechanics, farm implement service representatives or supervisors. During the first year, students work on basic fundamentals in the areas of tractor electricity, gas engines, assembly and handling of farm machinery including implement truck operation, and reconditioning and repair of used farm equipment. The second year of the program is devoted to the diagnosis and repair of farm tractors and systems including gasoline and diesel fuel systems and engines, hydraulics, transmissions and final drives. Students will work in specialized labs and classrooms.

A student may enter the program any quarter during the first year but must have had previous training or experience to enter the second year.

Upon successful completion of 52 credits, which is equivalent to three quarters, a student may receive a diploma as a machinery and equipment handling specialist. Upon successful completion of 103 credits or six quarters, the student will receive an Associate of Applied Science degree.

All veterans must take the required number of credit hours per quarter in order to graduate within the approved number of quarters for this program. This will be 16 to 19 credit hours per quarter.

The following are approved and suggested courses. Students select from them with approval of their associate department head and faculty advisor. A typical student would attend classes 260 to 360 contact hours

per quarter depending on their previous occupational and educational experiences.

FIRST-YEAR COURSES

		Credits	Hrs.
EL027U	Basic & Applied Electricity	8	144
MH005U	Manual Interpretation & Application	3	48
MH027U	Machinery Assembly & Handling Tillage	3	48
AG263U	Ag Career Orientation	1	12
MH009U	*Supervised Shop Projects	3	48
MH013U	Basic & Applied Gas Engines	8	144
MH007U	Machinery Assembly & Handling-Materials	3	48
MH028U	Machinery Assembly & Handling-Planting & Harvesting	3	48
MH009U	*Supervised Shop Projects	3	48
CM002U	Communication Skills I	3	36
MH019U	Reconditioning and Repair	5	108
MH025U	Machinery Operation & Adjustment-Tillage	3	48
MH006U	Machine Operation & Adjustment Crops	3	48
MH009U	*Supervised Shop Projects	3	48

SECOND-YEAR COURSES

MH001U	Basic Hydraulics	3	48
MH014U	Gas Engine Diagnosis & Overhaul	8	156
MH016U	Power Transfer Systems	3	48
PY004U	Psychology of Human Relations	3	36
	Applied Hydraulics	3	48
MH071U	Advanced Power Transfer Systems	3	48
MH008U	Diesel Diagnosis & Overhaul	8	156
AM013U	Implement Business Procedures	3	36
MH018U	Automatic Transmissions	3	48
MH021U	Unit Diagnosis & Overhaul	8	156
MH015U	Hydraulic Controls	3	48
AG108U	Shop Facilities & Equipment	3	36

*With permission of the associate department head and faculty advisor, the student may elect to take courses in other areas of the college in place of these courses.

GROUNDS & RECREATIONAL VEHICLE REPAIR

Grounds & Recreational Vehicle Repair is a course designed to prepare the student for employment in the growing fields of lawn and garden, turf and recreational vehicle repair. Engine electrical, hydraulics, power transfer systems, gasoline engines, welding, fiberglassing, and sheet metal work are studied. Students will spend approximately 60 per cent of their class time in the laboratory developing the skills necessary for successful employment as a mechanic in this area.

Any interested student may enroll for any course any quarter except the spring quarter. To be eligible for entry in the spring quarter, a student must have had previous training (fall and winter quarters) or experience in the field. Students may elect to generalize or specialize in the spring quarter.

Upon successful completion of three quarters or 52 credits, the student will receive a diploma.

All veterans must take the required number of hours per quarter in order to graduate within three quarters. This will vary from 240 to 336 contact hours per quarter.

The following are approved and suggested courses. Students may select from them with approval of their associate department head and faculty advisor. A typical student would attend classes 260 to 360 contact hours per quarter depending on their previous occupational and educational experiences.

		Credits	Hrs.
EL027U	Basic & Applied Electricity	8	144
MH001U	Basic Hydraulics	3	48
MH016U	Power Transfer Systems	3	48
MH009U	Supervised Shop Projects	3	48
AG263U	Ag Career Orientation	1	12
MH013U	Basic & Applied Gas Engines	8	144
MH019U	Reconditioning & Repair	6	96
MH009U	Supervised Shop Projects	3	48
MH022U	Systems Diagnosis & Repair	14	240
MH026U	Vehicle & Equipment Sales & Service Management	4	48

HORSE HUSBANDRY

The Horse Husbandry program is designed to prepare students for entry employment in the horse industry. Students may be employed as horse trainers, riding instructors, supportive sales in the feed and track areas, as well as be self-employed. Students spend about 50 percent of their time in the laboratory working with horses. The central farm laboratory consists of an indoor riding arena, a 40-stall stable and supportive facilities. Some of the unique instruction includes the "hands-on approach" whereby students are involved with breaking and training horses, as well as horse judging and work in the breeding program. The school maintains a band of brood mares for the purpose of teaching mare and foal care as well as breaking a young horse.

The Horse Husbandry program is six quarters in length. Students who successfully complete 100 credits will receive an Associate of Applied Science degree. Those completing 50 credits will receive a diploma. There are from 260 to 360 contact hours per quarter.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 16 to 19 credit hours per quarter.

The following are approved and suggested courses. Students may select from them with approval of their associate department head and faculty advisor.

FIRST - YEAR COURSES

		Credits	Hrs.
AG050U	Horse Enterprise, Fall	3	48
AG054U	Horsemanship, Fall	5	96
AG109U	Ag Power Unit Operations	5 & 6	72
AC008U	Agribusiness Records	4	48
MA001U	Agricultural Mathematics	2	24
AG263U	Ag Career Orientation	1	12
AG075U	Horse Enterprise, Winter	3	48
AG203U	Horsemanship, Winter	4	72
AG078U	Horse Health	6	96
AG022U	Horse Nutrition	4	72
AG006U	*Career Planning Seminar	1	12

AG202U	Horse Enterprise, Spring	3	48
AG229U	Horsemanship, Spring	5	96
AG223U	Hoof Care	4	72
AG204U	Horse Breeding	6	96
AG239U	*Horse Industry Problems	1-12	288
AG220U	*Special Projects, Horse Science	3	36

SECOND - YEAR COURSES

AG212U	Stable Management, Fall	6	96
AG211U	Horse Judging	6	96
AG210U	Horse Training	6	96
AG220U	*Special Projects, Horse Science	3	36
AG216U	Stable Management, Winter	6	96
AG201U	Horse Physiology	4	72
AG247U	Horse Feed Rations	4	72
PY004U	Psychology of Human Relations	3	48
AG220U	*Special Projects, Horse Science	3	36
AG227U	Stable Management, Spring	3	48
AG051U	Horse Shows	3	48
AG228U	Specialized Training	4	72
AG002U	Forage and Oat Production	6	96
CM002U	Communication Skills	2	24
AG220U	*Special Projects, Horse Science	3	36
AG239U	*Horse Industry Problems	1-12	288

*These courses are elective.



HORTICULTURE & NATURAL RESOURCES

The Horticulture and Natural Resources programs offer preparatory training for a diverse range of careers. Working under the direction of a faculty advisor, students develop an individual training plan which is approved by the program associate head. This plan typically involves completion of a basic core of instruction, followed by electives selected to meet educational requirements for specific career areas. Students are in class from 260 to 360 hours per quarter, depending upon their previous educational and occupational experiences.

Graduation standards require 45 to 50 credits for a diploma and 100 to 105 credits for the Associate of Applied Science (AAS) degree. Students earning the AAS degree must have completed one satisfactory employment experience. Time is allocated between April 15 and June 1 to meet this requirement.

Normal enrollment entry date for the full-time preparatory section is at the beginning of summer quarter. Students may enroll at the beginning of fall quarter if openings exist. Entry date for evening classes is at the beginning of each quarter. Evening classes will, in some cases, emphasize slightly different subject matter than the day classes.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 16 to 19 credit hours per quarter.

Although it is virtually impossible to list the total array of career opportunities, students select courses with approval of their faculty advisor and associate department head in preparation for employment in the following areas:

Landscape/Nursery/Garden Center:

Employment opportunities include positions in landscape design and construction, garden center sales and service, nursery stock and greenhouse production, as



well as positions in interior landscaping and plant material management.

Grounds & Turf Management:

Career opportunities include professional grounds management, positions for private corporations, governmental institutions, private estates, etc. Students are encouraged to select a broad range of courses, since many positions involve both indoor and outdoor plant material responsibilities.

Parks & Natural Resources:

Careers involve employment in city, county, and state parks as park attendants, officers, rangers, executive directors, or specialists such as arborists, horticulturists, equipment operators, etc. The courses offered are tailored to actual training requirements stated in job descriptions utilized throughout the state.

TECHNICAL COURSES

		Credits	Hrs.
AG044U	Plant Materials I	4	47
AG045U	Plant Materials II	4	72

AG046U	Plant Materials III	4	72
AG252U	Plant Materials Maintenance	4	72
AG039U	Plant Disease and Insects	4	72
AG057U	Turfgrass Management	4	72
AG062U	Horticulture Equipment	4	72
AG029U	Landscape Construction	4	72
AG056U	Soil & Water Mechanics	4	72
AG048U	Plant Propagation	4	72
AG206U	Greenhouse Practices	4	72
AG030U	Basic Landscape Drawing	4	72
AG034U	Commercial Landscape Design	4	72
AG031U	Residential Landscape Design	4	72
AG033U	Grounds Equipment Management	4	72
AG077U	Grounds Management Problems	4	72
AG032U	Recreational Areas Design	4	72
AG010U	Park Maintenance Programs	4	72
AG009U	Parks and Grounds Law	4	72
AG015U	Parks and Recreation Administration	4	72
CS002U	Facility Construction	4	72
AG018U	Wildlife Reserves	4	71
AG074U	Herbaceous Plant Material	4	72
AG035U	Commercial Plant Production	4	72
AG027U	House Plants	4	72
AG026U	Garden Center Operations	4	72
AG036U	Fruit and Vegetable Production	4	72
AG012U	Employment Experience	6	240
AG006U	Career Planning Seminar	1	12
AG222U	Special Projects: Horticulture	1,3,4,6	ARR
AG095U	Special Projects: Natural Resources	1,3,4,6	ARR

RELATED COURSES

PY004U	Psychology of Human Relations	3	36
CM005U	Oral Communication	3	36
MK002U	Basic Ag Salesmanship	3	36
BY027T	Aquatic Wildlife	2	24
BY028T	Mammalian Wildlife	4	48
BY026T	Avian Wildlife	4	48
AG263U	Ag Career Orientation	1	12

The following instructional units are available in the evening hours:

Greenhouse Facilities & Equipment
Horticulture Production & Marketing
Fruit Production
Greenhouse Production I

Greenhouse Production II
Interior Plant Materials
Interior Landscaping
Horticulture Mechanics I
Horticulture Mechanics II
Horticulture Chemical Application
Soils & Fertilizers
Deciduous Ornamentals
Evergreen Ornamentals
Annual Flower Culture
Perennial Flower Culture

PRODUCTION AGRICULTURE

The Production Agriculture program is designed to prepare students for entry employment or employment advancement in the science of food production. Students receive preparation leading to employment as farm operators, livestock technicians, livestock buyers and crop technicians. Special emphasis is placed on management decision making. Students spend about 50 per cent of their time at the college central demonstration farm. The farm laboratory is equipped with swine and beef breeding herds, as well as livestock finishing units. The cropping program consists of 400 acres of row crops and forage production. The length and time patterns of courses are designed to fully utilize the farm laboratory.

The Production Agriculture program is seven quarters in length which includes from 260 to 360 contact hours per quarter. Students successfully completing 110 credits in this program receive an Associate of Applied Science degree. Those completing 55 credits receive a diploma.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 16 to 19 credit hours per quarter.

The following are approved and suggested courses.

Students may select from them with approval of their associate department head and faculty advisor.

FIRST - YEAR COURSES

		Credits	Hrs.
AG008U	Agribusiness Records	4	48
MK003U	Ag. Product Marketing	3	48
AG072U	Swine Enterprise, Fall	2	48
AG114U	Crop Enterprise, Fall	2	48
AG230U	Animal Evaluation and Selection	3	48
AG109U	Ag. Power Unit Operations	.5 & 6	6 & 48
AG263U	Ag. Career Orientation	1	12
AG017U	*Field Crop Production	1 to 6	24-144
AG149U	*Applied Livestock Husbandry	1 to 6	24-144
AG064U	Beef Cow Management	2	24
AG115U	Beef Feedlot Management	2	24
AG115U	Modern Corn Production	2	24
AG251U	Modern Soybean Production	2	24
AG150U	Livestock Nutrition	4	72
AG200U	Animal Health Products	2-4	24-48
AG014U	Farm and Shop Maintenance	3	72
AG006U	*Career Planning Seminar	1	12
AG149U	*Applied Livestock Husbandry	1-6	24-144
AG073U	Swine Enterprise, Spring	2	36
AG116U	Crop Enterprise, Spring	2	36
AG065U	Beef Enterprise, Spring	2	36
AG005U	Ag. Chemicals	1	12
AG011U	Tillage and Planting Equipment	3	24
AG012U	Employment Experience	1-6	
AG017U	*Field Crop Production	1-6	24-144
AG149U	*Applied Livestock Husbandry	1-6	24-144

Electives

AG249U	Beef and Dairy Artificial Insemination	2	36
AG004U	Swine Artificial Insemination	2	36
AG017U	Field Crop Production	1-6	24-144
AG179U	*Advanced Livestock Evaluation	2-6	36-72
AG149U	*Applied Livestock Husbandry	1-6	24-144
AG218U	*Special Projects, Agronomy	3	36
AG219U	*Special Projects, Animal Science	3	36
AG221U	*Special Projects, Agribusiness	3	36

SECOND - YEAR COURSES

AG208U	Animal Science Management, Fall	2-4	48-96
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AG152U	Land Use & Conservation	2-4	48-96
AG103U	Agriculture Finance	2-4	48-96
AG086U	Ruminant Nutrition	3	24-48
AG012U	*Employment Experience	1-6	
AG179U	*Advanced Livestock Evaluation	2-6	36-72
AG218U	*Special Projects, Agronomy	3	36
AG219U	*Special Projects, Animal Science	3	36
AG221U	*Special Projects, Agribusiness	3	36
AG213U	Animal Science, Winter	5	72
AG215U	Machinery Economics	2-4	24-48
AG016U	Feed Rations	2-4	24-48
AG079U	Field Crop Planning	5	72
PY004U	Psychology of Human Relations	3	48
AG179U	*Advanced Livestock Evaluation	2-6	36-72
AG218U	*Special Projects, Agronomy	3	36
AG219U	*Special Projects, Animal Science	3	36
AG221U	*Special Projects, Agribusiness	3	36
AG225U	Animal Science, Management, Spring	3	48
AG205U	Farmstead Planning	2	24
AG002U	Forage and Oat Production	3-6	48-96
MK004U	Futures Marketing	2	12
CM002U	Communication Skills	2	12
AG012U	Employment Experience	1-6	
AG179U	*Advanced Livestock Evaluation	2-6	36-72
AG218U	*Special Projects, Agronomy	3	36
AG219U	*Special Projects, Animal Science	3	36
AG221U	*Special Projects, Agribusiness	3	36

*These courses emphasize skill development for students who wish to improve or enhance themselves in these areas.

VETERAN'S FARM MANAGEMENT *(need 12 q+rs)*

The Veteran's Farm Management program is designed for individuals involved in farming that want to better their farm business operations. The program combines lectures, laboratory work with Kirkwood's Central Farm Laboratory, field trips and presentations from resource personnel. Students receive instruction in animal science, crop production, farm business management, agricultural mechanics and current agriculture topics.

The courses are those most suited to farmers' needs

and the courses are held at night for their convenience. The students are given a three-week co-op period for planting and a three-week co-op period in the fall for harvesting, as well as two weeks of co-op in the summer. Classes meet at the Kirkwood campus and several other off-campus sites.

Graduates receive a certificate, diploma or Associate of Applied Science degree, depending on the length of time a student attends.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 114 to 162 contact hours per quarter.

The following are some approved and suggested courses. Students may select courses from the list below or others as stated earlier with approval of their associate department head and faculty advisor.

TECHNICAL COURSES

		Credits	Hrs.
AG084U	VFM Monogastric Nutrition	2.5	30
AG085U	VFM Field Crop Problems	2.5	30
AG086U	VFM Ruminant Nutrition	3.0	36
AG087U	VFM Soil and Plant Science	3.0	36
AG088U	VFM Swine Production	4.5	54
AG089U	VFM Soil Fertility	4.5	54
AG090U	VFM Agricultural Finance	3.0	36
AG092U	VFM Beef Production	2.5	30
AG093U	VFM Forage & Oat Production	2.5	30
AG094U	VFM Grain Marketing	2.5	30
AG096U	VFM Corn Production	4.5	54
AG097U	VFM Livestock Marketing	4.5	54
AG098U	VFM Tillage and Planting Equipment Adjustment	2.5	30
AG107U	VFM Futures Market	2.5	30
AG205U	Farmstead Planning	4.5	54
CS003U	VFM Farm Construction I	2.5	30

RELATED COURSES

LW003U	Agricultural Law	4.5	54
CM002U	Communication Skills I	2.5	30

ELECTIVES

AG005U	Agricultural Chemicals	2.5	30
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AG082	VFM CO-OP	2.0-21	80-840
AG083U	VFM Records and Management	2.5-19.5	30-234
AG102U	VFM Harvesting Equipment Adjustment	3.0	36
AG152U	Land Use and Conservation	2.5	30
EC004U	VFM Agricultural Economics	3.0	36

BUSINESS AND OFFICE CAREERS

ACCOUNTANT SPECIALIST

The Accountant Specialist 72-week curriculum is designed to prepare individuals for the semi-professional levels in accounting. Upon completion of the course, the student will be prepared to enter business in the areas of cost accounting, auditing, general accounting and many other specialized areas of financial reporting. Requirements include accounting principles and practice, general and occupational information and business internship.

Graduates may receive an Associate of Arts degree or an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 15 to 20 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
AC001T	Principles of Accounting I	4	48
AC002U	Principles of Accounting II	4	48
AC003T	Principles of Accounting III	4	48
AC006T	Intermediate Accounting I	4	48
AC007T	Intermediate Accounting II	4	48
AC009T	Intermediate Accounting III	4	48
AC004T	Cost Accounting I	4	48
AC005T	Cost Accounting II	4	48
AC015T	Personal Income Tax	2	24
AC016T	Income Tax for Business	3	36
AC009U	Accounting Problems	6	108
AM003T	Business Internship	12	480

RELATED COURSES

OE009T	Office Machines	3	48
LW005T	Business Law I	4	48

LW006T	Business Law II	4	48
DP048U	Business Application of Data Processing	4	48
EC013T	Economics Macro	4	48
EC014T	Economics Micro	4	48
CM002U	Communication Skills I or	3	36
CM101T	Composition I	4	48
CM003U	Communication Skills II or	3	36
CM102T	Speech I	3	36
MA014T	Intermediate Algebra and	4	60
MA011T	Fundamentals of Statistics or	4	60
MA026T	Quantitative Method I	5	60
MA027T	Quantitative Method II	5	60
AM002T	Principles of Finance	3	36
	Business Elective	4	48
	General Education Electives	6	72

JUNIOR ACCOUNTING

The Junior Accounting program is a one-year program designed to provide a fundamental knowledge of accounting, an understanding of basic concepts, definitions and terminologies, and to provide students with insight into the characteristics and methods of operating accounting systems.

The Junior Accounting program includes group instruction, individual instruction and laboratory practice. The program also provides on-the-job training periods through which the student gains actual work experience. Graduates receive a diploma.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 19 to 22 credit hours per quarter. (Except summer quarter is 12 credit hours served in an internship.)

TECHNICAL COURSES

		Credits	Hrs.
AC001V	Accounting Fundamentals I	5	60
AC002V	Accounting Fundamentals II	5	60
AC003V	Accounting Fundamentals III	5	60
AC009U	Accounting Problems	15	360
OE009T	Office Machines	3	48
OE006T	College Typing I	3	60
AC008V	Income Tax Procedures	3	36
AM003T	Business Internship	12	480

RELATED COURSES

DP006T	Computer and Data Processing Concept	3	
LW005T	Business Law I	4	48
EC015T	Principles of Business Economics	4	48
CM002U	Communication Skills I	3	36
CM003U	Communication Skills II	3	36
MA002U	Basic Mathematics	0	arr.
PD005T	Human Potential Laboratory	2	24

COMPUTER OPERATIONS

The Computer Operations program trains students for employment in a variety of closely related occupations in data processing. A student completing the two-quarter certificate program could work as a data librarian, work scheduler, records auditor, documentation specialist, operations assistant or computer and console operator. Students may enroll at the beginning of the fall, winter or spring quarters.

Computer Operations is approved for two quarters. A veteran must take 17 credit hours per quarter to graduate within two quarters.

Students must select, with the consent of the advisor, courses from the following list.

TECHNICAL CORE COURSES

		Credits	Hrs.
DP001U	Self-Service Aids	1	24
DP002U	Punched-Card Data Processing	2	36
DP003U	Computer Operating Techniques	2	36
DP005U	Introduction to S/360-370	3	36
DP009U	Assigned Operations Projects	3	60
DP011U	Introduction to Report Program Generator	2	36
DP021U	Disk Operating System Concepts and Facilities	3	36
DP027U	System Utilities	2	36
DP039U	Records & Scheduling of Data Processing Operations	3	36
DP040U	Related Equipment I	1	24
DP048U	Business Applications of Data Processing	3	36

DP006T	Computer and Data Processing Concepts	3	36
RELATED COURSES			
AM022U	Principles of Supervision	3	36

PROGRAMMER/PROGRAMMER ANALYST

Students majoring in Computer Programming will complete a six-quarter curriculum and graduate with a diploma. They may elect to continue two additional quarters of Systems Analysis and graduate with an Associate of Applied Science degree, as a programmer-analyst. These curricula are business oriented with much of the second year used to broaden the student's knowledge in business systems. Training in programming is aimed at providing applied technical knowledge so that the student can step directly into the occupation of programming. Units of training change frequently to keep with the industry. New students may begin in the fall, winter, spring or summer quarters.

The Programmer/Analyst program is approved for eight quarters. A veteran must take 15 to 18 credit hours per quarter in order to graduate in eight quarters.

Students must select, with the consent of an advisor, courses from the following list:

TECHNICAL CORE COURSES			
		Credits	Hrs.
DP001U	Self-Service Aids	1	24
DP002U	Punched-Card Data Processing	2	36
DP004U	Flowcharting Techniques	2	24
DP005U	Introduction to S/360-370	3	36
DP007U	Assembler Language I	5	84
DP008U	Assembler Language II	5	84
DP011U	Introduction to Report Program Generator	2	36
DP013U	introduction to Cobol Programming	5	84
DP014U	Advanced Cobol Programming	5	84
DP015U	Cobol Projects	5	108
DP016U	Introduction to Fortran Programming	4	48
DP020U	Program Analysis	2	36
DP022U	Disk Operating System Coding	5	84

DP023U	Advanced Disk Operating System Coding & Data Manage.	5	84
DP026U	Programming Systems	3	48
DP028U	Telecommunications Concepts	3	36
DP030U	D O S Tellecommunications Coding	5	84
DP032U	Numerical Analysis	3	36
DP033U	Introduction to Operations Research	3	36
DP036U	Assigned Programming Projects	5	108
DP037U	Installation Management	3	36
DP040U	Related Equipment I	1	24
DP043U	Documentation I	2	24
DP049U	Introduction to Systems	3	36
DP050U	Advanced Systems	3	36
DP051U	Applied Systems I	3	36
DP057U	Accounting Systems	3	36
DP058U	Production/Material Control System	3	36
DP059U	Project Management Systems	3	36
DP061U	Payroll/Personnel Systems	3	36
DP062U	On-the-Job Systems Projects	3	36
DP006T	Computer and Data Processing Concepts	3	36



RELATED COURSES

CM002U	Communication Skills I	3	36
MA026T	Quantitative Methods I	5	60
MA027T	Quantitative Methods II	5	60
AM022U	Principles of Supervision	3	36
AC001U	Accounting Survey	3	36
	Electives		

Additional courses from the Business Department, Data Processing Department and Mathematics Department may be taken, with an advisor's consent, at the student's option.

VOCATIONAL KEYPUNCH

The keypuncher is a valuable member of the data processing team. This one-quarter program will train the student to punch and verify cards which will serve as input to data processing equipment. Training will be done on the latest available equipment.

Graduates receive a certificate.

Vocational Keypunch is approved for one quarter. A veteran must take 17 credit hours to graduate in one quarter.

Students are required to select the following courses:

TECHNICAL CORE COURSES

		Credits	Hrs.
DP003V	Vocational Keypunch	8	180
DP002U	Punched-Card Data Processing	2	36
DP006T	Computer & Data Processing Concepts	3	36

RELATED COURSES

PD001U	Personal Development I	1	12
OE010T	Filing Systems and Record Control	3	36

OFFICE EDUCATION

The core approach to the Office Education curriculum allows a student to delay selecting a program until the end of the first quarter.

The Office Careers class, a core course completed the

first quarter, provides a means of exploring the six secretarial fields available:

Administrative Secretary	Insurance Secretary
Clerical Receptionist	Legal Secretary
General Secretary	Medical Secretary

Any person who holds a Certified Professional Secretary Certificate may make application to receive up to 36 hours credit toward an Associate of Applied Science degree. The following courses are accepted for credit:

		Credits	Hrs.
LW005T	Business Law I	4	48
OE011T	Secretarial Procedures	4	48
EC013T	Principles of Economics (Macro)	4	48
AC001T	Principles of Accounting I	4	48
AC002T	Principles of Accounting II	4	48
OE010T	Filing Systems and Records Control	3	36
OE007T	College Typing II	3	60
OE008T	College Typing III	3	60
AM019U	Office Management	4	48
PY004U	Psychology of Human Relations	3	36

OFFICE EDUCATION CORE COURSES

OE006T	College Typing I	.5-3	10-60
OE007T	College Typing II	.5-3	10-60
OE008T	College Typing III	.5-3	10-60
OE016V	Office Careers	1	24
OE010T	Filing Systems and Records Control	3	36
CM002U	Communication Skills I	3	36
OE001U	Office Procedures I	4	60
PD001U	Personal Development	2	24
OE004U	Office Calculating Procedures	4	60
OE015V	Transcribing Machines	2	36
OE025V	Office Education Seminar	1	12
OE005U	Office Education Lab	2	24
CM001U	Business Writing	3	36
AM003T	Business Internship	5	200

OFFICE EDUCATION SHORTHAND CORE COURSES

OE001T	College Shorthand I	4	60
OE002T	College Shorthand II	4	60
OE003T	College Shorthand III	4	60
OE004T	College Shorthand Transcription	3	48

ADMINISTRATIVE SECRETARY

The Administrative Secretary program permits length and depth in the study of secretarial science. It not only prepares a student for a position in the office but also provides a well-rounded educational background for a skilled secretary and a participating member of an executive team.

Upon successful completion of this two-year program (five or six quarters), graduates receive an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 16 to 18 credit hours per quarter.

	Credits	Hrs.
Office Education Core Courses	39	728
Office Education Shorthand Core Courses	15	228
OE011T Secretarial Procedures	4	48
OE012T Typing IV	3	60
AM019U Office Management	4	48
OE011T Secretarial Procedures	4	48
AC001T Principles of Accounting I or	4	48
AC004V Office Accounting	4	48
AC002T Principles of Accounting II or	4	48
AC006U Management Accounting	4	48
DP046U Elements of Data Processing or	3	36
DP006T Computer/Data Processing Concepts	3	36
CM201T Public Speaking or	3	36
CM204T Interpersonal Communications	3	36
EC013T Principles of Economics (Micro) or	3	36
Principles of Business		
EC015T Economics	4	48
LW005T Business Law I	4	48
MK032T Introduction to Business	4	48
PY002T General Psychology	4	48
AM003T Business Internship	4	160
*Electives	12	

*Electives are selected with the coordinator's approval.

CLERICAL-RECEPTIONIST

The Clerical-Receptionist program prepares students for entry into clerical positions in the office. These positions include clerk/typist, filing clerk and receptionist.

After successful completion of this three-quarter program, graduates receive a diploma.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 14 to 22 credit hours per quarter.

	Credits	Hrs.
Office Education Core Courses	39	728
RELATED COURSES		
PY004U Psychology of Human Relations	3	36
PD005T Human Potential Lab	2	24
AC004V Office Accounting	4	48
OE002U Office Procedures II	3	60
DP001V Introductory Key punch	3	36
OE030V Receptionist Seminar	1	12

*Electives are selected with the coordinator's approval.

GENERAL SECRETARY

Students planning a secretarial career in any one of dozens of businesses such as advertising agencies, travel agencies, banking firms and educational institutions will find the General Secretary program suited to them.

After successful completion of this four-quarter program, graduates receive a diploma.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 15-50 credit hours per quarter.

	Credits	Hrs.
Office Education Core Courses	39	728
Office Education Shorthand Core Courses	15	228
RELATED COURSES		
OE012T College Typing IV	3	60

PY004U	Psychology of Human Relations	3	60
PD005T	Or Human Potential Lab	2	24
OE002U	Office Procedures II	3	60
AC004V	Office Accounting	4	48
	Electives	4	48

*Electives are selected with the coordinator's approval.

INSURANCE SECRETARY

The Insurance Secretary program offers specialized training to those interested in working in the insurance field. Opportunities are available in large home offices as well as smaller agency offices. Training is given in general office procedures with concentration on Insurance Terminology, Principles of Insurance, and Insurance Typing.

After successful completion of this four-quarter program, graduates receive a diploma.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 18 to 20 credit hours per quarter.

	Credits	Hrs.
Technical Core Courses	39	728
TECHNICAL CORE COURSES		
MK006T Principles of Insurance	4	48
OE028V Insurance Typewriting	3	36
OE014T Insurance Terminology	2	24
OE029V Insurance Office Procedures	3	36
OE003U Insurance Machine Transcription	3	36
RELATED COURSES		
AM0327 Introduction to Business	4	48
OE012T College Typing	3	60
OE001T College Shorthand I	4	60
PY004U Psychology of Human Relations	3	36
AC004V Office Accounting	4	48
*Electives	12	

*Electives are selected with the coordinator's approval.

LEGAL SECRETARY

The Legal Secretary program provides specialized training necessary for work in a law office, a bank, or a similar area. In addition to advanced training in basic office skills, the student completes specialized course work in the legal secretarial area.

Upon successful completion of this four-quarter program, the student is awarded a diploma.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 16 to 21 credit hours per quarter.

Office Education Core Courses	39	728
Office Education Shorthand Core Courses	15	228
TECHNICAL COURSES		
LW005T Business Law I	4	48
LW006T Business Law II	4	48
OE006V Legal Terminology	3	48
OE005V Legal Typing	3	48
AC008V Income Tax Procedures	3	36
OE003V Legal Dictation	3	36
OE004V Legal Machine Transcription	3	36
OE002V Law Office Procedures	3	36
RELATED COURSES		
PY004U Psychology of Human Relations	3	36
AC004V Office Accounting	4	48

MEDICAL SECRETARY

The Medical Secretary program is designed to give students the skills they will need as a secretary in one of numerous health occupations—doctors' offices, insurance offices, clinics, hospitals and laboratories. This program provides a good foundation for medical records work.

Upon successful completion of this four-quarter program, graduates receive a diploma.

All veterans must take the required number of hours per quarter in order to graduate within the approved number

of quarters for this program. This will vary from 17 to 23 hours per quarter.

		Credits	Hrs.
Office Education Core Courses		39	728
TECHNICAL CORE COURSES			
BY006U	Basic Anatomy and Physiology	4	60
MS004V	Medical Terminology I	2	24
MS005V	Medical Terminology II	2	24
MS006V	Medical Terminology III	3	36
OE012V	Medical Secretarial Typing	3	48
OE011V	Medical Secretarial Office Procedures	4	48
MS007V	Pharmacology	4	24
OE010V	Medical Machine Transcription	3	36
LW001V	Medical Law	1	24
RELATED COURSES			
OE012T	College Typing IV ¹	3	60
AC004V	Office Accounting	4	48
PY004U	Psychology of Human Relations Electives ²	3	36

¹College Typing IV is required if the shorthand sequence is not taken.

²Electives other than shorthand may be taken with the approval of the coordinator.

CREDIT SUPPLEMENTAL PROGRAMS IN MANAGEMENT DEVELOPMENT

The Management Development program is designed to develop and improve management skills for those persons currently in management positions or those seeking advancement into a supervisory capacity.

The program provides an extensive selection of both general and technical management courses offered on either a credit or non-credit basis. All programs lead to a Certificate of Completion, which verifies that the graduate has acquired the specialized training, knowledge and skills needed for management-level advancement. A certificate can be attained by completing 30 quarter hours of credit in either Industrial Management, Sales/Marketing Management, Administrative Management, or Traffic/Transportation Management.

Other programs in Agribusiness and Allied Health are being planned for the near future.

Credits earned in the Management Development program can be applied toward a diploma of 54 credit hours, to towards an Associate of Applied Science or an Associate of Arts degree, both 90 quarter hours in length.

Any student, pursuing an Associate of Arts degree and anticipating transferring this degree as the first two years of a four-year degree, should first obtain advice from Kirkwood counselors or the coordinator of the program on the transferability of this program. This transferability will vary depending upon the four-year institution involved.

Previously taken courses at any accredited institution which parallel the offerings of the Management Development program will be considered for credit. Previous work experience related to the student's career emphasis will also be considered for credit towards the diploma and associate degree programs.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 2 to 15 credit hours per quarter.

MANAGEMENT DEVELOPMENT CERTIFICATE PROGRAMS (OPTION I)

INDUSTRIAL MANAGEMENT (30 Quarter Hours Minimum)

REQUIRED CORE COURSES

Introduction to Management
 Techniques of Supervision
 Human Behavior in Organizations
 Principles of Business Economics
 (Macro Economics may be substituted)
 Management Communications

SPECIALIZED OR CAREER COURSES

Required for all Industrial Management students: none.

Any three of the following courses are required:

- Industrial Engineering
- Inventory Production & Control
- Labor and Management Relations
- Work Simplification
- Introduction to Quality Control
- Management Tools for Decision Making
- Industrial Marketing
- Introduction to Purchasing

ELECTIVES

Electives are to be chosen from any courses listed under the specialized area that were not selected to meet that requirement and these additional courses:

- Human Resources Management
- Accounting for Non Accounting Managers
- Data Processing for Non-DP Managers
- OSHA: Its Application
- Management by Objectives
- Organizational Behavior
- Current Topics In Management
- Blue Print Reading
- The Metric System
- Human Potential Lab

**SALES/MARKETING MANAGEMENT
(30 Quarter Hours Minimum)**

REQUIRED CORE COURSES

- Introduction to Management
- Techniques of Supervision
- Human Behavior in Organizations
- Principles of Business Economics
(Principles of Economics may be substituted)
- Management Communications

SPECIALIZED OR CAREER COURSES

Required for all Sales/Marketing students: none.

Any three of the following courses are required:

- Sales Promotion for Results

- Sales Management
- Counselor Selling
- Principles of Marketing
- Industrial Marketing
- Principles of Selling

ELECTIVES

Electives are to be chosen from any courses listed under the specialized area that were not selected to meet that requirement and these additional courses:

- Labor and Management Relations
- Human Resources Management
- Management Tools for Decision Making
- Accounting for Non-Accounting Managers
- Management by Objectives
- Data Processing for Managers
- Organizational Behavior
- Current Topics in Management
- The Metric System
- Blue Print Reading
- Human Potential Lab

**ADMINISTRATIVE MANAGEMENT
(30 Quarter Hours)**

REQUIRED CORE COURSES

- Introduction to Management
- Techniques of Supervision
- Human Behavior in Organizations
- Principles of Business Economics
(Principles of Economics may be substituted)
- Management Communications

SPECIALIZED OR CAREER COURSES

Required for all Office / Administrative students: none.

Any three of the following courses are required:

- Office Management
- Human Resources Management
- Wage and Salary Administration
- Public Administration
- Management Information Systems
- Labor and Management Relations

ELECTIVES

Electives are to be chosen from any courses listed under the specialized area that were not selected to meet that requirement and these additional courses:

Accounting for Non-Accounting Managers
 Management by Objectives
 Human Resources Management
 Data Processing for Managers
 Organizational Behavior
 Current Topics in Management
 Human Potential Lab

TRAFFIC & TRANSPORTATION MANAGEMENT**REQUIRED CORE COURSES**

Introduction to Management
 Techniques of Supervision
 Human Behavior in Organizations
 Principles of Business Economics
 (Principles of Economics may be substituted)
 Management Communications

SPECIALIZED OR CAREER COURSES

All these courses required for Traffic students:

Traffic & Transportation Management I
 Traffic & Transportation Management II
 Traffic & Transportation Management III
 Traffic & Transportation Management IV
 Traffic & Transportation Management V
 Traffic & Transportation Management VI

RECOMMENDED ELECTIVES FOR DIPLOMA PROGRAM

Interstate Commerce Law and Practice I
 Interstate Commerce Law and Practice II
 Interstate Commerce Law and Practice III

**MANAGEMENT DEVELOPMENT
 DIPLOMA PROGRAM (OPTION II)**

The diploma program is 54 quarter hours in length and is designed to be a continuation of the certificate option in

Management Development. To receive this award the student must have completed one of the 30 quarter-hour certificate programs previously outlined. The remaining 24 hours of course work is to be selected from general management courses, up to 12 hours of internship, and the following additional courses:

Introduction to Sociology
 Principles of Economics I, II
 Human Potential
 Business Law I
 Principles of Accounting I, II, III
 General Psychology
 Speech
 Comp. I, II

**ASSOCIATE DEGREE PROGRAMS
 (OPTION III)**

The student may complete either an Associate of Applied Science degree or an Associate of Arts degree in Management Development. Both degrees include 90 quarter hours of course work.

- A) The Associate of Applied Science degree is a more "technically" oriented degree which allows the student to specialize further than he might under the AA degree, in a specific occupational area.

The student must complete at least 18 hours from the general education core and must have completed one of the 30-hour certificate program options for this award.

- B) The Associate of Arts degree requires the student to complete the college's requirements for the AA degree and, in addition, complete one of the 30-hour certificate programs of Management Development outlined previously. Special atten-

tion should be given to the planning of this program option if the student anticipates transferring as the transferability will vary depending upon the institution involved.

CONSTRUCTION CAREERS

ARCHITECTURAL DRAFTING

The Architectural Drafting program is designed basically to prepare an individual for entry employment in an architect's office. Normally, this involves the drawing or redrawing of plans, elevations, details, plumbing, electrical, and mechanical layouts. Attention is given to accuracy, neatness and proper drawing procedure. The drawing is primarily of commercial construction rather than of residential. The total course is four 12-week quarters or 1,440 clock hours.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 360 clock hours per quarter. Graduates receive a diploma.

TECHNICAL COURSES

	Credits	Hrs.
GR032U Architectural Drafting I	3	288
GR033U Architectural Drafting II	13	288
GR034U Architectural Drafting III	11	240
GR035U Architectural Drafting IV	14	438
GR036U Related Disciplines	2	24
CS033U Estimating	3	36
CS034U Presentations	2	24
CS035U Construction Materials	3	36
CS036U Construction Methods	3	36

RELATED COURSES

MA011U Mathematics I	3	36
MA003U Mathematics II	3	36
CM002U Communication Skills I	3	36
PY003U The Profession	1	12



Additional minimum requirements for an associate degree:

	Math/Science	Credits	Hrs.
MA004T College Algebra		5	60
MA010T Trigonometry		5	60
or			
PH001T College Physics		4	60
PH002T College Physics II		4	60
	Humanities		
AT002T Art History I		3	36
AT003T Art History II		3	36
AT004T Art History III		3	36
or			
HY016T Europe in the Age of Monarchy		4	48
HY017T Europe: The Age of Liberalism		4	48
	Social Science		
PS006T Iowa Government Today and Tomorrow		4	48
and			
PY002T General Psychology		4	48
or			
SO004T Introduction to Sociology		4	48
or			
SO008T Introduction to Cultural Anthropology		4	48

		English	
CM101T	Composition I	4	48
CM102T	Composition II	4	48
CM201T	Speech I—Public Speaking	3	36

The last 24 credit hours of course work must be in residency in the Arts and Sciences division at Kirkwood for the Associate of Arts degree.

An Associate of Applied Science degree can be awarded if the diploma and requirements are met regardless of sequence.

RURAL BUILDING CONSTRUCTION

The Rural Building Construction program is designed to provide students with the performance and management skills necessary to earn a living in the rural construction industry. Instructional areas are carpentry, excavation, masonry and concrete, electricity, plumbing, heating and ventilation, metal work and structural steel.

Each course in this program, with the exception of Facilities Construction-Planning and Preparation and Erection, is a self-contained course offered without prerequisites to any interested student. The Facilities Construction course requires that a student have previous training or experience.

A student may enroll for one or more courses any quarter. The typical full-time student would attend classes 260 to 360 contact hours per quarter depending on their previous occupational and educational experience. Approximately 50 per cent of student time is spent in laboratory exercises. The student receives a diploma for successful completion of four quarters or 72 credits. Students receive a certificate for completion of one quarter.

All veterans must take the required number of hours per quarter in order to graduate within four quarters. This will vary from 240 to 336 contact hours per quarter.

The following are approved and suggested courses. Students may select from them with approval of their associate department head and faculty advisor.

		Credits	Hrs.
CS045U	Fundamentals of Carpentry	10	168
CS044U	Excavation	4	60
CS043U	Masonry and Concrete	4	60
AG263U	Ag Career Orientation	1	12
CS042U	Construction Techniques	5	84
EL018U	Fundamentals of Electrical Service	5	84
MM006U	Metals and Welding	4	60
CS041U	Heating and Ventilation	4	60
CS040U	Job Planning and Scheduling in Carpentry	5	84
CS039U	Plumbing	5	84
CS038U	Electrical Construction	4	60
CS037U	Metal Fabrication	4	60
CS007U	Facilities Construction-Planning and Preparation	9	144
CS008U	Facilities Construction-Erection	9	144
		<u>9</u>	<u>144</u>
		73	

WELDING

The complete welding program at Kirkwood is approximately 1,080 hours, or 36 weeks. This is broken down into three main phases, each being about 12 weeks. The first one is metallic arc welding, or commonly referred to as stick welding. A student satisfactorily completing this section of the program will have the necessary skill required for passing the American Welding Societies Guide Bend Test in three positions with 3/8-inch steel plate using low hydrogen electrodes. Also included in this section is oxy-acetylene cutting, Mathematics I and blueprint reading.

The second phase is referred to as combination welding. This covers semi-automatic, oxy-acetylene, heliarc, sheet metal, cast iron and non-ferrous welding. It is recommended that students take the first two phases as a minimum.

The third quarter involves the study of the technical aspects of welding, plus drawing, shop math, communication skills. The set-up and use of production

machinery, welding inspection methods, and a student project also are included. This quarter is to provide the students with the background needed to obtain work in industry as a supervisor, methods man, inspector or specialist welder, or in a field of welding sales.

The first two quarters of the program are set up on a modular basis; that is, students can progress at their own speed within the time allotted, since the lessons are of the self instructing type with all necessary demonstrations on video-tape. The instructors provide individual help as is necessary. Students can enroll at any time if space is available. Students who enroll in the daytime must enroll on a full-time basis or 30 clock hours per week.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 180 to 360 clock hours per quarter.

		Credits	Hrs.
MM011V	Introduction to Arc Welding	1	26
MM025V	Weaving the Electrode	.5	12
MM028V	Flame Cutting	1	18
MM026V	Introduction to Joint Welding	1	28
MM027V	Powdered Iron Weld Methods	1	28
MM029V	Butt Joints—Flat	1	30
MM030V	Horizontal Weld Techniques	1	24
MM031V	Vertical Welding Techniques	1	26
MM032V	Overhead Welding Techniques	.5	18
MA011U	Mathematics I	3	36
MM034V	Blueprint Reading for Welders	3	36
MM033V	A.W.S. Test—Low Hydrogen Electrodes	3.5	78
MM017V	Semi-Automatic Welding	3	60
MM035V	Oxy-acetylene Light Gauge Steel Welding	1	20
MM036V	Oxy-acetylene Heavy Steel Welding	1	20
MM037V	Brazing and Silver Solder	1	20
MM038V	Oxy-acetylene Cast Iron Repair	1	20
MM039V	Oxy-acetylene Non-Ferrous Materials	1	20
MM019V	Heliarc Welding	5	104
MM020V	Special Arc Welding Techniques	3	60
MA003U	Mathematics II	3	36

MM009V	Production Machinery	2	56
MM022V	Welding Inspection	2	56
MM023V	Student Project	2	56
MM024V	Welding Technology	4	60
GR001V	Graphic Skills	2	36
MA004U	Mathematics III	2	36
CM002U	Communication Skills	2	36
PY001V	Human Relations & Shop Supervision	1	24

SPECIAL COURSES

MM010V	Welding for Auto Mechanics	2	48
MM012V	Welding Special Projects	2	48

ENVIRONMENTAL CAREERS

ENVIRONMENTAL HEALTH ASSISTANT

The Environmental Health Assistant program is designed to prepare the student, men and women, for careers with city and county boards of health, housing improvement agencies, state environmental quality and agriculture departments, plus private industries.

The Environmental Health Assistant curriculum is four quarters in length. It features a combination of classroom, laboratory and practical field learning experiences, during the first three quarters. The last quarter, usually the summer, involves a student internship in an environmental health agency, such as a local health department.

Graduates receive a diploma.

The Environmental Health Assistant program is approved for four quarters. A veteran must take from 21 to 28 contact hours per week in the first three quarters and an internship during the fourth quarter, averaging 34 contact hours per week, in order to complete the program within four quarters.

TECHNICAL CORE COURSES

		Credits	Hrs.
EV004U	Introduction to Environmental Health	3	36

EV015U	Insect and Rodent Control	3	36
EV012U	Private Wastewater Systems	5	72
EV016U	Private Water Supplies	5	72
EV007U	Milk Sanitation	5	72
MS035U	Diseases of Man	3	36
EV020U	Housing Inspection	5	60
EV006U	Food Sanitation	4	60
EV008U	Occupational Health & Industrial Safety	4	60
EV009U	Recreational Sanitation	4	48
EV010U	Solid Waste Management	5	72
EV005U	Institutional Sanitation	3	36
EV013U	Supervised Field Studies	10	384
EV014U	Seminar: Environmental Health	2	24

RELATED COURSES

CH001T	Principles of Chemistry	4	60
MA018D	Beginning Algebra	5	60
BY010U	Principles of Microbiology	3	72
CM002U	Communication Skills I or Composition I	3	36

ENVIRONMENTAL HEALTH TECHNOLOGY

Only graduates of the Environmental Health Assistant program are eligible to enroll in this expanded program. Environmental Health Assistants who successfully complete two quarters of additional course work will receive an Associate of Applied Science degree in Environmental Health Technology, and be considered an environmental health technician. The environmental health technician will be able to perform the same tasks, and be eligible for the same job positions as the environmental health assistant. However, the environmental health technician will also be able to perform job tasks in the following areas: planning, zoning, radiation monitoring, and evaluation of public water and wastewater treatment plants. Such additional capabilities may enable the environmental health technician to qualify for additional job positions in the following types of agencies: planning and redevelopment departments, zoning administration offices, Civil Defense and disaster preparedness agencies, and radiation monitoring units.

The Environmental Health Technician program is approved for six quarters. A veteran must take from 20 to 28

contact hours per week for five of the six quarters and an internship, averaging 34 contact hours per week, in order to complete the program within six quarters.

TECHNICAL CORE COURSES

		Credits	Hrs.
EV018U	Air Quality Management	4	48
EV011U	Planning and Zoning	4	48
EV017U	Environmental Health Administration	4	48
EV003U	Public Water Supplies	4	60
EV002U	Public Wastewater Systems	2	60
EV019U	Radiation Control	3	36

RELATED COURSES

EV001T	Man and The Environment: Atmosphere	4	48
PY002T	General Psychology	4	48
PH007U	Intro to Physics	4	48
PS003T	State and Local Government	4	48
PS006T	Iowa Government Today and Tomorrow	4	48
CM003U	Communication Skills II or Composition II	3	36

WATER AND WASTEWATER TECHNOLOGY

The Water and Wastewater Technology program is designed to prepare the student for employment in the areas of wastewater collection and treatment, water treatment and distribution, and laboratory analysis in water and wastewater facilities. Career opportunities in municipal or privately owned water or wastewater facilities, private laboratories, regulatory agencies, and engineering firms exist.

The four-quarter curriculum features classroom, laboratory, and practical field learning experiences. A pilot scale wastewater treatment facility located on campus enhances the hands-on learning capability.

Graduates of the one-year program receive a diploma.

The Water and Wastewater Technology program is approved for four quarters. A veteran must take 30 contact hours per week for the first three quarters and an intern-

ship, averaging 40 contact hours per week, in order to complete the program in four quarters.

TECHNICAL CORE COURSES

		Credits	Hrs.
EV022V	Water Resources	7	84
EV033V	Water Distribution and Storage	4	72
EV030V	Water Treatment	11	144
EV029V	Water Quality Control	5	96
EV034V	Wastewater Collection	4	96
EV031V	Wastewater Treatment	10	120
EV032V	Wastewater Lab	7	168
EV027V	Water and Wastewater Plant Administration	3	36
EV028V	Research Projects	6	120
EV026V	Supervised Field Studies	9	320

RELATED COURSES

MA018D	Beginning Algebra	5	60
CH001T	Principles of Chemistry	4	60
BY010U	Principles of Microbiology	3	72
CM002U	Communication Skills	3	36
PH007U	Introduction to Physics	4	48

HEALTH OCCUPATIONS

DENTAL ASSISTANT

Dental assistant students are prepared for successful employment in private dental offices, group practice, dental services, clinics and hospitals as well as public health installations.

The objective of this four-quarter program is to prepare students to directly assist the dentist in the treatment of patients, manage a smoothly functioning business office and perform basic laboratory procedures in a dental office.

Graduates receive a diploma and are eligible to take the national certification examination. The Dental Assistant program is accredited by the American Dental Association Commission of Accreditation. An Associate of Applied Science or Associate of Arts degree will be award-

ed if minimal additional requirements are met. Consult the requirements for the Associate Arts Degree as listed in this catalog.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 288 to 224 clock hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
FIRST QUARTER			
DN102U	Dental Materials	5	72
DN103U	Dental Assisting	6	84
DN101U	Dental Orientation	3	36
DN115U	Dental Lab. Assisting I	3	60
BY110U	Dental Anatomy	3	36
BY111U	Head and Neck Anatomy	3	36

SECOND QUARTER

DN113U	Dental Radiography I	2	36
DN116U	Dental Lab Assisting II	2	36
DN109U	Lab. Practicum I	4	96
MS001T	First Aid	2	24
BY109U	Oral Microbiology	2	36
DN120U	Dental Pharmacology	1	12
DN106U	Pedodontics	1	12
DN107U	Oral Surgery	1	12
DN117U	Periodontics	1	12
DN118U	Endodontics	1	12
DN123U	Orthodontics	1	12

THIRD QUARTER

DN114U	Dental Radiography II	2	24
AM033U	Dental Office Management I	2	36
DN110U	Lab. Practicum II	6	144
DN121U	Preventive Dentistry	2	36
DN122U	Oral Pathology	1	12

FOURTH QUARTER

AC007U	Dental Bookkeeping	2	36
AM034U	Dental Office Management II	3	36
DN111U	Clinic I	4	108
DN112U	Clinic II	4	108

RELATED COURSES

CM101T	Composition I	4	48
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CM204T	Speech I	3	36
PY022T	Psychology of Human Relations	3	36
PY002T	General Psychology	4	48
BY109U	Oral Microbiology	2	36

DENTAL LABORATORY TECHNICIAN

Dental laboratory technicians are employed in commercial dental laboratories, private dental offices or in their own commercial laboratories. As part of the two-year program, students box, pour and articulate models, set up, wax up, invest and process full dentures; cast inlays, crowns, bridges, partials, acrylic and porcelain jackets, porcelain on metal, and construct many other special appliances.

Graduates receive an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 16 to 21 credit hours per quarter.

FIRST YEAR

		Credits	Hrs.
DN004U	Dental Terminology (DLT)	2.5	36
DN001U	Dental Materials (DLT)	4	72
DN005U	Dental Equipment (DLT)	2.5	36
BY003U	Oral Anatomy	3	36
BY002U	Dental Anatomy I	3	48
BY001U	Dental Anatomy II	2	24
PH004U	Technical Chemistry and Physics I	3.5	60
PH005U	Technical Chemistry and Physics II	3	48
PH006U	Technical Physics III	2	24
DN012U	Project Lab I (DLT)	0	48
DN006U	Clinical Experience I and Seminar	12	384
DN021U	Denture Techniques I	6.5	120
DN023U	Articulators and Articulation	3.5	60
DN024U	Cast Inlay and Crown	5	96
DN025U	Crown and Bridge	10	192
DN026U	Partial Denture Techniques I	4	84

SECOND YEAR

DN008U	Acrylic Jacket, Crowns and Veneers	5	96
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DN027U	Partial Denture Techniques II	5	96
DN022U	Denture Techniques II	6	120
DN003U	Orthodontics	3	66
DN009U	Precision Attachment Partial	4	84
DN010U	Cast Metal Base Dentures	2	42
DN002U	Porcelain Techniques	4	84
DN028U	G.I.S. Orthodontics	8	156
DN029U	G.I.S. Fixed Bridges	8	156
DN030U	G.I.S. Ceramics	8	156
DN031U	G.I.S. Removable Bridges	8	156
DN032U	G.I.S. Full Dentures	8	156
DN007U	DLT Clinical Experience and Seminar	12	384

RELATED COURSES

PY022T	Psychology of Human Relations	3	36
CM002U	Communication Skills I	3	36
DN020U	Laboratory Management (DLT)	3	36
PY007U	Sales Psychology and Human Relation	3	36

DENTAL MANAGEMENT

This program is designed for dental office managers and/or receptionists who wish to expand their skills in the area of management. The program provides electives for persons who may pursue their individual interest based on their current employment. Students may enroll part time. It is open to graduates of one-year accredited programs, certified dental assistants and others. Students may obtain an Associate of Applied Science degree if minimum requirements are met.

TECHNICAL COURSES

		Credits	Hrs.
DN131U	Dental Management Seminar I	3	36
DN132U	Dental Management Seminar II	3	36
PS005T	Human Potential	2	24
AM052T	Introduction to Management	2	24
AM079T	Techniques of Supervision	2	24
AM045T	Human Behavior in Organizations	3	36

ELECTIVES

Nine credits (108 hours) may be taken from the following list. Others may be taken with Dental Assistant program approval.

EC015T	Principles of Business Economics	4	48
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AM078T	Management Communications	3	36
AM077T	Organizational Behavior	3	36
AC003U	Accounting for Non-Accounting Managers	2	24
DP010U	Data Processing for Managers	2	24
AM050U	Management by Objectives	2	24
AM042U	Management Tools for Decision Making	2	24
AM055U	Current Topics in Management	2	24
AM019U	Office Management	3	36
AM029U	Wage and Salary Administration	2	24
AM031U	Management Information Systems	2	24
AM047U	Human Resources Management	3	36
MK003T	Principles of Selling	4	46

PREVENTIVE DENTISTRY

Preventive dentistry is a part-time program designed for dental assistants who wish to expand their knowledge and skills in the area of preventive dentistry. It includes the mechanics, theory, philosophy and psychology for teaching the prevention of oral diseases to dental patients, with emphasis on plaque control. The student should be able to establish, teach and evaluate a plaque control program in a dental office after completion. It is open to graduates of a one-year accredited dental assistant program, or certified dental assistants with a minimum of six month's employment in a dental office. Graduates are eligible for an Associate of Applied Science degree if requirements are complete, or a certificate.

TECHNICAL COURSES

		Credits	Hrs.
DN127U	Preventive Dentistry Seminar I	4	48
PN128U	Preventive Dentistry Seminar II	4	48
PY002T	General Psychology	4	48
SO004T	Introduction to Sociology	4	48
PD005T	Human Potential	2	24

ELECTIVES

Electives may be from the following subject areas and be approved by the advisor of the Dental Assistant program.

Educational Psychology	Communication Courses
Photography Courses	Social Problems
Audio Visual Courses	Chemistry

MEDICAL ASSISTANT

The Medical Assistant program consists of four quarters. The duties of the assistant, under the doctor's supervision, are both administrative and clinical. These may include answering the telephone and scheduling appointments, assisting the doctor with examinations, arranging hospital admissions, assisting in emergencies, performing laboratory tests authorized by the doctor, ordering medical supplies, typing medical reports and filling in insurance forms.

Following graduation, the student may take the national certification test offered by the American Association of Medical Assistants. Those passing the test become nationally certified medical assistants.

Graduates of the program receive a diploma. The Medical Assistant program at Kirkwood is accredited by the Council on Medical Education of the American



Medical Association in cooperation with the American Association of Medical Assistants.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 276 to 396 clock hours per quarter

TECHNICAL COURSES		Credits	Hrs.
MS022V	Medical Procedures I	6	120
MS023V	Medical Procedures II	6	108
MS024V	Medical Procedures III	2	36
MS025V	Medical Procedures IV	2	24
LW001V	Medical Law	2	24
MS004V	Medical Terminology I	2	24
MS005V	Medical Terminology II	3	36
MS006V	Medical Terminology III	3	36
OE031V	Business Skills I Medical Insurance	2	24
MS008V	Supervised Clinical Experience M.A. I	6	204
MS001T	First Aid	2	48
MS009V	Supervised Clinical Experience M.A. II	13	372
PY006U	Psychology of Human Relations III	2	24
MS013V	Pharmacology	2	24

RELATED COURSES

OE013V	Medical Typing	2	36
BY006U	Basic Anatomy and Physiology	4	60
AC006V	Medical Bookkeeping	4	48
CM204T	Speech I Interpersonal Communication	3	36

ELECTIVES

Students may select any course in the following list to fulfill a Social Science requirement of four credits (48 hours).

PY002T	General Psychology
PY025T	The Young Child
PY020T	Psychology of Growth and Development
PY004V	Normal Growth and Development
SO004T	Introduction to Sociology
SO006T	Social Problems

NURSING EDUCATION

The Nursing Education program offers Licensed Prac-

tical Nursing (LPN) and Associate Degree Nursing (RN) options in a cored curriculum. Students are eligible for admission if they are 17 years of age and have a high school diploma or equivalent. The first three quarters of the LPN and ADN programs are identical and provide a core of skills, knowledge, ability and concepts common to the practical and registered technical nurse. Students will be counseled when selecting the fourth quarter ADN or LPN option on the basis of:

- 1) Student goals, interests and expectations.
- 2) Ability to meet Nursing I, II and III course objectives, performance and examinations.

No single factor will determine the direction the student takes.

Nursing courses and clinical experiences are offered concurrently on the Kirkwood campus and in cooperating health facilities in the area. The curriculum consists of major phases of medical, surgical, maternal, pediatric and psychiatric nursing, and is designed to prepare graduates to work in hospitals, extended or long-term care health facilities, doctor's offices, clinics and agencies providing nursing care. The LPN student learns specific procedures and patient care skills pertinent to the performance expected by employers of these graduates. Graduates receive a diploma and are eligible for the state examination for LPN licensure.

ADN students receive additional instruction in nursing and science courses and more extensive clinical patient care skills. ADN students learn to: 1. plan, implement and evaluate a plan of nursing care for patients, 2. assume specific leadership skills and 3. make responsible decisions regarding nursing care. Graduates of the ADN program receive an Associate of Applied Science degree and are eligible for the state examination for RN licensure.

ADN ADVANCED PLACEMENT: Kirkwood offers an ADN Advanced Placement program for people with previous health experience such as LPNs, corpsmen, medics, aides or orderlies. Applicants may receive up to three

quarters of credit for previous experience and are appropriately placed in the nursing curriculum depending upon faculty evaluation of ability, performance, credits or examination. Students may enter Nursing II, III or ADN IV. These students enroll in the Advanced Placement seminar, which is designed to assist in the transition from health worker to nursing student.

ASSOCIATE DEGREE NURSING: All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 16 to 19 credit hours per quarter.

LICENSED PRACTICAL NURSE: All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 16 to 18 credit hours per quarter.

LICENSED PRACTICAL NURSE

TECHNICAL COURSES

	Credits	Hrs.
<u>MS001T</u> First Aid and Safety	2	24
<u>NS002U</u> Metrology	1	12
<u>NS013U</u> Nutrition	2	24
<u>NS003U</u> Nursing I (Fundamentals of Nursing)	9	156
<u>NS004U</u> Nursing II (Intro to Medical-Surgical Nursing)	10	180
<u>NS005U</u> Nursing III (Maternal & Child Nursing)	11	204
<u>NS016V</u> Nursing IV PN (Medical-Surgical Nursing)	13	314
<u>NS017V</u> Seminar Nursing PN	2	24

RELATED COURSES

<u>BY006U</u> Basic Anatomy & Physiology	4	60
<u>PY002T</u> General Psychology	4	48
<u>CM201T</u> Speech	3	36
<u>BY014T</u> Microbiology I	4	72
<u>PY020T</u> Psychology of Growth & Development	4	48

ELECTIVES

Choice of transferable credit courses.	2	24
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ASSOCIATE DEGREE NURSE

TECHNICAL COURSES

	Credits	Hrs.
<u>MS001T</u> First Aid and Safety	2	24
<u>NS002U</u> Metrology	2	12
<u>NS013U</u> Nutrition	2	24
<u>NS003U</u> Nursing I (Fundamentals of Nursing)	9	156
<u>NS004U</u> Nursing II (Intro to Medical-Surgical Nursing)	10	180
<u>NS005U</u> Nursing III (Maternal & Child Nursing)	11	204
<u>NS006U</u> Nursing IV ADN (Psychiatric Nursing)	10	180
<u>NS007U</u> Nursing V (Medical-Surgical Nursing)	12	240
<u>NS008U</u> Nursing VI (Medical-Surgical Nursing)	12	240
<u>NS009U</u> Nursing VII (Advanced Maternal-Child Nursing)	12	240
<u>NS001U</u> Changing Patterns in Health Care	2	24
<u>NS010U</u> Nursing VIII (High Priority Care & Management Principles)	16	336
<u>NS011U</u> Seminar Nursing ADN	2	24
<u>NS012U</u> Advanced Placement Seminar ADN	1	12

RELATED COURSES

<u>BY006U</u> Basic Anatomy & Physiology	4	60
<u>PY002T</u> General Psychology	4	48
<u>CM201T</u> Speech	3	36
<u>BY014T</u> Microbiology I	4	72
<u>PY020T</u> Psychology of Growth & Development	4	48
<u>CM101T</u> Composition I	4	48
<u>CM102T</u> Composition II	4	48
<u>SO004T</u> Introduction to Sociology	4	48
<u>SO006T</u> Social Problems	4	48
<u>BY009U</u> Homeostatic Physiology	4	48

ELECTIVES

Choice of transferable credit courses.	4	48
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OCCUPATIONAL THERAPY ASSISTANT

The Occupational Therapy Assistant program combines didactic and clinical experience in one year of study to prepare the graduate for a career in health, working under the supervision of a registered occupational therapist. The focus of the program is helping patients in performance of tasks critical to self-care, work and leisure activities, restoration and treatment of physical and psychosocial disabilities. Occupational therapy assistants are employed in hospitals, nursing homes, mental health or rehabilitation centers and extended care facilities. Graduates will have the opportunity to work in guidance, providing patients occupational therapy treatment, assessment and evaluation. Graduates receive a diploma and are eligible for the national certification examination (AOTA.)

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 330 to 364 clock hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
TH010V	Orientation to Occupational Therapy	2	60
PY002V	Interpersonal Relationships	3	48
TH007V	Media and Skills I	3	48
TH008V	Media and Skills II	3	48
TH015V	Media and Skills III	3	48
TH004V	Function and Dysfunction	5	60
CM001V	Medical Communications	3	36
MS036U	Independent Study in Health Science	1	24
TH005V	Management of Physical Disability Clinical Conditions	4	48
TH006V	Management of Psychosocial Clinical Conditions	4	48
TH011V	Principles and Practices of Rehabilitation	5	72
TH001V	Clinical Experience I	5	200
TH002V	Clinical Experience II	5	200
TH003V	Clinical Experience III	5	200
TH014V	Seminar - OTA	2	24

RELATED COURSES

BY006U	Basic Anatomy and Physiology	4	60
BY011U	Functional Anatomy	4	48
PY002T	General Psychology	4	48
PY020T	Psychology of Growth/Development, Conception to Senescence	4	48
CM101T	Composition I	4	48
PS005T	Human Potential Laboratory	2	24
MS001T	First Aid	2	23

ORTHOPAEDIC PHYSICIAN'S ASSISTANT

The Orthopaedic Physician's Assistant program is an 18-month course consisting of two academic years, three quarters each (summer quarter is recessed). Theory and practice is integrated and concurrent during the program. Classroom and laboratory activities are provided at Kirkwood Community College, while practical experience is obtained in selected hospitals and private physician's offices.

The orthopaedic physician's assistant encounters patients having special medical problems associated with the musculoskeletal system. Under the direction of an orthopaedic surgeon, the OPA removes and assists with the application of casts and splints, applies and maintains traction equipment, assists in the operating room and emergency area, and teaches simple exercises and crutch walking. The graduate is prepared to be employed in physicians' offices, hospitals and clinics.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 12 to 21 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
MS007U	Principles of Immobilization I	3.5	60
MS013U	Principles of immobilization II	3.5	60
MS006U	Operating Room Techniques I	3	48
MS003U	Introduction to Health Care & Personnel Relations	2.5	36
MS002U	Emergency Care	4	60



RESPIRATORY THERAPY

The Respiratory Therapy curriculum is a two-year program designed to prepare students as allied health specialists in the field of respiratory therapy. The role of the respiratory therapist is primarily, but not limited to, cardio-respiratory care in the form of oxygen administration, ventilatory support, blood gas analysis, chest-physiotherapy and pulmonary rehabilitation. The therapist's role also often encompasses other related therapeutic and diagnostic functions such as pulmonary function testing. Graduates receive an Associate of Applied Science degree and are eligible for the National Registry Examination for respiratory therapists.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 16 to 21 credit hours per quarter.

• MS004U	Orthopaedic Conditions I	4	48
• MS005U	Orthopaedic Conditions II	4	48
• MS008U	Supervised Laboratory Experience I	6	144
• MS009U	Supervised Laboratory Experience II	7.5	180
• MS010U	Supervised Laboratory Experience III	9	216
• MS015U	Introduction to Physical Therapy, Orthotics & Prosthetics	3	48
• 0E007U	Office Procedures	2	36
• MS011U	Supervised Clinical Experience IV/Seminar	12	360
• MS012U	Supervised Clinical Experience V/Seminar	12	360

RELATED COURSES

• BY006U	Basic Anatomy and Physiology	4	60
• BY002T	Principles of Biology	4	60
• BY011U	Functional Anatomy	4	60
• BY014T	Microbiology	4	84
CM101T	Comp I	4	48
CM116T	Comp II - Mass Media	4	48
CM201T	Speech	3	

ELECTIVES

4 48

May select four credits (48 hours) from English or Social Science.

TECHNICAL COURSES

		Credits	Hrs.
MS025U	Introduction to Health Care	4	48
MS014U	Respiratory Therapy Techniques I	4	48
MS023U	Respiratory Therapy Techniques II	4	48
MS024U	Respiratory Therapy Techniques III	3	36
MS017U	Fundamentals of Respiratory Therapy I	7	108
MS018U	Fundamentals of Respiratory Therapy II	7	84
MS032U	Respiratory Therapy Techniques IV	3	36
AM023U	Medical Department Management	3	36
MS019U	Supervised Clinical Experience I	7.5	180
MS020U	Supervised Clinical Experience II	8	192
MS021U	Supervised Clinical Experience III	12	288
MS022U	Supervised Clinical Experience IV	12	288
MS033U	Supervised Clinical Experience V	14	312

RELATED COURSES

<u>BY008T</u>	Human Anatomy & Physiology I	6	72
<u>BY009T</u>	Human Anatomy & Physiology II	6	72
<u>BY010T</u>	Human Anatomy & Physiology III	6	72

CH001T	Principles of Chemistry	5	60
CH002T	Fundamentals of Organic Chemistry	5	60
CM101T	Composition I	4	48
CM102T	Composition II	4	48
MA011U	Mathematics I	5	60
BY014T	Microbiology	3	36
PH011T	Medical Physics	5	60
PY002T	General Psychology	4	48
CM201T	Speech	3	36
ELECTIVES		8	96

Eight credits (96 hours) may be selected from any courses listed in this catalog.

MANUFACTURING PRODUCTION CAREERS

ELECTRONICS ENGINEERING TECHNOLOGY

Electronics Engineering Technology is oriented toward research and development electronics. Major emphasis is on circuit analysis, basic design and modification. Successful completion of the Electronics Engineering Technology program qualifies the student for an entry job as a research and development technician, an engineering associate, or an instrumentation technician in certain industries. Other occupations include field engineer, technical sales representative and electronics draftsman.

Normally students maintain 19 to 23 credit hours per quarter. Students who transfer credits from other programs or other institutions must maintain a minimum of 12 credit hours per quarter and have an approved course of study which will lead to graduation within six quarters in order to be considered a full-time student. An Associate of Applied Science degree is awarded to those who successfully complete this six-quarter program.

All veterans must take the required number of hours per

quarter in order to graduate within the approved number of quarters for this program. This will vary from 12 to 24 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
EL001U	Introduction to Electronics	3	72
EL002U	Electric Circuits I	6	84
EL003U	Electric Circuits II	6	84
EL031U	Electric Circuits III	6	84
EL035U	Active Devices	7	120
EL015U	Solid-State Circuit Analysis & Design	7	120
EL033U	Electronic Test Methods	3	60
EL013U	Industrial Electronics	3	60
EL006U	Communication Electronics	7	120
EL012U	Transmission Systems	6	96
EL010U	Television Circuit Analysis	7	120
EL034U	Transform Circuit Analysis	4	60
EL022U	Network Analysis and Design	4	60
EL014U	Pulse and Switching Circuits	6	84
EL021U	Digital Systems	4	72
EL024U	Advanced Electronic Problems	4	60
EL058U	Design Projects I	1	24
EL059U	Design Projects II	2	48

RELATED COURSES

MA012U	Technical Mathematics I	4	60
MA014U	Technical Mathematics II-E	4	60
MA015U	Technical Mathematics III	4	60
EG008U	Engineering Problems	3	60
GR001U	Electronic Drawing	3	72
PH001U	Applied Physics I	4	60
PH002U	Applied Physics II	4	60
CM002U	Communication Skills I	3	36
CM003U	Communication Skills II	3	36
CM004U	Technical Reporting	3	36
PY004U	Psychology of Human Relations	3	36
EC003U	American Institutions	3	36

MACHINIST

The machine shop curriculum is planned to prepare students to enter the machinist trade and to become skilled machinists or machine operators.

A balance of practical shop work and related instruction provide a solid foundation for future advancements in the trade. Related instruction includes shop math, blueprint reading and machine technology. The practical shop work is individualized so that students can progress at their own speed.

Students learn the care and use of precision measuring and layout tools and develop skills on basic machine tools and production machines. Basic metallurgy and heat treatment of steel is also part of the course.

The day program is three quarters in length and involves 1,080 clock hours and 55 credits. The evening program is four quarters in length and involves 920 clock hours and 48 credits. Its content is similar to the day program.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program.

Graduates of either program receive a diploma.

TECHNICAL COURSES

		Day		Evening	
		Cr.	Hrs.	Cr.	Hrs.
MM001V	Machinist Lab I	10	240	8	192
MM002V	Machinist Lab II	12	288	8	192
MM003V	Machinist Lab III	13	312	8	192
MM004V	Machinist Lab IV			8	192
MM005V	Machinist Related I	10	120	4	48
MM006V	Machinist Related II	6	72	4	48
MM007V	Machinist Related III	4	48	4	48
MM008V	Machinist Related IV			4	48

Single courses are available in the evenings and begin each college quarter. These courses are scheduled two evenings per week and involve 96 clock hours and are four credits each.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 240 clock hours per quarter. The single courses include:

MM052V	Bench Work — Engine Lathe I
MM053V	Engine Lathe II

MM054V	Milling I
MM055V	Milling II
MM056V	Grinding and Heat Treat
MM057V	N. C. Operation & Programming
MM058V	Turret Lathe

MECHANICAL ENGINEERING TECHNOLOGY

The graduate mechanical engineering technician will have obtained a high degree of ability in analytical problem solving as well as the ability to translate his own and others' thought into graphical representations. A thorough knowledge of mechanical and manufacturing processes will allow him to follow a design to its conclusion in the actual manufacture and ultimate production of a special tool or product. The design option provides the student possessing mechanical and mathematical aptitudes with an unlimited opportunity for work in research and development in a wide range of industrial endeavors from farm machinery to electronics.

Mechanical Engineering Technology is a two-year program consisting of six twelve-week quarters. The curriculum includes practical experience in the drafting room, shops and laboratories but is more heavily weighted towards technical studies in the classroom.

Normally, students maintain between 18 to 21 credit hours per quarter. Students who transfer credits from other programs or other institutions must maintain a minimum of 12 credit hours per quarter and have an approved course of study which will lead to graduation within six quarters in order to be considered a full-time student.

Graduates receive an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 12 to 21 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
GR002U	Engineering Drawing I	6	120
GR003U	Engineering Drawing II	6	120
GR004U	Engineering Drawing III	5	120
GR005U	Design Problems I	2	60
GR006U	Design Problems II	6	144
EG001U	Statics	8	120
EG002U	Kinematics of Mechanisms	7	120
EG003U	Dynamics	7	120
EG004U	Machine Design	7	144
EG005U	Engineering Materials	2	48
EG006U	Strength of Materials I	4	60
EG007U	Strength of Materials II	5	60
MA007U	Engineering Computations I	2	48
MA008U	Engineering Computations II	2	48
MH002U	Hydraulics	4	72

RELATED COURSES

PH003U	Heat' Light and Sound	5	72
EL026U	Electricity	3	60
MA012U	Technical Mathematics I	4	60
MA013U	Technical Mathematics II	5	60
MA015U	Technical Mathematics III	4	48
MM001U	Manufacturing Processes I	3	72
MM002U	Manufacturing Processes II	3	72
CM002U	Communication Skills I	3	36
CM003U	Communication Skills II	3	36
CM004U	Technical Reporting	3	36
PY004U	Psychology of Human Relations I	3	60
EC003U	American Institutions	3	36
SO001U	Industrial Organizations	3	36

MANUFACTURING SERVICE CAREERS**AUTOMOTIVE COLLISION REPAIR**

Automobile collision repairmen are employed in body and fender shops, dealerships, and garages which offer service. Other employers are trucking, taxicab and bus companies, and automotive manufacturers.

Those completing the course will have had training in the full range of shop processes used to restore damaged vehicles. Students will be trained in the use of hydraulic jacks, rams, air and electric grinders, sanders, buffers, drills, panel cutters, welders, torches, paint guns, damage dozers, alignment tools and specialized hand tools.

The Kirkwood program extends over three 12-week quarters for a total of 36 weeks. Class periods are six hours per day, five days per week.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 360 clock hours per quarter.

Graduates receive a diploma.

TECHNICAL COURSES

		Credits	Hrs.
MH009V	Collision Lab I	12	300
MH010V	Collision Lab II	12	300
MH011V	Collision Lab III	12	300
MH012V	Collision Related I	3-5	36-60
MH013V	Collision Related II	3-5	36-60
MH014V	Collision Related III	3-5	36-60

RELATED COURSE

AM003U	Business Practices	2	36
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AUTOMOTIVE MECHANICS

The Automotive Mechanics program is planned to provide four quarters of basic auto mechanics for post-high school age students. It is designed for the student who wishes to become a first-class auto mechanic, with training in a wide variety of organized learning experiences. Class periods are six hours per day, five days per week.

Due to the complexity of the modern automobile, and the variations in makes and models, there are many opportunities for ingenuity and exploration. Students

enrolled in this program spend 25 to 30 per cent of their time in classroom and laboratory instruction, and the balance of their time in the automotive shop.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 360 clock hours per quarter.

Graduates receive a diploma.

TECHNICAL COURSES

		Credits	Hrs.
MH001V	Auto Mechanics Lab I	10	240
MH002V	Auto Mechanics Lab II	10	240
MH003V	Auto Mechanics Lab III	10	240
MH004V	Auto Mechanics Lab IV	10	240
MH005V	Auto Mechanics Related I	10	120
MH006V	Auto Mechanics Related II	8	96
MH007V	Auto Mechanics Related III	10	120
MH008V	Auto Mechanics Related IV	10	120

RELATED COURSE

AM003U	Business Practices	2	24
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COMMUNICATION ELECTRONICS

Communication Electronics is oriented toward the fields of consumer electronics servicing and radio and television broadcasting. Major emphasis is on maintenance and troubleshooting of existing equipment. Successful completion of the Communication Electronics program qualifies the student for an entry job as a radio-TV serviceman, broadcast engineer, two-way radio serviceman, test technician, commercial sound technician, or as a technician in many related fields. A diploma is awarded to those who successfully complete this four-quarter program.

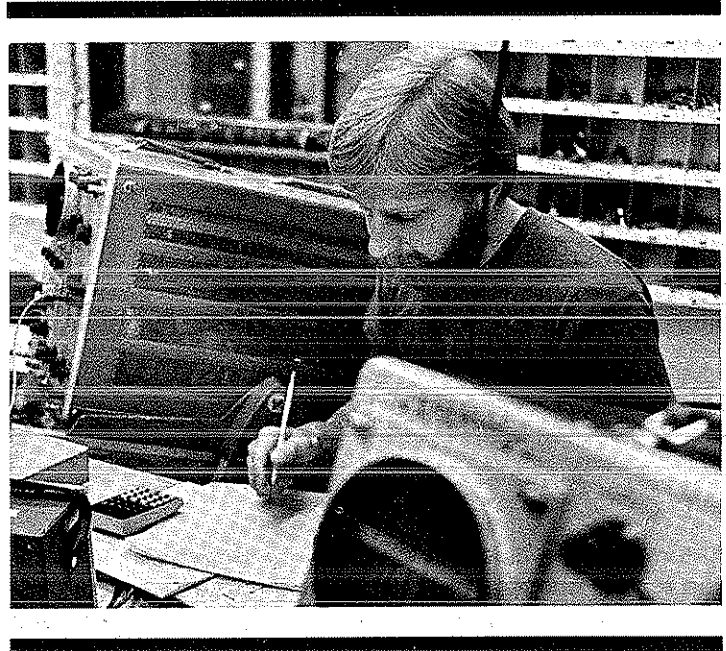
All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 360 clock hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
EL001U	Introduction to Electronics	3	72
EL029U	Electronic Circuits I	12	192
EL030U	Electronic Circuits II	10	180
EL002V	Audio Systems	8	144
EL001V	Electronic Shop Methods	1	36
EL003V	Broadcast Systems	4	60
EL007U	Communication Electronics I	5	96
EL008U	Communication Electronics II	5	84
EL004V	Television I	11	204
EL005V	Television II	4	84
EL006V	Troubleshooting	5	120
EL013V	Digital Circuits	2	36

RELATED COURSES

MA001V	Technical Mathematics I	4	60
CM002U	Communication Skills I	3	36
AM003U	Business Practices	3	36



ELECTRICAL EQUIPMENT SERVICING

This program provides the specialized training necessary for troubleshooting, maintaining, and installing electrically operated devices. Graduates of this program will have the knowledge and skills necessary to enter an occupation in the broad field of electrical equipment servicing, such as general plant maintenance, large appliance repair, entry-level model shop technician or electric motor repairman.

A diploma is awarded to those who successfully complete this program.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 360 clock hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
EL008V	Electrical Principles	11	180
EL010V	Electrical Circuits	10	180
EL009V	Shop Processes	2	60
EL011V	Diagram Interpretation	3	60
EL012V	Electro-Mechanical Systems I	4	60
EL014V	Electro-Mechanical Systems II	7	120
EL015V	Control Circuit Devices	5	84
EL016V	Control Circuits and Systems	8	144
EL018V	Principles of Refrigeration	7	120
EL017V	Equipment Troubleshooting	10	180

RELATED COURSES

MA011U	Mathematics I	5	60
MA003U	Mathematics II	5	60
PH001V	Mechanisms	4	60
PY004U	Human Relations	3	36
CM002U	Communication Skills	3	36

MARKETING AND DISTRIBUTION CAREERS

FASHION MERCHANDISING

Fashion Merchandising provides technical training for

individuals interested in the field of retailing fashion products. Career opportunities for trained persons include the areas of fashion coordination, fashion promotion, fashion buying, departmental and speciality shop management.

The Fashion Merchandising program is seven quarters in length and features a curriculum designed to develop managerial abilities, decision making skills, retail knowledge, and to provide the specialized knowledge necessary in the fashion market. Practical experience compliments classroom theory during the supervised business internship phase of the program.

Graduates receive an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 17 to 19 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
MK007U	Principles of Fashion Merchandising	3	36
MK014U	Merchandising	4	48
MK006U	Fashion Merchandising Seminar	6	144
HE002U	Fashion History	3	36
MK008U	Fashion Show Procedures	5	60
HE003U	Textiles I	3	36
HE004U	Textiles I Laboratory	1	24
AT004U	Design Relationships	2	24
AM003T	Business Internship	24	864

RELATED COURSES

AM032T	Introduction to Business	4	48
AM001U	Merchandise Analysis and Control	3	36
MK002T	Principles of Retailing	4	48
EC015T	Principles of Business Economics	4	48
MK018U	Principles of Display	2	36
MK019U	Small Business Organization/Management	3	36
MK001T	Principles of Marketing	4	48
MK025U	Principles of Advertising	4	48
AM022U	Principles of Supervision	3	36

AM002U	Credit Procedures	3	36
LW005T	Business Law I	4	48
DP046U	Elements of Data Processing	3	36
AM020U	Retail Management	4	48
AC001T	Principles of Accounting I	4	48
CM204T	Speech I	3	36
PY004U	Psychology of Human Relations	3	36
MA002U	Basic Mathematics	0	arr.
CM002U	Communication Skills I or		
CM101T	Composition I	3-4	36-48
CM003U	Communication Skills II or		
CM102T	Composition II	3-4	36-48
MK002T	Principles of Retailing	4	48
MK003T	Principles of Selling	14	48
	Electives	10	

FOOD SERVICE MANAGEMENT

The Food Service Management program is designed to prepare people for careers in restaurant or institutional food management. Through specialized training, students are provided with the background and skills necessary for meeting the requirements of this rapidly growing industry.

The Food Service Management program is six quarters in length and features study in technical, related and general education courses, including on-the-job training in which the student gains actual work experience in commercial or institutional food services. Studies also include quantity meal preparation and service in the kitchen-cafeteria area operated by Food Service students.

Graduates receive an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 17 to 21 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
HE014U	Food Service Cost Control	3	36
AM052U	Dining Room Management I	5	108
AM053U	Dining Room Management II	5	108

HE012U	Equipment and Design	4	60
HE013U	Gourmet Foods/Catering	3	72
HE018U	Food Service Internship II	6	216

RELATED COURSES

		Credits	Hrs.
CM003U	Communication Skills II	3	36
AM022U	Principles of Supervision	3	36
EC015T	Business Economics	4	48
LW005T	Business Law	4	48
CM201T	Speech	3	36
MK019U	Small Business Organization and		
	Operation	3	36
	Elective	3or4	36-48

FOOD SERVICE TRAINING

Food Service Training is a specialized, three-quarter (36-week) program designed to prepare men and women with the technical and specialized knowledge and skills required to enter the quantity food preparation and service industry.

The program for food production personnel includes a combination of classroom instruction in general education, related food service subjects, food preparation skills, and on-the-job training. During the internship period, the student gains actual work experience in commercial or institutional food service establishments throughout Iowa. The graduate is prepared to be employed in restaurants, hotel, motels, schools, institutions, hospitals, nursing homes, industrial cafeterias, delicatessans and other facilities.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 17 to 21 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
HE001U	Introduction to Food Service/Hospitality Careers	1	12
HE010U	Nutrition and Food Composition I	4	48
HE011U	Nutrition and Food Composition II	4	48

HE009U	Food Service Sanitation and Safety	3	36
HE005U	Food Production I	6	144
HE006U	Food Production II	6	144
HE007U	Food Production III	6	144
MA017U	Food Service Related Math	3	36
HE008U	Menu Planning and Servicing Fundamentals	3	36
HE016U	Quantity Food Purchasing	3	36
HE015U	Production Analysis	3	60
HE017U	Food Service Internship I	6	216

RELATED COURSES

MA002U	Basic Mathematics	0	arr.
CM002U	Communication Skills I	3	36
PY004U	Psychology of Human Relations Elective	3 or 4	36/48

FOOD STORE MANAGEMENT

The Food Store Management program is designed to prepare people for careers in the retail or wholesale food industry. Through specialized training, students are provided with the background and skills necessary for meeting the requirements of this vast and rapidly expanding career field.

The Food Store Management program is seven quarters in length and features a combination of general education, business education and technical food marketing study. The program also provides on-the-job training periods in which the student gains actual work experience in retail or wholesale food businesses throughout Iowa.

Graduates receive an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 17 to 22 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
MK012U	Introduction to Food Store Marketing	4	48

✓MK011U	Food Store Seminar	6	144
✓MK041U	Food Store Merchandising I	3	36
✓MK042U	Food Store Merchandising II	3	36
✓MK013U	Food Store Planning and Layout	3	36
✓AM005U	Front End Management	3	36
✓AM012U	Food Store Management	5	60
✓AM003T	Business Internship	24	864

RELATED COURSES

✓MK003T	Principles of Selling	4	48
✓AM032T	Introduction to Business	4	48
LW005T	Business Law I	4	48
✓MK001T	Principles of Marketing	4	48
✓AC001T	Principles of Accounting I	4	48
✓MK025T	Principles of Advertising	4	48
✓AM022U	Principles of Supervision	3	36
✓AC006U	Management Accounting	4	48
✓CM002U	Communication Skills I or	3	36
✓CM101T	Composition I	4	48
✓CM003U	Communication Skills II or	3	36
✓CM102T	Composition II	4	48
✓PY004U	Psychology of Human Relations I	3	36
✓MA002U	Basic Mathematics	0	arr.
✓CM204T	Speech I	3	36
✓EC015T	Principles of Business Economics	4	48
✓DP046U	Elements of Data Processing I	3	36
	Electives	12	144

FLORICULTURE

The Floriculture program is a specialized training program designed to prepare people for careers in the floral industry. This program provides the student with classroom and laboratory instruction in all phases of floriculture and two five-week periods of business internship in a floral shop.

Classroom and laboratory time is devoted to commercial flower forcing (greenhouse growing and operation), retail florist shop operation and business management. During this time the student gains actual growing experience in a greenhouse, learns the construction of all types of floral pieces, and studies the basic principles and procedures for the successful operation of a retail florist business. During the two business internship

periods, each student has the opportunity to apply what he has learned to an actual job situation.

Graduates receive a diploma.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 16.5 to 22 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
AG001V	Commercial Flower Forcing Greenhouse I	2	36
AG002V	Commercial Flower Forcing Greenhouse II	1	12
AG003V	Commercial Flower Forcing Greenhouse III	2	24
AM005V	Retail Flower Shop Operation I	5	60
AM006V	Retail Flower Shop Operation II	3	36



AM007V	Retail Flower Shop Operation III	3	36
AM008V	Retail Flower Shop Operation IV	4	48
AT001V	Floral Designing I	4	96
AT002V	Floral Designing II	2	48
AT003V	Floral Designing III	2	48
AT004V	Floral Designing IV	2.5	60
BY004V	Basics of Plant Growth	3	36
BY005V	Diagnosing Plant Disorders I	1	12
BY006V	Diagnosing Plant Disorders II	1	12
AC005V	Floriculture Bookkeeping	4	48
MK002V	Floriculture Seminar	1	24
AM003T	Business Internship	12	440

RELATED COURSES

MK003T	Principles of Selling	4	48
MK001T	Principles of Marketing	4	48
MA002U	Basic Mathematics	0	arr.
CM002U	Communication Skills I	3	36
CM003U	Communication Skills II	3	36
PY004U	Psychology of Human Relations I	3	36
MK001V	Retail Advertising and Display	4	48
MK021U	Sales Presentation	3	36

GRAPHIC ARTS

The graphic arts program introduces the student to the basic fundamentals of the graphic arts industry, beginning with the history of graphic arts, processes, functional typography, letterpress operation, lithography, layout and design, mathematics and bindery operation.

Advancing through the program, the student will learn more about lithography including camera and darkroom, photo-composition, paste-makeup, theory of color, stripping and plate-making and offset presswork. In the final stages the student will become familiar with management problems, estimating, production control, plant organization and layout, industrial relations and related technical data.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will be 360 clock hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
GR007U	Layout and Design	4	96
GR009U	Typography	5	60
GR011U	Copy Preparation I	7	144
GR012U	Copy Preparation II	8	180
GR030U	Copy Preparation III	8	180
GR019U	Platemaking I	1	20
GR020U	Platemaking II	3	60
GR021U	Process Camera I	2	32
GR022U	Process Camera II	4	96
GR023U	Process Camera III	2	32
GR024U	Stripping I	2	32
GR025U	Stripping II	3	60
GR026U	Stripping III	2	32
GR027U	Offset Presswork I	4	96
GR028U	Offset Presswork II	7	144
GR029U	Offset Presswork III	4	96
GR031U	Bindery/Operations	1	20
EC001U	Printing Economics	1	12
	Typing	2	48

Additional minimal requirements for Associate of Arts degree (optional) and Associate of Applied Science degree (optional):

Composition	8
Speech	3
Humanities	8
Social Sciences	8
Math/science	8

35

The last 24 hours of course work for residency must be in the Arts and Sciences Division at Kirkwood for the Associate of Arts degree.

An Associate of Applied Science degree will be awarded if the diploma and requirements are met regardless of sequence.

HOME FURNISHINGS

The Home Furnishings program is seven quarters in length and combines general education, business education and technical courses. It is a program design-

ed to prepare you for a career in merchandising as a decorator, sales director, consultant, department manager, specialty shop manager, buyer and other management positions in furniture, drapery, wallpaper, paint, floor coverings and home accessories areas of retail stores.

Graduates receive an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 20 to 24 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
MK034U	Home Furnishings Seminar	6	144
AT003U	Survey of Interiors I	3	36
AT006U	Survey of Interiors II	2	24
MK032U	Home Furnishings I	3	36
MK033U	Home Furnishings II	3	36
HE003U	Textiles I	3	36
HE004U	Textiles Laboratory I	1	24
AT002U	Decorative Accessories	2	48
AT004U	Design Relationships	2	24
AM003T	Business Internship	24	864

RELATED COURSES

MK003T	Principles of Selling	4	48
AM032T	Introduction to Business	4	49
MA011U	Merchandise Analysis and Control	3	36
MK002T	Principles of Retailing	4	48
EC002T	Principles of Business Economics	4	48
MK018U	Principles of Display	2	36
MK001T	Principles of Marketing	4	48
MK025T	Principles of Advertising	4	48
AM022U	Principles of Supervision	3	36
AM006U	Credit Procedures	3	36
LW005T	Business Law	4	48
DP046U	Elements of Data Processing I	3	36
AM020U	Retail Management	4	48
AC001T	Principles of Accounting	4	48
MK014U	Merchandising	4	48
PY004U	Psychology of Human Relations I	3	36

MK019U	Small Business Organization/Management	3	36
CM201T	Speech I	3	36
CM002U	Communication Skills I or	3-4	36-48
CM101T	Composition I		
CM003U	Communication Skills II or	3-4	36-48
CM102T	Composition II		
MA002U	Basic Mathematics	0	arr.
	Electives	12	

RETAIL MANAGEMENT

The Retail Management program is designed to prepare students for careers in the retailing industry. These programs stress an understanding of business procedures and the knowledge of retailing principles.

The program is seven quarters in length and consists of a combination of classroom instruction and on-the-job training. During on-the-job training periods, the student gains actual work experience in retail firms throughout Iowa.

Graduates receive an Associate of Applied Science degree.

All veterans must take the required number of hours per quarter in order to graduate within the approved number of quarters for this program. This will vary from 17 to 19 credit hours per quarter.

TECHNICAL COURSES

		Credits	Hrs.
MK010U	Retail Marketing Seminar	6	144
MK002T	Principles of Retailing	4	48
MK025T	Principles of Advertising	4	48
AM020U	Retail Management	4	48
AM003T	Business Internship	24	864

RELATED COURSES

MK003T	Principles of Selling	4	48
MK001T	Principles of Marketing	4	48
MK014U	Merchandising	4	48
AM032T	Introduction to Business	4	48
AM022U	Principles of Supervision	3	36

AM006U	Credit Procedures	3	36
CM002U	Communication Skills I or		
CM101T	Composition I	3-4	36-48
CM003U	Communication Skills II or		
CM102T	Composition II	3-4	36-48
MA002U	Basic Mathematics	0	arr.
AM001U	Merchandise Analysis and Control	3	36
PY004U	Psychology of Human Relations I	3	36
MK019U	Small Business Organization and		
	Management	3	36
EC002T	Principles of Business Economics	4	48
CM204T	Speech I	3	36
AC001T	Principles of Accounting I	4	48
AC006U	Management Accounting	4	48
LW005T	Business Law I	4	48
DP046U	Elements of Data Processing I	3	36
MK016T	Counselor Selling	4	48



DEVELOPMENTAL PROGRAM

PERSONAL ACHIEVEMENT DEPARTMENT

Kirkwood Community College is committed to the "open-door" philosophy of education. That is, we are concerned foremost with meeting the needs of the community we serve. A great part of this commitment lies in providing educational opportunities to a widely diversified student body. The Personal Achievement Department has played an instrumental role in making the "open-door" concept a functioning and effective policy at Kirkwood.

The purpose of the Personal Achievement Department is to provide an opportunity for all students to diagnose, develop and strengthen their skills in the areas of reading, writing, mathematics, and study skills. In addition to, and as a result of this skill development, we hope also to help students develop a sense of self-confidence in their abilities in these areas.

TYPES OF ASSISTANCE

An individual may enroll in Personal Achievement courses for a variety of reasons, both personal and academic in nature. Some of these reasons may include the following:

- 1) High school graduates who did not gain the skills necessary to succeed in college-level

work may wish to improve their basic skills before entering a college program.

- 2) Those students who have been away from school for awhile may wish to review their basic skills either before or concurrent with taking other courses at Kirkwood. These students may lack the self-confidence they could have.
- 3) Currently employed individuals might need to improve themselves in any or all of these areas to remain competitive in their vocational areas.
- 4) Those individuals who have been recommended to Personal Achievement by the results of the Self Assessment tests or by an instructor or counselor, may decide to take any one or any combination of courses to assist them in succeeding in their academic pursuits at Kirkwood.

COURSES AVAILABLE

The Personal Achievement Department offers courses in reading, writing, mathematics, basic study skills, punctuation review, and grammar review. All courses are offered on either an individualized, one-to-one basis with an instructor, or on a small group basis. Upon enrollment the student's current skill level is determined through diagnostic testing for the purpose of identifying his or her strengths and weaknesses in these academic areas. Then, based on the results of these tests, a plan of instruction is developed with each student.

Students may enroll in the primary courses of reading, writing, and math at any time during the quarter, provided space is available. These courses are offered for one to three hours of developmental credit, depending upon the recommendation of the instructor involved and his or her interpretation of the student's diagnostic test. The

remaining three courses in study skills, punctuation review and grammar review are offered at specific times according to the course schedule.

A unique feature of Personal Achievement courses is that their curriculum and content is related to the specific subject matter or vocational interest of the student being served.

CREDIT

Personal Achievement course credit generally is not accepted by four-year colleges as transfer credit, nor can it be applied toward graduation at Kirkwood. However, the Personal Achievement courses may be extremely valuable in terms of achieving success in other courses and in terms of personal enrichment. Students have the option of taking any of the Personal Achievement courses for a grade or on a pass/no-pass basis. The courses do count in computing the grade point average of the student.

SERVICES PROVIDED

In addition to academic upgrading, a counseling service is provided in the lab. A counselor is available for individual conferences and a small group process is available to those students enrolled in Personal Achievement. The group is structured toward helping students achieve academic success.

For those students who want to find out what their current skill strengths and weaknesses are, the counselor will administer the Self Assessment program as described in the Counseling section of this catalog.

Also, the Student Tutor Bureau operates under the auspices of the Student Development Center and the Personal Achievement Department. The purpose of the

Tutor Bureau is to match on a one-to-one basis students who are having difficulty in a specific subject with a student tutor who has some expertise in that particular area. This service is provided free to Kirkwood students.

SKILLS CENTER

The primary objective of the Skills Center is the preparation of handicapped and disadvantaged persons for vocational training or placement in jobs. Personal and vocational goals are established through counseling between the student and the center's staff.

A trained staff of vocational evaluators, instructors, production supervisors, vocational counselors and job placement personnel is available. Psychologists, psychiatrists, and physicians are available on a referral basis, as well as services offered through the Linn County Mental Health Center, residential care facilities, public health nursing and social service agencies.

The center provides opportunities for career exploration, vocational evaluation, work adjustment training, academic upgrading, and skill development, with objective of making appropriate recommendations for job placement or vocational training.

COMMUNITY EDUCATION PROGRAMS

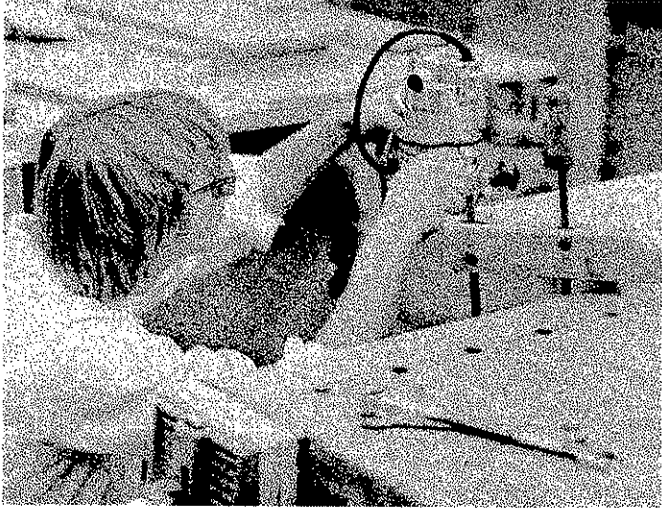
COMMUNITY EDUCATION COURSES

In keeping with its philosophy of lifelong learning, the Community Education Division of Kirkwood Community College has developed a great variety of credit and non-credit courses for those persons who wish to continue their education. These are designed for individual and personal growth as well as for career preparation or upgrading. Many of these courses are offered for their recreational and personal enjoyment benefits, while others provide a chance to learn a skill with which to earn supplementary income.

Instructors for these programs are sought out from among civic, business, industrial and cultural leaders throughout Kirkwood's seven-county area to make available their expertise to the total community. All classes are conducted with the philosophy of Community Education--that learning is enjoyable and should be the means to individual growth for every citizen of this area. Sociability and sharing are integral parts of this facet of Kirkwood's educational process.

These classes along with many others are offered through the Community Education Division each quarter. Details regarding specific class offerings are available





through the division and are published in local newspapers.

ADULT BASIC EDUCATION

This area of learning is designed to help persons improve their basic academic skills up to the eighth grade level. The classes are located throughout the seven-county area and are scheduled at times convenient to students. Students may continue their work to prepare for the General Education Development Test (GED) or earn credit toward a high school diploma. Learning centers located in Iowa City, Monticello, Williamsburg, and Cedar Rapids provide flexible hours and individualized instruction for those that prefer this approach to learning.

HIGH SCHOOL COMPLETION

The Community Education Division provides the opportunity for persons of all ages to work toward the completion of their high school education. Kirkwood offers classes at various locations in the seven-county area and individualized programs are available at Kirkwood's learning centers. These programs are free to adults. An annual high school graduation ceremony is conducted each spring.

CORRESPONDENCE STUDIES

High school completion by correspondence is made possible by the Community Education Division of Kirkwood through a variety of courses.

There are no limitations placed upon the students as to the number of courses they may take. However, the transfer of such credit to institutions other than Kirkwood is an optional matter for the accepting institution.

Enrollment for students who are considered actively enrolled in their local high schools is subject to the con-

sent and approval of such institutions. Prospective correspondence students who are not enrolled elsewhere may enroll in this program at any time.

INSTITUTIONAL PROGRAMS

Programs of learning which include all or a selection of the above mentioned areas have been set up in such institutions as the Iowa State Men's Reformatory, Veteran's Hospital, county homes and halfway houses.

Instructional services, consultant services and curriculum guidance may be arranged for these types of programs through the Community Education Division.

TRANSFER CREDIT (ARTS & SCIENCES EXTENSION)

The Kirkwood Community Education Division in cooperation with the Arts & Sciences Division offers college credit extension courses in locations throughout Kirkwood's seven counties. Open to adults with a high school diploma, they include courses in English, mathematics, foreign languages, fine arts and social sciences.

MANAGEMENT DEVELOPMENT

The Management Development programs are designed to develop and improve management skills for those persons currently in management or those seeking advancement into supervisory positions. The programs provide an extensive selection of general and technical management courses and seminars offered on either a credit or non-credit basis.

SEMI-TRAILER TRUCK DRIVING

The Semi-Trailer Truck Driving program is designed to prepare men and women for entry employment in the trucking industry. The five-week curriculum includes classroom instruction, individualized student laboratory

learning, driving range instruction and supervised practical experiences in the areas of highway, interstate, village and city driving.

Graduates of the program are awarded a certificate, 15 college CEUs (Continuing Education Units), and the opportunity to take the state driving examination on campus.

SUPPLEMENTARY VOCATIONAL PROGRAMS

These programs are designed to help persons seeking job enrichment or upgrading. Classes are held in business and industrial locations as well as on the Kirkwood campus and in local high schools. Time and locations of classes are dependent upon the preferences of the students.

KEY PROGRAM

KEY stands for "Kirkwood Exploration, Experience, Exposure for Youth. The program is offered in cooperation with local school districts at central locations to supplement the high school curriculum in vocational preparatory programs. The students are transported from their local high school to the center for a portion of the school day. Centers are currently located in Iowa City, Monticello, Williamsburg, Washington, Center Point and Cedar Rapids. Programs in auto mechanics, the building trades, health occupations, data processing, welding and agriculture are some of the programs offered. The steering committee at each location helps determine the courses to be offered.

RETIREMENT & PRE-RETIREMENT PROGRAMS

Courses and programs are offered to provide recreational, social, and leisure activities for the retired, as well as informational programs. Opportunities for those nearing retirement are available to assist them in planning for their retirement. Credit and non-credit offerings are also available to retired persons at reduced rates.

GENERAL INTEREST AND RECREATIONAL CLASSES

General Interest and recreation classes are designed for adults who are not interested in earning academic credit, but who wish to informally further their education, enrich their cultural lives, improve their physical fitness or improve their personal efficiency.

The classes cover a wide range of topics from bridge, knitting and woodworking to art, music and literature. They are offered four times each year at various locations throughout the seven-county merged area.

These types of classes are self-supporting and offered as a community service in cooperation with local school districts.

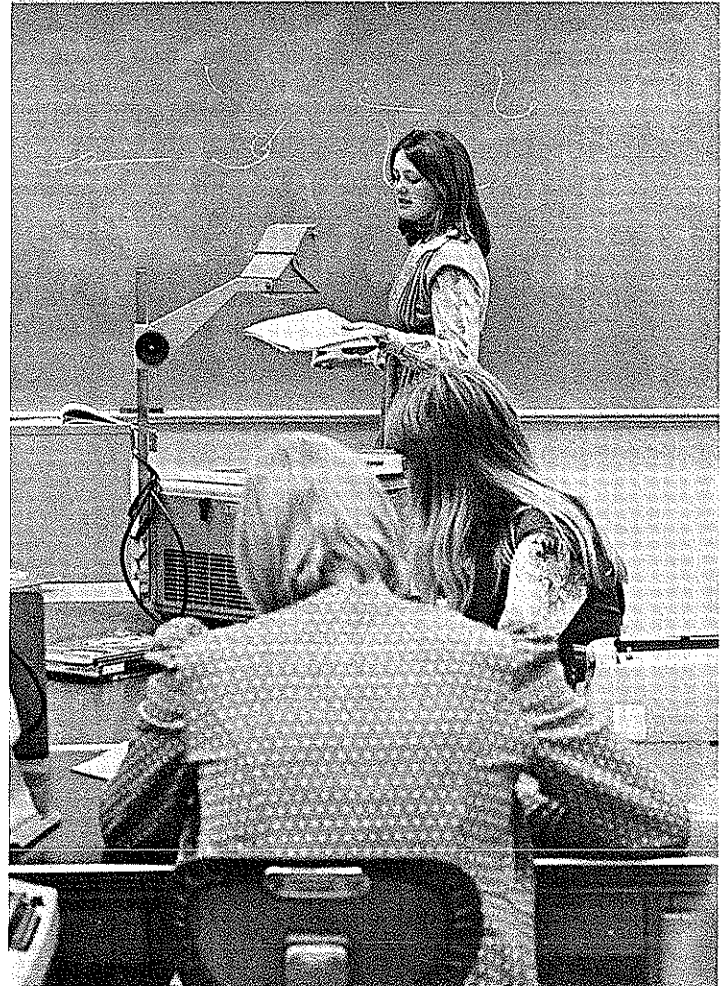
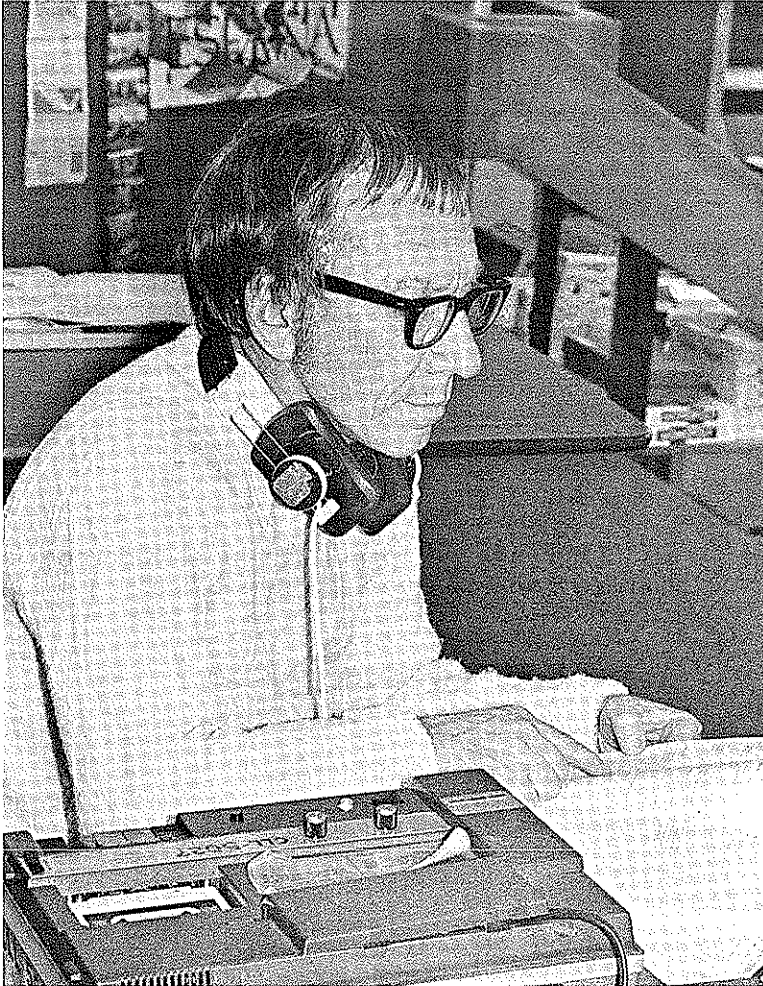
RIGHT-TO-READ PROGRAM

The Right-to-Read program is operated in cooperation with the Community Education Division of Kirkwood Community College and is designed to serve adults in the college's seven-county area.

Right to Read is a national effort for developing and improving the reading skills of all citizens, enabling each to function effectively in our society. As such, it is both a legislated program and a coordinated national endeavor for promoting the involvement of all segments of society, both public and private, to ensure that in the next decade, no American adult shall be denied a full and productive life because of an inability to read effectively.

The program is unique in that adults desiring to read better are assigned a tutor, who is a volunteer from the community. The participant and tutor are supplied the necessary learning materials and they make their own arrangements and plans for achieving various reading goals. Participants receive approximately two hours of reading assistance per week. The program is operated through coordinators at Kirkwood's Community Education Centers in Cedar Rapids and Iowa City.

COURSE DESCRIPTIONS



Information in this section is subject to change without notice.

THE COURSE NUMBERING SYSTEM

Course numbers appearing in this catalog should be interpreted according to the following guidelines:

- 1) The two-letter prefix denotes the area of study in which the course may be found. The area of study is the academic discipline that most nearly describes the content of the course. (Example: "BY" is the prefix for courses that have biology as their basic subject matter.) The areas of study are listed on this page.
- 2) The three numerals in the body of the course number are random, and do not imply sequence.
- 3) The letter at the end of the course number represents the level of instruction, according to the following code.

A — Adult Basic Education (ABE)
 D — Developmental
 G — General Adult
 H — High School
 S — Supplemental
 T* — Transfer
 U — Voc. Tech. (Applies to AAS)
 V — Voc. Tech. (Applies to Diploma)
 W — Voc. Tech. (Applies to Certificate)
 Z — Part-time Vocational Technical

The credit value of each course is indicated in quarter hours following the title of the course. Where possible, the description also indicates the number of lectures and lab sessions involved. Thus, (3/1) indicates three lecture hours and one lab hour per week. The course descriptions in this section are listed according to the following areas of study.

*T - Courses asterisked are under review by the curriculum instruction committee for permanent approval as part of the Arts & Sciences curriculum.

AC - Accounting	GR - Graphics
AG - Agriculture	HY - History
AM - Administration and Management	HE - Home Economics
AT - Art	IS - Interdisciplinary Studies
BY - Biological Science	JO - Journalism
CE - Cooperative Education	LE - Law Enforcement
CH - Chemistry	LS - Library Services
CM - Communication (including speech)	LT - Literature
CO - Corrections	LW - Law
CS - Construction	MK - Marketing
DP - Data Processing	MA - Mathematics
DN - Dental	MH - Mechanics
DR - Drama	MS - Medical and Surgical
DS - Driver Education and Safety	MM - Metals and Manufacturing
EC - Economics	MU - Music
EL - Electricity and Electronics	NS - Nursing
EG - Engineering	OE - Office Education
EV - Environmental Studies and Pollution Control	PD - Personal Development
FL - Foreign Languages	PR - Philosophy and Religion
FS - Fire Safety	PH - Physics/Astronomy
GE - Geography	PS - Political Science
	PH - Psychology/Education
	SO - Sociology
	SS - Social Sciences
	SW - Social Welfare
	TH - Therapy

A list of courses no longer taught at Kirkwood is available by contacting the Registrar's Office.

ACCOUNTING

College Parallel

Credit

AC001T PRINCIPLES OF ACCOUNTING I 4
 Approaches accounting theory and procedures from the business entity concept. Accounting principles covered include understanding the balance sheet and income statements, matching costs and revenues, working paper development, and debit-credit relationships. (4/0)

AC002T PRINCIPLES OF ACCOUNTING II 4
 Emphasizes partnership and corporate entities, worksheet adjustments and asset valuation. (4/0) Prereq: Principles of Accounting I.

- AC003T PRINCIPLES OF ACCOUNTING III** 4
Emphasizes management uses, and studies introduction to cost accounting, cost analysis, budgeting, fund flow, and statement analysis.(4/0)Prereq: Principles of Accounting II.
- AC004T COST ACCOUNTING I** 4
Relates principles and methods of handling materials, labor costs, and manufacturing expenses to the formulation of reports to management. (4/0) Prereq: Principles of Accounting III.
- AC005T COST ACCOUNTING II** 4
Emphasizes standard costing and budgeting.(4/0)Prereq: Principles of Accounting III.
- AC006T INTERMEDIATE ACCOUNTING I** 4
Includes a review of accounting procedures and reporting process. An in-depth analysis of cash, receivable, and inventories.(4/0)Prereq: Principles of Accounting III.
- AC007T INTERMEDIATE ACCOUNTING II** 4
Emphasis on investment accounting, tangible and intangible assets, and liabilities.(4/0)Prereq: Intermediate Accounting I.
- AC009T INTERMEDIATE ACCOUNTING III** 4
Covers corporation accounting, consignment and installment sales and income correction and statement changes. (4/0)Prereq: Intermediate Accounting II.
- AC010T ANALYZING FINANCIAL STATEMENTS** 3
Presents management's viewpoint on cost analysis, budgeting, fund flow, and statement analysis.(3/0)Prereq: Recommended AC002T.
- AC015T PERSONAL INCOME TAX** 2
Provides a basic knowledge of individual income taxation, its purposes and development, possible future modifications, and its significance for individual tax planning. (2/0)
- AC016T INCOME TAX FOR BUSINESS** 3
Provides a basic knowledge of the structure of business income taxation, its purposes and development, possible future modification, and its significance for managerial decision making. (3/0)Prereq: Principles of Accounting II, Personal Income Tax or instructor's permission.
- AC017T INCOME TAX II** 4
Studies the federal income tax law, its purposes and development and its significance for tax planning. Emphasis is placed on the ap-

lication to the individual and the single proprietorship business.(4/0)Prereq: Income Tax I.

- AC018T INCOME TAX I** 4
Studies the federal income tax law, its purposes and development and its significance for tax planning. Emphasis is placed on the application to the individual and the single proprietorship business. (4/0)Prereq: Principles of Accounting I.

Vocational-Technical

- AC001U ACCOUNTING SURVEY I** 3
Accounting for the data processor. Covers basic concepts, definitions, terminology, techniques, and characteristics of accounting and accounting systems as found in medium/ large organizations. Attention is given to the functions of accounting as they might be performed by data processing systems.(3/0)
- AC002U ACCOUNTING SURVEY II** 3
Cost accounting and financial control for the data processor. Includes classifications of costs, cost control, standard costs, budgeting depreciation, financial reporting and managerial use of accounting information as found in medium/large organizations. Special attention given to use of computerized data processing systems in performing accounting functions.(3/0)Prereq: AC001U.
- AC003U ACCOUNTING FOR THE NON-ACCOUNTING MANAGER** 2
Introduces the various financial statements and their relation and contribution to the profitability of a business to the non-financial manager. Also covers terminology used in accounting practices. (2/0)
- AC005U SMALL BUSINESS RECORDKEEPING** 2
Small Business Recordkeeping is designed to help the small businessman keep simple cash flow, expense, and receipts records. It also includes necessary recordkeeping for basic payroll and sales tax records. The assumption is made that students have not previously had any experience with bookkeeping or recordkeeping.(2/0)
- AC006U MANAGEMENT ACCOUNTING** 4
Presents management's viewpoint on cost analysis, budgeting, fund flow, and statement analysis.(4/0)Prereq: AC001T.
- AC007U DENTAL BOOKKEEPING** 2
Covers basic principles of bookkeeping from the viewpoint of the dental assistant. Areas of study include journalizing,posting to the ledgers and taking a trial balance and preparation of financial

statements. Special attention is given to patient billing, preparing for audits, peg board accounting, use of data processing services, and insurance and tax forms.(2/1)

AC008U AGRIBUSINESS RECORDS 3-4

Designed to familiarize students with farm records; accounting inventories, valuation, cash flow, net worth, depreciation, and different types of record systems. (2-4/0-4)

AC009U ACCOUNTING PROBLEMS 2-5

Provides the student with the opportunity to secure assistance in his accounting course work and to provide him with the opportunity for more in-depth study. Time arranged.(0/3-10)

AC015U PRINCIPLES OF AUDITING 3

Reviews internal controls in accounting systems and development of procedures necessary to test the integrity of accounting systems and financial reports.(3/0) Prereq: Intermediate Accounting II or instructor's permission.

AC001V ACCOUNTING FUNDAMENTALS I 5

Introduces the complete accounting cycle for personal service and merchandising enterprises. Application of fundamental principles covered in laboratory practice(5/0)

AC002V ACCOUNTING FUNDAMENTALS II 5

Continues Accounting Fundamentals I with expansion of the accounting for purchases, sales, inventory, prepaid expenses, long-lived assets, and accounting for owner's equity.(5/0)Prereq: AC001V.

AC003V ACCOUNTING FUNDAMENTALS III 5

Continues Accounting Fundamentals II, with emphasis on corporate organizations and introduction to cost accounting.(5/0)Prereq: AC002V.

AC004V OFFICE ACCOUNTING 4

Provides an understanding of basic accounting concepts and procedures. Includes the recording of transactions, preparation of financial statements, and payroll problems. A practice set will be completed. (4/0)

AC005V FLORICULTURE BOOKKEEPING 4

Studies the basic theories of accounting concepts and procedures as they apply to the floral shop. Special attention is placed on units of recording basic transactions, credit, payroll and banking. (4/0)

AC006V MEDICAL BOOKKEEPING 4

Covers basic principles of bookkeeping from the viewpoint of the

medical assistant. Areas of study include journalizing, posting to the ledgers and taking a trial balance and preparation of financial statement. Special attention is given to patient billing, preparing for audits, peg board accounting, use of data processing services and insurance tax forms.(4/0)

AC008V INCOME TAX PROCEDURES 3

Training in the preparation of federal and state income tax returns.(3/0)

ADMINISTRATION AND MANAGEMENT

College Parallel

AM001T AGRICULTURE FINANCE 3

Reflects the rapid growth of the off-farm agribusiness sectors, emphasizes general principles associated with the evaluation of management and the use of capital. An understanding of agricultural finance should help the banker in satisfying the credit needs of modern agriculture.

AM002T PRINCIPLES OF FINANCE 3

Includes basic methods and principles concerning such topics as financing, working capital and fixed capital needs, stocks and bonds, the marketing of securities and the operation of financial institutions. (3/0) Recommended: Principles of Accounting III.

AM003T BUSINESS INTERNSHIP 1-12

Provides an opportunity to receive practical experience through on-the-job training in an approved business establishment. Valuable learning experiences are structured by the program coordinator and the training sponsor.(0/3-36)

AM005T PRINCIPLES OF MANAGEMENT 4

Covers basic concepts, behavior, practices and principles applied to the functions of planning, organizing and controlling the business enterprise. The course will include readings of leading management theorists. Prereq: Sophomore standing. (4/0)

- AM025T INDEPENDENT STUDY IN BUSINESS 1-4**
This study is taken concurrently with a standard course in the student's area of specialty. Special projects and/or individual readings are assigned by the program coordinator or an individual staff member. Projects must be approved before the beginning of the quarter in which the work is to be done. Prereq: Consent of instructor and department head before registering.(1-4/0)
- AM029T BANK MANAGEMENT 3**
Presents new trends which have emerged in the philosophy and practice of management. The study and application of the principles outlined provide new and experienced bankers with a working knowledge of bank management. (3/0)
- AM030T INSTALLMENT CREDIT 3**
Presents the techniques of installment lending. Emphasis is placed on establishing the credit, obtaining and checking information, servicing the loan, and collecting the amounts due. Each phase of a bank's installment credit operation is carefully scrutinized. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. (3/0)
- AM031T SUPERVISION AND PERSONNEL ADMINISTRATION 3**
Is designed to enable students to understand human relations at the management level and the methods of getting things done through people. Basic principles and current practices of personnel administration are studied. (3/0)
- AM032T INTRODUCTION TO BUSINESS 4**
Surveys American business and the environment in which it operates and includes study of the economic, social, and political influences and business organization functions and responsibilities.(4/0)
- AM034T INTERSTATE COMMERCE LAW AND PRACTICE I 3**
Prepares the student for the Interstate Commerce Commission's examination to practice, or the Number 4 examination of the American Society of Traffic and Transportation in a) basic concepts, b) structure of the act, c) operating authority and d) exemptions. (3/0)
- AM035T INTERSTATE COMMERCE LAW AND PRACTICE II 3**
Prepares the student for the Interstate Commerce Commission's examination to practice, or the Number 4 examination of the American Society of Traffic and Transportation in a) causes of action, b) civil liability, c) statute of limitations, d) the I.C.C., e) statutory provisions, f) economics, and g) tariff interpretations. (3/0) Prereq: Interstate Commerce Law & Practice I.
- AM036T INTERSTATE COMMERCE LAW AND PRACTICE III 3**
Prepares the student for the Interstate Commerce Commission's examination to practice, or the Number 4 examination of the American Society of Traffic and Transportation in a) leading cases, b) rules of evidence, c) code of ethics, d) rules of practice, e) drafting the complaint, f) judicial review. (3/0) Prereq: Interstate Commerce Law II.
- AM045T HUMAN BEHAVIOR IN ORGANIZATIONS 3**
Explores problems of human behavior in organizations through lab exercises, cases and readings. Human relations problems and relationships with peers, subordinates, and supervisors and the dynamics of effective group interaction are discussed. Theories of contemporary behavioral scientists and industrial psychologists are reviewed. (3/0)
- AM052T INTRODUCTION TO MANAGEMENT 2**
Explains the evolutionary development of management styles and philosophies. Studies will be made of the various authors of influential management techniques. Included, also, will be an examination of societal attitudes and their effect on the management process.(2/0)
- AM077T ORGANIZATIONAL BEHAVIOR 3**
Examines groups in relation to organizational effectiveness. Focuses on factors that improve work group functioning. (3/0)
- AM078T MANAGEMENT COMMUNICATIONS 3**
Based on a unified communications concept and built around the technical principles common to oral, written and visual communications. Includes aspects of listening, interviewing, writing, reading, speaking and briefing techniques.(3/0)
- AM079T TECHNIQUES OF SUPERVISION 2**
Emphasis on the managerial directing function. Necessary supervisory qualities are examined along with duties and responsibilities. Emphasis on maximization of worker potential and application to achievement of individual and organizational goals.(2/0)
- *AM080T BANK INVESTMENTS 3**
Analyzes the nature of primary reserves and loanable funds and how their uses are determined. (3/0)
- *AM081T PERSONAL FINANCE 3**
Approaches the financial problems of families. Explores decision making relative to acquiring and allocating income. Focuses on

management of consumer credit, savings and investment, insurance, home ownership and estate planning. (3/0)

AM082T LAW AND BANKING 3
Introduces basic American law, presenting the rules of law which underlie banking. Topics include jurisprudence, the court system and civil procedure, contracts, quasi-contracts, property, torts and crimes, agencies, partnerships, corporations, sales of personal property, commercial paper, bank deposits and collections, documents of title, and secured transactions. Emphasis is on the Uniform Commercial Code. (3/0)

***AM083T ELEMENTS OF FARM MANAGEMENT** 3
Applies farm accounts, economic principles and budgeting to the organization and management of a farm business including risk and uncertainty, precautions and adjustments, size of business, capital acquisition and control, as well as crop, livestock, machinery and labor management considerations. (3/0)

AM084T BANK CARDS 3
Presents an overview of the bank card industry with the dual objectives of helping the student understand the role of the bank card in the economy as well as the basic operational problems involved in the successful management of a bank card plan. This course also discusses the evolution of credit cards into electronic funds transfer, legal developments affecting credit cards, and the regulatory environment. (3/0)

Vocational-Technical

AM001U MERCHANDISE ANALYSIS AND CONTROL 3
Deals with techniques and procedures of determining profits, pricing of goods, inventories and merchandise control. Some of the problems faced by merchandisers are presented, analyzed and solved. Prereq: Basic Mathematics. (3/0)

AM003U BUSINESS PRACTICES 2-3
Includes basic bookkeeping, purchasing, inventory records, employee-employer relations, advertising and customer relations. (2-3/0)

AM004U AGRICULTURE FOREMANSHIP 2-3-4
Is designed to provide students with the opportunity to study and apply skills of supervision and personnel management in Agribusiness. Projects will be developed according to the students' enterprise. Management techniques will be stressed. (1-4/0-4)

AM005U FRONT END MANAGEMENT 3
Teaches proper cash register operation and checkout procedures for the modern supermarket. Emphasis is placed on checker training, supervision, and control of the checkout function. (3/0)

AM006U CREDIT PROCEDURES 3
Presents economic and sociological aspects of credit from a managerial viewpoint, the nature of credit, credit instruments, the role of credit in our economy, management of the credit and collection function. (5/0)

AM007U ENTERPRISE ANALYSIS I 3
Offers a detailed farm management record program giving instruction in analysis of each individual agricultural enterprise connected with the farm business, and that enterprise's relationship to the total farm business. (2/2)

AM009U FARM MANAGEMENT 2-4
Focuses on the abilities needed to manage a farm. The farm laboratory, area demonstration farms and the students' home farms are used. (1-4/0-4)

AM012U FOOD STORE MANAGEMENT 5
Offers a comprehensive study of problem areas encountered in food marketing management. Policies and procedures in retail and wholesale food distribution are considered, and decision making or problem solving are explored through the use of case problem situations. (5/0)

AM013U IMPLEMENT BUSINESS PROCEDURES 3
Studies profit sources of a farm implement dealership and the business procedures which contribute to developing maximum profit from each source. (2-3/0-3)

AM019U OFFICE MANAGEMENT 4
Examines in detail the following aspects of office management: the impact of automation; organizing and planning office work; controlling people, forms, and machines that do the work; and creating proper human relations. (4/0)

AM020U RETAIL MANAGEMENT 4
Studies managerial principles as they apply to retailing and analyzes the functions of planning, organizing and controlling in relationship to managerial policy and human relations. Decision-making skills are developed. (4/0) Prereq: Sophomore standing.

AM022U PRINCIPLES OF SUPERVISION 3
Covers the development of supervision as a managerial directing function. Necessary skills and personal traits are explored. The

proper motivation and cooperation attitudes, as they pertain to both individual and groups, are discussed. How company goals are best achieved by coordinating the requirements and needs of employees and management is also examined.(3/0)

AM023U MEDICAL DEPARTMENT MANAGEMENT (RT) 3

Covers principles of managing a medical department including staffing, physical layout, inventory control, budgeting, public relations and instructional techniques in clinical education for managers.(3/0)

AM024U AGRIBUSINESS PERSONAL FINANCE 2

Discusses individual and family life, health, accident, liability, automobile and home owners insurance as they apply to agribusiness employees. Other areas of study will include: planning budgets, using consumer credit, understanding and paying taxes, planning estates and keeping financial records (as they pertain to agribusiness employees). (2/0)

AM025U AGRIBUSINESS PRACTICES 3-4

Distinguishes job requirements, business organization, personnel policy and product knowledge techniques in the ag supply industry. Insurance is also covered. Field trips are a large part of this course. (2-4/0-4)

AM029U WAGE AND SALARY ADMINISTRATION 3

Is designed to provide a rational approach to the various elements of a compensation program: job description, job evaluations, salary surveys and administrative policies.(2/0)

AM030U SALES MANAGEMENT 2

Includes discussion of sales organizations, policies for sales, merchandising and distribution, layout of territories, selection and training of a sales force. (2/0)

AM031U MANAGEMENT INFORMATION SYSTEMS 2

Covers nature of systems, parameters for the business system, measurement problems, information theory, models for management, decision making and control of systems. (2/0) Prereq: AM052T Introduction to Management.

AM032U INTRODUCTION TO QUALITY CONTROL 2

Introduces the techniques and principles of statistical quality control within industry. Various techniques of sampling will be utilized. Charting and graphing for observer results will be accomplished. (2/0)

AM033U DENTAL OFFICE MANAGEMENT I 2

Provides instruction for the student relative to dental business office management, traffic flow in office design, appointment control, office policies, job interviews, ethical conduct and proper terminology used in office procedures.(2/1)

AM034U DENTAL OFFICE MANAGEMENT II 3

Provides instruction for the student relative to dental business office management, handling mail, supplies, invoices, filing and storage, case management, financial arrangements and taxes.(3/0)

AM035U INDUSTRIAL ENGINEERING 2

Considers management uses of industrial engineering techniques to plan, control and evaluate manufacturing projects. Also covered are appropriation control, scheduling networks and economic lot sizes.(2/0)

AM036U TRAFFIC AND TRANSPORTATION MANAGEMENT I 3

Examines the history of transportation. Introduction to classification of freight and the principles of freight rates and tariffs.(3/0)

AM037U TRAFFIC TRANSPORTATION MANAGEMENT II 3

Covers shipping documents and their applications, freight claims, tariff circulars, construction and filing of tariffs. Also introduces freight rates and tariffs in practical application. (3/0)

AM038U TRAFFIC TRANSPORTATION MANAGEMENT III 3

Continues study in freight rates and tariffs, terminal facilities and switching, demurrage, reconsignment, stop-off, transit, routing, warehousing and distribution, materials handling and packaging.(3/0)

AM039U TRAFFIC TRANSPORTATION MANAGEMENT IV 3

Covers rates, import-export rates and procedures, further in-depth study of rates and routes, milling-in-transit, loss and damage, overcharges and undercharges.(3/0)

AM040U TRAFFIC TRANSPORTATION MANAGEMENT V 3

Studies classification and rate committee procedures, tariff and rate interpretation and introduction to the Interstate Commerce Act.(3/0)

AM041U TRAFFIC TRANSPORTATION MANAGEMENT VI 3

Studies the Interstate Commerce Act and other acts pertaining to transportation, plus a study of the Rules of Practice before the Interstate Commerce Commission.(3/0)

AM042U MANAGEMENT TOOLS FOR DECISION MAKING 2

Designed as a discussion of management decision making tools.

Topics will include such areas as use of breakeven analysis, statistics, PERT and others.

AM043U MANAGEMENT OF HUMAN RESOURCES 3
Helps managers develop an understanding of personnel function: recruiting, interviews, placement training and evaluation. (3/0)

AM044U WORK SIMPLIFICATION 2
Designed for everyone in business, industry and education interested in the philosophy of work simplification. (2/0)

AM045U MANAGING DATA PROCESSING 2
This course is intended to aid data processing managers in integrating the department's function, strategies and goals with those of the total organization.

AM046U OFFICE SUPERVISION I 2
Includes the role of the office supervisor, motivating and understanding the office employee, maintaining office discipline, techniques of office delegation, handling grievances and complaints, and what every office supervisor should know about training office employees.

AM047U HUMAN RESOURCES MANAGEMENT 4
Includes managerial philosophy of personnel administration, emphasizing study of personnel techniques of recruiting, interviewing, selecting, placement, training and evaluating. (4/0)

AM048U GENERAL INVENTORY AND PRODUCTION CONTROL 3
Designed to present the basic concepts and techniques of production planning and inventory control. The course stresses the influence which all usual departments within an industrial organization have upon the production planning and control function.

AM049U LABOR AND MANAGEMENT RELATIONS 2
Designed to expose participants to an objective view of how labor "feels" and how management "views" each other within total institutional objectives. (2/0)

AM050U MANAGEMENT BY OBJECTIVES 2
Concentrates on developmental perspectives as a managerial philosophy with emphasis on MBO's expanding use and popularity. Included are the "how to" aspects of developing a MBO philosophy and subsequently measuring the success of such effort. (2/0) institutional objectives. (2/0)

AM051U OSHA/AN UNDERSTANDING 2
Designed to familiarize management personnel with the rules and

regulations of the Williams-Stuger Occupational Safety and Health Act. This course is an introduction to OSHA with coverage on the general implications of the law and will not emphasize industrial or construction standards specifically. (2/0)

AM052U DINING ROOM MANAGEMENT I 5
Provides experiences in mid-management supervisory skills. Emphasizes development and implementation of production schedules, employee training, menu planning, ordering of supplies, production assignments and meal costing. (1/8)

AM053U DINING ROOM MANAGEMENT II 5
Continues experiences in mid-management supervision skills. Emphasizes meal service types of table service, waiter/waitress training, order taking, customer relations and guest checks. Students compute daily "sales and income" and in cooperation with the kitchen production report, determine profit/loss. (1/8)

AM054U PUBLIC ADMINISTRATION/MANAGEMENT 3
Designed to give the student a basic understanding of principles and concepts underlying the generic field of public administration in federal, state and local government: line-staff, span of control responsibility, accountability. (3/0)

AM055U CURRENT TOPICS IN MANAGEMENT 1-2
Designed for discussion and review of contemporary issues in the changing field of management. Course may be repeated for a maximum of four hours credit. A short-term course. (1-2/0)

AM004V MEDICAL OFFICE MANAGEMENT 1
Consists of office etiquette, mailing services and basic systems of filing maintained in medical offices, e.g., alphabetic, numeric and terminal digit. (1/0)

AM005V RETAIL FLOWER SHOP OPERATION I 5
Introduces the florist business and efficient shop layout. Studies expediting floral order, purchasing and pricing, and selling floral products, including use of cash register. (5/0)

AM006V RETAIL FLOWER SHOP OPERATION II 3
Studies the floral business: etiquette and sales of all types of floral products except wedding flowers, credit and collections, floral terminology. (5/0) 7 weeks. Prereq: AM005V.

AM007V RETAIL FLOWER SHOP OPERATION III 3
Studies the floral business, holiday sales, diversification, mock floral shop sales, finding and holding a job, and floriculture terminology. (5/0) (7 weeks) Prereq: AM006V.

AM008V RETAIL FLOWER SHOP OPERATION IV 4
Studies the floral business: etiquette and sales of wedding flowers, business records and cost analysis, shop management and policies. Prereq: AM007V (4/0)

AGRICULTURE

College Parallel

AG001T FUNDAMENTALS OF SOIL SCIENCE 3-4
Introduction to physical, chemical and biological properties of soils, their formation, classification and distribution. (2-4/0-2)

AG002T PRINCIPLES OF HORTICULTURE 3-4
Horticulture in daily living: plant growth, environment, propagation, cultivation, pruning, protection, harvesting, quality control and selection. Also covers home grounds development and maintenance. (2-4/0-4)

Vocational-Technical

AG001U TECHNICAL AGRICULTURE (RELATED) 3
Studies chemicals, soils, fertilizers and other modern farm production practices from an agricultural mechanics point of view. (3/0)

AG002U FORAGE AND OAT PRODUCTION 3-6
Involves study in the technical areas of various forages and oat production. Includes varieties, fertility, tillage methods and various management practices. The course also identifies and compares various pasture and forage management methods. (1-6/0-4)

AG003U AGRI-BUSINESS PROCEDURES 3-4
Reviews terminology used in agribusiness, the handling of money from sales, inventory control, customer credit control, business money management and basic double-entry bookkeeping. (2-4/0-4)

AG004U SWINE ARTIFICIAL INSEMINATION 2
Develops skills of artificial insemination, heat detection and supportive background knowledge for swine breeding herds. Studies nutritional and genetics management practices in swine breeding. (1/2)

AG005U AGRICULTURAL CHEMICALS 2, 3, 4
Relates pesticide terminology, labels, uses, cost and safety. Also covers establishing herbicide test plots. (2-4/0-4)

AG006U CAREER PLANNING SEMINAR 1
Assists the student in managing his affairs as an employee. Includes "mini-courses" on current topics. Also includes planning a student's courses and activities while at Kirkwood.

AG009U PARKS AND GROUNDS LAWS 4
Examines the statutes of the Code of Iowa, game laws, law enforcement problems and governmental agencies. Field trips and resource speakers reinforce classroom exercises. (2/4)

AG010U PARK MAINTENANCE PROGRAMS 4
Includes development and analysis of comprehensive maintenance programs for buildings, campgrounds, lake areas and related recreational facilities. Budgeting and recordkeeping are discussed. (2/4)

AG011U TILLAGE AND PLANTING EQUIPMENT 3
Compares and identifies various tillage and planting equipment used in modern field crop production and also includes applied equipment adjustment and set-up. (2/2)

AG012U EMPLOYMENT EXPERIENCE 1-9
Offers employment arranged to give students practical full-time on-the-job training with an employer or self-employed individual.

AG014U FARM AND SHOP MAINTENANCE 3
Concentrates on skills and understanding needed to keep the physical plant in repair. Areas of study include basic electricity, plumbing, concrete and general carpentry pertaining to a farm business. (1/5)

AG015U PARK AND RECREATION ADMINISTRATION 4
Examines the planning, organizing and administering parks employees and activities involved in parks operations. (2/4)

AG016U FEED RATIONS 2-4
Includes selection of ingredients, types of feeds, use of feed additives to formulate proper rations for different classes of livestock. (1-4/0-4)

AG017U FIELD CROP PRODUCTION 1-6
Develops and applies understandings and abilities in crop production covering management practices, plant growth factors, seed variety, tillage and harvesting practices. (0/2-12)

AG018U WILDLIFE RESERVES 4
Concentrates on proper wildlife management which necessitates carefully planned and maintained reserve areas. This course covers these management techniques, including plant material,

cover material, location and isolation.(2/4)

AG022U HORSE NUTRITION 4
Includes knowledge and understandings of types of feed stuffs used to fulfill required amounts of nutrients for different types of horses used under different conditions. (3/3)

AG026U GARDEN CENTER OPERATION 4
Covers purchasing, merchandising, advertising and business analysis as it pertains to the garden center. Students visit several local businesses as a means of interviewing owners.(2/4)

AG027U HOUSE PLANTS 4
Instructs students in the identification and cultural requirements of 150 semi-tropical to tropical plants commonly used as houseplants. Identification includes recognition of plants with both botanical and common names. Cultural requirements include such topics as soil mix, light, humidity, watering, and pest problems.(2/4)

AG028U GREENHOUSE FACILITIES AND EQUIPMENT 3
Studies design and construction methods utilized in greenhouses. Floor plans, environmental equipment and operational cost analysis are studied.(2/2)

AG029U LANDSCAPE CONSTRUCTION 4
Presents construction of retaining walls, mulched areas, patios, etc. Also covers proper methods for digging and planting trees and shrubs. (2/4)

AG030U BASIC LANDSCAPE DRAWING 4
Studies the landscape design process, functional and aesthetic organization of space and plant materials for pleasing effects. Site analysis, preparation of scaled drawings and lettering are practiced in laboratory exercises. (2/4)

AG031U RESIDENTIAL LANDSCAPE DESIGN 4
Deals with the actual development of landscape drawings for homeowner clients. Client needs and motivation are explored. Students develop scaled, formal drawings and informal sketches.(2/4)

AG032U RECREATIONAL AREA DESIGN 4
Deals with design of attractive, functional and durable areas utilized for recreational purposes. Structures, equipment and procurement techniques are analyzed.(2/4)

AG033U GROUNDS EQUIPMENT MANAGEMENT 4
Provides skills in the development and operation of a maintenance

system for grounds equipment inventories. Bidding, purchasing, recordkeeping and inventory analysis are stressed. Field trips are taken to several area park systems.(2/4)

AG034U COMMERCIAL LANDSCAPE DESIGN 4
Teaches skills in designing for industrial and institutional sites, churches, etc., including analysis of landscaping as a business and instruction on specifications, bidding and recordkeeping. Skills in customer interviewing are developed. (2/4)

AG035U COMMERCIAL PLANT PRODUCTION 4
Teaches production of plants for profit. Material presented includes growing techniques and scheduling, recordkeeping, and cost analysis for nursery and greenhouse businesses. (2/4)

AG036U FRUIT AND VEGETABLE PRODUCTION 4
Introduces the student to the production of midwestern fruits and vegetables and also provides much information on cultural practices, recommended varieties, storage, etc. Organic gardening is explored in depth. Demons-tration gardens are utilized. (2/4)

AG037U SOILS AND FERTILIZERS 5-6
Studies soil structures and classification, soil sampling, conservation practices and testing. Soil nutrients, pH analysis and amendments and soil chemistry are discussed. Practical lab exercises are completed. Students enroll for 1-2 individual study units.(5-6/5-6)

AG039U PLANT DISEASE AND INSECTS 4
Develops skills in identification and control of insects and diseases common to horticultural plant material. Special emphasis is devoted to symptom analysis.(2/4)

AG041U AGRIBUSINESS TRAVEL 2-4
Studies livestock, crop and management problems in agriculture in the United States through traveling to points of interest selected by the Agribusiness and Natural Resources Department. Student travel time is from one to two weeks.(0/4-8)

AG042U VFM WEED IDENTIFICATION 2-4
Includes material on identification, classification, and control of mid-western broadleaf and grassy weeds. Students learn to observe many individual plant characteristics as a means of identification. Much emphasis is placed on control. (1-4/0-4)

AG044U PLANT MATERIALS I 4
Develops skills in the identification and cultural requirements of 100 varieties of deciduous trees and flowering shrubs common to our geographical area.(2/4)

- AG045U PLANT MATERIALS II** 4
Studies the identification and cultural requirements of 35 evergreens, 40 deciduous ornamental trees and shrubs, vines and groundcovers. (2/4)
- AG046U PLANT MATERIALS III** 4
Studies the identification and cultural requirements of 75 ornamental trees and shrubs including many of the exotics and named varieties. (2/4)
- AG047U HERBACEOUS PLANT MATERIAL** 4
Studies the identification of annual and perennial flowers and bulb plants. Cultural requirements are explained for all plants. (2/4)
- AG048U PLANT PROPAGATION** 4
Covers methods of multiplication of plants by seed or vegetative cuttings, grafts, buddings, are presented. Students develop proper techniques in laboratory exercises. (2/4)
- AG051U HORSE SHOWS** 3
Identifies and applies necessary requirements to prepare a horse for show and includes instruction in participation of setting up and conducting a horse show. (2/2)
- AG053U SOIL FERTILITY** 4
Provides a working knowledge of soils and fertilizers. This course prepares a student for making proper amendments to an existing soil as a means of improving its productivity. (1-4/0-4)
- AG054U HORSEMANSHIP, FALL** 5
Studies horse care before and after riding; initial seat position; elements of the seat; posting trot; aids; turns; leads off the cantor; equitation; and coordination of the aids. (3/5)
- AG056U SOIL AND WATER MECHANICS** 4
Studies soil formation, types, classes and groups, soil erosion and control, soil fertility and fertilizers, their sources and effect on plants, land leveling, terracing and use of survey equipment. (2/4)
- AG057U TURFGRASS MANAGEMENT** 4
Considers the culture of turf with emphasis placed on soil, turf varieties and weed identification and control. (2/4)
- AG059U SPECIAL PROJECTS (NATURAL RESOURCES)** 1, 2, 3, 4, 6
Offers self-planned project work in individual interest areas. (0-4/1-8)
- AG060U HORTICULTURE MECHANICS II** 3
Covers the design and construction of plumbing and electrical installations in greenhouse applications. (2/2)
- AG061U RUMINANT NUTRITION** 3-4
Examines the anatomy and functions of ruminant digestive system along with discussions and demonstrations of feeding requirements and efficiencies of various classes of beef cattle. (1-4/0-4)
- AG062U HORTICULTURE EQUIPMENT** 4
Studies equipment needed to handle the multiple maintenance problems posed by widely different landscaped areas on campuses, golf courses, woodlands, paved areas, nursery proper, and in the tree service areas. (2/4)
- AG064U BEEF FEED LOT MANAGEMENT** 2
Analyzes, discusses and interprets specific beef finishing programs, nutrition, growth factors, health problems, economics of the beef finishing business. Students develop fundamental skills in handling and working with equipment and facilities in the beef finishing laboratory. (2/0)
- AG065U BEEF ENTERPRISE, SPRING** 2
Demonstrates and applies skills and relates through lecture various programs for marketing, development and husbandry of beef cattle and, in addition, demonstrates care of breeding stock through various stages of production. (1/2)
- AG072U SWINE ENTERPRISE, WINTER** 1-2
Studies farrowing house, weaning and nursing management Selection and breeding and records are stressed in the second half of the course. (1/3)
- AG073U SWINE ENTERPRISE, SPRING** 2
Studies life-cycle management practices and discusses different breeding, farrowing schedules, and marketing practices used in swine production. Some applied laboratory work is involved. (0-2/1-4)
- AG075U HORSE ENTERPRISE, WINTER** 3
Includes grooming, feeding, stabling, exercising and daily husbandry problems occurring in the winter quarter. Also includes some horsemanship. (1/4)
- AG078U HORSE HEALTH** 6
Offers insight into physiology of the horse. Discussion of diseases and health problems, parasites, signs of good and bad health, digestive problems and diseases, as well as basic aid care. (4/4)
- AG079U FIELD CROP PLANNING** 5
Designed to enable students to develop a corn and soybean management program. Included are units dealing with variety

selection, seedbed preparation, fertilization, weed and insect control, diseases, and approved practices in raw crop production. (3/4)

AG081U DAIRY PRODUCTION 1-12

Includes dairy selection, breeding, housing and equipment, nutrition, herd health and husbandry practices. This course is an elective, therefore, the class must be large enough to justify an instructor before offered. (1-6/1-6)

AG082U VFM COOP 3, 2

Is a supervised home farm work period for students in the Veterans Farm Management program. (0/4-6)

AG083U VFM RECORDS AND MANAGEMENT 4.5, 2.5, 3

Is an applied home farm business course for Veterans Farm Management students in the area of records and management. (4.5, 2.5, 3/0)

AG084U VFM MONOGASTRIC NUTRITION 2.5

Covers digestion, absorption, maintenance, growth, fattening and reproduction of monogastric animals. (2.5/0)

AG085U VFM FIELD CROP PROBLEMS 2.5

Develops understanding and abilities in diagnosing problems which may be encountered when growing corn and soybeans. (2.5/0)

AG086U VFM RUMINANT NUTRITION 3

Provides basic information needed by Veterans Farm Management students in meeting the food requirements of ruminants. (3/0)

AG087U VFM SOIL AND PLANT SCIENCE 3

Includes the effects of soil and applied nutrients on plant growth, yield and quality. Nutrient application techniques are explored to integrate fully soil fertility with crop management to ensure profitable land use. (3/0)

AG088U VFM SWINE PRODUCTION 3, 4, 4.5

Examines the fundamentals of swine production for the pork producer to enable him to improve the breeding, feeding and management of his swine enterprise and includes basic skills and new research ideas recently developed which will be beneficial to both the new and experienced pork producer. (2-5/0-4)

AG089U VFM SOIL FERTILITY 3, 4, 4.5

Concentrates on the nature and properties of soils including origin, formation, biological, chemical and physical properties, emphasizing soil management with sampling and testing for the determination of fertilizer requirements. (2-4/0-5)

AG090U VFM AGRICULTURAL FINANCE 3

Includes credit and its relation to increasing farm income; credit sources and their proper use, the security of credit and repayment capacities. (3/0)

AG092U VFM BEEF PRODUCTION 2,5,4

Examines the fundamentals of beef production for the beef producer to enable him to improve the breeding, feeding and management of his beef enterprise. (2.5,4/0)

AG093U VFM FORAGE AND OAT PRODUCTION 2.5

Involves study in the technical areas of various forages and of oats as a cash crop, and includes varieties, fertility programs and various management practices. (2.5/0)

AG094U VFM GRAIN MARKETING 3,4

Develops skills and knowledge in marketing grain commodities with emphasis on pricing and services performed in the marketing system. (3,4/0)

AG095U VFM TRACTOR MAINTENANCE 3

Is designed for those involved in the maintenance tune-up and minor repair of farm power units and provides practical instruction in engine timing, nozzle cleaning and adjustment and compression testing. (3/0)

AG096U VFM CORN PRODUCTION 3,4,4.5

Designed to enable students to develop a corn management program. Units deal with variety selection, seedbed preparation, fertilization, weed and insect control and disease control. (3,4,4.5/0)

AG097U VFM LIVESTOCK MARKETING 3

Studies the practical approach to buying and marketing of livestock and includes studies of local and terminal livestock marketing facilities, pricing and competition. (3/0)

AG098U VFM TILLAGE AND PLANTING EQUIPMENT ADJUSTMENT 2.5

Is an applied home farm business course for Veterans Farm Management students in the area of tillage and planting equipment adjustment. (2.5/0)

AG099U VFM GRAIN & FEED HANDLING 2.5

Discusses principles and economics of grain drying, selecting grain drying method and storage, use of silos and sealed structures, and determining capacities of structures. (2.5/0)

AG101U VFM WASTE MANAGEMENT I 2,3,4.5

Deals with animal waste and economics of disposal, including li-

quid manure handling, oxidation ditch and anaerobic manure lagoons.(2,3,4.5/2,4)

AG102U VFM HARVESTING EQUIPMENT ADJUSTMENT 3
Includes material on combine operation, field adjustment, methods of reducing loss and the economics of owning a combine.(3/0)

AG103U AGRICULTURAL FINANCE 2-4
Identifies credit sources in agriculture where and how to secure credit, interest rates and repayment capacities for maximum farm income. (1-4/0-4)

AG105U VFM FARMSTEAD PLANNING AND MECHANIZATION 4.5
Analyzes a farmstead, including the replanning of it, and the use of capital to replace labor when profitable. The course includes types of equipment and methods of mechanization. (4.5/0)

AG106U VFM LAND USE AND CONSERVATION 2.5
Is an applied home/farm business course for Veterans Farm Management students in the area of land use and conservation.(2.5/0)

AG107U VFM FUTURES MARKET 2.5,3,4
Is an applied home farm business course for Veterans Farm Management students in the area of the futures market. (2.5,3,4/0)

AG108U SHOP FACILITIES AND EQUIPMENT 3
Concentrates on the maintenance of physical plant and grounds of the farm equipment dealership in the areas of general carpentry, plumbing, electrical wiring and electric motors.(3/0)

AG109U AG POWER UNIT OPERATION .5-6
Operating and maintaining various sizes of tractors, skid loaders, and single-unit and multiple-unit pickup trucks. Students may choose among twelve units, each carrying .50 credits.(0/1-12)

AG111U FARM SUPPLY ENTERPRISE, WINTER 2-4
Discusses problems and current topics in farm supply (1-4/0-6)

AG112U AGRI-BUSINESS MANAGEMENT 2-4
Students participate in advertising and promotion, pricing of merchandise, figuring discounts and taxes, the setting up of an agricultural merchandise display and agri-business filing systems, and simplifying work in an agriculture business. (1-4/0-4)

AG114U CROP ENTERPRISE, FALL 2
Studies and involves students in harvesting of corn. Preparation of

fall tillage and fall fertilizer application is also studied. Records are stressed.(1/3)

AG115U MODERN CORN PRODUCTION 2
Studies and compares different types of tillage methods, seed varieties, fertilizer programs, diseases and chemical application used in modern corn production.(2/0)

AG116U CROP ENTERPRISE, SPRING 2
Identifies and compares different tillage methods of establishing forage and oats. In addition, the course looks at seed variety, seed rates and depths of planting, inoculation of seed, and outlines steps in forage improvement and renovation of pastures.(1/2)

AG148U APPLIED LIVESTOCK HUSBANDRY 1,6
Employs competencies developed in supportive animal science courses in specialized laboratory skills and activities in the student's specific interest area. Laboratory competencies developed shall be pre-determined by student and instructor. The course may be repeated for credit with instructor's consent.(0/4-24)

AG150U LIVESTOCK NUTRITION 2-4
Provides basic information needed by salesmen, herdsman and farmers in meeting the feed requirements of livestock. It includes an understanding of biological principles and body processes of animals. (1-4/0-4)

AG152U LAND USE AND CONSERVATION 2-4
Studies conservation practices, such as terraces, contours and rotations in production agriculture. In addition, the course also studies soil types and their capacity to produce field crops.(1-3/2-4)

AG173U CURRENT AGRICULTURAL TOPICS 1-4
New developments in livestock, crops, farm machinery and management are presented. Field trips to various agricultural events are a part of this course. (1-4/0-6)

AG179U ADVANCED LIVESTOCK EVALUATION 3-6
Further develops students' potential in judging of livestock. Farm laboratory livestock and livestock farms will serve as a means for applying classroom knowledge. Students will also apply knowledge in various field trips to livestock exhibitions to judge and give reasons. The course may be repeated for credit with instructor's consent. (1-6/1-8) Prereq: Animal Evaluation and Selection.

AG198U VFM CROP DRYING PRINCIPLES 3
Includes the principles by which crops are dried and economical

102

aspects of drying for selection by the farmer/customer. (3/0)

AG200U ANIMAL HEALTH PRODUCTS 2-4

Concentrates on products used to control diseases and parasites in animals. This course deals with product recommendations, basic principles of disease prevention and control, and effect of weather and environment on disease and disease symptoms. (1-4/0-6)

AG201U HORSE PHYSIOLOGY 4

Discusses and identifies the conformation of the horse, the respiratory, digestive, nervous and circulatory systems plus skeletal and muscle structure.(3/3)

AG202U HORSE ENTERPRISE, SPRING 3

Includes grooming, feeding, personality, stabling, exercising, facilities and daily husbandry problems occurring in the spring of the year. Also includes show preparation.(1/4)

AG203U HORSEMANSHIP, WINTER 4

Continues Horsemanship, Fall, with emphasis placed on advance riding styles and techniques. (2/4)

AG204U HORSE BREEDING 6

Covers the physiology of breeding, brood mare selection and care, and stallion management. Also breeding techniques, including artificial insemination.(4/4)

AG205U FARMSTEAD PLANNING 2

Includes the principles of farmstead planning and arrangement, particularly toward site selection, traffic and predominant selection factors. Emphasis will be placed on distance from water and other services.(1/2)

AG206U GREENHOUSE PRACTICES 4

Covers the design and operation of greenhouse structures, heating, cooling and watering systems. Equipment utilized in pesticide applications is also discussed.(2/4)

AG207U AGRICULTURAL SUPPLY MANAGEMENT, FALL 2-4

Covers decision-making in office procedures and records management. (0-4/0-8)

AG208U ANIMAL SCIENCE MANAGEMENT, FALL 2-4

Provides the "whys" of decision-making in farm management, financial, cash flow, budgeting analysis of lab enterprises as well as studies in genetics, nutrition and livestock production.(1-3/2-4)

AG209U HORSE ENTERPRISE, FALL 3

Includes grooming, feeding, stabling, exercising and daily husbandry problems occurring in the fall of the year and also working with a colt crop.(1/3)

AG210U HORSE TRAINING 6

Provides instructions for obtaining the abilities and skills of training various breeds and types of horses. (4/4)

AG211U HORSE JUDGING 6

Provides instruction in judging various breeds and qualities of horses. Students will apply instruction by judging in competition and giving reasons.(4/4)

AG212U STABLE MANAGEMENT, FALL 6

Designed to provide understandings and abilities in the organization, business aspects, and operation of horse stables. Areas of study include records, care and health of horses in the management of stables.(4/4)

AG213U ANIMAL SCIENCE MANAGEMENT, WINTER 5

Provides the "whys" of decision-making in animal health, genetics, facilities and equipment, and records management. (4/2)

AG214U AGRICULTURAL SUPPLY MANAGEMENT 2-4

Analyzes decision-making in product merchandising and purchasing, machinery costs, crop planning and various tillage methods. (1-4/0-4)

AG215U MACHINERY ECONOMICS 2-4

Studies the economics relating to size, efficiency, maintenance, and use of farm power and machinery. Includes discussion of renting, leasing and/or purchasing equipment. (1-4/0-4)

AG216U STABLE MANAGEMENT, WINTER 6

Continuation of Stable Management, Fall, with emphasis on facilities, equipment, records and money management.(4/4)

AG217U SPECIAL PROJECTS—TECHNICAL AGRICULTURAL STUDY 3, 4, or 6

Designed as a self planned individual instruction course for student work in the area of technical agricultural study. (3, 4, 6/0)

AG218U SPECIAL PROJECTS-AGRONOMY 3

Is designed as a planned individual instruction course where the student and instructor agree upon the project. Upon completion, the project is evaluated by instructor.(0/6)

- AG219U SPECIAL PROJECTS-ANIMAL SCIENCE** 3
Designed as a planned individual instruction course where the student and instructor agree upon the project. Upon completion, the project is evaluated by an instructor.(0/6)
- AG220U SPECIAL PROJECTS-HORSE SCIENCE** 3
Designed as a self-planned individual instruction course designed for student work in the area of horse science under the evaluation of an instructor.(0/6)
- AG221U SPECIAL PROJECTS—AGRIBUSINESS** 1, 2, 3 or 6
Designed as a self planned individual instruction course designed for student work in the area of agribusiness. (0-4/1-12)
- AG222U SPECIAL PROJECTS-HORTICULTURE** 1,3,4,6
Individualized study courses jointly planned by staff and student in areas of special interest. Research, lab experimentation or demonstration and other learning techniques can be involved. (0/2,6,8,12)
- AG223U HOOF CARE** 4
Provides instruction around the care and condition of horses' legs and hoofs.(2/4)
- AG225U ANIMAL SCIENCE MANAGEMENT, SPRING** 3
Provides the basis of decision-making in marketing, budgeting, selection of breeding stock and breeding stock management. (2/3)
- AG227U STABLE MANAGEMENT, SPRING** 3
Continues Stable Management, Winter, with emphasis on specialized areas of stable management, types of stables, specialized stations, and care and health of breeding stock.(2/2)
- AG228U SPECIALIZED TRAINING** 4
Provides in-depth instruction in the specialized training of various breeds and types of horses.(2/4)
- AG229U HORSEMANSHIP, SPRING** 5
Continues Horsemanship, Winter, with emphasis placed on advanced riding styles. Basic principles and fundamentals in schooling a horse over preliminary jumps.(2/6)
- AG230U ANIMAL EVALUATION AND SELECTION** 3
Develops students' skills in livestock selection. The farm laboratory's livestock and various field trips to livestock farms will serve as a means of applying the classroom knowledge. Some carcass evaluation will be included. (2/2)
- AG231U ANIMAL HEALTH LAB** 4-6
Covers the restraint of livestock, observation of livestock, syringe use, vocabulary of animal health terms, as well as the producer and veterinarian working relationships. (1-5/1-8)
- AG232U SWINE HEALTH** 4-6
Studies the causes and prevention of swine diseases of economic importance in Iowa, swine anatomy and physiology. In addition it develops a swine herd health management calendar, management of purchased animals, control of external and internal parasites, veterinarian relations, and swine and animal health laws and regulations. (1-6/0-6)
- AG233U SWINE ENVIRONMENT AND FACILITIES** 3-4
Discusses and appraises several different types of swine facilities, ventilation, confinement problems, waste disposal systems, feeding machinization and EPA standards through field trips and lectures. (1-4/1-6)
- AG234U SMALL ANIMAL PSYCHOLOGY** 4-6
Studies dog and cat's nervous mechanism, including dog and cat senses, reflexes and conditioned reflexes, instincts, needs, drives, hormones, and their effect on behavior. The course also studies how small animals learn and how to condition small animals for training. (2-6/0-8)
- AG235U SMALL ANIMAL HEALTH** 4-6
Includes state and federal laws regarding dogs and cats; anatomy and physiology; causes and preventions of common dog and cat diseases; how to work with a veterinarian; and determination of pulse, respiration, and temperature. (2-6/0-8)
- AG236U KENNEL MANAGEMENT** 4-6
Small animal observation techniques, nutrition, grooming and conditioning are areas of study. Also covers vocabulary of small animal health terms and budgeting and records. (2-6/0-8)
- AG237U SPECIAL PROJECTS-ANIMAL HEALTH** 1,2,3,4,5,6,9
Is designed as a self-planned individual instruction course for student work in the area of animal health.(0/2-18)
- AG238U CATTLE HEALTH** 5
Studies the causes and prevention of cattle diseases of economic importance in Iowa, cattle anatomy and physiology, the development of a feedlot cattle and beef cow herd health management calendar, the control of external and internal parasites, skills in how to work with a veterinarian and a knowledge of cattle health laws and regulations.(3/5)

- AG239U HORSE INDUSTRY PROBLEMS** 1-12
Is a supervised, independent study course. The student, in consultation with the instructor, designs the horse industry competencies to be learned. Students generally attain these competencies off-campus in various horse industry businesses. (0/2-36) Prereq: Horse Husbandry classes first year.
- AG241U GREENHOUSE PRODUCTION II** 3
Analyzes horticulture crops grown commercially in greenhouses. Potted and bench crops receive special emphasis. Cultural requirements, cost comparison, and labor demands are presented.(2/2)
- AG243U INTERIOR LANDSCAPING** 3
Covers the design and construction of interior plant installations. Terrariums, hanging pots, fountains and related materials are constructed.(2/2)
- AG244U PERENNIAL FLOWER CULTURE** 3
Studies perennial flowers grown in the midwest. Specific plant requirements and insect and disease problems are discussed. Propagation methods and perennial garden design are emphasized.(2/2)
- AG245U ANNUAL FLOWER CULTURE** 3
Discusses culture and utilization of annual flowers encompassing plant characteristics, insect and disease problems and floral garden design. (2/2)
- AG247U HORSE FEED RATIONS** 4
Includes selection of ingredients, types of feed, use of feed additives to formulate proper rations for different classes of horses.(3/3)
- AG248U BEEF CATTLE ENVIRONMENT AND FACILITIES** 2-4
Discusses and appraises several different types of beef cattle and working, handling and feeding facilities in addition to feed storage through lecture and field trips. (1-4/1-6)
- AG249U BEEF AND DAIRY CATTLE
ARTIFICIAL INSEMINATION** 2
Develops skills of artificial insemination, heat detection and supportive background knowledge for beef and dairy herds, and discusses recommended nutrition, management and genetics. (1/2)
- AG250U BEEF COW MANAGEMENT** 2
Analyzes, discusses and interprets specific beef cow programs and studies nutrition, cattle breeding and beef cow economics.
- Students develop fundamental skills in handling and working with equipment and facilities in beef cow lab operations.(2/0)
- AG251U MODERN SOYBEAN PRODUCTION** 2
Studies and compares different types of tillage methods, seed varieties, fertilizer programs, diseases and chemical application as well as weed control and new harvest methods used in modern soybean production.(2/0)
- AG252U PLANT MATERIAL MAINTENANCE** 4
Studies the pruning, spraying, fertilizing and performing related maintenance practices for trees and shrubs.(2/4)
- AG253U HORTICULTURE CHEMICAL APPLICATION** 3
Provides skills in calibration, maintenance and operation of sprayers, foggers and granule applicators. Pesticide utilization, safety equipment and governmental regulations are presented.(2/2)
- AG254U GROUNDS MANAGEMENT PROBLEMS** 4
Analyzes grounds maintenance needs and teaches the development of management programs for recreational and commercial grounds. The campus laboratory is utilized as a study project.(2/4)
- AG255U GREENHOUSE PRODUCTION I** 3
Provides students with skills in the propagation of plants from seeds and vegetative cuttings in greenhouse production. Cultural requirements of seedlings, cuttings and potted stock are demonstrated. (2/2)
- AG256U EVERGREEN ORNAMENTALS** 3
Identification and culture of evergreens commonly grown in the midwest. Insect and disease problems are identified and control measures are demonstrated.(2/2)
- AG257U DECIDUOUS ORNAMENTALS** 3
Covers the identification and culture of basic deciduous plants used in midwestern landscaping. Insect and disease problems are identified and control measures are demonstrated. (2/2)
- AG258U INTERIOR PLANT MATERIALS** 3
Covers the identification and culture of tropical, succulent and related plant materials commonly grown indoors.(2/2)
- AG259U HORTICULTURAL MECHANICS I** 3
Develops skills in the selection and utilization of wood and concrete products for horticultural applications.(2/2)

AG260U HORTICULTURE PRODUCTION AND MARKETING 3
Analyzes the business requirements of horticulture enterprises. Investment requirements, operational costs and returns are examined and compared.(2/2)

AG261U VEGETABLE PRODUCTION 3
Discusses production of vegetable crops common to the midwest with emphasis on cultural practices, varieties, pest control and processing.(2/2)

AG262U FRUIT PRODUCTION 3
Covers the identification and cultural requirements for berries, grapes, tree fruits and similar crops. Storage and processing methods are explained and demonstrated.(2/2)

AG263U AG CAREER ORIENTATION 1
Assembles all first-year Agribusiness and Natural Resources Department students together for the purpose of further understanding their present career choice and/or perhaps pending career choices. Most career information presented is inter-related with Kirkwood Community College.(1/0)

AG265U SPECIALIZED DOG TRAINING 3
Applies techniques in training dogs for open, utility and hunting classes for judged shows.(2/2)

AG266U AGRICULTURE LEADERSHIP 1-2-3
Develops skills in using parliamentary procedure, business meeting agendas, techniques of delegation, communications module, organizational structure and listening skills. Determining cooperative activities, organizational funding, committee functions and leading discussion groups.(1-2-3/0)

ART

College Parallel

AT001T ART APPRECIATION 4
Provides an overview of art from a historical, contemporary and aesthetic frame of reference. Recommended for non-art majors.(3/2)

AT002T ART HISTORY: PRE 15th CENTURY 3
Studies architecture, sculpture and painting from pre-history to Rome.(3/0)

AT003T ART HISTORY: 15th CENTURY TO 19th CENTURY 3
Studies architecture, sculpture and painting from the medieval

period through the 18th century.(3/0)

AT004T ART HISTORY: 20th CENTURY 3
Studies architecture, sculpture and painting in the 19th and 20th centuries.(3/0)

AT005T FUNDAMENTALS OF CERAMICS I 2
Introduces high-fire, hard-built and wheel-thrown pottery, fundamental glaze and clay experimentation.(0/4)

AT006T FUNDAMENTALS OF CERAMICS II 2
Continues Ceramics I. (0/4)Prereq: AT005T or permission of instructor.

AT007T FUNDAMENTALS OF CERAMICS III 2
Continues Ceramics I and II with emphasis on form, throwing, and advanced glaze techniques.(0/4)Prereq: AT006T or permission of instructor.

AT008T FUNDAMENTALS OF DESIGN I 2
Introduces basic design concepts, utilizing contemporary concepts of the visual experience.(0/4)

AT009T FUNDAMENTALS OF DESIGN II 2
Continues Design I. Problems of design form and structure.(0/4) Prereq: AT008T or permission of instructor.

AT010T FUNDAMENTALS OF DESIGN III 2
Continues Design I and II with emphasis being placed on the third dimension, motion and space.(0/4)Prereq: AT009T or permission of instructor.

AT011T FUNDAMENTALS OF DRAWING I 2
Practices basic elements of perspective drawing, analytical drawing and figure drawing.(0/4)

AT012T FUNDAMENTALS OF DRAWING II 2
Continues Drawing I. Analysis of subject matter and accurate descriptive visual drawing.(0/4)Prereq: AT011T or permission of instructor.

AT013T FUNDAMENTALS OF DRAWING III 2
Emphasis placed on the figure using the various media of drawing.(0/4)Prereq: AT012T or permission of instructor.

AT014T FUNDAMENTALS OF LETTERING 2
Studies basic letter forms and the use of reed pens, problems in page design and manuscript writing.(0/4)

106

AT015T FUNDAMENTALS OF PAINTING I	2
Introduces oil painting.(0/4)	
AT016T FUNDAMENTALS OF PAINTING II	2
Continues Painting I. Includes oil and various water color methods.(0/4)Prereq: AT015T or permission of instructor.	
AT017T FUNDAMENTALS OF PAINTING III	2
Continues Painting I and II with emphasis on composition and color.(0/4)Prereq: AT016T or permission of instructor.	
AT018T FUNDAMENTALS OF PHOTOGRAPHY I	2
Use of camera, light meter and dark room; theory of photography and contemporary photography methods.(0/4)	
AT019T FUNDAMENTALS OF PHOTOGRAPHY II	2
Emphasizes creative aspects of contemporary techniques.(0/4)Prereq: AT018T or permission of instructor.	
AT020T FUNDAMENTALS OF PHOTOGRAPHY III	2
Emphasizes individual problems and modern aesthetics in photography. (0/4) Prereq: AT019T or permission of instructor.	
AT021T FUNDAMENTALS OF PRINTMAKING I	2
Introduces wood cut, engraving, dry point and silk screen techniques in contemporary and traditional methods of reproducing.(0/4)	
AT022T FUNDAMENTALS OF PRINTMAKING II	2
Introduces basic methods of Intaglio printing and etching.(0/4)Prereq: AT021T or permission of instructor.	
AT023T FUNDAMENTALS OF PRINTMAKING III	2
Continues Fundamentals of Prints and Composition I and II with emphasis on advanced composition and technical methods.(0/4)Prereq: AT022T.	
AT024T FUNDAMENTAL OF SCULPTURE I	2
Introduces carving, modeling and casting.(0/4)	
AT025T FUNDAMENTALS OF SCULPTURE II	2
Continues Sculpture I with emphasis on welding and combining medias in the sculpture area. Exploration of form and color as they relate to sculpture.(0/4)Prereq: AT024T or permission of instructor.	
AT026T FUNDAMENTALS OF SCULPTURE III	2
Emphasizes advanced techniques and form with concern for applying methods of the construction of a major project in sculpture.(0/4)Prereq: AT025T	

Vocational-Technical

AT001U FASHION ART	3
Develops sketching skill for quick illustrative purposes through a study of body proportion, design presentation, rendering techniques, motion studies and principles of illustration. Student assignments include independent projects, development of fashion training aids, newspaper illustrations and seminar presentations.(3/0)	
AT002U DECORATIVE ACCESSORIES	2
Analyzes selling points, use and customer coordination of accessories in the home. Knowledge is developed in artwork, flowers, table appointments, porcelain and ceramics, and lighting and lighting theory. (2/0)	
AT003U SURVEY OF INTERIORS I	3
Surveys the development of architecture, ornament, decorative arts, interiors and furniture styles from the prehistoric to the 1800s. Projects require students to create their interpretations of a traditional interior through use of furniture, accessory selection and color materials board.(3/0)	
AT004U DESIGN RELATIONSHIPS	2
Studies the elements and principles of design and visual perception and their relationships and application to merchandising and design activities.(2/0)	
AT006U SURVEY OF INTERIORS II	2
Continues Survey I to provide a study of the period from 1800 through the twentieth century.(2/0)Prereq: Survey of Interiors I.	
AT001V FLORAL DESIGNING I	4
Introduces basic designing principles and rules; study of geometric designs of bouquets, corsages, Christmas arrangements, foliage arrangements and potted plants; care of cut flowers and foliages; use of tools and supplies; identification of flowers and foliages, and pricing and expediting a floral gift. (1/7.5)	
AT002V FORAL DESIGNING II	2
Studies floral designing of geometric forms including cut flowers, corsages, funeral and memorial flowers, plastic arrangements, potted plant decoration, cost pricing and expediting floral gifts. Prereq: Floral Designing I. (7 weeks) (0/7.5)	
AT003V FLORAL DESIGNING III	2
Studies floral designing of geometric forms including cut flowers, funeral and memorial flowers, and basic wedding designs. Prereq: Floral Designing II. (7 weeks) (0/7.5)	

AT004V FLORAL DESIGNING IV 3
Continues geometric forms in wedding designs, advanced cut flowers and corsage designing. Prereq: Floral Designing III.(0/7.5)

BIOLOGICAL SCIENCES

College Parallel

BY030T PRINCIPLES OF BIOLOGY 4
Stresses the organization of plant and animal life at the molecular and cellular level: microscopic techniques, origin of life, cellular structure and function, plant and animal development, and genetics. (3/3)

BY031T BIOLOGY OF ORGANISMS 4
Emphasizes animal structure and function. Covers dissection of two representative vertebrates (the frog and fetal pig). Includes a study of the osmoregulatory, transport, digestive, skeletal, muscular, nervous, endocrine and reproductive systems, as well as the evolutionary significance of each. Prereq: BY030T or departmental approval. (3/3)

BY032T ENVIRONMENTAL BIOLOGY 4
Emphasizes living systems and their environmental interactions. Includes a study of basic ecological concepts, energy, nutrient and mineral cycling, animal behavior, and population and community ecology. Includes several field trips to terrestrial and aquatic habitats and a specialized applied ecological project. Prereq: BY030T, BY031T or one quarter of Man and the Environment and departmental approval. (3/3)

AUDIO-TUTORIAL LAB FOR PRINCIPLES, ORGANISMS, AND ENVIRONMENTAL BIOLOGY
Uses audio-tutorial approach. The student meets in a lecture session one hour per week, in a clarification seminar two hours per week and in a scheduled lab three hours per week—the third hour of which is optional. Emphasis in the courses is on the lab. Single-concept films, demonstrations, and individual experimentation are integrated with taped information to provide an opportunity for the student to approach the subject matter at his own pace. Instructions are always available in the laboratory, and student-instructor discussions are encouraged.

BY033T INDEPENDENT STUDY IN BIOLOGY 1
Provides readings, papers and/or basic research or other projects under the individual guidance of a staff member. Prereq: Consent

of instructor and department chairman is required before registering. (Hours arranged)

BY034T INVERTEBRATE ZOOLOGY I 4
Surveys the classification, diversity, morphology, physiology, development, behavior, ecology and evolutionary relationships of the major invertebrate phyla. Emphasis will be on living forms, both freshwater and marine. Field work will stress adaptations and ecological relationships. (3/2) Prereq: BY030T, (BY031T may be taken concurrently) or consent of instructor.

BY035T INVERTEBRATE ZOOLOGY II 4
A continuation of Invertebrate Zoology I. Groups covered will include the molluscs, annelida, arthropoda, echinodermata, in addition to numerous minor phyla. Laboratory work will stress both morphology and physiology, in addition to ecological distribution. (3/2) Prereq: BY034T.

BY036T VERTEBRATE ZOOLOGY I 4
Introduces the principles of vertebrate zoology, emphasizing such topics as vertebrate morphology; taxonomy and systematics; evolution, phlogenetic relationships and diversity. Fishes, amphibians and reptiles are covered. Laboratory work supplements the lectures. (3/2) Prereq: BY030T, (BY031T may be taken concurrently) or consent of instructor.

BY037T VERTEBRATE ZOOLOGY II 4
A continuation of Vertebrate Zoology I with emphasis on birds and mammals. In addition, ecological relationships and population dynamics are also stressed. Field trips as well as in-lab experiences supplement the material in this course. (3/2) Prereq: BY036T.

BY038T GENERAL BOTANY 4
Studies fundamental concepts of plants including the relationship of structure and function, reproduction, development, ecology and evolution. (3/2) Prereq: BY030T.

BY039T HUMAN ANATOMY AND PHYSIOLOGY I 4
Designed primarily for the medically oriented student in health occupations and prospective majors in pharmacy, medical technology, baccalaureate degree nursing, zoology and other natural science fields. Integrates the study of mammalian anatomy and physiology with emphasis on structure and function of the human body. Gross and microscopic aspects of the interdependency of the functional body systems are stressed. Includes the study of the body as a whole, its organization and appearance of the cells and tissues as basic structural - physiological units. Emphasis will begin with a study of basic body

structure, in addition to a concentrated study of body fluids, blood, R - E systems, and the endocrine system with applications to homeostasis. Lab work is based on current topics of study. (3/3)

BY040T HUMAN ANATOMY AND PHYSIOLOGY II 4
Further studies of the structure and function of systems such as nervous, skeletal, muscular and cardiovascular are continued. Laboratories are designed to show basic phenomena such as cardiology, muscle response and acid - base balance as well as dissection to integrate over - all structure. (3/3) Prereq: BY039T.

BY041T HUMAN ANATOMY AND PHYSIOLOGY III 4
Further studies of the structure and function of systems such as respiratory, digestive, excretory and reproductive, etc. are continued. Laboratory work is based on current topics of study with emphasis on homeostasis. Lectures and laboratories are designed to complement each other. (3/3) Prereq: BY040T.

BY042T MICROBIOLOGY I 4
Emphasizes pathogenic bacteria and viruses: Their morphology, cultural characteristics and pathogenicity, along with epidemiology, transmission, diagnostic test and an introduction to immunology. Laboratory emphasis on culturing, identification, staining, sterilization, disinfection and asepsis. (3/3)

BY043T MICROBIOLOGY II 3
A continuation of Microbiology I with continued emphasis on immunology, diagnostic test, viruses and viral diseases and with studies in the Rickettsia and Fungi. (2/4) Prereq: BY042T or instructor permission.

BY044T AVIAN WILDLIFE 4
Presents a practical study of life habits, migration, protection laws, habitats and general information about avian (birds) wildlife and is designed for students in the Parks and Natural Resources program. (4/0)

BY045T AQUATIC WILDLIFE 2
Covers fish and fish management including identification, habitat, and reproduction. In addition, management technique is stressed and is designed for students in the Parks and Natural Resources program. (2/1)

BY046T MAMMALIAN WILDLIFE 4
Presents an exhaustive study of the natural life habitats as well as identification of Iowa mammals. Special attention is devoted to conservation practices that are recommended for each individual species and is designed for students in the Parks and Natural Resources program. (4/0)

Vocational - Technical

BY001U DENTAL ANATOMY II (DLT) 2
Continues the study of dental anatomy through waxing techniques in restoring individual characteristics of each tooth in the permanent dentition as it relates to prosthetic dentistry. (2/0)

BY002U DENTAL ANATOMY I (DLT) 3
Introduces terminology, identification, description and individual characteristics of the teeth and surrounding structures found in human dentition. Includes the drawing of various views of individual teeth, and the formation of required surfaces in wax on stone casts. (2/2)

BY003U ORAL ANATOMY 3
Specifies the anatomical and physiological features, structures and function of the human head that must be considered in the fabrication of dental prosthesis. (3/0)

BY006U BASIC ANATOMY AND PHYSIOLOGY 4
Designed and required for students enrolled only in the following health occupation careers: Nursing Education, Orthopaedic Physicians Assistant, Medical Assistant, Medical Secretary, and Occupational Therapy Assistant. A systems approach to human structure and function is covered in one quarter. (3/2)

BY009U HOMEOSTATIC PHYSIOLOGY 4
Designed specifically for associate degree nursing students. Major emphasis of the course will consist of integrating mechanisms of the nervous, muscular, endocrine, cardiovascular, respiratory, digestive and excretory systems used in maintaining homeostasis and their deviations in pathophysiology. Combined lectures, discussions and demonstrations are used in the course presentation. Prereq: Basic Anatomy and Physiology or equivalent. (4/0)

BY010U PRINCIPLES OF MICROBIOLOGY 3
Studies the nature of bacteria, related microorganisms and their relation to the economy of man and nature, with application to industry, sanitation, agriculture and disease. Laboratory emphasizes on culturing, identification, staining, physiology, sterilization and disinfection. (2/4) Prereq: Departmental approval.

BY011U FUNCTIONAL ANATOMY 4
Is designed only for Occupational Therapy and Orthopaedic Physicians Assistant students for a detailed presentation of applications of functional neurology, skeletal and muscular structure and function and regional functional anatomy of the limbs and back. Course presentation includes lecture, group - study, seminar and discussion. (4/0) Prereq: Basic Anatomy and Physiology or equivalent.

BY109U ORAL MICROBIOLOGY 2
Emphasizes micro-organisms of the oral cavity, their morphology, growth characteristics pathogenicity and transmission. Laboratory emphasis is on basic microbiological techniques, sterilization, disinfection and asepsis in relation to the dental office/clinic and patient treatment. (2/4)

BY110U DENTAL ANATOMY 3
Examines the structure, function and form of the teeth, individual teeth and their supportive structures. (2/1)

BY111U HEAD AND NECK ANATOMY 3
Examines general plan of the body as an integrated whole. Emphasis on the structure and function of the head and neck. (2/1)

BY004V BASICS OF PLANT GROWTH 3
Introduces the parts of plants, their functions and how they work together to perform the basic process of growth. Explores the technique of plant propagation by sexual methods including cutting, grafting and budding. Introduces soils, physical properties and the effect these have on fertility. (3/0)

BY005V DIAGNOSING PLANT DISORDERS I 1
Introduces the causes of plant disorders caused by the control of environmental conditions, soil and fertility, plant diseases and insects. (7 weeks) (2/0)

BY006V DIAGNOSING PLANT DISORDERS II 1
Continues into the causes of plant disorders caused by the control of environmental conditions, soil and fertility, plant diseases and insects. Prereq: Diagnosing Plant Disorders I. (7 weeks) (2/0)

CHEMISTRY

College Parallel

CH001T PRINCIPLES OF CHEMISTRY 3,4
Is designed for students who have not taken high school chemistry or those with otherwise deficient backgrounds. It covers the basis of inorganic chemistry requiring a working knowledge of introductory algebra. Topics include: introduction to measurement, atomic structure, chemical bonding, chemical reactions, kinetic molecular theory, chemical periodicity, and acids, bases and salts. The course may be taken as lecture only or lecture and laboratory.

CH002T FUNDAMENTALS OF ORGANIC CHEMISTRY 4
Provides a survey of organic chemistry as a continuation of Prin-

ciples of Chemistry and is designed to give the student an introduction to the structures of organic compounds, nomenclature, physical and chemical properties, and organic reactions. Based primarily on the functional group approach. Prereq: Either high school chemistry or CH001T. (3/2)

CH003T FUNDAMENTALS OF BIOCHEMISTRY 4
Continues Fundamentals of Organic Chemistry to give the student a survey of the chemistry of living organisms including basic chemistry of carbohydrates, lipids, proteins and nucleic acids, and an introduction to metabolism. Prereq: CH002T, or CH008T, or departmental approval. The three courses, of CH001T, CH002T, and CH003T are a normal sequence for students in nursing. (3/2)

CH004T QUANTITATIVE ANALYSIS 6
Introduces methods of chemical analysis stressing gravimetric, volumetric and spectrophotometric approaches. Emphasis is placed on fundamentals of measurement, treatment of data, and error analysis. (3/6) Prereq: CH006T.

CH005T GENERAL CHEMISTRY I 5
Studies the basic principles of inorganic chemistry with emphasis on such concepts as measurements and problem solving, chemical reactions and equations, stoichiometry, atomic structure and nuclear chemistry, periodicity, chemical bonding, kinetic molecular theory and gas laws, and structure and properties of matter. Prereq: CH001T or high school chemistry, and a working knowledge of algebra. (4/2)

CH006T GENERAL CHEMISTRY II 5
Studies colligative properties along with thermodynamics and kinetics, chemical equilibrium, electrochemistry, acids, bases, and complexions, and an introduction to organic chemistry. Prereq: CH005T. (4/2)

***CH007T NUTRITION** 4
Designed to show the relationship between sound nutrition and good health. Topics studied are: energy requirements, carbohydrates, lipids, proteins, vitamins, minerals, metabolism physical exercise, dieting, weight problems, evaluation nutritional claims, vegetarianism, and proper nutrition during pregnancy and lactation. (3/2)

CH008T ORGANIC CHEMISTRY I 4
Introduces theory and practice of organic chemistry with emphasis on structure and nomenclature. Areas especially stressed are chemical bonding, functional groups, various types of isomerism, aromaticity, resonance, tautomerism and spectral interpretation. The lab includes the use of U.V. - visible, and I.R. spec-

trophometers. (3/3) Prereq: CH006T or departmental approval.

CH009T ORGANIC CHEMISTRY II 4
A continuation of Organic I with emphasis on organic reactions and reaction mechanisms. The lab includes the preparation of several organic compounds. (2/3) Prereq: CH008T.

CH010T ORGANIC CHEMISTRY III 4
A continuation of organic reactions and reaction mechanisms followed by a brief intro to Biochemistry. (3/3) Prereq: CH009T.

***CH013T INDEPENDENT STUDY IN CHEMISTRY** 1
Provides readings, papers, and/or basic research or other projects under the individual guidance of a staff member. Prereq: Departmental approval. (1/0)

Vocational - Technical

CH001U VFM AGRICULTURAL CHEMICALS 2.5
Is a practical approach to insect and weed control and includes identification of agriculture pests and chemical control with emphasis on the safe use of chemicals. (2.5/0)

COMMUNICATIONS

Developmental

CM002D WRITING LABORATORY D
Provides students who need or desire additional work in writing with an opportunity to secure it. Periods to be arranged.

***CM005D ENGLISH AS A SECOND LANGUAGE** 4
Provides instruction in English as a second language for non-English speakers only. Students will be tested for English proficiency and will be placed at elementary, intermediate or advanced levels. Course may be repeated for credit until student reaches desired proficiency level in communication skills. (4/0)

***CM103D COMPOSITION TECHNIQUES I** 4
Offers help to students who are concerned about grammar and literary skills. Emphasis on clear writing and effective expression. Part classroom work and writing lab work. This course is developmental credit and does not count toward graduation. (4/0)

College Parallel

CM101T COMPOSITION I 4
Studies expository writing, including the rhetorical techniques of

description, exemplification and definition, the organization of a coherent and unified paper, and critical thinking for the purpose of dealing with propaganda and persuasive techniques. Required of all students for AA or AS degree. (4/0)

CM105T INTERMEDIATE COMPOSITION 3
Develops students' understanding of modern rhetorical theory and English prose style. Instruction and practice in the art and craft of writing, and guidance in enlarging the student's power of thought. (3/0) Prereq: CM116T, CM117T, CM118T or CM119T.

CM106T EFFECTIVE READING AND STUDY 3
Provides instruction in college study skills including techniques for improving concentration, comprehension and retention of information from textbooks, graphic materials, lectures and seminars. The course includes diagnostic testing of each student's reading, listening and other basic education - related skills as a guide to individualized work in Reading Laboratory. Prereq: Must be concurrently enrolled in Reading Laboratory (CM107T). (3/0)

CM107T READING LABORATORY 1
Provides practice and instruction for the improvement of specific reading and study skills. Under the guidance of the instructor, students work independently with programmed materials selected to serve their individual needs. (Must be concurrently enrolled in Effective Reading and Study CM106T) (0/2)

CM108T CRITICAL READING 3
Designed for students with no basic reading problems, the course provides instruction in the advanced reading techniques needed for college courses requiring extended reading in primary and secondary sources. These include both comprehension techniques and techniques for evaluating source, logic, assumptions, implications, intent and attitude. Readings are drawn from several media with an emphasis on contemporary works of serious non-fiction. (3/0)

CM111T CREATIVE WRITING 4
Offers students an opportunity to be creative in writing literary art forms of fiction, poetry and drama and emphasizes structure, form and style. Also analyzes the publications market. (4/0) Prereq: CM101T or consent of instructor.

CM112T SPEEDED READING LABORATORY 1
Offers individualized work to increase reading speeds for students with no serious deficiencies in comprehension or vocabulary skills. Under the guidance of the instructor, students work independently using mechanical reading accelerators with self - cor-

rected workbooks to develop the range of reading rates needed for efficient reading. (0/2)

***CM116T COMPOSITION II—MASS MEDIA** 4
Deals with mass media as a major societal influence and examines the technical, economic and legal aspects of the media. Emphasis is on critical evaluation and analysis. (4/0) Prereq: CM101T or equivalent.

CM117T COMPOSITION II: TECHNICAL WRITING 4
Deals with objective precision in the writing of business correspondence, technical briefs, proposals and articles. Especially recommended for students in law enforcement, management, science, or pre-law. (4/0) Prereq: CM101T or equivalent.

CM118T COMPOSITION II: CONTEMPORARY NON-FICTION 4
Deals with techniques of critical reading, thinking, and writing via contemporary non-fiction which concerns current social issues such as violence, alienation, social values and social roles. (4/0) Prereq: CM101T or equivalent.

CM119T COMPOSITION II: HUMANITIES 4
Presents an overview of artistic communication via art, music and writing. Material is thematically treated — centering on man's search for identity. Emphasis is on critical analysis and synthesis. (4/0) Prereq: CM101T or equivalent.

CM201T SPEECH I — PUBLIC SPEAKING 3
Studies the fundamentals of speaking, emphasizing the development of speaking skills. (3/0)

CM202T SPEECH II 3
Examines the theory and techniques used in discussion and group processes. The development of leadership and group skills are provided through frequent practical application in varying group sizes and opportunities. (3/0) Prereq: CM201T, CM204T or CM203T.

CM203T SPEECH I — PERSUASION 3
Presents the implications and uses of persuasion for responsible and effective social interaction and the need to be critical of persuasive devices used upon people. (3/3)

CM204T SPEECH I — INTERPERSONAL COMMUNICATION 3
The study of the research-based foundations of interpersonal communication, with laboratory activities designed toward improving communication with others. (3/0)

CM205T INDEPENDENT STUDY IN SPEECH 1-4
Provides readings and research opportunities under the guidance

of a staff member. Consent of instructor and department chairman required before registering.

***CM212T BANK LETTERS AND REPORTS** 3
Designed for those bank officers, supervisors and employees who dictate or review correspondence. A review of letter forms that emphasizes fundamental principles underlying modern correspondence, and examines different kinds of bank letters. (3/0)

CM301T INTRODUCTION TO BROADCASTING 4
Provides a background in the origin and history of broadcasting. The course attempts to familiarize the student with the organization, operation and dimensions of the industry and to make him aware of the legal, social, commercial and artistic aspects of broadcasting. (4/0)

***CM303T RADIO REPORTING AND ANNOUNCING** 4
Offers skills in the delivery of news and allied information and develops techniques in gathering, writing and editing news, features, and editorial material. (4/0)

***CM304T RADIO AND TV PRODUCTION** 4
Presents basic principles, procedures and techniques of TV and radio production and develops skill and creativity in various production assignments, such as camera, audio production, floor management and film editing. (4/0)

***CM305T RADIO STATION OPERATIONS** 2
Offered in conjunction with work in the Kirkwood FM - radio station. A student must be actively working in the radio station as an announcer, production manager, continuity writer, programmer or director to qualify for this course. The majority of instruction comes from laboratory experience and a weekly seminar with the radio station staff. A student may take this course twice for credit. (0/4)

Vocational - Technical

CM001U BUSINESS WRITING 3
Develops the skills and knowledges necessary to write effective business letters, memorandums and informal reports. (3/0)

CM002U COMMUNICATION SKILLS I 2-3
Reviews communicative usage and mechanics of standard expression. Students apply communication skills through oral and written composition exercises. Offered for students enrolled in several occupational programs three to five periods each week depending on the program. (2,3/1,2)

CM003U COMMUNICATION SKILLS II 3
Offers additional practice and application of skills acquired in Communication Skills I, with application to student's individual vocational needs. Emphasis will be on developing of oral skills in career situations. (2,3/0,2) Prereq: CM002U.

CM004U COMMUNICATION SKILLS III: TECHNICAL REPORTING 3-4
Studies principles of organization and interpretation as they apply to preparing technical reports. Research and descriptive writing skills needed for both informal and formal reports will be emphasized. (3, 4/0, 3) Prereq: CM003U.

CM005U ORAL COMMUNICATIONS 4
Persons in all phases of horticulture stress the necessity of proper communications. This particular course concentrates on public speaking, demonstrations and leading group discussions. (2/4)

CM001V MEDICAL COMMUNICATIONS 3
Includes the preparation of medical reports, orally and in writing and considers legal aspects of written records in occupational therapy. (3/0)

CONSTRUCTION

Vocational - Technical

CS001U VFM FARM CONSTRUCTION 2-6
Develops competencies necessary for the construction of a farm building from the planning stage through the concrete and carpentry work, to the final electrical wiring. (1-3/2-10)

CS002U VFM FACILITY CONSTRUCTION 2-4
Covers concrete work, carpentry and electricity which are all areas where most horticulturists need training. This course provides basic understandings and skills development in these areas. (1-4/0-8)

CS007U FACILITIES CONSTRUCTION—PLANNING AND PREPARATION 9
Plans the construction of a turn-key farm-type facility and the site preparation and concrete work under the supervision of an instructor. (1-4/6-12) Prereq: Previous training or experience.

CS008U FACILITIES CONSTRUCTION—ERECTION 9
Completes the construction of a facility started in the Facilities Construction—Planning and Preparation course, including plumbing, heating, ventilation and electrical service. (1-4/6-10) Prereq: Previous training or experience.

CS016U CARPENTRY—MILLWORK FOR ARCHITECTURAL DRAFTSMEN 3
Covers light construction, framing, millwork, trim, doors, windows and glazing. Factory and site built basic cabinets and jointing. (3/0) Prereq: GR010V.

CS017U ELECTRICAL - MECHANICAL SYSTEMS FOR ARCHITECTURAL DRAFTSMEN 3
Covers application of drafting concepts for site and area lighting and wiring, including power and equipment wiring. Applied drafting concepts for waste and domestic water piping, hot water, steam, forced air heating, air conditioning and ventilation. (3/0) Prereq: GR010V.

CS018U CONCRETE - MASONRY FOR ARCHITECTURAL DRAFTSMEN 3
Studies concrete footings and foundations. Architectural concrete, pre-cast concrete, structural concrete and wall panels. Included is the study of unit masonry and stone masonry applications. (3/0) Prereq: GR010V.

CS019U VFM PLUMBING AND WATER SUPPLY 3
Discusses plumbing systems and water sources. Solutions and treatment for water problems. Also characteristics of pump and piping. (3/0)

CS021U VFM CARPENTRY AND WOOD CONSTRUCTION 2-4
Studies safety use of hand and power tools, roof construction, framing, exterior wall and household carpentry (1-4/0-4)

CS023U VFM BUILDING LAYOUT 3
Covers farmstead planning and recreation; farm service center; windbreaks; and landscaping. (3/0)

CS025U VFM STRUCTURES 2.5
Covers types and economic comparisons of swine, beef, dairy and horse facilities. (2.5/0)

CS027U VFM MATERIALS SELECTION 2.5
Deals with economics, selection paints and preservatives, calculation of material and comparing costs. (2.5/0)

CS029U VFM VENTILATION, INSULATION AND HEATING 2.5
Covers ventilation systems, needs and economic comparisons, and types of insulation. (2.5/0)

CS031U VFM FARM CONCRETE 3
Studies on-the-farm concrete mixtures, selection and design,

economics of ready mix versus mixing on the job, placing, forming, reinforcing, finishing and curing concrete. (3/0)

CS033U ESTIMATING 3
Is designed for architectural draftsmen: the course includes the techniques of estimating and quantity survey. (3/0)

CS034U PRESENTATIONS 2
Includes instruction in color, proportion, and delineation; offered for architectural draftsmen. (2/0)

CS035U CONSTRUCTION MATERIALS 3
Covers study of building codes, construction standards, wood, concrete, steel and unit masonry. (3/0)

CS036U CONSTRUCTION METHODS 3
Covers study of floor ceiling systems, masonry walls, foundation systems and sound control. (3/0)

CS037U METAL FABRICATION 4
Studies construction of metal buildings according to various farm usages. (3/2)

CS038U ELECTRICAL CONSTRUCTION 4
Gives students skills for building electrical power systems for rural buildings using schematics, controls, codes and references. (3/2)

CS039U PLUMBING 5
Deals with the supply of water to rural buildings and the disposal of after-use with emphasis given to use of tools and materials to build, repair or replace these systems. (3/4)

CS040U JOB PLANNING AND SCHEDULING IN CARPENTRY 5
Covers developing building plans and scheduling the construction of the building based on availability and location of various building materials in the community and on local state and vocational building codes. (3/4)

CS041U HEATING AND VENTILATION 4
Covers individual systems of heating, cooling and ventilation and their appropriate controls in using the many sources of energy available today. (3/2)

CS042U CONSTRUCTION TECHNIQUES 5
Provides students with experiences in building various modular buildings. (3/4)

CS043U MASONRY AND CONCRETE 4
Develops skills in pouring and finishing concrete structures, both

flat and vertical. Laying concrete block also is practiced. (3/2)

CS044U EXCAVATION 4
Studies the use of various types of earth-moving equipment. The student will work at site preparation, excavation, earth moving and grading for various types of construction. (3/2)

CS045U FUNDAMENTALS OF CARPENTRY I 5
Covers the identification and use of carpentry tools and materials as related to the rural construction industry. (3/4)

CS046U FUNDAMENTALS OF CARPENTRY II 5
Covers the identification and use of accessory materials and various types of fasteners used in form construction, including the use of laser levels, standard levels and steel tapes in construction measurement. (3/4)

COOPERATIVE EDUCATION

***CE001T COOPERATIVE EDUCATION EXPERIENCE** 1-8

Offers structured work experience providing career verification on the job in a learning environment for Arts and Sciences students related to their major academic interest. Prereq: Instructor approval. Must be taken with CE002T. May be repeated for credit. (0/3-24)

***CE002T COOPERATIVE EDUCATION SPECIAL TOPICS** 1-4

Offers a learning experience in conjunction with a structured work situation. Instruction and readings will relate to the particular job experience and supplement same. Prereq: Instructor approval. Must be taken with CE001T. May be repeated for credit. (0/4-14)

***CE003T COOPERATIVE EDUCATION PREPARATION** 0-1

Designed to complete individual needs prior to a Cooperative Education work experience. Testing, interviewing, and objective setting will be involved as needed by each individual. (0/2)

***CE004T CAREER DECISION MAKING** 3

Designed to provide a grasp of the process of making a career decision. This is to be accomplished by identifying the individual's desires, relating these to the requirements of various career fields, and developing an understanding of the trade-offs involved in making a career decision. (3/0)

CORRECTIONS

College Parallel

CO002T INTRODUCTION TO COMMUNITY CORRECTIONS 3
Studies the correctional process as applied in the community by means of juvenile and adult probation and parole. (3/0)

CO003T PRINCIPLES OF CORRECTIONS/MANAGEMENT AND SUPERVISION 4
Studies the principles and methods of supervision, management, administration, and evaluation in a correctional setting. Emphasis on staff recruitment and development, budgeting, administrative decision making and public relations as they relate to the institutional setting. (4/0)

CO004T PENOLOGY 4
Surveys the history of penal institutions, examines the theories and practices relating to penal institutions, and explores prison reform in relation to various objectives of modern penology. (4/0)

DATA PROCESSING

College Parallel

DP001T INTRODUCTION TO DATA PROCESSING 3
Surveys data processing concepts and applications. Oriented to the business students or of general interest. (3/0)

DP002T INTRODUCTION TO COMPUTER ORGANIZATION AND PROGRAMMING 3
Studies logical basis of digital computer systems; machine representation of numbers and characters; flow of control; arithmetic and logical operations; indexing; input-output, subroutines; linkage and recent advances in computer organization. Covers programming in problem oriented languages. Concepts illustrated and problems programmed on available computers. (3/0)

DP003T COMPUTER ORGANIZATION AND PROGRAMMING I 4
Studies number systems; symbol and number representation; basic algorithmic processes; flow-charting; decisions tables; switching matrices. Formulation and solution of a wide range of algorithmic processes. Prereq: 10 credits in mathematics of statistics. (4/0)

DP004T COMPUTER ORGANIZATION AND PROGRAMMING II 4
Studies organization of a large scale digital computer; instructions and format; basic assembler language coding and formulation and solution of a variety of numerical and non-numerical problems in one or more high-level problem-oriented languages. Prereq: DP003T. (4/0)

DP005T COMPUTER ORGANIZATION AND PROGRAMMING III 3
Studies Fortran, Cobol and PL/1 programming. Prereq: DP004T (3/0)

DP006T COMPUTER AND DATA PROCESSING CONCEPTS 3
Covers fundamentals of computers and computerized data processing. Data processing concepts, computer terminology, computer devices, basic systems considerations, programming techniques and data accuracy and control. (3/0)

Vocational - Technical

DP001U SELF-SERVICE AIDS FOR PROGRAMMERS 1
Presents basic operation of keypunch and data entry equipment to make personnel self-sufficient in the operation of that equipment. (.5/1)

DP002U PUNCHED-CARD DATA PROCESSING 2
Studies functional wiring and basic operation of unit record equipment. Includes the interpreter, reproducer, sorter and collator. (1/2)

DP003U COMPUTER OPERATING TECHNIQUES 2
Includes study and practice of computer operating techniques, student study and performance in the areas of card/tape/disk handling, computer console control, and peripheral equipment operation. (1/2)

DP004U FLOWCHARTING TECHNIQUES 2
Covers the study and practice of the most commonly used techniques for the graphic representation of system or program logic. (2/0)

DP005U INTRODUCTION TO S/360-370 3
Presents the System 360 and System 370 architecture and hardware. Includes direct access storage devices, the techniques of file organizations and the programming systems support for these devices. (3/0)

DP007U ASSEMBLER LANGUAGE I	5	DP020U PROGRAM ANALYSIS	2
Studies IBM 360/370 basic assembler language programming concepts and techniques. Includes the writing and testing of assembler language programs. (3/4)		Covers methods, skills and techniques for program testing and program improvement. Students are required to detect and correct program malfunctions and to increase the efficiency of working programs. (1/2)	
DP008U ASSEMBLER LANGUAGE II	5	DP021U DISK OPERATING SYSTEM (DOS) CONCEPTS AND FACILITIES	3
Continues Assembler Language I. (3/4)		Acquaints the operator, analyst and data processing manager with the general structure of the Disk Operating System, examining its concepts and facilities. (3/0)	
DP009U ASSIGNED OPERATIONS PROJECTS	3	DP022U DISK OPERATING SYSTEM (DOS) CODING	5
Assigns projects closely simulating actual operation of a data center. Provides hands - on experience in input scheduling, I / O device and console operating, and output handling. (1/4)		Covers all facilities of the Disk Operating System, including the job control language, supervisor services, systems maintenance, the linkage editor functions and multiprogramming facilities. Is designed for programmers who plan to use the Disk Operating System of the S/360. (3/4) Prereq: DP007U or DP013U	
DP010U DATA PROCESSING FOR THE MANAGERS	2	DP023U ADVANCED DISK OPERATING SYSTEM (DOS) AND DATA MANAGEMENT	5
Articulates as completely as possible, the relationships between man and machine and the role of each in the industrial or business organization. By attempting to separate the emotional agreements from the statements of fact, this course tells, in layman's language, what the computer can do, or cannot do, not how it works. (3/0)		Studies advanced concepts of DOS using supervisor macros, system utilities and file organization techniques. Prereq: DP022U (3/4)	
DP011U INTRODUCTION TO REPORT PROGRAM GENERATOR	2	DP024U OPERATING SYSTEM (OS) CONCEPTS AND FACILITIES	3
Studies RPG on a tape and disk system. Covers methods for having data processed by a computer through use of the report program generator (RPG) technique. (1/2)		Studies concepts, organization and functions of Operating System 360. Designed to acquaint the operator, programmer, systems analyst and data processing manager with the facilities provided by the Operating System and how they can be effectively used. (3/0)	
DP013U INTRODUCTION TO COBOL PROGRAMMING	5	DP025U OPERATING SYSTEM (OS) CODING	5
Studies Cobol programming concepts and techniques, and writing and testing of Cobol programs. (3/4)		Continues Operating System Facilities. Teaches programmers to use the supervisor services provided in OS/360 Assembly Language. Covers the use of I / O definition and macros, as they relate to writing programs to be run under the Operating System. (3/4)	
DP014U ADVANCED COBOL PROGRAMMING	5	DP026U PROGRAMMING SYSTEMS	3
Continues introduction to Cobol Programming. (3/4)		Surveys the programming systems area: assemblers, compilers, sorts, merges, monitors and consideration of future trends in programming. (2/2)	
DP015U COBOL PROJECTS	5	DP027U SYSTEMS UTILITIES	2
Provides experience in some of the more complex aspects of Cobol programming. To a large extent the course will operate in a simulated business atmosphere. Prereq: DP013U and DP014U. (1/8)		Develops knowledge and skill in the use of various systems utilities and offers actual working experience with a sort, merge, monitor and various utilities. (1/2)	
DP016U INTRODUCTION TO FORTRAN PROGRAMMING	3		
Introduces Fortran programming concepts and techniques, with numerical analysis and other methods for solving mathematical/scientific/business problems. Prereq: DP006T or equivalent. (2/2)			
DP018U INTRODUCTION TO PROGRAMMING LANGUAGE I	3		
Introduces language specifications for System 360 PL/1. (2/2)			

DP028U TELECOMMUNICATION CONCEPTS 3
Introduces concepts, consideration, devices and control in data communications for computerized data transmission. (3/0)

DP029U TELECOMMUNICATIONS CODING 3
Offers an extension of OS Coding, including teleprocessing systems. Prereq: DP025U and DP028U. (2/2)

DP030U DOS TELECOMMUNICATIONS CODING 5
Is designed to acquaint the programmer with the concepts and assembler language coding necessary to handle teleprocessing hardware under DOS BTAM. Covers the DOS multiprogramming conventions, BTAM MACROS and assembler language programming methods for on - line teleprocessing programs. Prereq: DP028U (3/4)

DP031U ADVANCED PROGRAMMING STUDIES 3
Investigates advanced areas of computerized data processing; provides specially selected computer related topics which are researched in depth by students. (3/0)

DP032U NUMERICAL ANALYSIS 3
Includes theory and application of numerical process to the computer assisted solution of mathematical/scientific/engineering problems. Covers iterative techniques, polynomial interpolation, numerical differentiation and integration. Computer usage in problem solution is stressed. Prereq: College Algebra (3/0)

DP033U INTRODUCTION TO OPERATIONS RESEARCH 3
Offers seminar - type class meetings dealing with operations research topics: inventory models, assignment problem, allocation, sequencing, replacement, linear programming, simulation, mathematical models, gaming theory, queueing theory, networks and graphs, optimizing algorithms in operations research, etc. All units will begin with a basic introduction to the theory needed to develop an understanding of the subject at a rather elementary level. Prereq: College Algebra (3/0)

DP034U ADVANCED OPERATIONS RESEARCH 3
Develops the topics considered in Introduction to Operations Research. Applies operations research techniques to problem situations so as to develop application abilities. Prereq: DP033U (3/0)

DP035U CERTIFICATE IN DATA PROCESSING REVIEW 3
Provided review of topics found in the certificate in data processing examination: automatic data processing equipment, computer programming and software systems, data processing systems, accounting, mathematics and statistics. (3/0)

DP036U ASSIGNED PROGRAMMING PROJECTS 5
Offers supervised work experience at various data processing tasks, which serve as learning tools as the tasks are completed. These tasks may be done within a real or simulated business organization. (1/8)

DP037U INSTALLATION MANAGEMENT I 3
Offers seminar coverage of specialized subjects peculiar to supervising or managing a data processing department. Prereq: three quarters of data processing. (3/0)

DP038U INSTALLATION MANAGEMENT II 3
Continues seminar coverage of specialized subjects begun in Installation Management I. Prereq: three quarters of data processing and DP037U. (3/0)

DP039U RECORDS AND SCHEDULING OF DATA PROCESSING OPERATIONS 3
Studies types, formats and typical systems for maintaining records for a data processing installation. Prereq: DP006T

DP040U RELATED EQUIPMENT I 1
Includes characteristics, functions and use of equipment related to data processing: microfilm processing and handling, after - handling equipment, ledger card machines, copying equipment and key driven equipment controlled by paper tape. (0/2)

DP043U DOCUMENTATION I 3
Includes documentation, standards and forms designed for a computerized data processing installation. (2/0)

DP045U SPECIAL ACTIVITIES 1
Offers topics of current interest to the data processor in forms of lectures, films, discussions, articles, field trips, etc., to present information to broaden and deepen the knowledge of the data processor within his or her field. (1/0)

DP046U ELEMENTS OF DATA PROCESSING I 3
Explores the use of various manual and mechanized data processing systems for business applications and familiarizes the student with the functional characteristics of data processing systems. Basic business applications of order writing, billing, accounts

X receivable, inventory accounting and sales analysis are covered. (3/0)

DP047U ELEMENTS OF DATA PROCESSING II 3
Continues Elements of Data Processing I. (2/2)

DP048U BUSINESS APPLICATIONS OF DATA PROCESSING 2-4
Applies data processing to a business organization and considers functional areas such as production, personnel and accounting. (2-4-0)

DP049U INTRODUCTION TO SYSTEMS 3
Includes systems, procedures, systems analysis and systems design, purposes, responsibilities, applications and techniques of the systems activity as found in a business organization. (3/0)

DP050U ADVANCED SYSTEMS 3
Applies systems analysis/design to particular functions of a business organization. General consideration of data processing systems to service the manufacturing, marketing, personnel and accounting activities. Systems examined range from a small procedure to a total management information system. (3/0)

DP051U APPLIED SYSTEMS I 3
Provides practical experience in systems analysis and design at several levels. Student performs analysis and design functions in simulated business environments. Prereq: DP055U, DP050U.

DP052U APPLIED SYSTEMS II 3
Continues Applied Systems I. (2/2)

DP053U APPLIED SYSTEMS III 3
Continues Applied Systems II. (2/2)

DP054U SEMINAR SERIES 3
Provides a specialized series of topics to fit specific occupational groups such as accountants/auditors, banking, present data processing users, manufacturing, personnel, industrial engineering, advanced programmers/systems analysts, corporate management, etc. Topics cover such areas as computer concepts, data transmission, audit trails, banking uses, management control, advanced computer/systems techniques, etc. (3/0)

DP055U MANAGEMENT SYSTEMS 3
Offers fundamentals of the systems approach to management in the areas of manufacturing, marketing, personnel and accounting. Examines systems ranging from a small procedure to a total management information system. Prereq: DP049U (3/0)

DP056U MANAGEMENT INFORMATION SYSTEMS 3
Studies procedures and techniques useful in the design and evaluation of integrated management information systems, including data base management. Prereq: DP055U (3/0)

DP057U ACCOUNTING SYSTEMS 3
Offers in - depth study of systems analysis/design as applied to the function of accounting. The subject of accounting is covered more fully in this course than in the Advanced Systems course. Prereq: DP050U (3/0)

DP058U PRODUCTION AND MATERIAL CONTROL SYSTEMS 3
Offers in - depth study of systems analysis/design as applied to the function of production and material control. The subjects are covered more fully in this course than in the Advanced Systems course. Prereq: DP050U (3/0)

DP059U PROJECT MANAGEMENT SYSTEMS 3
Applies scientific management techniques to the planning and control of project scheduling, completion, profit and cost. Includes critical path methods, PERT costing and the use of computers to implement those techniques. (3/0)

DP060U MATERIAL CONTROL SYSTEMS 3
Applies systems analysis/design to the function of material control. The subject of material control is covered more fully in this course than in the Advanced Systems course. Prereq: DP050U (3/0)

DP061U PAYROLL / PERSONNEL SYSTEMS 3
Offers in - depth study of systems analysis/design as applied to the function of personnel/payroll. The subject of personnel/payroll is covered more fully in this course than in the Advanced Systems course. Prereq: DP050U (3/0)

DP062U ON - THE - JOB SYSTEMS PROJECTS 3
Offers supervised assignment of systems analysis design tasks which develop skill, knowledge and ability in the responsibilities, activities and methods of systems work. Prereq: DP050U (3/0)

DP081U INTRODUCTION TO COMPUTERS AND COBOL PROGRAMMING 3
Provides fundamentals of computers, computerized data processing and programming in Cobol language. (3/0)

DP082U ADVANCED COBOL PROGRAMMING (SPECIAL) 3
Continuation of introduction to Computers and Cobol Programming. (3/0)

DP001V INTRODUCTORY KEYPUNCH 2
Offers training for the occupation of key - punching: punching and verifying of cards which serve as input to unit record and computer equipment. (0/4) 8 "

DP003V VOCATIONAL KEYPUNCH 8
Provides extensive training in occupations of key punching. Offers training on several types of machines. (1/14)

DENTAL

Vocational - Technical

DN001U DENTAL MATERIALS 4
Gives students an opportunity to acquire a basic understanding of the various types of dental materials, their uses and their manipulating techniques. (2/4)

DN002U PORCELAIN TECHNIQUES 4
Covers basic principles of design, fabrication, and staining of restorations of porcelain, or porcelain to metal, including operation and maintenance of related equipment and use of supplies. (1/6)

DN003U ORTHODONTICS (DLT) 3
Studies irregularities of teeth and the fabrication of appliances as prescribed by the dentist to correct those irregularities. Prereq: Dental Anatomy I and Dental Anatomy II. (.5/5)

DN004U DENTAL TERMINOLOGY 2.5
Includes ability of student to dissect words used in dental terminology as to roots, prefixes, and suffixes. Also includes brief introduction to dental history, ethics and jurisprudence, work authorization and professional organizations associated with the dental laboratory field. (2/1)

DN005U DENTAL EQUIPMENT (D.L.T.) 2.5
Studies proper arrangement, care and maintenance, safety procedures and availability of common types of dental equipment. Includes some operation. (2/1)

DN006U CLINICAL EXPERIENCE AND SEMINAR (D.L.T.) 12
Utilizes dental laboratories or dental offices to gain practical experience relating to instructional and manipulative skills given in classroom setting. (0/32)

DN007U CLINICAL EXPERIENCE II AND SEMINAR, (D.L.T.) 12
Continuation of Clinical Experience I (0/32)

DN008U ACRYLIC JACKET CROWN AND VENEERS II (D.L.T.) 5
Covers the principles, techniques of staining and curing, and fabrication of various types of acrylic jacket and veneer crowns. (2/6)

DN009U PRECISION ATTACHMENTS PARTIALS (D.L.T.) 4
Studies principles and design of various types of intracoronal retention for removable partial dentures, including actual construction of removable partial dentures incorporating precision attachments. (1/6)

DN010U CAST METAL BASE DENTURES 2
Continues complete denture construction involving the design and construction of complete dentures with cast metal bases (Titanium). (.5/3)

DN012U PROJECTS LAB (D.L.T.) 1-2
Provides specific assignments to aid in learning, with experiences and depth of training planned and offered on an individual basis. Assignments made to develop each phase and growth of students.

DN020U LABORATORY MANAGEMENT (D.L.T.) 3
Study in surveying potential sites for new laboratories, design of laboratories, bookkeeping and cost analysis, and all facets dealing with the establishment and operation of a dental laboratory. (3/0)

DN021U DENTURE TECHNIQUES I (D.L.T.) 6.5
Provides an introduction to the outline and study of procedures related to denture construction. Involves the fabrication of temporary removable partial dentures and complete dentures. (3/7)

DN022U DENTURE TECHNIQUES II (D.L.T.) 6
Adventures into the esthetics, phonetics and function associated with complete dentures. Working with a special advanced articulator and advanced work in tooth arrangements. (2/8)

DN023U ARTICULATORS AND ARTICULATION 3.5
Introduces the study of mechanical devices used to simulate the movements of oral anatomy with relation to the construction of dental prosthesis. (2/3)

DN024U CAST INLAY AND CROWN (D.L.T.) 5
Applies the technique of pouring casts, mounting techniques,

recognition of gingival margin preparations, preparation and trimming of individual dies, and the actual construction of inlays and crowns. (2/6)

DN025U CROWN AND BRIDGE (D.L.T.) 10
Studies types, designs and procedures used in constructing fixed partial dentures, including actual construction of various types of fixed partial dentures. (4/12)

DN026U PARTIAL DENTURE TECHNIQUES I (D.L.T.) 4
Examines the principles and theories of survey, design and blockout techniques for simple removable partial dentures, and actual construction of cobalt - chrome removable partial dentures. (1/6)

DN027U PARTIAL DENTURE TECHNIQUES II (D.L.T.) 5
An advanced study in the design and fabrication of special types of removable partial dentures. (2/6)

**DN028U GUIDED INDEPENDENT STUDY:
ORTHODONTICS** 8
Allows the student and instructor to prepare a contract for individualized study in orthodontics. This contract will include the phase of orthodontics the student and instructor feel necessary to make the student knowledgeable and competent in this field of laboratory work. Prereq: Previous modules related to this subject.

**DN029U GUIDED INDEPENDENT STUDY:
FIXED BRIDGES** 8
Allows the student and instructor to prepare a contract for individualized study in fixed bridges. This contract will include the phases of fixed bridgework the student and instructor feel necessary to make the student knowledgeable and competent in this field of laboratory work.

**DN030U GUIDED INDEPENDENT STUDY:
CERAMICS** 8
Allows the student and instructor to prepare a contract for individualized study in ceramics. This contract will include the phases of porcelain the student and instructor feel necessary to make the student knowledgeable and competent in this field of laboratory work.

**DN031U GUIDED INDEPENDENT STUDY:
REMOVABLE BRIDGES** 8
Allows the student and instructor to prepare a contract for individualized study in removable bridges. This contract will include the phase of removable partials the student and instructor feel necessary to make the student knowledgeable and competent in

this field of laboratory work.

**DN032U GUIDED INDEPENDENT STUDY:
FULL DENTURES** 8
Allows the student and instructor to prepare a contract for individualized study in full dentures. This contract will include the phases of full dentures and student and instructor feel necessary to make the student knowledgeable and competent in this field of laboratory work.

DN101U DENTAL ORIENTATION (DA) 3
Provides information necessary to build a complete and knowledgeable foundation upon which to anchor a meaningful career as a dental assistant, including dental terminology, understanding of dental assistant certification, and a thorough study of State Practice Acts. (3/0)

DN102U DENTAL MATERIALS (DA) 5
Includes the chemical and physical composition of the basic groups of dental materials. The laboratory phase offers clinical demonstration of the use of each material and individualized manipulative practice. (4/2)

DN103U DENTAL ASSISTING (DA) 6
Covers basic principles of chairside assisting including the identification, use and maintenance of equipment and instruments, passing and receiving instruments, oral evacuation, charting, and (1/0)

DN106U PEDODONTICS (DA) 1
Covers dentistry for the child patient. Inclusive of child behavior, management, growth and development, . diagnosis and treatment planning, physical - mental handicaps and operative procedures. (1/0)

DN107U ORAL SURGERY (DA) 1
Covers surgical procedures for the assistant in the treatment of diseases and injuries to the oral cavity. (1/0)

DN109U LAB PRACTICUM I (DA) 4
Assigns each student to clinical areas of operative, crown - bridge and prosthetics at the College of Dentistry in Iowa City for practical experience. (0/8)

DN110U LAB PRACTICUM II (DA) 6
Provides experience in the various departments of periodontics, endodontics, orthodontics, oral diagnosis, oral surgery, and x - ray, at the College of Dentistry in Iowa City. An overview of dental assisting in all areas of dentistry. (0/12)

120

DN111U CLINIC I (DA) 4
Provides overview experience in chairside assisting, business office procedures, and dental office laboratory procedure in a private dental office. (0/12)

DN112U CLINIC II (DA) 4
Continues Clinic I in a private dental office. (0/12)

DN113U DENTAL RADIOGRAPHY I (DA) 2
Presents a basic background of dental radiation and safety. An emphasis is given to exposing, processing and mounting dental films. (2/1)

DN114U DENTAL RADIOGRAPHY II (DA) 2
Continues Dental Radiography I with emphasis on exposure angulation, evaluation of films and corrective measures. (2/1)

DN115U DENTAL LAB. ASSISTING I (DA) 3
Provides practice and application of laboratory skills commonly performed in a private dental office, such as pouring and trimming of study casts, construction of biteblocks, soldering and construction of removable acrylic appliances. (1/4)

DN116U DENTAL LAB. ASSISTING II (DA) 2
Involves the construction of dies and wax patterns for casting crowns and inlays, and the assistant's responsibilities in the use of a commercial laboratory. (1/2)

DN117U PERIODONTICS (DA) 1
Covers theory of diseases relating to the tissues surrounding the teeth. Treatment of the diseases and preventive therapeutic measures. (1/0)

DN118U ENDODONTICS (DA) 1
Covers causes of disease and therapeutic procedures relating to the pulpal tissues of the teeth. (1/0)

DN120U DENTAL PHARMACOLOGY (DA) 1
Deals with the origin, effects, uses and dosage of commonly used drugs in dentistry; storage and measuring of medicaments; state and dental profession safety precautions required in the use of medicaments; indications, contraindications, and patient reactions associated with drugs. (1/1)

DN121U PREVENTIVE DENTISTRY (DA) 2
Presents concepts of prevention through an understanding of oral problems and treatment, control of bacterial plaque formation and methods of oral hygiene instruction for patients. (2/1)

DN122U ORAL PATHOLOGY (DA) 1
Introduces the dental assistant to the intrinsic' extrinsic and developmental factors which causes oral disorders. Emphasis on the major types of oral pathological conditions and basic types of procedures for treatment. (1/0)

DN123U ORTHODONTICS (DA) 1
Deals with the construction and types of orthodontic appliances, malocclusions, types of conditions, preparation of diagnostic records, facial growth and development, tooth movement, patient education and office procedure. (1/0)

DN127U PREVENTIVE DENTISTRY SEMINAR I 4
Examines the oral structures (normal and abnormal) and former development and detection of dental disease, including laboratory application in the theories, philosophy and mechanics of teaching dental patients.

DN128U PREVENTIVE DENTISTRY SEMINAR II 4
Continuation of Preventive Dentistry Seminar I (3/2) Prereq: Prev. Dent. Sem. I

DN131U DENTAL MANAGEMENT SEMINAR I 3
Emphasizes improving the efficiency of routinely performed tasks by a systems approach to problem solving for the mechanics of a total office and analysis of office operation and production. (3/0) Prereq: Dental Assistant graduates, employed dental assistants with six months experience, or by exam.

DN132U DENTAL MANAGEMENT SEMINAR II 3
Explores the psychological principles in communications and decision making with discussion of management theories and philosophies. (3/0) Prereq: DN131U.

DRIVER EDUCATION AND SAFETY

DS001U JOB SAFETY 2
Includes on - job safety and the job's relation of OSHA. Students will be made aware of various interdependent responsibilities. (1/2)

DRAMA

College Parallel

- DR101T INTRODUCTION TO THEATRE** 3
Introduces the various methods of stagecraft with emphasis on the study of a number of plays and the observation of performances to discover the relationship of the playwright to the creation of an actual performance. (3/0)
- DR102T THEATRE WORKSHOP** 2
Provides students with experience in theatrical production. Students may work in one of a number of production areas under the guidance of experienced theatre personnel. Guidance and frequent critiques provide students with the understanding of production activities. May be repeated for credit once. Production schedule determines hours per week. (0/4)
- *DR103T THEATRE PRODUCTION** 3
Provides students with on - campus production experience. The course is responsible for presenting a series of short dramatic presentations and provides opportunities in acting, directing and staging. (3/0)

ECONOMICS

College Parallel

- EC007T INDEPENDENT STUDY IN SOCIAL SCIENCE (ECONOMICS)** 0, 1, 2, 3, 4
Provides readings, papers and/or basic research or other projects under the individual guidance of a staff member. Consent of the instructor and department chairman is required before registering.
- EC008T MONEY AND BANKING** 3
This course 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. Emphasis is also placed on such problems as economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy, balance of payments, and foreign exchange, showing their repercussions on the banking industry in affecting yield curves and the structuring of portfolios. (3/0)
Prereq: Recommend EC013T.

- EC009T PRINCIPLES OF COLLECTIVE BARGAINING** 3
Covers problems of the industrial labor setting as applied to collective bargaining. Topics reviewed include wage - determination and employment theory, internal and external problems of the labor force, union structure and government, growth and theory of labor movements and evolution of substantive labor law in the U.S. Emphasis will be placed on the historical, political, and institutional setting of the collective bargaining process. (3/0)

- EC010T LABOR LAW (TAFT - HARTLEY)** 3
An institutional and historical approach to public policy considerations in labor relations law from 1806 to the present. Topics reviewed include the "Greek" of labor law: "strikes," "picketing," "organizational," "boycotts," "unfair labor practice," "union security," "duty to bargain," etc. Relationships between the large - group conflicts of labor relations and other large group conflicts: e.g. race relations, will receive attention. Focus also will be directed to the public sector. (3/0)

- EC011T DISPUTE SETTLEMENT AND LABOR RELATIONS** 3
Offers an analysis of problems encountered in the area of employer - employee differences with respect to the meaning and application of contract terminology. Cases in arbitration are used to illustrate problem areas in the industrial relations setting. Areas of study include: Grievance handling; arbitration of grievances; discipline; wages; vacations and holidays; work assignments; seniority; distribution of overtime; subcontracting; technological change. Additional focus will be directed to the public sector. No prior course is required. (3/0)

- EC013T PRINCIPLES OF ECONOMICS (MACRO)** 4
Introduces principles of the economizing problem with emphasis on national income and employment analysis. Includes nation income accounting, the business cycle, money and banking, fiscal and monetary theory and policy, and economic growth. Recommended for students pursuing a baccalaureate degree program. (4/0)

- EC014T PRINCIPLES OF ECONOMICS (MICRO)** 4
Emphasizes markets, the price system and the allocation of resources, demand and supply, market structures, price and output determination, and income distribution. Recommended for students pursuing a baccalaureate degree program. (4/0)

- EC015T PRINCIPLES OF BUSINESS ECONOMICS** 4
Acquaints the student with the business enterprise in the perspective of the modern economy, and introduces the economizing pro-

blem and a comprehensive analysis of markets and the price system. The course also stresses the role of the business sector in examining national income and employment theory. Recommended for associate degree programs only. Transfer status uncertain. (4/0)

EC016T CONTEMPORARY ECONOMIC PROBLEMS 4
Offers advanced analysis of some of the topics discussed in Principles of Economics (Macro) (Micro). The course will focus on one or more contemporary economic problems. Individual and group projects will be assigned. (4/0) Prereq: EC013T and EC014T.

***EC018T UNIONS AND THE POLITICAL SYSTEM 3**
Describes the structure and functions of all levels of government including separation of authority, executive privilege, and presidential appointive powers. The role of pressure groups, the union's role in our two - party system, plus recent trends in the "labor vote" will also be discussed, as will the entire area of selection of issues which unions want enacted into law. (3/0)

***EC019T ENGINEERING ECONOMICS 4**
Applies fundamentals of economics to engineering alternatives in planning, developing and managing industrial projects. (4/0)

***EC020T LABOR LAW (LANDRUM - GRIFFIN) 3**
Continues the study of labor law using an institutional and historical approach to public policy considerations in labor relations law. Topics reviewed include: individual rights and the duty of fair representation, admission to union membership, union elections, enforcement of the agreement, union democracy, etc. Emphasis again will be placed on the public sector. (3/0)

Vocational - Technical

EC001U PRINTING ECONOMICS 1
Covers estimating production costs, specification of equipment, materials inventory, and control, and the study of systems which expedite graphic reproductions. Application of techniques in estimating to actual job production specifications and cost. (1/0)

EC003U AMERICAN INSTITUTIONS 3
Studies of macro economics uses simple models to develop concepts of money and banking, national income, and international trade. The volume of individual businesses and the GNP are analyzed for the practical purpose of evaluating the future potential. (3/0)

EC004U AGRICULTURAL ECONOMICS I 3 or 4
Identifies economic concepts, principles and relationships as they

relate to the agricultural industry. Reviews the principle of diminishing returns, marginal costs, opportunity cost, substitution, and the concept of risk and uncertainty. (3 or 4/0)

ELECTRONICS

Vocational - Technical

EL001U INTRODUCTION TO ELECTRONICS 3
Develops the student's ability to use electronic test equipment properly and provides an overview of the field of electronics. (1/5)

EL002U ELECTRIC CIRCUITS I 6
Studies resistive circuits with both constant and time - varying power sources. The first portions of the course introduce the physics of electricity, along with units, definitions, symbols and notations. The major portion of the course is a study of methods and techniques of analyzing circuits. Application of Fortran IV computer programming to circuit analysis is also introduced. (5/2)

EL003U ELECTRIC CIRCUITS II 6
Studies the steady - state sinusoidal analysis. Includes reaction, resonance, and frequency response. (5/2) Prereq: Electric Circuits I.

EL006U COMMUNICATION ELECTRONICS 7
Uses a systems approach to cover requirements and options relating to radio communications, and examines modulation techniques including AM, FM, PM and SSB, as well as time division multiplexing and frequency division multiplexing. (4/6) Prereq: Solid State Circuit Analysis and Design.

EL007U COMMUNICATION ELECTRONICS I 5
Studies oscillator, amplitude and frequency modulation theory. A classroom and laboratory exploration is made of receivers and their associated circuits. Transmission of radio energy is introduced. (3/5) Prereq: Electronic Circuits II.

EL008U COMMUNICATION ELECTRONICS II 5
Continues the study of communication systems including antennas, transmission lines, F.M. multiplex systems, micro.- wave systems, remote control devices and basic transmitter troubleshooting techniques. (3/4) Prereq: Communication Electronics I.

- EL010U TELEVISION CIRCUIT ANALYSIS** 7
Applies the general topics covered in Communications Electronics (EL006U) and Transmission Systems (EL012U) to the specific systems used for generation, transmission and reception of color television and stereo FM. (4/6) Prereq: Communication Electronics and Transmission Systems.
- EL012U TRANSMISSION SYSTEMS** 6
Continues the systems approach initiated in Communication Electronics (EL006U). Here topics include antennas, transmission lines, propagation of EM waves, waveguides and microwave devices. (4/4) Prereq: Communication Electronics.
- EL013U INDUSTRIAL ELECTRONICS** 3
Takes a theoretical as well as a laboratory approach to the analysis of control devices and circuits. Some of the topics covered include silicon controlled rectifiers, thyratrons, uni - junction transistors and zener diodes. (2/3) Prereq: Electric Circuits I.
- EL014U PULSE AND SWITCHING CIRCUITS** 6
Includes analysis and design of electronic switching circuits including clipper, clampers, multivibrators, pulse shapers, blocking oscillators, logic circuits and sweep circuits. (5/2) Prereq: Solid - State Circuit Analysis and Design.
- EL015U SOLID - STATE CIRCUIT ANALYSIS & DESIGN** 7
Takes an analytical approach with laboratory applications, to solid - state circuitry and basic transistor amplifier analysis and design. Topics covered include biasing techniques, equivalent circuits and their parameters, small signal amplifiers, large signal amplifiers, multi - stage amplifiers, feedback and oscillators. The theory and application of field - effect transistors, unijunctions and new devices are also covered. (4/6) Prereq: Electric Circuits II.
- EL016U VFM ELECTRICITY ON FARM** 4.5
Emphasizes the importance of electricity, understanding terms and measurements, principles of wiring, switches and circuits, selecting wire types and sizes and overcurrent devices. (4.5/0)
- EL018U FUNDAMENTALS OF ELECTRICAL SERVICE** 5
Covers the generation, distribution and types of consumer power systems as they apply to rural electrical service. Use of tools, equipment, materials and fixtures as they relate to layout of electrical circuits are also studied. (3/4)
- EL021U DIGITAL SYSTEMS** 4
Deals with computer operations, programming, number systems, logic circuits, arithmetic and memory elements, input - output devices and control elements. (3/3)
- EL022U NETWORK ANALYSIS AND DESIGN** 4
Applies network analysis to such topics as filters, equalizers and tuned amplifiers. This course includes an introduction to filter network synthesis. (3/2) Prereq: Transform Circuit Analysis.
- EL024U ADVANCED ELECTRONIC PROBLEMS** 4
Covers modern advances in electronics technology, discusses new devices with application, and studies modern techniques of circuit analysis with emphasis on utilization of the computer. (3/2) Prereq: Solid - State Circuit Analysis and Design.
- EL026U ELECTRICITY** 3
Studies electric circuits and machines. Emphasis is placed on the fundamentals of electricity relative to the operation of electric machines. Topics covered are basic electricity (AC and DC), magnetism, D.C. generators, and motors, A.C. generators and motors, transformers, and basic electric machine control. (2/3) Prereq: Technical Math II.
- EL027U BASIC AND APPLIED ELECTRICITY** 8
Covers the diagnosis and repair of electrical problems as they relate to tractors, trucks and small engines. Modern test methods and equipment is stressed. (4/8)
- EL029U ELECTRONIC CIRCUITS I** 12
Studies the theory and application of the physics of electricity as it is applied to the field of electronics. Included are definitions, symbols, components, Ohm's law, Kirchhoff's laws, Norton's and Thevenin's theorems, and the principles of magnetics. Laboratory experiments are designed to enhance the learning of the theories studied. (8/8) Prereq: High School Algebra.
- EL030U ELECTRONIC CIRCUITS II** 10
Continues Electronic Circuits I, applying the laws from Circuits I to alternating current circuits, active devices, coupling methods, resonant circuits and radio frequency amplifiers. (5/10) Prereq: Electronic Circuits I.
- EL031U ELECTRIC CIRCUITS III** 6
Studies the analysis of single time - constant circuits (R - C and R - L). The S - operator is introduced in this course. (5/2) Prereq: Electric Circuits II.
- EL033U ELECTRONIC TEST METHODS** 3
Covers use of test equipment in performing measurements, alignment, trouble shooting, and in attaining an understanding of the types of circuits studied in Communications Electronics (EL006U). (2/3) Prereq: Communications Electronics.

- EL034U TRANSFORM CIRCUIT ANALYSIS** 4
Includes analysis of multiple time - constant circuits (R - L - C) by the use of Laplace transform techniques. (3/2) Prereq: Electric Circuits III.
- EL035U ACTIVE DEVICES** 7
Provides the student with a basic understanding of how active devices work, how amplifiers amplify, and how a circuit is analyzed and designed. The course provides a background needed to progress into more complex circuits and systems. (4/6) Prereq: Electric Circuits I.
- EL046U CIRCUIT ANALYSIS I** 2
Studies techniques and methods of analyzing electric circuits, resistive and reactive. Completion of this course and Electronics I satisfies the requirement for Electric Circuits I. (2/0) Prereq: Electronics I.
- EL047U CIRCUIT ANALYSIS II** 2
Covers the analysis of active devices in a circuit, with an emphasis on solid - state devices and how they amplify. Completion of this course and Electronics II satisfies the requirement for active devices. (2/0) Prereq: Electronics II.
- EL048U CIRCUIT ANALYSIS III** 2
Covers equivalent circuits and their parameters. Topics include small and large signal amplifiers and feedback. Completion of this course and Electronics III satisfies the requirement for Solid - State Circuit Analysis and Design. (2/0) Prereq: Electronics III.
- EL049U CIRCUIT ANALYSIS IV** 2
Is an analytical study of systems of amplitude modulation, frequency modulation, and single - side - band systems. Completion of this course and Electronics IV satisfies the requirement for Communication Electronics. (2/0) Prereq: Electronics IV.
- EL050U CIRCUIT ANALYSIS V** 4
Includes analysis and design of electronic switching circuits including clippers, clampers, multivibrators, shapers, blocking oscillators, logic circuits, and sweep circuits. Completion of this course and Electronics V satisfies the requirement for Pulse and Switching Circuits. (4/0) Prereq: Electronics V.
- EL051U CIRCUIT ANALYSIS VI** 2
Includes an analysis of control circuits and devices. Some of the topics include silicon controlled rectifiers, thyratrons and photo - electric devices. Completion of this course and Electronics VI satisfies the requirement for Industrial Electronics. (2/0) Prereq: Electronics VI.
- EL052U ELECTRONICS I** 5
Studies the theory and application of the physics of electricity as it applies to the field of electronics. Included are definitions, symbols, components, Ohm's law, Kirchhoff's laws and Thevenin's theorem with application to resistive and reactive circuits. (4½/1) Prereq: MA011U.
- EL053U ELECTRONICS II** 5
Covers the theory and application of active devices, with emphasis placed on biasing techniques and the theory of amplification in transistor amplifiers. (4/1 - ¾) Prereq: Electronics I or equivalent.
- EL054U ELECTRONICS III** 5
Includes a study of amplifiers, oscillators, power supplies and regulators. (4/1 - ¾) Prereq: Electronics II or equivalent.
- EL055U ELECTRONICS IV** 5
Introduction to transmitters, receivers and antennas, with an emphasis on troubleshooting and alignment techniques. (4/1 - ¾) Prereq: Electronics III or equivalent.
- EL056U ELECTRONICS V** 2
Covers the theory and application of operational amplifiers and an introduction to logic circuits. (1¾½) Prereq: Electronics IV or equivalent.
- EL057U ELECTRONICS VI** 2
Introduces the theory and operation of synchros and servo systems. (1¾½) Prereq: Electronics II or equivalent.
- EL058U DESIGN PROJECTS I** 1
Allows the student to select, research, plan, design and make drawings of an electronics project which he will construct in Design Projects II. This may be an individual or group project. (0/2) Prereq: Solid-State Circuit Analysis & Design.
- EL059U DESIGN PROJECTS II** 2
Provides final design, breadboard construction, testing, fabricating and re - testing of the project started in Design Projects I. (0/4) Prereq: Design Projects I.
- EL001V ELECTRONIC SHOP METHODS** 1
Covers the shop skills needed by technicians in a modern electronics service center. Topics included are soldering techniques, wiring, parts placement, and the use and care of hand tools. (0/3)

- EL002V AUDIO SYSTEMS** 8
Covers basics of solid - state amplifiers including the various amplifier types and bias configurations. Other topics covered include hi - fi and recording systems, distortion, decibels, and signal characteristics. (4/8) Prereq: Introduction to Electronics.
- EL003V BROADCAST SYSTEMS** 4
Includes a study of the complete systems for generation, transmission and reception of color television and broadcast FM stereo. (3/2) Prereq: Audio Systems
- EL004V TELEVISION I** 11
Includes the TV broadcast system, transmitter systems, receivers, troubleshooting techniques and alignment procedures. (5/12)
- EL005V TELEVISION II** 4
Extends the student's experience into color television, covering such topics as transmitters, receivers and receiver servicing. (2/5) Prereq: Television I.
- EL006V TROUBLESHOOTING** 5
Offers practical experience in troubleshooting electronic equipment in a service shop atmosphere, with student responsibility in the areas of supervision, scheduling of work, safety, showroom displays, technical testing, measuring and troubleshooting. (1/9) Prereq: Communication Electronics I.
- EL008V ELECTRICAL PRINCIPLES** 11
Studies the theory and application of the physics of electricity. Included are definitions, symbols, components, Ohm's law, Kirchhoff's laws and the theory of magnetism. Laboratory experiments are designed to enhance the learning of the theories studied. (8/7)
- EL009V SHOP PROCESSES** 2
Develops skills in the use of hand tools, drill press, oxy - acetylene welding and brazing. Also included are care of tools, inventorying, soldering and wiring techniques. (0/5)
- EL010V ELECTRICAL CIRCUITS** 10
Studies electrical circuits including motors, circuit breakers, controls, three - phase systems, transformers, relays and the proper use of special measuring instruments. (5/10) Prereq: Electrical Principles.
- EL011V DIAGRAM INTERPRETATION** 3
Develops skills in reading schematics, wiring diagrams and blue prints. (2/3)
- EL012V ELECTRO - MECHANICAL SYSTEM I** 4
Studies real systems, both mock - up and actual equipment. Included are such things as motor control panels, appliances including automatic washers, dryers and dish washers. (3/2) Prereq: Elec. Princ.
- EL013V DIGITAL CIRCUITS** 2
Introduces the service technician to electronic computer circuits. Some of the topics studied are logic gates, number systems, arithmetic circuits, flip - flops, counters and converters. (1/2)
- EL014V ELECTRO - MECHANICAL SYSTEMS II** 7
Continues Electro - Mechanical Systems I; this course also includes refrigerator, electric ranges, garbage disposers, small appliances, as well as industrial systems. (5/5) Prereq: El. Mech. Systems I
- EL015V CONTROL CIRCUIT DEVICES** 5
Introduces vacuum and gas tubes and solid state devices. Emphasis is placed on the use of these devices in control circuits. Emphasis is placed on silicon controlled rectifiers, diodes, transistors, phanotrons and thyratrons. (4/3) Prereq: Electrical Circuits.
- EL016V CONTROL CIRCUITS AND SYSTEMS** 8
Studies the types of control circuits and systems found in industry and in home appliances. Some of the topics covered include welding controls, motor controls, automatic door openers, temperature controls, humidistats and warning devices. (5/7) Prereq: Control Circuit Devices.
- EL017V EQUIPMENT TROUBLESHOOTING** 10
Offers the student the opportunity to troubleshoot all types of electro - mechanical equipment. An effort is made to include as large a variety as possible. It provides an opportunity for the student to put into practice all of the troubleshooting techniques he has learned during the entire course, and gives him a chance to develop techniques for the first time. (5/10) Prereq: El. Mch. Systems II.
- EL018V PRINCIPLES OF REFRIGERATION** 7
Familiarizes the student with the basic refrigeration terms and the major components, tubing and fittings in a refrigeration system. Also acquaints the student with the principles of heat quantity measurements, and the theory of refrigeration and refrigeration systems. (5/5) Prereq: El. Mech. Systems I.

ENGINEERING

College Parallel

EG007T ENGINEERING GRAPHICS I 3

Includes study of sketching, lettering, freehand drawing, use of drawing instruments and principles of projection. Also lines, perpendicularity, parallelism, revolution, topography and piercing points.

EG008T INTRODUCTION TO ENGINEERING: COMPUTATION 3

Emphasizes digital computer programming utilizing FORTRAN and time - shared BASIC; engineering applications using logic operations, decision and transfer, loops, subprograms, input/output and flow charts. It is a required course in engineering and is designed for undergraduate students who have had no, or only a minimum, digital computer programming experience. Prerequisites are high school algebra and trigonometry or departmental permission. (3/0)

EG009T MATERIALS SCIENCE I 5

Is a foundation course in materials science designed to show relationships between structures and properties of various materials at the atomic, micro and macro levels. The course is a core requirement in all engineering curriculum. Prereq: CH005T or departmental approval.

EG010T STATICS 3

Covers such topics as vector algebra, forces, couples, equipollent force - couple systems, Newton's laws, friction, equilibrium analysis of particles and finite bodies and applications. This course principally serves both the civil engineering and mechanical engineering undergraduate engineering programs where it is a required course. Prereq: One semester or two quarters of college - level calculus. (3/0)

EG011T DYNAMICS 5

Emphasizes vector calculus, Newton's laws, dynamics of particle motion, multi - particle systems, and rigid bodies in plane motion and applications. It serves principally both the civil and mechanical engineering undergraduate programs where it is a required course. Prereq: EG010T and MA037T. (5/0)

EG012T THERMODYNAMICS I 6

Includes basic elements of classical thermodynamics, including first and second laws, reversibility, irreversibility, Carnot cycle, properties of pure substances; closed simple systems and one -

dimensional steady - flow open systems, and engineering applications. The course is a core course in the basic and applied science portion of the curriculum and is a required course of all engineers except those in chemical engineering. Prereq: CH005T or equivalent and one semester or two quarters of college - level calculus. (6/0)

Vocational - Technical

EG001U STATICS 8

Studies composition and resolution of forces; equilibrium of force systems; plane trusses and structures; friction. (6/4) Prereq: Technical Math II.

EG002U KINEMATICS OF MECHANISMS 7

Studies the analysis of kinematic systems for displacement, velocity and acceleration. Graphical and analytical methods are used in the solutions. Systems include linkages, cams and gear trains. (4/6)

EG003U DYNAMICS 7

Covers particles and rigid bodies in translation, rotation and plane motion; work and energy; moments of inertia of mass. (4/6)

EG004U MACHINE DESIGN 7

Is an application course where the skills acquired during the first four quarters are focused on problems involving the size, shape and material requirements of machine parts for various loading conditions. Machine components that are analyzed are: shafts, weldments, fasteners, springs, clutches and brakes, gears and gear trains, bearings and chain drives. (2/10)

EG005U ENGINEERING MATERIALS 2

Studies the terminology used in describing the properties of engineering materials. Reference descriptions are reinforced with actual tests conducted on ferrous metals to determine their mechanical properties. (1/3)

EG006U STRENGTH OF MATERIALS I 4

Is an analytical study of material properties and the application with respect to joints, torsional devices and beams, including shear and moments, stresses, and beam design. (3/2)

EG007U STRENGTH OF MATERIALS II 5

Studies the deflection of beams, statically indeterminate beams, combined stresses and columns. Provide complete structural analysis. (5/0)

EG008U ENGINEERING PROBLEMS 3
Includes basic operations of scientific electronic calculators and an introduction to Fortran IV programming. (2/3)

ENVIRONMENTAL STUDIES

College Parallel

**EV001T MAN IN THE ENVIRONMENT:
ATMOSPHERE** 4

Is one of three non - sequential courses in the interdisciplinary area of man and the environment. All three quarters are taught cooperatively by a social scientist, a biologist and a physical scientist with subject matter coming from a variety of disciplines. Environmental problems and challenges resulting from the interaction of man with the environment are treated from underlying principles and a social scientific perspective. Quarter topics include scientific method, atmospheric circulation, air pollution, ecosystem and the air, urban and rural air pollution control techniques, pollution legislation and conservation ethic. Three hours science credit, one hour core social science credit. (4/0)

**EV002T MAN IN THE ENVIRONMENT:
HYDROSPHERE** 4

(See Man and the Environment: Atmosphere) This quarter includes interaction of atmosphere hydrosphere and lithosphere biology of a closed ecosystem, ecology, water environment, pollution of waters, power and energy, thermal pollution, wastewater treatment, control technology, humanity and water, legislation and pollution control. Three hours core science credit and one hour core social science credit. (4/0)

**EV003T MAN IN THE ENVIRONMENT:
LITHOSPHERE** 4

This quarter emphasizes land based problems of environmental interactions. Topics are: the urban environment, transportation, population, food, solid waste, national priorities, economics of pollution, legal aspects of pollution, control enforcement, conservation and comparative social and political systems responses to environmental issues. Two hours core science credit and two hours core social science credit. (4/0)

EV002U PUBLIC WASTEWATER SYSTEMS 4
Considers the operation and evaluation of public wastewater treatment systems. (3/2)

EV003U PUBLIC WATER SYSTEMS 4
Considers operation and evaluation of public water supply and treatment system. (3/2)

**EV004U INTRODUCTION TO
ENVIRONMENTAL HEALTH** 3

Offers an overview of the organized community effort to overcome disease and upgrade the level of health of the public. (3/0)

EV005U INSTITUTIONAL SANITATION 3
Covers environmental factors involved in the health and safety considerations in schools, nursing homes, hospitals and correctional institutions. (3/0)

EV006U FOOD SANITATION 4
Includes the relationship of food and the preparation and handling of food to the health of the public, and the sanitary requirements of food handling establishments. (3/2)

EV007U MILK SANITATION 5
Includes the quality milk program; the sanitation involved in the production and the processing of milk; and proper sampling technique. (4/2)

**EV008U OCCUPATIONAL HEALTH AND
INDUSTRIAL SAFETY** 4

Includes routine monitoring of safety, health and hygiene conditions in the work place, controlling work practice and working conditions, writing necessary reports, and recommending appropriate action. (3/2)

EV009U RECREATIONAL SANITATION 4
Covers the health and safety aspects of parks, trailer parks and swimming pools including regulation enforcement and testing. (4/0)

EV010U SOLID WASTE MANAGEMENT 5
Covers the character of solid waste produced by households and communities; their health and nuisance significance; and proper methods of disposal including use of landfills, incinerators, and grinders. The hazard of hog feeding and the air pollution and vermin problems associated with refuse burning and dumps also will be covered. (4/2)

EV011U PLANNING AND ZONING 4
Considers the development of a master community plan for the orderly development and redevelopment of all areas. It will include a study of police power through the improvement and strict application of building codes, fire and health inspections and zoning

regulations; the power of eminent domain and the power of taxation and public credit. (4/0)

EV012U PRIVATE WASTEWATER SYSTEMS 5
Emphasizes small water - borne wastewater disposal systems. Design and evaluation of such systems to include systems in tight soils. (4/2)

EV013U SUPERVISED FIELD STUDIES 10
Offers supervised on - the - job training in inspection procedures, complaint investigations, food, water and milk sampling, report writing, and administration in a typical work environment. (0/32)

EV014U SEMINAR: ENVIRONMENTAL HEALTH 2
Studies problems encountered during field learning experience. (2/0)

EV015U INSECT AND RODENT CONTROL 3
Includes the identification of insect and rodent pests, how they spread disease, and the control procedures with special attention to sanitary practices and the judicious use of insecticides. (3/0)

EV016U PRIVATE WATER SYSTEMS 5
Considers source and protection of private water supplies. Also considers water quality, sanitary survey and water sampling, bacterial and chemical examinations of water. (4/2)

EV017U ENVIRONMENTAL HEALTH ADMINISTRATION 4
Includes such topics as governmental aspects of public health, legal considerations, organizational considerations, personnel factors, fiscal management, and public relations. (4/0)

EV018U AIR QUALITY MANAGEMENT 4
Considers the sources of air pollution, the classification of pollutants, the meteorological aspects, the effects of atmospheric pollution, the prevention and control of air pollution, and the monitoring of pollutants. (4/0)

EV019U RADIATION CONTROL 3
Covers fundamentals of radiation, biological effects of radiation, types of X - ray units, common hazards, radioactive sources, radiation protection, disposal of radioactive wastes, and environmental radiation surveillance and monitoring. (3/0)

EV020U HOUSING INSPECTION 5
Covers the health significance of housing; the features of housing which contribute to it, including lighting, heating, ventilation, supplied facilities, safe and sanitary maintenance and minimum space

use and location requirements; the application of standards (building and housing codes) to the control of these features; and the inspectional methods employed in the promotion and enforcement of the standards. (5/0)

EV022V WATER RESOURCES 7
Includes evaluation of water resources and availability. The course also covers analysis of water usage trends, concepts of water re-use, and discussion of water tables and geology. (7/0)

EV026V SUPERVISED FIELD STUDIES 9
Offers a period of training in a water or wastewater treatment plant. The student participates in the routine daily operation of the plant (0/40) (Eight Weeks) Prereq: Wastewater Treatment.

EV027V WATER AND WASTEWATER PLANT ADMINISTRATION 3
Offers instruction and practice in planning and conducting an organized system of plant records and reports. Introduction to personnel procedures and municipal management responsibilities in water and wastewater processing. Emphasis on public relations and report writing. (3/0) Prereq: Wastewater Treatment.

EV028V RESEARCH PROJECTS 6
Offers special investigative projects related to water or wastewater plant operations selected by the student with approval of the department advisor. (Four Weeks) (6/24) Prereq: Wastewater Treatment.

EV029V WATER QUALITY CONTROL 5
Offers instruction in laboratory procedures and equipment used in the water plant laboratory. (2/6)

EV030V WATER TREATMENT 11
Offers instruction in water treatment methods, equipment maintenance, and plant control. (10/2)

EV031V WASTEWATER TREATMENT 10
Focuses on design concepts, maintenance and process control of wastewater treatment facilities. The pilot scale wastewater treatment facility is a key training aid. (10/0)

EV032V WASTEWATER LAB 7
Includes instruction in laboratory procedures and equipment for assessment of wastewater treatment plant performance and process control. (0/14)

EV033V WATER DISTRIBUTION AND STORAGE 4
Focuses on design, installation, repair and operation of these water system components. (2/4)

EV034V WASTEWATER COLLECTION 4
Covers collection of wastewaters by gravity and pumping. Discussion of design, installation, maintenance, repair of components and safety is included. (0/8)

FIRE SAFETY

FS001T HISTORY AND PHILOSOPHY OF FIRE SCIENCE 3

Provides a basic description and explanation of the core courses required for the associate degree; discusses history and philosophy of fire protection, organization at the local, state and national level; relationships with the insurance industry, governmental bodies and other agencies will be studied. Includes a study of how our fire services are organized, an introduction to basic fire problems, and an evaluation and a survey of fire protection. (3/0)

FS002T FIRE PROTECTION SYSTEMS AND EQUIPMENT 3

Examines the in-house devices and systems utilized to support the role of the fire service in the detection and suppression of fire. (3/0)

FS003T INDUSTRIAL FIRE PROTECTION AND SECURITY 3

Develops the precautions and safeguards essential for protection of lives and property in various types of occupational establishments. (3/0)

FS004T FLUID FLOWS 3

Involves application of the laws of hydraulics, design features, flow characteristics and tests needed to insure adequate water supplies on the fire ground. Flow testing is an integral part of this course. (3/0)

FS005T STRATEGIC PLANNING FOR FIRE PROTECTION 3

Designed to help the student understand the overall fire problem at the area, community, multiple building complex, and the individual building levels. The course provides the student with the ability to identify overall and specific fire problems. It describes the management tools (systems analysis) and data collection systems from which the student can then develop solutions and alternatives. (3/0)

FS006T FIRE INVESTIGATION 3
Studies the solid technical matters in a clear and useful manner, permitting the individual to go to the scene of a fire and come back with some answer as to what caused it, who set it, what defect was responsible, or generally, what happened. (3/0)

FS007T HAZARDOUS MATERIALS 3
Develops the properties of chemically active and hazardous materials, such as flammable liquids, combustible solids, oxidizing and corrosive materials and radioactive compounds, as they are related to materials and processes connected with transportation, storage, usage and fire potentials. (3/0)

FS008T TACTICS FOR FIRE PROTECTION 3
Includes organization for major fires, including preplanning, command post operations, utilization of manpower and equipment for large scale operations, supply and communication. (3/0)

FS009T FIRE PROTECTION ADMINISTRATION AND MANAGEMENT 3

Includes application and implementation in the fire service: relationship of administration at various levels of the organization including communications, legal aspects, budgeting, and evaluation of fire data for statistical purposes. Provides an in - depth study of management as it is defined: a dynamic process which effectively utilizes all resources, human and material, in the achievement of policy and goals established for the department. (3/0)

FS010T BUILDING DESIGN FOR FIRE PROTECTION 3

Studies building construction as it relates to its reaction under fire conditions. Interpretation and application of fire prevention in building codes as they are related to the structural strengths of a particular design. (3/0)

FS012T FIRE BEHAVIOR I 3

Involves a qualitative study of chemical and physical aspects of fuels, the combustion process and the products of combustion as these aspects apply to the causes, spread and the extinguishing of a fire. A combination lecture, demonstration and class participation course designed to teach the basic facts necessary to understand fire behavior. The latter part of the course will include the principles of fire suppression. (3/0)

FOREIGN LANGUAGES

College Parallel

INDIVIDUALIZED FOREIGN LANGUAGE PROGRAM

All courses in the Department of Foreign Languages are on a modular system of individualized instruction. Instructors, native consultants and para - professionals assist the student. Students who have had previous language study should consult the department head for correct placement.

FL001T ELEMENTARY FRENCH I 4
Develops fundamental skills in the French language. Emphasis on acquiring the proficiency to communicate with the native speaker in everyday situations. Includes activities that promote the understanding and knowledge of the French speaking peoples and their culture. (4/0)

FL002T ELEMENTARY FRENCH II 4
Continues Elementary French I. Prereq: Elementary French I or equivalent. (4/0)

FL003T ELEMENTARY FRENCH III 4
Continues Elementary French II. Prereq: Elementary French II or equivalent. (4/0)

FL004T INTERMEDIATE FRENCH I 3
Develops fundamental skills in the French language. Emphasis on acquiring the proficiency to converse easily with the native speaker on general topics and to read contemporary materials. Includes activities that promote the understanding and knowledge of French speaking peoples and their culture. Prereq: Elementary French III or equivalent. (3/0)

FL005T INTERMEDIATE FRENCH II 3
Continues Intermediate French I. Prereq: Intermediate French I or equivalent. (3/0)

FL006T INTERMEDIATE FRENCH III 3
Continues Intermediate French II. Prereq: Intermediate French II or equivalent. (3/0)

FL007T FRENCH CIVILIZATION I 3
Provides readings on France and the French people: France, the provinces, the people and their way of life. Course conducted in French. May be taken as independent study. (3/0) Prereq: Intermediate French III or equivalent.

FL008T FRENCH CIVILIZATION II 3
Provides readings on French history, politics, unions, education, economy. Course conducted in French. May be taken as independent study. (3/0) Prereq: Intermediate French III or equivalent.

FL009T FRENCH CIVILIZATION III 3
Provides readings on the cultural heritage of France from the Middle Ages to the present. Units include literature, music, art, drama. Course conducted in French. May be taken as independent study. (3/0) Prereq: Intermediate French III or equivalent. May be repeated for credit.

FL010T ELEMENTARY GERMAN I 4
Develops fundamental skills in the German language. Emphasis on acquiring the proficiency to communicate with the native speaker in everyday situations. Includes activities that promote the understanding and knowledge of the people of Germany and their culture. (4/0)

FL011T ELEMENTARY GERMAN II 4
Continues Elementary German I. Prereq: Elementary German I or equivalent. (4/0)

FL012T ELEMENTARY GERMAN III 4
Continues Elementary German II. Prereq: Elementary German II or equivalent. (4/0)

FL013T ELEMENTARY SPANISH I 4
Develops fundamental skills in the Spanish language. Emphasis on acquiring the proficiency to communicate with the native speaker in everyday situations. Includes activities that promote the understanding and knowledge of the Spanish speaking peoples and their culture. (4/0)

FL014T ELEMENTARY SPANISH II 4
Continues Elementary Spanish I. Prereq: Elementary Spanish I or equivalent. (4/0)

FL015T ELEMENTARY SPANISH III 4
Continues Elementary Spanish II. Prereq: Elementary Spanish II or equivalent. (4/0)

FL016T INTERMEDIATE SPANISH I 3
Develops fundamental skills in the Spanish language. Emphasis on acquiring the proficiency to converse easily with the native speaker on general topics and to read contemporary materials. Includes activities that promote the understanding and knowledge of Spanish speaking peoples and their culture. Prereq: Elementary Spanish III or equivalent. (3/0)

FL017T INTERMEDIATE SPANISH II 3
Continues Intermediate Spanish II. Prereq: Intermediate Spanish I or equivalent. (3/0)

FL018T INTERMEDIATE SPANISH III 3
Continues Intermediate Spanish II. Prereq: Intermediate Spanish II or equivalent. (3/0)

FL019T SPANISH CIVILIZATION 3
Provides readings on Spain, the people and the land, history and ways of life. Student may choose to emphasize a special interest area. Conducted in Spanish. May be taken as independent study. (3/0) Prereq: Intermediate Spanish III or equivalent. May be repeated for credit.

FL020T SPANISH - AMERICAN CIVILIZATION 3
Provides readings on the Spanish speaking countries of the Western Hemisphere. Student may choose a special interest area: Mexico, Central America, South America, or some common aspect of all or several of these countries. Conducted in Spanish. (3/0) Prereq: Intermediate Spanish III or equivalent. May be repeated for credit.

FL023T INTERMEDIATE GERMAN I 3
Develops fundamental skills in the German language. Emphasis on acquiring the proficiency to converse easily with the native speaker on general topics and to read contemporary materials. Includes activities that promote the understanding and knowledge of German people and their culture. Prereq: Elementary German III or equivalent. (3/0)

FL024T INTERMEDIATE GERMAN II 3
Continues Intermediate German I. Prereq: Intermediate German I or equivalent. (3/0)

FL025T INTERMEDIATE GERMAN III 3
Continues Intermediate German II. Prereq: Intermediate German II or equivalent.

***FL031T ADVANCED GERMAN I** 3
Provides for improvement of speaking, reading and writing skills through multi - media materials on contemporary German civilization. Prereq: Intermediate German III, or equivalent. (3/0)

***FL032T ADVANCED GERMAN II** 3
Continuation of Advanced German I. Prereq: Advanced German I, or equivalent. (3/0)

***FL033T ADVANCED GERMAN III** 3
Continuation of Advanced German II. Prereq: Advanced German II, or equivalent. (3/0)

GEOGRAPHY

College Parallel

GE001T HUMAN GEOGRAPHY 4
Studies the geography of population and the principle ways of life with consideration of the capacity of the earth for future population growth. (4/0)

GRAPHICS

Vocational-Technical

GR001U ELECTRONIC DRAWING 3
Studies the theory of orthographic projection, familiarization with drawing instruments, materials and drafting practices as applied to electronics. Students do a block diagram and a schematic of a selected system. (1/5)

GR002U ENGINEERING DRAWING I 6
Deals with the following topics: the use of drawing instruments, geometric constructions, orthographic projection, freehand drawing, isometric and oblique pictorial drawing, auxiliary and sectional views. (2/8)

GR003U ENGINEERING DRAWING II 6
Studies dimensioning and tolerancing practices. Weldments and structural assemblies, and assemblies utilizing the more commonly used fasteners are drawn. A major part of the quarter is spent in drawing a complete set of working drawings including assemblies, details and bills of materials. (2/8)

GR004U ENGINEERING DRAWING III 5
Covers more specialized areas of drawing such as the graphing of engineering data, and the drawing of gears, cam profiles, motion diagrams, and linkages. Intersections and developments of sheet metal parts are drawn. (0/10)

GR005U DESIGN PROBLEMS I 2
Concentrates on design principles, design procedures, design problem observations, design problem solutions, layouts, working drawings, design collateral, specifications and vendor research. (2/3)

- GR006U DESIGN PROBLEMS II** 6
Includes instruction in design principles and procedures, problem observations and problem solutions. (1/11)
- GR007U LAYOUT & DESIGN** 4
Studies two-dimensional design and its relationship to graphic reproduction in terms of balance, contrast, color, form and texture for specified communications. The application of design theory to actual production work in a laboratory environment. (1/7)
- GR009U TYPOGRAPHY** 3
Studies type faces as related to typographic design and layout. Historical evaluation of type is traced from the origins of the alphabet to the present. Working definitions and terminology, including the several ways in which type is composed. A prerequisite for this is a typing course. (1/4)
- GR011U COPY PREPARATION I** 7
Presents an introduction to cold-type composition. Basic elements of simple strike-on, paste-up and an overview of high-speed typesetting systems. (2/10)
- GR012U COPY PREPARATION II** 8
Covers advanced elements of cold-type composition, including photo-mechanical typesetting, preparation of artwork with intent for color, photo-mechanical transfer techniques, and line and halftone considerations. (2/13) Prereq: Copy Preparation I or consent of instructor.
- GR019U PLATEMAKING I** 1
Presents an introduction to the kinds of lithographic plates, nomenclature and specific applications for each in the printing cycle. Exposure and development of plates is stressed. (.50/1.16)
- GR020U PLATEMAKING II** 3
Surveys the chemistry involved in preparing plates as related to problems encountered on the press, running life, additions, deletions, and proper application of preservatives. (1/4) Prereq: Platemaking I or consent of instructor.
- GR021U PROCESS CAMERA I** 2
Studies high-contrast photography as it relates specifically to the lithographic process. Emphasis is placed on the production of line negatives and positives with an introduction to contact printing. (1/1.66)
- GR022U PROCESS CAMERA II** 4
Presents advanced techniques of line and halftone negatives including an introduction to the theory of special effects. Related darkroom operations and nomenclature. (1/7) Prereq: Process Camera I or consent of instructor.
- GR023U PROCESS CAMERA III** 2
Offers advanced theory and practical application of photographic sensitized materials applicable to the lithographic printing processes. Attention is given to special effects photographic techniques and an introduction to the theory of color separation. (1/1.66) Prereq: Process Camera II or consent of instructor.
- GR024U STRIPPING I** 2
Covers simple stripping of negatives and positives to layout specifications for duplicator size presses. (.50/2.16)
- GR025U STRIPPING II** 3
Covers advanced stripping techniques, including multiple impositions, color register and pin register systems. Introduction to step-and-repeat and multiple burn stripping applications. (1/4) Prereq: Stripping I or consent of instructor.
- GR026U STRIPPING III** 2
Offers systematic application of advanced stripping techniques with intent for single color and multiple color runs on duplicator and larger lithographic presses. (1/1.66) Prereq: Stripping II or consent of instructor.
- GR027U OFFSET PRESSWORK I** 4
Emphasizes the practical and technical aspects of offset printing including all machine parts and operations in the "make-ready" cycle related to duplicator size presses. (1/7)
- GR028U OFFSET PRESSWORK II** 7
Emphasis is placed on tone control and the press as related to line and halftone reproduction. Fountain solutions and formulae related to inks, paper, plates, pH control and associated techniques are studied. Prereq: Offset Presswork I or consent of instructor. (2/10)
- GR029U OFFSET PRESSWORK III** 4
Advanced study of theory and practical aspects relating to color reproduction and plating, includes operation of presses larger than duplicator. Consideration is given to troubleshooting and maintenance of large and small presses. (1/7) Prereq: Offset Presswork II or consent of instructor.
- GR030U COPY PREPARATION III** 8
Studies advanced principles of preparing artwork for commercial offset, including newspaper, magazine and book publication techniques. Practical applications of high-speed phototypesetting systems. (2/13) Prereq: Copy Preparation II or consent of instructor.

- GR031U BINDERY OPERATIONS** 1
Offers practical application of the several binding operations including fastening and covering printed materials, folding, stitching, cutting, trimming, punching and other associated finishing operations. (1/.66)
- GR032U ARCHITECTURAL DRAFTING I** 13
Covers sheet layout, orthographic projection, dimensioning, line quality, sketching, perspective and lettering. (2/22)
- GR033U ARCHITECTURAL DRAFTING II** 13
Teaches the proper procedures in developing site plans, plan views (footing plans, floor plans and framing plans), elevations and wall sections. (2/22) Prereq: GR032U.
- GR034U ARCHITECTURAL DRAFTING III** 11
Covers the development of a set of working drawings for a commercial or institutional type building. Students learn to use manufacturer's reference materials. (2/18) Prereq: GR032U, GR033U.
- GR035U ARCHITECTURAL DRAFTING IV** 14
Enables student teams to develop a set of working drawings for an addition to an existing building. (2/27) Prereq: GR032U, GR033U, GR034U.
- GR036U RELATED DISCIPLINES** 2
Covers graphic application of electrical, plumbing and mechanical work as related to architectural working drawings. (2/0)
- GR001V GRAPHIC SKILLS** 2
Develops basic drafting skills, both freehand and with layout instruments. (1/2)

HISTORY

College Parallel

- HY001T U.S. HISTORY** 4
(17th & 18th CENTURY)
Surveys the social, political and economic history of the United States with emphasis on the forces resulting in the emergence of the new nation through the age of Jackson. (4/0)
- HY002T U.S. HISTORY** 4
(19th CENTURY)
Surveys the social, political, and economic history of the United States from the 1840s through the Progressive Era. (4/0) Prereq: None.
- HY003T U.S. HISTORY** 4
(20th CENTURY)
Surveys the social, political and economic history of the United States from World War I to the present. (4/0) Prereq: None.
- HY008T INDEPENDENT STUDY IN SOCIAL SCIENCES (HISTORY)** 0, 1, 2, 3, 4
Provides readings, papers and/or basic research or other projects under the individual guidance of a staff member. Prereq: Consent of instructor and department chairman is required before registering.
- HY016T EUROPE IN THE AGE OF MONARCHY** 4
Presents and explores the social, economic, political and cultural basis of Europe and covers from the Renaissance to 1763. (4/0)
- HY017T EUROPE IN THE AGE OF LIBERALISM** 4
Continues the objectives of three-quarter study and covers from the Enlightenment to the Revolution of 1848. (4/0)
- HY018T EUROPE IN THE AGE OF TOTALITARIANISM** 4
Continues the objectives of the three-quarter study and covers from 1848 to the present. (4/0)

HOME ECONOMICS

Vocational-Technical

- HE001U INTRODUCTION TO FOOD SERVICE/HOSPITALITY CAREERS** 1
Introduces students to careers in hospitality/food service industry, training requirements and personal characteristics desirable for employment in the industry. Guidance is offered in developing individual career goals. (1/0)
- HE002U FASHION HISTORY** 3
Covers the development of costume and accessories as a part of a socio-economic and cultural force from ancient times to the present and its relationship to fashion design and trends of today. (3/0)
- HE003U TEXTILES I** 3
Studies natural fiber characteristics, yarn processing, fabric construction and fabric finishing. The qualities of fabrics are analyzed in relationship to factors of design, strength and durability. (3/0)
- HE004U TEXTILES I LABORATORY** 1
Studies properties of fabrics and fibers. Offers directed laboratory

activities which provide knowledge for fabric identification and analysis of fiber characteristics. (0/2)

HE005U FOOD PRODUCTION I 6
Provides experiences in use and care of small and large quantity cooking equipment. Emphasizes kitchen procedures, work simplification processes and kitchen safety and sanitation. Introduces food preparation skills and techniques for yeast breads, quick breads, pastry, cakes, cookies, other desserts, salads, dressings, sandwiches, eggs, beverages, fruits, vegetables, appetizers, relishes, milk and milk products, breakfast dishes, condiments and seasonings. (0/12)

HE006U FOOD PRODUCTION II 6
Provides continued experience in the use and care of equipment, safety, sanitation, and work simplification procedures. Includes large and small quantity food production in meat, poultry, fish, seafoods, soups, sauces, gravies, yeast breads, convenience and synthetic foods, dehydrated and concentrated foods. (0/12) Prereq: Food Production I

HE007U FOOD PRODUCTION III 5
Offers field studies to complement employment experiences. Specialized projects such as catering, cake decorating, etc., enable the student to develop areas of specialty. (0/12) Prereq: Food Production I and II

HE008U MENU AND SERVICING FUNDAMENTALS 3
Applies basic nutrition principles and aesthetic values to menu planning. Directs study toward the various forms of commercial/institutional menus, and their relationships to food purchasing, costing, personnel, equipment and determining selling price, dependent upon the types of establishment. (3/0)

HE009U FOOD SERVICE SANITATION AND SAFETY 3
Studies the relationship and requirements of food, food handling and food preparation necessary to produce safe and sanitary foods including the study of food borne illnesses, pest control, commercial dishwashing, personal sanitation and grooming and local sanitation regulations. Identifies safe working practices, conditions, equipment safety, OSHA requirements and basic first aid procedures. (3/0)

HE010U NUTRITION AND FOOD COMPOSITION I 4
Studies the basic principles of nutrition in relation to feeding individuals of all ages. Emphasizes study of foods, their nutritional contributions, composition, characteristics and requirements in handling, preparation, service and storage. (4/0)

HE011U NUTRITION AND FOOD COMPOSITION II 4
Continues study of foods, their nutritional contribution, composition, characteristics and requirements in handling, preparation, service and storage. Emphasis is on red meats, poultry and fish. (4/0) Prereq: Nut/Food Comp. I

HE012U EQUIPMENT AND DESIGN 4
Studies types and capabilities of commercial/institutional food service equipment available. Studies floor plans of commercial/institutional kitchens in relation to menu needs, work flow, space and personnel. Students design a commercial or institutional floor plan including equipment, specifications, approximate cost, includes field trip studies of large quantity kitchens and equipment companies. (3/2)

HE013U GOURMET FOODS/CATERING 3
Studies specialty, regional, national and "gourmet" foods. Includes menu planning, preparation and service of above food types, and costing each type. Special emphasis is directed toward catering menus for various groups with study of menu needs and pricing, portion and cost controls, equipment and service. (0/6) Prereq: Food Production III or permission of instructor

HE016U QUANTITY FOOD PURCHASING 3
Studies the requirements for quantity food purchasing related to food specifications, specification writing, determining specifications according to various menu requirements. Includes study of inventories and relation of inventory records to purchasing. (3/0)

HE017U FOOD SERVICE INTERNSHIP I 6
Provides six-week employment experiences to apply competencies learned in the classroom and laboratory, to gain additional quantity food production experience and to develop the ability to work with food service oriented people. (6/36) Prereq: Successful completion of required classroom and laboratory courses.

HE018U FOOD SERVICE INTERNSHIP II 6
Provides six weeks of employment experiences to apply competencies learned in the classroom and laboratory, to gain additional mid-management experiences in working with food service personnel and quantity food preparation and service. Students must meet with the instructor in seminars to discuss experiences and problems identified during the internship, to emphasize job-seeking skills and necessary interpersonal relationships with fellow employees, and to evaluate their personal objectives, goals, and accomplishments. (6/36) Prereq: Successful completion of required classroom and laboratory courses.

HE019U TEXTILES II 2
Studies basic characteristics and principles of man-made fiber production. Emphasis on fabric service-ability in specific end uses—clothing, household textiles, nonwovens. (2/0) Prereq: Textiles I.

INTERDISCIPLINARY STUDIES

IS001T BIOLOGICAL AND CULTURAL MAN 4-MS 4
Considers and explores such questions as the origin and evolutionary history of the earth, life, man and culture. During the course of study, the student will engage in such diverse fields of study as physical and cultural anthropology, paleontology, geology, evolution and genetics. (4/0)

IS002T BIOSOCIAL ISSUES 2-MS 2-SS 4
Examines biosociological problems and issues facing present and future society. Human genetics and principles of evolution serve as the basis for study and discussion of such topics as Social Darwinism and more recent parallels, human ecology, race, medical genetics, eugenics and abortion. The course is interdisciplinary in scope and offered through a team teaching approach by a sociologist and a biologist. (4/0)

***IS003T CZECH ETHNIC HERITAGE STUDIES I** H 1
Studies Czech language and/or culture. Specific materials in elementary and intermediate language; topics related to history, literature, anthropology, sociology, psychology, geography, fine arts and independent study. Individualized instruction. Variable entry. Czech native assistant. Repeat for credit up to a total of 12 quarter hours. (1/0)

***IS004T CZECH ETHNIC HERITAGE STUDIES II** H 2
Studies Czech language and/or culture. Specific materials in elementary and intermediate language, topics related to history, literature, anthropology, sociology, psychology, geography, fine arts and independent study. Individualized instruction. Variable entry. Czech native assistant. Repeat for credit up to 12 quarter hours. (2/0)

***IS005T CZECH ETHNIC HERITAGE STUDIES III** H 3
Studies Czech language and/or culture. Specific materials in elementary and intermediate language, topics related to history, literature, anthropology, sociology, psychology, geography, fine arts and independent study. Individualized instruction. Variable entry. Czech native assistant. Repeat for credit up to a total of 12 quarter hours.

***IS006T CZECH ETHNIC HERITAGE STUDIES IV** 4
Studies Czech language and/or culture. Specific materials in elementary and intermediate language, topics related to history, literature, anthropology, sociology, psychology, geography, fine arts and independent study. Individualized instruction. Variable entry. Czech native assistant. Repeat for credit up to a total of 12 quarter hours.

IS008T SCIENCE AND SOCIETY 4
Considers the interactions of science and society during past ages, in the present and for the future. Topics include fads and fallacies in science; interactions of science, music, art, literature and politics; government support of science; role of science in various civilizations; energy production and use; the space program, and "consumer survival." (4/10)

***IS009T DEATH AND DYING** Elective 4
Examines selected topics dealing with death and dying with regard to health care, religious, social, legal and funeral practices. (4/0)

JOURNALISM

College Parallel

JO101T INTRODUCTION TO JOURNALISM 3
Presents a broad, yet incisive, picture of the most important phases of journalism: newspapers, writing, advertising and public relations. (3/0)

JO102T JOURNALISM LABORATORY 2
Offers laboratory for basic reporting and newswriting and combines weekly meetings and student independent work on the college's publications. (2/1) May be taken twice.

***JO103T PHOTO JOURNALISM I** 3
Offers experiences in camera technique and control film processing and printing, news photography and creative photography. (3/0)

***JO104T PHOTO JOURNALISM II** 3
Covers advanced techniques in studio, newspaper, and magazine photography including darkroom techniques, filmed techniques and business techniques in setting up a studio or part-time practice. All students should have their own 35mm, 120mm, or 4x5 camera and access to a darkroom. (3/0) Prereq: JO103T.

JO105T NEWSWRITING AND REPORTING 3
 Involves an in-depth study of objective news reporting and advocacy journalism as well as training in writing the news story, writing headlines, layout, using copy writing symbols, and studying legal implications of biased reporting. Open to any interested student. (3/0)

***JO106T PROMOTION AND PUBLIC RELATIONS** 3
 Designed to teach students how to plan an effective promotion campaign by identifying target audiences, understanding the effect of mass communication media, and preparing materials for media campaigns. Students will be involved with campaign projects. (3/0)

LAW

College Parallel

LW001T CRIMINAL PROCEDURAL LAW 4
 Deals with the procedural aspects of the criminal justice system; includes the limits on prosecution; proceedings prior to trial; rights and privileges of the defendant. Emphasis is on the safeguards and protections of "due process" as they relate to procedures. (4/0)

LW002T CRIMINAL EVIDENCE 4
 Studies the kinds and degrees of evidence and the rules governing the admissibility of evidence in court. (4/0)

LW003T CRIMINAL LAW 4
 Introduces the philosophy and theory of criminal law and traces the historical development of criminal law from its roots in common law and Roman law to its present statutory condition. (4/0)

LW004T APPLICATIONS OF CRIMINAL LAW 4
 Examines specific definitions of criminal behavior as set forth by law. Subjects include: homicide, robbery, burglary, arson, larceny, rape, auto theft and others. Study will progress from historical definitions to contemporary Iowa law. (4/0)

LW005T BUSINESS LAW I 4
 Surveys principles of law as applied to business relationships and transactions. (4/0)

LW006T BUSINESS LAW II 4
 Studies partnerships and corporations, real property, negotiable instruments, sales, insurance, trusts and estates, government and business. (4/0) Prereq: Business Law I.

LW007T INDIVIDUAL RIGHTS AND THE LAW 4
 Examines the American view of liberty by exploring the history of constitution-making and the Bill of Rights. Discusses rights and issues of the 19th century. Follows the development of each freedom from its beginnings to contemporary society by reviewing recent court decisions regarding freedom of speech, "due process" of law, equal protection under the law, and other relevant issues. (4/0)

LW008T INTRODUCTION TO LAW 3
 Introduces the philosophy and history of common law as it relates to the court system and law office operations in Iowa. The role of the legal assistant in the modern law office will be examined. (3/0)

LW009T LEGAL SYSTEMS 3
 Reviews the American judicial system and the relationship between the federal, state and local systems, study of the law library and research. (3/0)

LW010T LEGAL PROCESSES 3
 Examines the processes and methods of legal decision making by judicial legislative and administrative agencies, ethical and professional practice standards applicable to lawyers and law office personnel. (3/0)

LW011T ESTATES AND TRUSTS I 3
 Provides the basic legal concepts of the more common forms of wills and trusts and their ramifications. Studies the Iowa District Court relating to probate, administration of estates in probate court, estate and inheritance taxes. (3/0)

LW012T ESTATES AND TRUSTS II 3
 Covers the basic legal concepts of the more common forms of wills and trusts and their ramifications. Studies the Iowa District Court relating to probate, administration of estates in probate court, estate and inheritance taxes. (3/0) Prereq: LW011T

LW013T ESTATES AND TRUSTS III 3
 Focuses on the basic legal concepts of the more common forms of wills and trusts and their ramifications. Studies of the Iowa District Court relating to probate, administration of estates in probate court, estate and inheritance taxes. (3/0) Prereq: LW012T

LW014T LEGAL INTERNSHIP RESEARCH 6
 Provides practical experience in the functions and responsibilities of a legal assistant. The student will research legal problems utilizing the law library and will be able to understand the more common forms of legal procedures and agreements and to perform the functions of a legal assistant in an office setting. The student will

be evaluated by the coordinator and the employer. Prereq: one year Legal Assistant curriculum.

LW015T TORTS AND TRIALS I 3
Studies the principles of the law of tort and preparation and use of pleading and other documents involved in the trial and appeal of the civil action. (3/0)

LW016T TORTS AND TRIALS II 4
Continues Torts and Trials I. Prereq: LW015T (4/0)

LW017T BUSINESS ORGANIZATIONAL LAW I 3
Provides a study of the attorney's role in the formation of business entities which includes proprietorships, partnerships, corporations and other business vehicles with a survey of the fundamental principles of law applicable to each and the training to prepare the necessary documents for the organization and operation of each entry. (3/0)

LW018T BUSINESS ORGANIZATIONAL LAW II 3
Continues Business Organizational Law I (3/0) Prereq: LW017T

LW019T MODERN REAL ESTATE TRANSACTIONS 4
Studies the law of real property and a survey of the more common types of real estate transactions and conveyances such as deeds, contracts, leases, deeds of trust and recording systems, and public documents. (4/0)

LW020T LAW OFFICE MANAGEMENT 3
Aids in effective planning and use of financial resources. Topics will include management techniques, human relations, fees, accounting for time, planning and development in the law office, training, law library management and maintenance, tickler procedures, word processing future trends. (3/0)

LW021T LAW OF COMMERCE I 4
Studies the fundamentals of the laws of contracts, sales and transactions and the right of creditors in transactions involving commerce. (4/0)

LW022T LAW OF COMMERCE II 3
Studies the fundamentals of the laws of contracts, sales and transactions and the right of creditors in transactions involving commerce. (3/0) Prereq: LW021T

Vocational-Technical

LW003U VFM AGRICULTURAL LAW 3
Considers the local, state and federal laws as they relate to farm

management and agribusiness in regard to contracts, mortgages, environmental protection, taxation, real estate, tenancy, and other legal problems relating to agri-business. (3/0)

LW001V MEDICAL LAW AND ECONOMICS 2
Studies medical jurisprudence as applied to health personnel in performing activities in health care centers. (2/0)

LAW ENFORCEMENT

College Parallel

LE002T PATROL PROCEDURES 4
Studies the basic methods used by a police patrolman. Subjects covered are planning the patrol, methods of patrol, problems faced by the patrolman, relations with the public, specialized patrol activities, response for various types of emergency calls, dealing with persons presenting such special problems as illness, intoxication, amnesia and mental illness.

LE004T CRIMINAL INVESTIGATION 4
Presents the basic techniques of criminal investigation including examination of the criminal scene, collecting physical evidence, interrogation and investigation, drawings, report writing and basic photography. Investigative methods related to specific crimes such as arson, burglary and homicide will be treated. Specialized detection methods and services of the crime laboratory will be included.

LE005T CRIME SCENE INVESTIGATION 4
Deals with advanced methods of criminal investigation, utilizing special methods and techniques as it applies to felony and misdemeanor cases. (4/0)

***LE008T INDEPENDENT STUDY IN CRIMINAL JUSTICE** 1-3
Provides readings, papers and/or basic research or other projects under the individual guidance of a staff member. Prereq: Consent of instructor and department chairman. (Hours arranged) May be repeated for up to 10 credit hours.

***LE009T INTRODUCTION TO CRIMINAL JUSTICE** 4
Surveys the various segments of the criminal justice system; explores the relationship between these independent segments of the system and the effect of this separation upon the justice process. Should be taken early in the student's program.

***LE010T TRAFFIC SAFETY AND ACCIDENT INVESTIGATION**

3

Examines the principles of traffic safety, accident prevention, accident scene control, investigate procedures, skidmark evaluation and speed calculation, accident reconstruction, cause analysis report writing, case presentation, enforcement action, follow-up methods. (3/0)

***LE011T TRAFFIC REGULATION PROCEDURES**

3

Examines the development, purpose and organization of the vehicle code, supervision of traffic, selective enforcement procedures, chemical testing for intoxication, congestion control, traffic analysis and engineering, organization and planning, use of records and statistics. (3/0)

***LE012T HISTORY OF POLICE IN AMERICA**

4

Traces the development of the police officer, and the police organization, from the colonial period to modern times; investigates the problems encountered during various periods of development of the American police agencies. (4/0)

LIBRARY SERVICES**College Parallel****LS001T INSTRUCTION IN EDUCATIONAL MEDIA**

3

Covers the planning and production of different types of projected and non-projected teaching materials for use in the classroom, and selection, utilization and evaluation of audiovisual materials in educational programs. (May not apply toward library science major when credit is transferred.) (3/0)

LS003T LIBRARY LITERATURE

3

Considers specialized materials common in most library collections including reference materials, catalogs, indexes and periodicals. (May not apply toward library science major when credit is transferred.) (1/3)

LS004T LIBRARY PROCEDURE

2

Provides an understanding of the function and arrangement of library catalogs, the ordering and typing of catalog cards and the ALA filing system for the card catalog. (May not apply toward library science major when credit is transferred.) (1/3)

LS006T TECHNICAL PROCESSES

2

Covers principles and practice of workroom procedures involving the preparation of new materials and the repair and maintenance

of the current collection. (May not apply toward library science major when credit is transferred.) (1/3)

LS007T SCHOOL LIBRARY OPERATIONS

3

Covers library service to children and adolescents and those operations and routines which are common to school libraries. These latter include library instruction and orientation, story hours, construction of displays and bulletin boards, reserve work, technical services in the school library and direct cooperative projects with classroom teachers. Also included are circulation and shelving routines. (3/0)

LS008T INTRODUCTION TO USES OF THE LIBRARY I

1

Provides self-instruction in basic skills of library research. Students are allowed to proceed at their own pace, with guidance in the library. (1/0)

LS009T INTRODUCTION TO USES OF THE LIBRARY II

1

Continues work in library use and research skills begun in Introduction to Uses of the Library I. Examines reference books in more detail and discusses classification systems used in various types of libraries. Self-instructional. (1/0) Prereq: LS008T

LS010T INTRODUCTION TO USES OF THE LIBRARY III

1

Final course in the sequence. In addition to more research projects there is discussion of library organization, book selection and purchasing and the newer educational media. (1/0) Prereq: LS009T.

LITERATURE**College Parallel****LT001T CHILDREN'S LITERATURE**

4

Analyzes children's reading interests by examining the three levels of ability and the 10 types of literature available. It is primarily a historical survey of the literature with emphasis on contemporary literature. (4/0) Prereq: CM101T or consent of instructor.

LT002T SCIENCE FICTION

4

Includes the study of short stories and novels of the science fiction genre. Special emphasis is on utopian and fantasy science fiction. Authors studied include people like Herbert, Brunner, Vonnegut, Asimov and Heinlein. (4/10) Prereq: CM101T or equivalent.

LT104T AMERICAN LITERATURE 4
Introduces major American prose literature with a concentration on writers from 1820 to 1925. (4/0) Prereq: CM101T or consent of instructor.

LT101T INTRODUCTION TO FICTION 4
Introduces the techniques and purposes of the novel and the short story. Both forms are based on the students' interests and broadening and refining those interests. Intensive analytical and interpretative reading and extensive comparative reading will help to enrich and improve the students' literary tastes. In addition to basic texts, supplemental reading lists will refer students to a variety of library reading in the novel and short story. (4/0) Prereq: CM101T or equivalent.

LT102T INTRODUCTION TO DRAMATIC LITERATURE 4
The purposes and kinds of dramatic works will be analyzed, and extensive comparative reading will indicate some of the significant types and forms used in dramatic convention. In addition to the study of a number of individual plays, supplemental reading will refer students to a variety of dramatic works. (4/0) Prereq: CM101T or equivalent.

LT103T INTRODUCTION TO POETRY 4
Develops skill in interpreting the elements of the formal structure of poetry and evaluates different theories of how poems gain meaning. The study develops a perceptive acquaintance with a large number and variety of the world's poetry. (4/0) Prereq: CM101T or equivalent.

LT201T MASTERPIECES OF WORLD LITERATURE I 4
Analyzes selected writings from the Bible, Greek drama, and Greek and Roman narrative poetry. Primarily these works will be approached on their contextual basis with some attention to style, meaning and form. (4/0) Prereq: CM101T or equivalent.

LT202T MASTERPIECES OF WORLD LITERATURE II 4
Studies epic poetry of the medieval period, some of Chaucer's works and some of Shakespeare's plays and poetry. These works will be explored using generic, social-cultural, mythical and comparative approaches in combination. (4/0) Prereq: CM101T or equivalent.

LT203T MASTERPIECES OF WORLD LITERATURE III 4
Discusses selected prose and poetry of nineteenth and twentieth

century Europe and America. Works will be read as masterpieces of art and studied by employing a combination of critical approaches. (4/0) Prereq: CM101T or equivalent.

LT204T BLACK LITERATURE 4
Presents an overview of the black writer as representative of a literary art form as well as a major historical and sociological impact. Includes works from the 1920s-1960s. (4/0) Prereq: CM101T or equivalent.

LT205T INDEPENDENT STUDY IN LITERATURE 1-4
Provides readings, papers and/or research projects in literature under the guidance of a staff member. Consent of instructor and department chairman is required before registering.

LT209T LITERATURE OF TERROR 4
Explores fear or horror in literature from medieval times to the present. Beginning with the medieval folk tale and ending with 20th century psychological horror, this course will attempt to show how literature has dealt with the theme of fear throughout western history. This course will be concerned with horror fiction as a reflection of historical phenomena, but also as a work of art understandable in its own terms. (4/0) Prereq: CM101T or equivalent.

LT210T POPULAR LITERATURE 4
Includes a survey of popular literature which covers such genres as the thriller, the romance, the detective, the western and science fiction. The course attempts to evaluate their effect on modern society and to give these types of literature their place on the literary scene. (4/0) Prereq: CM101T or equivalent.

***LT211T INTRODUCTION TO FILM** 4
Provides for film history, criticism and analysis of major films. The works of Chaplin, Renoir, Cocteau, Bergman, Antonioni and Truffaut will be viewed and analyzed. The emphasis of the course is upon criticism and analysis of film as an artistic medium and upon the historical and societal implications of the film. (4/0) Prereq: CM101T or equivalent.

MARKETING

College Parallel

MK001T PRINCIPLES OF MARKETING 4
Studies the concepts, institutions, procedures, methods and problems in moving goods or services from the producer to the consumer. (4/0)

- MK002T PRINCIPLES OF RETAILING** 4
Studies retailing and its functions in a free enterprise system. All facets of retail operation are considered including planning, organization, personnel, facilities, control, pricing, buying, selling and promotion. (4/0)
- MK003T PRINCIPLES OF SELLING** 4
Provides the basic skills needed to sell goods and services in a free enterprise economy. Theory is followed by practical application by each student.
- MK006T PRINCIPLES OF INSURANCE** 3
Exposes students to different types of insurance contracts, the concept of risk, and government's relationship with the industry.
- MK007T PRINCIPLES OF BANK OPERATIONS** 3
Presents the fundamentals of bank functions in a descriptive fashion so that the beginning banker may view his chosen profession in a broad perspective. (3/0)
- MK008T TRUST FUNCTIONS AND SERVICES** 3
Presents a complete picture of the services rendered by institutions engaged in trust business. Providing an introduction to the services and duties involved in trust operations, the course is intended for all bankers, not only those who are engaged in trust business. (3/0)
- MK013T BANK PUBLIC RELATIONS AND MARKETING** 3
This course discusses the basis of public relations, both internal and external, and seeks simply to explain the why, the what, and some of the how of public relations and marketing. It is intended as an overview for all bankers in terms of what everyone in banking should know about the essentials of bank public relations and marketing.
- *MK014T EXPLORING WORLD TRADE** 3
Provides students with an overview of the concepts of international trade. Students will acquire an awareness of the effects of monetary exchange, trade duties and restrictions, sociological problems and other areas of involvement in international trade. (3/0)
- MK016T COUNSELOR SELLING** 4
Presents the technical aspects of customer assistance. The student should have had previous sales experience prior to enrolling in this course. (4/0) Prereq: instructor's consent.
- *MK017T TECHNIQUES OF EXPORTING** 3
Covers terminology, payment terms, financing, drafts, letters of credit, and United States and foreign government trade controls. The course is structured for the person who has no previous foreign trade experience. (3/0) Prereq: MK014T or consent of instructor.
- MK019T HOME MORTGAGE LENDING** 3
Approaches the subject from the viewpoint of the mortgage loan officer who seeks to develop a sound mortgage portfolio. A picture of the mortgage market is presented first, then 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. (3/0)
- MK020T SAVINGS/TIME DEPOSIT BANKING** 3
Presents the historical development of savings institutions and an awareness of the basic economic function of the savings and policies of these institutions. Different types of financial savings are reviewed in order to describe the system of financial flows of income to capital investment. (3/0)
- MK021T FOREIGN TRADE DOCUMENTATION** 3
Involves the student directly in the actual details of processing an export order from the time it is received until payment is received. It will cover export shipping, documents, packaging, traffic procedures and insurance. The course is structured for the person who has no previous foreign trade experience. (3/0) Prereq: MK014T or consent of instructor.
- MK022T INTERNATIONAL TRANSPORTATION** 3
Covers the functions of the movements of goods from point of origin to international and intercontinental destination. These functions include choice of carrier and port of exit and entry, routing, packaging, insurance, claims, rates and freight forwarder functions. (3/0) Prereq: MK014T or consent of instructor.
- MK023T BUSINESS POTENTIAL SEMINAR** 3
Is designed around a series of seminars for the small business owner, manager and employee. It deals with the image of business, customer potential analysis, advertising and promotion, merchandising for more sales, the satisfaction of the customer and the development of the masterplan for a profitable business. (3/0)
- MK024T INTERNATIONAL BUSINESS** 3
Is intended to teach the theoretical and practical concepts of international business which are related to international trade. The course will outline world effects of private and governmental trade

as well as the effects of foreign and domestic economic policy on overseas trade. (3/0) Prereq: MK014T or consent of instructor.

MK025T PRINCIPLES OF ADVERTISING 4
Acquaints the student with the philosophy of advertising, historical concepts and practical applications of advertising at the local and national levels and includes media and media selection, copywriting and layout with an emphasis on product selection for advertising. (4/0)

Vocational-Technical

MK002U BASIC SALESMANSHIP 3,4
Leads students to recognize personal traits needed for success in a sales career and identify basic sales principles as they relate to the agricultural industry. (2-4/0-4)

MK003U AGRICULTURAL PRODUCT MARKETING I 2-4
Emphasizes grain marketing from the producer's standpoint. Economic principles and seasonal supply cycles, grain grades and least-cost market options are covered. (2-4/0-4)

MK004U AGRICULTURAL FUTURES MARKETING 2-4
Covers the futures marketing system from a hedging standpoint. In addition, forward contracting as a price protection for farm commodities is explained and discussed. (2-4/0-4)

MK006U FASHION MERCHANDISING LABORATORY 2-4
Provides individual projects relating to the retailing of fashion products, and offers the student the opportunity to discuss and analyze on-the-job problems in a group situation. (0/2)

MK007U PRINCIPLES OF FASHION MERCHANDISING 3
Provides a historical and evolutionary introduction to the field of fashion merchandising: sociological, psychological, and economic aspects of fashion; fashion terminology; fashion cycles, and current practices in fashion retailing. (3/0)

MK008U FASHION SHOW PROCEDURES 5
Includes the principles of fashion show production: planning, coordinating and directing the fashion show. (3/4)

MK010U RETAIL MANAGEMENT SEMINAR 1
Is designed to help prepare students for careers in retailing. The majority of seminar time is set aside for individual student help. Students also are given time to investigate retailing opportunities, prepare reports and complete projects related to their individual

retailing interests. (0/2)

MK011U FOOD STORE SEMINAR 1
Provides various instructional procedures to practical problems in food marketing, with special emphasis given to the technical study of the food merchandising field and the development of projects through the use of food store marketing facilities. (0/2)

MK012U INTRODUCTION TO FOOD STORE MARKETING 4
Offers an introduction to the specialized field of food merchandising. Study and materials will be based on the principles, practices and procedures relating to the retail and wholesale food industry. (4/0)

MK013U FOOD STORE PLANNING AND LAYOUT 3
Includes the study and actual development of the organization and planning necessary to properly merchandise and lay out a retail or wholesale food operation. (3/0)

MK014U MERCHANDISING 4
Studies principles and methods of successful merchandise selection, analyzing the market, and coping with the problems of buying. Inventory control and pricing procedures are included. (4/0)

MK015U MARKETING STUDY TOUR 1-2
Provides a short period of orientation (lectures, films, discussion and study) prior to tour departure. Written report due after termination of the tour. Cities and itinerary will vary to include educational appointments with retail stores, manufacturing companies and showrooms, advertising agencies, national conventions and market-week activities.

MK018U PRINCIPLES OF DISPLAY 2
Offers basic instruction in display construction, the relationship of display to the total promotional program, the role of the display manager, elements of display design, construction materials and merchandise selection. A laboratory provides the student an opportunity for display construction. (1/2)

MK019U SMALL BUSINESS ORGANIZATION/MANAGEMENT 3
Designed to examine the fundamentals of organizing a small business. It covers such topics as finance, demographics, promotion, market competition and site location and analysis. The student will be involved in a business simulation project. (3/0) Prereq: Instructors consent.

MK020U ADVERTISING AND SALES PROMOTION FOR RESULTS

Concerned with the non-personal efforts used to increase sales volume. This course will present information in the arts of advertising and display. Special emphasis will be placed on the development of a total sales promotion campaign to maximize profits. (2/0)

MK021U SALES PRESENTATION 3

Builds on basic theory and skills developed in courses such as Principles of Selling, Communication Skills, Psychology and Principles of Marketing. The student develops sales presentations and analyzes presentations through video taping. (3/0)

MK022U PRINCIPLES OF REAL ESTATE 3

Is designed to introduce the student to the fundamental concepts of real estate, including law, terminology and ethics. Primary attention will be given to students preparing for the real estate licensing examination. (3/0)

MK023U INDUSTRIAL MARKETING 3

Introduces and investigates the functional areas of industrial marketing. Industrial distributor and manufacturer marketing principles and methods are examined. Industrial marketing simulated experiences will be given through an industrial marketing business game. (3/0)

MK026U PURCHASING 2

Presents the purchasing function and its relationship in the manufacturing and distributor type industrial businesses. Purchasing systems are studied, developed and applied in a simulated laboratory. (2/6)

MK027U PHYSICAL DISTRIBUTION 4

Examines transportation and warehousing as a function of the marketing process. The principles and methods of physical distribution will be studied in depth. (4/0)

MK032U HOME FURNISHINGS I 3

Studies furnishings including fundamentals of good design, color in interiors, background materials, window treatments and fabrics. Emphasis placed on practical aspect of home furnishings including measurements and estimates. (3/0) Prereq: Textiles I & II.

MK033U HOME FURNISHINGS II 4

Studies sales/servicing in the home furnishings store through interior projects requiring the student to select the elements employed in the creation and coordination of an interior. The

course covers the fundamentals of space planning, product knowledge, trade sources, furniture arrangement, room coordination and the solution of specific customer problems. (4/0)

MK034U HOME FURNISHINGS SEMINAR 1

Explores current issues and problems confronting the home furnishings categories. The class also will bring the students on-the-job training and relate that training to classroom activities. (0/2)

MK035U AGRIBUSINESS SALE 3,4

Describes the application of selling aids, selling innovations, prospecting for customers, importance of customer relations, handling customer objections, how to meet competition, and the preparation of sales calls, sales reports and the necessity of organization. (2,3/1,2)

MK039U INTRODUCTION TO PURCHASING 2

Designed for those persons who are employed in the purchasing field and have had no formal classroom instruction or those persons enrolled in marketing who want to expand their knowledge of the purchasing field. (2½/0)

MK041U FOOD STORE MERCHANDISING I 3

Offers a basic look at the principles involved in retail food merchandising with practical examples and illustrations of how they maximize profits and customer satisfaction when properly applied. (3/0)

MK042U FOOD STORE MERCHANDISING II 3

Offers a continuation of the principles involved in retail food merchandising with emphasis on advertising and promotions, display, profit planning and control, and government regulation and trends affecting merchandising. (3/0) Prereq: Food Store Merchandising I.

MK001V RETAIL ADVERTISING AND DISPLAY 4

Emphasizes instruction and practical experience in the areas of ad layout, design and construction for use with local advertising media. Includes relationship of display to the total promotional program and a study of elements of display, construction materials, merchandise selection and the actual display construction. Course meets only during summer quarter (10 weeks). (5/0)

MK002V FLORICULTURE SEMINAR 1

Provides various instructional procedures for practical problems in the retail florist business. Emphasis is placed on retailing and an annual floral design show planned entirely by the students. (0/2)

MATHEMATICS

College Parallel

MA020D BEGINNING ALGEBRA 5
Includes the properties of the real numbers, linear equations and linear inequalities in one variable, factoring, fractions, systems of linear equations, exponents, radicals, second-degree equations and inequalities in one variable. This course presumes no background in algebra. (5/0)

MA030T MODELS, MEASUREMENTS AND MATHEMATICS 4
Is for the Liberal Arts major with emphasis on very elementary statistics. Models (examples) will be taken from actual events and the necessary mathematics will be introduced to solve these and other problems of interest to everyone. (4/0) Prereq: MA020D or equivalent.

MA031T INTERMEDIATE ALGEBRA 5
Includes the properties of the real numbers, polynomials, fractions, exponents, roots, radicals, first-degree equations and inequalities in one variable, functions and their graphs, systems of equations. Prereq: MA020D or one year of high school algebra and one year of high school geometry. (5/0)

MA032T COLLEGE ALGEBRA 5
Includes systems of equation, matrices and determinants, functions and their graphs, the binomial theory, linear programming, probability and sequences. (5/0) Prereq: MA031T or equivalent.

MA033T TRIGONOMETRY 5
Studies functions, inverse functions, periodic functions, circular functions, identities, trigonometric equations, and applications using the properties of the trigonometric functions. (5/0) Prereq: MA032T

MA034T ANALYTIC GEOMETRY 5
Includes point and plane vectors, direction cosines, the straight line, the conics, transformations, polar coordinates, the point and space vectors, surfaces and curves. (5/0) Prereq: MA033T or equivalent.

MA035T CALCULUS I 5
Includes limits, derivative, differentiation, the differential, elementary applications of calculus and introduction to integration. (5/0) Prereq: MA034T.

MA036T CALCULUS II 5
Continues Calculus I and includes the study of the integral, in-

tegration, methods of integration, parametric equations, and improper integrals. (5/0) Prereq: MA035T.

MA037T CALCULUS III 5
Includes study of indeterminate forms, infinite series, series expansion of functions, partial differentiation, and multiple integration. (5/0) Prereq: MA036T.

MA038T DIFFERENTIAL EQUATIONS I 5
Includes solutions of differential equations, equations of first order and first degree, variables separable, exact equations and reduction to exact equations, and linear equations; geometric applications and physical applications. (5/0) Prereq: MA037T.

MA039T DIFFERENTIAL EQUATIONS II 4
Is a continuation of Differential Equations I. More on series solutions, systems of linear differential equations, approximate methods of solving first-order equations. An introduction to Laplace transforms, and Sturm Liouville problems is also included. Prereq: MA038T.

MA040T LINEAR ALGEBRA 5
Is a post-calculus course which includes a study of vector spaces, determinants, linear transformations and matrices, bilinear and multilinear forms, and polynomial rings. (5/0) Prereq: MA036T.

MA041T FUNDAMENTALS OF STATISTICS 5
Includes descriptive statistics (mean, median, mode, standard deviation and variance). Probability and inferential statistics will also be covered. Prereq: MA032T or instructor approval.

MA042T MATH FOR ELEMENTARY SCHOOL TEACHERS 5
Includes systems of numeration, abstract mathematical systems, sets and geometry, elementary probability theory and sets of numbers. Prereq: MA020D or one year of high school algebra and one year of high school geometry.

MA043T QUANTITATIVE METHODS I 5
Designed primarily for the non-mathematics major who needs an introduction to mathematics, statistics and the computer. Use of the computer in handling data essential to the student's discipline for immediate application is emphasized. (5/0) Prereq: MA031T or instructor approval.

MA044T QUANTITATIVE METHODS II 4
A continuation of Quantitative Methods I. Topics covered: properties of probability; binomial distribution, expected values, introduction to mathematics of finance, and continuing computer language. (4/0) Prereq: MA043T.

Vocational-Technical

MA001U AGRICULTURAL MATHEMATICS 2,3,4
Stresses problems relating to agronomy, animal science, ag business, ag economics and ag mechanics. This course is designed to aid the student in reviewing mathematics practical to agriculture. (2,3,4/0,2)

MA002U BASIC MATHEMATICS 0
Covers basic fundamental operations of addition, subtraction, multiplication and division. The course includes working with fractions, review of decimals, and use of percent in business. Course work is orientated toward individual instruction allowing the student to complete the course in line with his ability to grasp the material presented.

MA003U MATHEMATICS II 1-5
Covers basic algebra as relates to fundamental equations, ratios and proportion, and percentages. Covers applied geometry as it relates to finding length, areas, volumes, etc. Also covers basic right angle trigonometry and gives more practice in solving "stated" problems. (2-5/0)

MA007U ENGINEERING COMPUTATIONS I 2
Surveys calculator market to aid students in purchase of a personal calculator. Problem exercises cover scientific type functions and mental calculations are stressed for purpose of checking calculator results. (0/4)

MA008U ENGINEERING COMPUTATIONS II 2
Presents problems in applied geometry with particular emphasis on the analytic approach using electronic calculators to obtain solutions. (0/4)

MA011U MATHEMATICS I 1-5
Covers basic math skills such as addition, subtraction, multiplication, and division of whole numbers, decimals and fractions. Covers specifically dimensional analysis and significant digit concepts. Also gives practice in solving "stated" problems and covers introductory algebra concepts. (1-5/0)

MA012U TECHNICAL MATHEMATICS I 4
Includes fundamental concepts and operations, functions and graphs, trigonometric functions, linear equations and determinants, factoring and fractions, quadratic equations, vector algebra, and exponents and radicals. Emphasis is placed on applications to technology. (4/1)

MA013U TECHNICAL MATHEMATICS II 5
Continues Technical Mathematics I and includes a study of logarithms, numerical trigonometry of right and oblique triangles, analytical trigonometry and applied geometry. (5/0)

MA014U TECHNICAL MATHEMATICS II E 4
Continues Technical Mathematics I and includes a study of logarithms, the j-operator systems of equations, inequalities, variation and progressions, inverse trigonometric functions, elements of analytic geometry and an introduction to different calculus. Emphasis is placed on application to technology. (4/1)

MA015U TECHNICAL MATHEMATICS III 4
Introduces applied calculus. Emphasis is placed on application of applied calculus to the understanding, analysis and solution of engineering problems. Topics covered are derivations of functions, with application to maxima, minima and related rate problems, integration techniques with application to area, volume and moment of inertia problems. (4/0-1)

MA017U RELATED FOOD SERVICE MATH 3
Studies recipe forms, standardization and quantity conversions, computing recipe costs. Includes work with portion controls, use of standard weights and measures, recipe yields and production charts. (3/0) Prereq: Basic Math

MECHANICS

Vocational-Technical

MH001U BASIC HYDRAULICS 3
Covers diagnosing and repairing basic hydraulic systems including pumps, valves, cylinders, oils and lines. (2/2)

MH002U HYDRAULICS 4
Studies the use of hydraulic pumps and systems. Special emphasis is given to pumping, controlling, and measuring flows and to system design and analysis. Special emphasis is also placed on distinguishing the difference between types of valves, pumps, hose and connection arrangement and flow patterns. (2/4)

MH003U APPLIED HYDRAULICS 3
Covers diagnosing and repairing hydraulic pumps, motors, servos, cylinders and valves. (2/2) Prereq: MH001U

MH004U AGRICULTURAL MECHANIZATION 4
Includes discussion and application of ventilation systems, feed

processing machinery, minor farmstead electricity, and heating units. (2/5)

MH005U MANUAL INTERPRETATION AND APPLICATION 3
Studies interpreting operators and assembly manuals with emphasis on safety, tool selection, hoisting equipment, tires, belts, chains, bearings, bushing and seals. (2/2)

MH006U MACHINE OPERATION AND ADJUSTMENT: CROPS 3
Includes operating and adjusting major crop machines with special emphasis on planters and combines. (2/2)

MH007U MACHINERY ASSEMBLY AND HANDLING: MATERIALS 3
Includes assembly and adjustment of materials, handling farm equipment such as grinders, forage boxes, mowers, spreaders, augers. Emphasis is placed on accuracy of work. (2/2)

MH008U DIESEL DIAGNOSIS AND OVERHAUL 8
Covers the diagnosis and overhaul of farms and light industrial diesel power units. (3/10) Prereq: MH014U

MH009U SUPERVISED SHOP PROJECTS 3,4,6
Is planned so that student projects assist the students in exploring their interests, abilities and deficiencies in the area of agricultural mechanics. (3, 4, 6/0)

MH010U TRACTOR AND FARM EQUIPMENT MAINT. AND ADJUSTMENT 2.5
Discusses use and maintenance of small gas engines and cooling systems. Fuel, lubrication and use of testing devices. Transmission of power and ignition systems. (2.5/0)

MH013U BASIC AND APPLIED GAS ENGINES 8
Covers servicing and repairing all makes and models of a two- and four-cycle air and water cooled gasoline engines including the rotary engine. (4/8)

MH014U GAS ENGINES DIAGNOSIS AND OVERHAUL 8
Offers instruction in the diagnosis and overhaul of farm and light industrial gasoline power units. (3/10)

MH015U HYDRAULICS CONTROLS 3
Involves overhauling, adjusting and maintaining hydraulic systems in which electricity is used to control flows and pressures. (2/2) Prereq: MH003U.

MH016U POWER TRANSFER SYSTEMS 3
Compares principles of design, construction and operation of

manual and hydrostatic transmissions, clutches, axles, belts, chains and differentials. (2/2)

MH017U ADVANCED POWER TRANSFER SYSTEMS 3
Includes the operation, diagnosis and repair of manual and hydrostatic transmissions, clutches, differentials and final drives. (2/2)

MH018U AUTOMATIC TRANSMISSIONS 3
Covers diagnosing and repairing hydraulic controlled transmissions and torque converters. (2/2)

MH019U RECONDITIONING AND REPAIR 5
Covers reconditioning and repairing used equipment other than power units using arc and acetylene welding, pop riveting, soldering, grinding, lathe work and fibreglassing. (1/8)

MH021U UNIT DIAGNOSIS AND OVERHAUL 8
Covers diagnosis and overhaul of gasoline and diesel power units with special emphasis on student work with a minimum of instructor supervision. (3/10) Prereq: MH008U

MH022U SYSTEMS DIAGNOSIS AND REPAIR 14
Concentrates on diagnosis and repairing all systems of outboard motors, stern drives, lawn mowers, garden tractors, chain saws, mini-bikes, bicycles and all two- and four-cycle stationary power plants. Students may elect to specialize or generalize. (8/12) Prereq: First and second quarters of Grounds Recreational Vehicle and Repair.

MH023U GASOLINE ENGINE OPERATION AND MAINTENANCE 3
Involves instruction in the operating principles of single and multicylinder gas engines and their maintenance procedures. Minor repair and adjustment is also done. (1/3)

MH024U POWER TRANSFER SYSTEMS: SMALL ENGINES 3
Studies the diagnosis and repair of manual and hydrostatic transmissions, differentials, clutches, axles, drives, belts and chains. (2/2)

MH025U MACHINE OPERATION & ADJUSTMENT (TILLAGE) 3
Covers adjustment and calibration field equipment with emphasis placed on student performance under actual field conditions. (2/2)

MH026U VEHICLE AND EQUIPMENT SALES AND SERVICE MANAGEMENT 4
Studies the profit sources of a business dealing with ground and/or recreational vehicles and the procedures which contribute to obtaining maximum profit from each source. (4/0)

MH027U MACHINERY ASSEMBLY AND HANDLING (TILLAGE)	3
Provides instruction in the assembling and adjusting of primary and secondary tillage equipment used in modern farming systems. Related instruction in metal grinders, taps and die work and fasteners. (2/2)	
MH028U MACHINERY ASSEMBLY & HANDLING (PLANTING AND HARVESTING)	3
Involves instruction in the assembly and adjustment of planting and harvesting equipment with emphasis on speed and accuracy. (2/2)	
MH001V AUTO MECHANICS LAB I	10
Offers formal classroom as well as on-the-job instruction in shop practices, in complete auto service procedures, automotive electrical systems, fuel systems, brakes, drive train, etc. (0/20)	
MH002V AUTO MECHANICS LAB II	10
Continues Auto Mechanics Laboratory I. (0/20)	
MH003V AUTO MECHANICS LAB III	10
Continues Auto Mechanics Laboratory II. (0/20)	
MH004V AUTO MECHANICS LAB IV	10
Continues Auto Mechanics Laboratory III. (0/20)	
MH005V AUTO MECHANICS RELATED I	10
Covers practices safety, mathematics, customer relations and employer-employee relations. (10/0)	
MH006V AUTO MECHANICS RELATED II	8-10
Continues Auto Mechanics Related I. (8-10/0)	
MH007V AUTO MECHANICS RELATED III	10
Continues Auto Mechanics Related II. (10/0)	
MH008V AUTO MECHANICS RELATED IV	10
Continues Auto Mechanics Related III. (10/0)	
MH009V COLLISION LAB I	12
Instructs through discussion, visual aids and demonstrations covering the basics in assembly, sheet metal and frame, trim and glass, and refinishing. Students will practice proper use of hand and power equipment, materials and develop skills in repair procedures. (0/25)	
MH010V COLLISION LAB II	12
Continues Collision Laboratory I. (0/25)	

MH011V COLLISION LAB III	12
Continues Collision Laboratory II. (0/25)	
MH012V COLLISION RELATED I	3-5
Provides instruction in shop processes and responsibilities, shop problem solving and basic repair procedures. (3-5/0)	
MH013V COLLISION RELATED II	3-5
Continues Collision Related I. (3-5/0)	
MH014V COLLISION RELATED III	3-5
Continues Collision Related II. (3-5/0)	

MEDICAL/SURGICAL

College Parallel

MS001T EMERGENCY AND FIRST AID PROCEDURES	1-3
Provides three areas of instruction in: 1) Red Cross multimedia basic first aid, 2) American Heart Association approved basic life support (cardio-pulmonary resuscitation and 3) safety emphasis for procedures in general health related practices. (1-3/arranged)	

Vocational-Technical

MS002U EMERGENCY CARE (OPA)	4
Introduces students to the organization and function of the emergency room, develops basic skills in resuscitatory methods, triage and primary patient evaluation and management. Emphasis is placed on understanding the body's response to injury and disease and methods of treating specific traumatic, medical and surgical emergencies. Fundamentals of first aid are incorporated throughout the course. (3/2)	
MS003U INTRODUCTION TO HEALTH CARE AND PERSONNEL RELATIONS (OPA/ORT)	2.5
Offers an overview of the medical care system, medical specialties and allied health fields. Offers insight into the hospital organization and the inter-relationship of its personnel in meeting the needs of the clientele. Stresses the fundamentals of patient care, safety and comfort, and includes basic nursing procedures, medical terminology, medical ethics and legal responsibilities. (2/1)	
MS004U ORTHOPAEDIC CONDITIONS I (OPA)	4
Investigates specific orthopaedic diseases and disorders, their cause, course and methods of treatment. Incorporates history and physical examination techniques, fundamentals of roentgenology and applied pharmacology. Subjects are classified by etiology or	

anatomical region and include a review of the related surgical and functional anatomy. (4/0)

MS005U ORTHOPAEDIC CONDITIONS II (OPA) 4
Continues Orthopaedic Conditions I. (4/0)

MS006U OPERATING ROOM TECHNIQUES I (OPA) 3
Provides the basic principles and skills necessary to assist with surgical procedures in the operating room. Includes surgical aseptic techniques, patient preparation and positioning, instrumentation and equipment management. Selected operative procedures and the related anatomy are studied. (2/2)

MS007U PRINCIPLES OF IMMOBILIZATION I (OPA) 3.5
Focuses on the principles and techniques of plaster casting and splinting utilized in the treatment of musculoskeletal disorders and includes care of the cast and the involved patient, fracture identification, healing and complications. Concepts of traction and internal fixation are introduced. (2/3)

MS008U SUPERVISED LABORATORY EXPERIENCE I (OPA) 6
Provides practical experience in a hospital emergency room, orthopaedic operating room and orthopaedic outpatient clinics. In the emergency room, the student assists with the care, treatment and transportation of patients, especially those with traumatic injuries. In the orthopaedic operating room, the student functions as an operating room technician (OR^T). In the orthopaedic outpatient clinic, the student observes and assists staff with patient evaluations and treatments. Students are assigned a minimum of six weeks in each area. Performance is based on knowledge and skills acquired through the first-year course offerings. Emphasis is placed on patient/personnel relations and the development of technical skills. (0/12)

MS009U SUPERVISED LABORATORY EXPERIENCE II (OPA) 7.5
A continuation of Supervised Laboratory Experience I (OPA). (0/15)

MS010U SUPERVISED LABORATORY EXPERIENCE III (OPA) 9
Focuses on developing skills in surgical assisting (OR^S). The student is assigned to a local orthopaedist in private practice to assist with the care of office and hospitalized patients, with special emphasis on assisting with all types of orthopaedic surgical procedures. Activities involve patient positioning, draping and prepping for surgery, and retracting and maintaining hemostasis during surgery. Students develop surgical case studies during OR^S and OR^T rotations. (0/18)

MS011U SUPERVISED CLINICAL EXPERIENCE IV (OPA) 12

Offers an intensified, comprehensive clinical practicum in St. Paul, Minnesota. Emphasis is placed on increasing skills in assisting with the immediate care and treatment of patients with traumatic injuries. Also offers the student an opportunity to assist a number of orthopaedists with a variety of procedures in the hospital and office environment. (0/30)

MS012U SUPERVISED CLINICAL EXPERIENCE V -- AND SEMINAR (OPA) 12

Involves a three-month assignment in a private orthopaedic office or clinic. Under the direction of the orthopaedist(s), guided by predetermined learning objectives, the student participates as an OPA. Includes assisting with office procedures and emergencies, accompanying the orthopaedist on hospital rounds and assisting in surgery. (0/30)

MS013U PRINCIPLES OF IMMOBILIZATION II (OPA) 3.5
Continues Principles of Immobilization I with emphasis on traction techniques. Spica and body casting and cast-bracing techniques are included. (2/3)

MS014U RESPIRATORY THERAPY TECHNIQUES I 4
Provides basic background in medical gas therapy, humidity and aerosol therapy. Students will encounter administration of gases, safety and storage, transportation, uses of environmental control systems and oxygen analysis. (4/0)

MS015U INTRODUCTION TO PHYSICAL THERAPY, ORTHOTICS AND PROSTHETICS (OPA) 3

Studies the basic concepts of biomechanics and physical therapy in relation to the care and rehabilitation of the orthopaedic patient and includes principles of orthotics and prosthetics with emphasis on terminology, gait concepts, recognition of abnormalities and problem-solving techniques. (3/0)

MS017U FUNDAMENTALS OF RESPIRATORY THERAPY I 7

Studies the history of mechanical ventilation, IPPB therapy and aerosol drugs, mechanical ventilation using pressure cycled ventilators with clinical application experience. (5/4)

MS018U FUNDAMENTALS OF RESPIRATORY THERAPY II 7

Prepares the student to obtain arterial blood gas samples, calibrate, operate and maintain blood gas analyzers. Operation and application of adult volume ventilators for continuous ventila-

tion is discussed with physician lectures about adult pathology. (7/0)

MS019U SUPERVISED CLINICAL EXPERIENCE I (R.T.) 7
Provides clinical experience and didactic work in respiratory physiology, acid base balance, basic respiratory measurement to include spirometry, respirometers and peak flow meters. (3/8)

MS020U SUPERVISED CLINICAL EXPERIENCE II (R.T.) 8
Places students in patient care areas in hospitals for application of respiratory therapy skills. (0/16)

MS021U SUPERVISED CLINICAL EXPERIENCE III (R.T.) 12
Offers maximum interaction between student, physician, patient and nursing personnel which enables the student to exercise some initiatives and judgments. (4/16)

MS022U SUPERVISED CLINICAL EXPERIENCE IV (R.T.) 12
Provides clinical rotation through pediatric and neonatal intensive care. (0/24)

MS023U RESPIRATORY THERAPY TECHNIQUES II 4
Develops skills in chest physio-therapy breathing exercises, resistance breathing techniques, basic cardio-pulmonary resuscitation, and techniques in airway management. (4/0)

MS024U RESPIRATORY THERAPY TECHNIQUES III 3
Presents action of respiratory drugs, review of anesthetics, antibiotics and advanced diagnostic procedures in pulmonary disease. (3/0)

MS025U INTRODUCTION TO HEALTH CARE (RT) 4
Designed to introduce the student to medical terminology, metrology, medical ethics, hospital organization, nursing arts and introduction to health-illness continuum. (4/0)

MS032U RESPIRATORY THERAPY TECHNIQUES IV 3
Introduces pediatric and neonatal pathology and unique respiratory therapy techniques for the patients. (3/0)

MS033U SUPERVISED CLINICAL EXPERIENCE V/SEMINAR (R.T.) 14
Offers intensive learning experience in comprehensive patient care areas for pulmonary diseases. (2/24)

MS035U DISEASES OF MAN 3
Covers the infections, intoxications and traumatic injuries suffered by man; their severity and frequency of occurrence; their agents

and reservoirs; and the conditions and circumstances which result in their transmission or occurrence and how they are controlled. (3/0)

MS036U INDEPENDENT STUDY IN HEALTH SCIENCE 1, 2, 3, 4
Provides readings, papers and/or basic research projects under the individual guidance of a staff member. Prereq: Consent of instructor and program chairperson.

MS004V MEDICAL TERMINOLOGY I 2
Is an orientation course in the vocabulary of medicine. Efforts are directed toward correct pronunciation and correct spelling of words through self-paced learning with video tapes as well as classroom participation. (2/0)

MS005V MEDICAL TERMINOLOGY II 2
Continues Medical Terminology I with concentration on spelling, defining and applying terminology common to systems of the body by the medical field. (2/0) Prereq: Medical Terminology I.

MS006V MEDICAL TERMINOLOGY III 3
Continues Medical Terminology I and II. (3/0)

MS008V SUPERVISED CLINICAL EXPERIENCE I M.A. 6
Offers experience in private doctors' offices, clinics, industry or wherever medical treatment is given under supervision of doctors and registered nurses and school instructors. (1/16)

MS009V SUPERVISED CLINICAL EXPERIENCE II M.A. 13
Continues Supervised Clinical Experience I M.A. (1/36) Prereq: Supervised Clinical Experience I.

MS013V PHARMACOLOGY 2
Introduces drugs, apothecary and the metric system. (2/0)

MS022V MEDICAL PROCEDURES I 6
Introduction to medical assisting; orientation to the physician's office and the role of the medical assistant; housekeeping, sterilization procedures; T.P.R. and B.P. procedures; histories and preparing patients for examinations; telephone and scheduling procedures; inventory and storage, x-ray techniques; collection of specimens, smears, etc., as well as electrocardiogram. (3/7)

MS023V MEDICAL PROCEDURES II 6
Continues Medical Procedures I and studies hematology, drugs and solutions. Hematology studies consist of complete blood counts. Also blood typing is done. Pharmacology includes history

and purpose of drugs plus administration by all methods. (3/6)
Prereq: MS022V.

MS024V MEDICAL PROCEDURES III 2
Continues Medical Procedures II and pharmacology including physical therapy. (1/2) Prereq: MS023V.

MS025V MEDICAL PROCEDURES IV 2
Health Services management. Includes computer science information and current trends. (2/0) Prereq: MS024V.

METALS AND MANUFACTURING

Vocational-Technical

MM001U MANUFACTURING PROCESSES I 3
Covers ferrous metals and materials, machining and cutting tools, layout tools, gaging and inspection, measuring, hand tools, sawing and turning lathes. (1/5)

MM002U MANUFACTURING PROCESSES II 3
Develops skills in turret and automatic lathes, screw threads, drilling, milling, grinding and finishes, shaper and planer, and numerical control machines. (1/5)

MM004U VFM WELDING I 2.5
Included are arc welding machines, equipment and arc welding procedures. (2.5/0)

MM005U VFM WELDING II 2.5
Covers gas welding equipment, cutting procedures and metal work. (2.5/0)

MM006U METALS AND WELDING 4
Studies shaping, cutting, forming, fastening, drilling, finishing and welding of various types of metals used in farm construction. (3/2)

MM001V MACHINIST LABORATORY I 8-10
Studies heat treatment of various metals and other basic metallurgical procedures; instruction in the proper care and use of measuring and layout tools; development of skills in following machines; drill press, engine lathe, turret lathe, horizontal and vertical milling machines, grinders, shaper, tracer lathe, numerically controlled machines and other types of production machine tools. (0/16-20)

MM02V MACHINIST LABORATORY II 8-12
Continues Machinist Laboratory I. (0/16-24)

MM003V MACHINIST LABORATORY III 8-13
Continues Machinist Laboratory II. (0/16-26)

MM004V MACHINIST LABORATORY IV 8
Continues Machinist Laboratory III (In the evening program only). (0/16)

MM005V MACHINIST RELATED I 4-10
Offers instruction in applied mathematics for machinist, blueprint reading, machine technology, metallurgy, heat treating, and safety. (4-10/0)

MM006V MACHINIST RELATED II 4-6
Continues Machinist Related I. (4-6/0)

MM007V MACHINIST RELATED III 4
Continues Machinist Related II. (4/0)

MM008V MACHINIST RELATED IV 4
Continues Machinist Related III (in the evening program only.) (4/0)

MM009V PRODUCTION MACHINERY 2
Covers classroom study and shop practice on the use of metal forming machinery, and maintenance of welding equipment. (0/56)

MM010V WELDING FOR AUTOMOTIVE MECHANICS 2
Covers the set up and operation of a metallic arc and oxy-acetylene welding equipment. Welding techniques used for welding in the flat position with arc welding, gas welding and brazing also are included. Welding safety is stressed.

MM011V INTRODUCTION TO ARC WELDING 1
Includes operation of A.C. and D.C. welding equipment. Striking an arc, beads of weld in all directions in the flat position, and building pads of weld. Welding safety is stressed. (2/24)

MM012V WELDING SPECIAL PROJECTS .5 to 5
An individualized course for those needing specific welding training other than the regular courses, or practice for various weld tests. Also for those needing review or upgrading of methods and skills. (0/12 to 120)

MM017V SEMI-AUTOMATIC WELDING 3
Studies the set up and operation of the semi-automatic welding process, using both hard wire and flux core wire. (6/54)

150

MM019V HELIARC WELDING	5	MM030V HORIZONTAL WELD TECHNIQUES	1
Covers all position welding techniques on ferrous and non-ferrous materials, using the heliarc welding process. (6/98)		Introduces horizontal welding techniques and methods used to make various types of joints in the horizontal position. (0/24)	
MM020V SPECIAL ARC WELDING TECHNIQUES	3	MM031V VERTICAL WELDING TECHNIQUES	1
Studies the welding methods used on cast iron, stainless, hard surfacing and all position weld techniques used on light gauge metal. (6/54)		Introduces vertical welding techniques and methods to make various types of joints in the vertical position. (0/26)	
MM022V WELDING INSPECTION	2	MM032V OVERHEAD WELDING TECHNIQUES	.5
Studies shop and lab welding inspection techniques giving practice in the selection, preparation and interpretation of both destructive and non-destructive welding tests. (0/56)		Introduces overhead welding techniques and methods used to make various types of joints in the overhead position. (0/18)	
MM023V STUDENT PROJECT	2	MM033V A.W.S. TEST -- LOW HYDROGEN ELECTRODES	3.5
Provides for preparation of an original project by the student in the areas of fabrication, inspection or welding process. (0/56)		Covers the testing of welds including the preparation and welding of A.W.S. Welder Certification Guided Bend Tests in all positions, using E-7018 electrodes. Students must pass this test to complete the metallic arc welding section of the welding program. (8/70)	
MM024V WELDING TECHNOLOGY	4	MM034V BLUEPRINT READING FOR WELDERS	3
Studies welding processes and power sources including welding metallurgy, strength of materials, design of weldments, cost of welding and production methods. (60/0)		This covers lines and views, size description, welding layout, with emphasis on welding terms and symbols. It also includes interpreting welding prints. (36/0)	
MM025V WEAVING THE ELECTRODE	.5	MM035V OXY-ACETYLENE LIGHT GAUGE STEEL WELDING	1
Covers the welding techniques used to make beads of weld any width. Three basic weave patterns are taught. (0/12) Prereq: Introduction to Arc Welding.		An introduction to oxy-acetylene welding including the set-up and operation of equipment and accessories. Welding procedures for light gauge steel sheet metal in all positions, and common joint types are taught. (4/16)	
MM026V INTRODUCTION TO JOINT WELDING	1	MM036V OXY-ACETYLENE HEAVY STEEL WELDING	1
Studies in detail fillet welds in the flat position using single and multiple pass techniques. Includes an introduction to welding metallurgy. (4/24)		Provides instruction in the correct welding procedures to use for heavy steel plate in all positions, and various joint types. (4/16)	
MM027V POWDERED IRON WELD METHODS	1	MM037V BRAZING AND SILVER SOLDER	1
Covers the methods used to make fillet welds using large diameter powdered iron "drag rods"; also the selection, and the A.W.S. numbering system of covered electrodes. (4/24)		Introduces the techniques and procedures used to braze, braze weld, and silver solder. (4/16)	
MM028V FLAME CUTTING	1	MM038V OXY-ACETYLENE CAST IRON REPAIR	1
Develops the skills needed in oxy-acetylene flame cutting, including set-up, operation, and maintenance of equipment. Oxy-acetylene safety is stressed. (6/12)		Studies the various methods of oxy-acetylene repair welding of cast iron. (4/16)	
MM029V BUTT JOINTS -- FLAT	1	MM039V OXY-ACETYLENE NON-FERROUS MATERIALS	1
Introduces the basic methods of preparing and welding butt joints in the flat position, with and without backing strips. Also includes the use of the A.W.S. welding symbols. (6/24)		Covers methods and procedures used for oxy-acetylene welding of non-ferrous materials. Aluminum welding techniques are stressed. (4/16)	

- MM052V BENCH WORK -- ENGINE LATHE I** 4
Introduces measuring tools, layout, saws, filing, drill press and engine lathe work. The work on lathe covers tool grinding, speeds and feeds as well as turning. (0/8)
- MM053V ENGINE LATHE II** 4
A continuation of Engine Lathe I covering tapers, thread cutting, face plate and chuck work. Also included is sine bar, dial indicator and other precision gauge work. (0/8) Prereq: Engine Lathe I.
- MM054V MILLING I** 4
Covers basic set-ups on the vertical and horizontal milling machines. Also included is work with the shaper and planer. (0/8) Prereq: Eng. Lathe I.
- MM055V MILLING II** 4
A continuation of milling machine operations including indexing, gear cutting and rotary table milling. Also covered in this course is the metal cutting band saw. (0/8) Prereq: Milling I.
- MM056V GRINDING AND HEAT TREAT** 4
Covers the operation and set up of surface cylindrical and tool grinders. Also including basic heat treatment and metallurgy. (0/8) Prereq: Eng. Lathe I.
- MM057V N.C. OPERATION AND PROGRAMMING** 4
Includes the set up and operation of a two-axis tape machine and the programming and tape punching. (0/8) Prereq: Eng. Lathe I.
- MM058V TURRET LATHE** 4
Includes the basic set-ups and operation of a turret lathe.

MUSIC

College Parallel

- MU007T APPLIED MUSIC: VOCAL I** 2
Designed to teach, in a group situation, the basic skills of singing to beginning students. Various concepts of voice will be presented, concerning these skills which include overcoming self-consciousness, breath control, tone production, interpretation, and performing musical exercises and a varied repertoire will be learned so that the student may apply concepts and techniques to simple songs. The course also encourages the beginner to understand that singing is a natural activity and not just a highbrow activity. (0/4)
- MU008T APPLIED MUSIC: VOCAL II** 2
A continuation of Vocal I. (2/0)
- MU010T APPLIED MUSIC: VOICE** 4
Offers private instruction for advanced students in voice. May be repeated for six credits. Periods to be arranged. (1/0) Prereq: Vocal II or permission of instructor.
- MU011T MUSIC APPRECIATION** 4
Includes elements and types of music with some attention to major periods and composers. (4/0)
- MU012T ADVANCED HARMONY, EAR TRAINING, AND SIGHT SINGING I** 1-3
Continues the first year music theory. This course is divided into three one-hour segments so students may register for 1, 2, or 3 hours credit. (0/8) Prereq: MU011T
- MU013T ADVANCED HARMONY, EAR TRAINING AND SIGHT SINGING II** 1-3
Continues Advanced Music Theory I. This course is divided into three one-hour segments so students may register for 1, 2, or 3 hours credit. (0/8) Prereq: MU012T
- MU014T ADVANCED HARMONY, EAR TRAINING AND SIGHT SINGING III** 1-3
Continues Advanced Music Theory II. This course is divided into three one-hour segments so students may register for 1, 2, or 3 hours credit. (0/8) Prereq: MU013T
- MU015T BAND** 1
Is designed for students with ability and desire to play in a band. May be repeated for a total of six credits. (0/3)
- MU016T CHORUS** 1
Meets three hours weekly. May be repeated for a total of six credits. Period to be arranged. (0/3) Prereq: Permission of instructor.
- *MU019T BEGINNING PIANO** 2
Designed to teach beginning piano in a group situation. The basic music skills and vocabulary are taught and developed into the techniques needed to perform music. Simple, familiar folk and popular songs are learned to develop these basic skills and technique. The course is also designed to help the student overcome self-consciousness while playing the piano and to stimulate ensemble playing in order to perfect the basic skills and to learn from one another. (0/4)

152

MU020T MUSIC FOR CLASSROOM TEACHERS 4
Helps provide the necessary skills and background for elementary classroom teachers to teach music including: sight singing, the use of an autoharp, basic keyboard and repertoire. (0/8)

MU022T ENSEMBLE 1
Offers instruction and performance in small vocal groups. May be repeated for a total of six credits. (0/3)

MU024T MUSIC THEORY II 1-4
Continues Music Theory I. This course is divided into four one-hour segments so students may register for 1, 2, 3, or 4 hours credit. (0/8) Prereq: MU039T.

MU025T MUSIC THEORY III 1-4
Continues Music Theory II. This course is divided into four one-hour segments so students may register for 1, 2, 3, or 4 hours credit. (0/8) Prereq: MU024T.

MU034T BEGINNING GUITAR 2
Designed to teach beginning guitar in a group situation. The basic skills and vocabulary as taught and developed into the technique needed to perform music. Simple, familiar folk and popular songs are used to develop these skills and techniques. (0/4)

MU035T INTRODUCTION TO FOLK MUSIC 4
Entails learning the origin of unfamiliar and familiar folk songs and can serve to mirror the collective consciousness of the society from which it emerged. (4/0)

MU036T MUSIC THEORY IA 1
Includes fundamentals, ear training and sight singing and is a study of touch harmony. (0/2)

MU037T MUSIC THEORY IB 1
Includes fundamentals, ear training and sight singing, with the addition of harmony. (0/2) Prereq: MU036T.

MU038T MUSIC THEORY IC 1
Continuation of Music Theory IB (0/2) Prereq: MU037T.

MU039T MUSIC THEORY ID 1
Continuation of Music Theory IC (0/2) Prereq: MU038T.

APPLIED MUSIC

For each hour of credit, the work in applied music requires 10 lessons during the quarter. Unless otherwise directed by the department head, these lessons will be on a weekly basis. It is

possible for a student to enroll for two hours of the same instrument with the permission of the department head. (.5/0) The appropriate area faculty will determine the level of the student's qualification by audition and/or previous work in an instrument or voice.

The following are the instrument areas. Each represents one hour of credit.

MU101T ORGAN	MU110T TROMBONE
MU102T PIANO	MU111T CORONET-TRUMPET
MU103T STRING BASS	MU112T FRENCH HORN
MU104T CELLO	MU113T SAXOPHONE
MU105T VIOLA	MU114T BASSOON
MU106T VIOLIN	MU115T CLARINET
MU107T PERCUSSION	MU116T OBOE
MU108T TUBA	MU117T FLUTE
MU109T BARITONE	

NURSING

Vocational-Technical

NS001U CHANGING PATTERNS OF HEALTH CARE & NURSING (ADN) 2
Focuses on changing patterns of the health care delivery system and the complex team relationships that affect the quality of health service. (2/0) Prereq: NS008U

NS002U METROLOGY 1
Uses a programmed instruction text to assist learning of conversion and application of apothecary, metric and household systems of measurement. Course is self-paced. A nursing core course. (Pass, no-credit evaluation) (1/0)

NS003U NURSING I (FUNDAMENTALS OF NURSING) 9
Focuses on function of the nurse in beginning clinical practice and the behavioral changes required to implement fundamental care for all patients and/or residents (care, comfort, safety, nutrition and elimination). The patient, as an individual, and the physical-emotional-cultural relationships also are studied. A nursing core course. Students with reading and/or mathematic deficiencies may be required to enroll in the personal achievement courses. (5/10)

NS004U NURSING II (INTRODUCTION TO MEDICAL-SURGICAL NURSING) 10
Continues Nursing I with focus on fundamental nursing knowledge and techniques for the care of all patients. Special emphasis is on

the nursing care of patients having surgery. Fluid and electrolytes, oxygen, nutrition, pharmacology and elimination are the learning foci. Concepts of stress in self and others, death as a progressive, individual process, health care and health promotion are included. A nursing course. (5/10) Prereq: NS003U, NS002U, NS013U and BY006U.

NS005U NURSING III (BASIC MATERNAL AND CHILD NURSING) 11

Focuses on physical and mental changes occurring during pregnancy and the birth process. The study of the needs of ill children in relation to the well child is emphasized. Identification of community health agencies and services through study and visitation. A nursing core course. (5/12) Prereq: NS004U

NS006U NURSING IV (PSYCHIATRIC NURSING) (ADN) 10

Focuses on the care of persons with emotional problems. Principles relating to communication, the nurse-patient relationship and psychosocial needs are applied to the nursing care. The role of the nurse in caring for patients in various settings and in coordination with other professionals is explored. Attitudes, values, feelings and emotions as present in all persons and as an integral part of all interpersonal relationships are used in the continuing development of a philosophy of human caring in nursing. (5/10) Prereq: NS005U.

NS007U NURSING V (MEDICAL SURGICAL NURSING) (ADN) 12

Focuses on the systematic application and analysis of care given to, for and with the hospitalized person with more complex medical surgical health problems. Supportive and therapeutic modalities are continued throughout the nursing core; i.e., fluid and electrolytes, pharmacotherapeutics, surgical and diet. (4/16) Prereq: NS006U.

NS008U NURSING VI (MEDICAL SURGICAL NURSING) (ADN) 12

Focuses on the systematic analysis and application of care given to, for and with the hospitalized persons with more complex medical surgical health problems. Focus on the problem-solving method is continued as a tool to assess, implement and evaluate patient care. (4/16) Prereq: NS007U.

NS009U NURSING VII (ADVANCED MATERNAL AND CHILD NURSING) (ADN) 12

Focuses on the care of obstetrical, newborn and pediatric patients. Nursing content is focused on the care of patients with complications. The psychosocial and learning needs of persons at the various stages of development. Complex health problems are explored in depth. Specific nursing measures are developed which are utilized in planning, implementing, evaluating nursing care for the patient and family. (4/16) Prereq: NS008U.

NS010U NURSING VIII (HIGH PRIORITY CARE & MANAGEMENT PRINCIPLES) (ADN) 16

Focuses on the role of the nurse in planning, implementing and evaluating nursing care for groups of patients and those requiring priority care. The student is assisted with the transition to the nurse practitioner role. The team leading method of patient care is studied in relation to managerial skills. Disaster nursing is also included. (4/24) Prereq: NS009U.

NS011U NURSING IX (LEGALITIES SEMINAR) (ADN) 2

Focuses on the legalities and guidelines within which the nurse's patient care responsibilities are defined by the law and by nursing practice. (2/0) Prereq: NS009U.

NS012U ADVANCED PLACEMENT SEMINAR (ADN) 1

Is open to advanced placement nursing students to explore the role expectation of the associate degree nurse, develop skills in problem-solving, communication, self-evaluation and self-directed learning. (1/0)

NS013U NORMAL NUTRITION 2

Designed to provide the foundation of knowledge of normal nutrition necessary to application of nutritional therapy in the nursing care of the patient with special nutritional needs. A nursing core course. (2/0)

NS016V NURSING IV (MEDICAL SURGICAL NURSING) (PN) 13

Studies advanced med-surg. nursing care of patients with disaster nursing included. (5/16) Prereq: NS005U

NS017V PN NURSING SEMINAR (LPN) 2

Deals with the legal and ethical implications and responsibilities of the licensed practical nurse. Consideration is given to the rights and privileges of the patient. General legal and ethical principles are related to specific nursing care situations. (2/0) Prereq: NS005U.

OFFICE EDUCATION

College Parallel

OE001T COLLEGE SHORTHAND I 4

Presents the shorthand theory and develops the ability to take dictation consisting of basic vocabulary. For students with no knowledge of shorthand or instructor's approval. (3/2)

OE002T COLLEGE SHORTHAND II 4

Offers a review of shorthand theory and continues to develop shorthand dictation ability on gradually increasing vocabulary levels.

154

Introduces typewriter transcription. Prereq: OE001T or instructor's approval. (3/2)

OE003T COLLEGE SHORTHAND III 4
Emphasizes increased rates of dictation and development of introductory transcription skills. Prereq: OE002T or instructor's approval. (3/2)

OE004T COLLEGE SHORTHAND TRANSCRIPTION 3
Continues shorthand sequence with emphasis on increasing the student's ability to transcribe difficult material from shorthand notes and to polish related transcription skills. Prereq: OE003T or instructor's approval. (2/2)

OE006T COLLEGE TYPING I .5-3
Consists of modules 1-6. Module I covers the alphabetic keyboard; module II, the number keys; module III introduces the basics of correspondence; module IV, the basics of tabulations and manuscripts; module V, other correspondence; and module VI introduces business forms and additional manuscript instruction. This course is designed for beginners or those who may wish to review any of this material. Speed goal is 35 wpm. Students should consult an instructor before enrolling.

OE007T COLLEGE TYPING II .5-3
Consists of modules 7-12. This sequence is designed to improve the knowledge and skill developed in the first six modules. Includes learning additional letter styles as well as more complex manuscripts, tabulations and business forms. Speed goal is 45 wpm. (0/1-6) Prereq: College Typing I or instructor's approval.

OE008T COLLEGE TYPING III .5-3
Consists of modules 13-18. This sequence is designed to develop expert typing skill and knowledge and is primarily for the secretarial major. Begins with a review of previous instruction. Offers an opportunity for extensive practice of very difficult material. Concludes with office-style projects. Speed goal is 55 wpm. (0/1-6) Prereq: College Typing I and II or instructor's approval.

OE009T OFFICE MACHINES 3
Includes operation and application of adding and calculating machines. (2/2)

OE010T FILING SYSTEMS AND RECORDS CONTROL 3
Designed to introduce and develop the principles governing what records to keep, how to store them and how to find them quickly when needed. Consideration will be given to criteria for determin-

ing disposition or retention of records, alphabetic indexing rules, records storage methods and systems, and principles for the selection of records equipment supplies. (3/0)

OE011T SECRETARIAL PROCEDURES 4
Integrates the skills, knowledges and personal qualities necessary for an administrative secretary to perform the operational and supervisory functions for today's office. Provides simulated office activities, problem solving techniques and decision making experiences with special emphasis on creativity and professionalism. Prereq: OE007T, OE002T or instructors approval. (3/1)

OE012T COLLEGE TYPING IV .5-3
Consists of modules 19-24. Each module offers a different office simulation in which a student is provided practice in applying advanced typewriting skills to a realistic job situation. Speed goal is 65 wpm. (0/1-6) Prereq: College Typing I, II and III or instructor's approval.

OE039T INDIVIDUALLY PRESCRIBED INSTRUCTION .5
Includes selected lessons prescribed by the instructor enabling in-depth study of an area. Approval of instructor.

OE040T CURRENT OFFICE ISSUES .5
Explores current issues in the secretarial field in order to develop an awareness of the recent legislation and research that have implications for the secretarial worker. Topics for discussion could include recent changes in the recruiting, hiring and promoting processes; opportunities for inservice training; (or) other current news events that affect the secretary. (5/0)

Vocational-Technical

OE001U OFFICE PROCEDURES I 4
Refines knowledges and skills and introduces new concepts and procedures leading to realistic preparation for seeking office employment. Units include experience with copying and duplicating equipment, telephone and receptionist duties, as well as basic secretarial functions. Students learn effective job application techniques. (3/2) Prereq: College Typing I.

OE002U OFFICE PROCEDURES II 3
Provides simulated office activities and problem-solving situations which will develop and apply a wide range of office skills. Students are rotated through different office positions and undergo realistic patterns of inter-action which will better prepare them to perform

day-to-day operations, to develop self-confidence, and to cultivate the personal traits and the human relations skills that are necessary for success in office occupations. (1/4) Prereq: Typing II.

OE003U INSURANCE MACHINE TRANSCRIPTION 3
Designed to concentrate on the letters, memos, and reports used in insurance offices. Both accuracy and increased transcription rate will be stressed, and actual letters will be used. (2/1) Prereq: Insurance terminology and proficiency in machine transcription.

OE004U OFFICE CALCULATING PROCEDURES 4
Provides for integration and relevance between basic mathematics and office machines. Mathematical concepts are applied to the operating of adding and calculating machines. (3/2)

OE005U OFFICE EDUCATION LABORATORY 1-4
Provides self-paced learning activities for either remedial or enrichment instruction in various office education subject areas, with special emphasis on improving spelling skills. (0/2-8)

OE006U AGRIBUSINESS OFFICE MACHINES 2
Is specifically designed as a short-term offering for specialized agribusiness students. Emphasis is on the 10-key adding machine and the cash register. Applied problems are worked as students learn the operation of these machines. (2/3)

OE007U OFFICE PROCEDURES (OPA) 2
Develops procedures necessary to assist the orthopaedic surgeon and related personnel with the care of patients in the office environment. Includes communications procedures, inventory management, ordering orthopaedic shoes and adjustments, and applied pharmacology. (1/2)

OE002V LAW OFFICE PROCEDURES 3
Designed as a finishing course in specialized legal secretarial training, combining skills previously learned in legal typing and terminology, shorthand, and office procedures. Through lectures, class discussions, simulated projects, field trips and panel discussions, students are acquainted with typical law office procedures applicable to different areas of legal work – probate work, real estate transactions, civil actions, etc. (2/1) Prereq: Legal Typing and Legal Terminology.

OE003V LEGAL DICTATION 3
Develops student's ability to take dictation of difficult materials and to transcribe in legal document form. (2/1) Prereq: College Shorthand III, Legal Terminology.

OE004V LEGAL MACHINE TRANSCRIPTION 3
Develops student's ability to transcribe legal materials in document form from machine dictation. (2/1) Prereq: Legal Terminology and proficiency in transcribing machines.

OE005V LEGAL TYPING 3
Provides instruction in typing of information on printed legal forms and in completion of legal instruments and documents common to local jurisdiction practices. (2/2) Prereq: College Typing III.

OE006V LEGAL TERMINOLOGY 3
Provides instruction in the correct definitions, spelling, and application of approximately 400 terms commonly used in legal secretarial work. (3/0)

OE007V MEDICAL SECRETARIAL DICTATION 4
Develops a medical shorthand vocabulary, concentrates on building shorthand speed on medical material, and on producing mailable letters and reports with medical terminology. (3/1) Prereq: College Shorthand III, Medical Terminology, Basic Anatomy & Physiology.

OE010V MEDICAL SECRETARIAL MACHINE TRANSCRIPTION 3
Develops further transcription skills with emphasis on medical terminology. Gives practice in transcribing medical letters and forms, case histories, consultation reports, operative records, discharge summaries, X-rays and EKG reports. (2/2) Prereq: Medical Secretarial Terminology, Basic Anatomy & Physiology, and Transcribing Machines.

OE011V MEDICAL SECRETARIAL OFFICE PROCEDURES 4
Designed as a comprehensive advanced office simulation. Basic secretarial skills are combined with skills needed to perform secretarial duties in a doctor's office, hospital record room or specialized hospital department. (3/1) Prereq: College Typing II or approval of instructor.

OE012V MEDICAL SECRETARIAL TYPING 3
Concentrates on typing medical letters and forms, case histories, consultation reports, operative records, discharge summaries, X-ray and EKG reports, and the preparing of abstracts and articles for medical journals. (2/2) Prereq: OE008T.

OE013V MEDICAL TYPING 2
Concentrates on the typing of forms, letters, and other business papers which are common to the medical office. Introduces the use of transcribing machines. (1/2)

156

OE014V INSURANCE TERMINOLOGY 2
Emphasis will be on the correct spelling and application of terms used in the insurance field. (2/0)

OE015V TRANSCRIBING MACHINES 2
Teaches efficient operation of several kinds of transcribing machines. Emphasis is also given to spelling, grammar usage, punctuation, capitalization, business letter styles, typing short-cuts, and error correction. Business terminology used in various kinds of business communication is also introduced. (1/2) Prereq: OE007T.

OE016V OFFICE CAREERS 1-2
Provides an atmosphere to analyze the career opportunities available to clerical and secretarial workers. Special emphasis is placed on tours, personal development and projects related to individual interest areas. (1-2/1-2)

OE025V OFFICE EDUCATION SEMINAR 1
Correlated with the students' program of studies and business internship experiences. Time assigned by program. (1/0)

OE028V INSURANCE TYPEWRITING 3
Introduces the forms, policies, and letters common to most insurance offices. The typing of numbers will be stressed, and accuracy will be a major objective. (2/2)

OE029V INSURANCE OFFICE PROCEDURES 3
Designed as a finishing course in specialized insurance secretarial training, combining previously learned typing, shorthand and general office skills. Through lecture, discussions, simulation and other activities, students will become familiar with typical insurance office procedures applicable in various areas of insurance work. (2/1) Prereq: Ins. Terminology & Insurance Typing.

OE030V RECEPTIONIST SEMINAR 1
Provides instruction in the area of greeting callers, making appointments, doing introductions, and other related receptionist responsibilities. (1/0)

OE031V BUSINESS SKILLS (INSURANCE) 2
Promotes a working knowledge of basic medical insurance programs and forms utilized in record keeping of insurance claims. (2/0)

PERSONAL DEVELOPMENT

College Parallel

PD004T LIFE-STYLE PLANNING AND ASSERTIVENESS TRAINING 2
Is designed primarily to assist students in assessing their current life-style and helping them make decisions regarding their future. Also, included are activities designed to enhance straightforward communication and behavior. (2/0)

PD005T HUMAN POTENTIAL LAB 2
Is designed to allow the student to become involved in group interaction in an atmosphere that is conducive to assisting the student in his formation of a realistic, positive self-concept. Emphasis is on the personal growth of the individuals involved and development of the attributes which are important in establishing harmonious inter-personal relationships. (2/1)

PD006D ORIENTATION TO AMERICAN CULTURE 1
Presentation of information that will help the student function in American society and in Kirkwood Community College. Topics to be covered will include American institutions and customs and the educational system. Student activities will include conversation, oral reports, note-taking and quizzes. This course is required during the first term for those enrolled in English as a Second Language.

PD007D PERSONAL ACHIEVEMENT BASIC STUDY SKILLS 1
Basic study skills include instruction and practice in the following areas: time schedule and management, using textbooks, systematic study attack methods, notetaking, concentration and retention, test taking and listening skills. (0/2)

PD008D PERSONAL ACHIEVEMENT: PUNCTUATION REVIEW .5
Review punctuation to help the student in writing, covering rules in conventional standard written communication. (0/1)

PD009D PERSONAL ACHIEVEMENT: GRAMMAR REVIEW .5
Reviews grammar to help student with sentence structure in writing. The course will cover parts of speech and parts of sentences. (0/1)

Vocational-Technical

PD001U PERSONAL DEVELOPMENT 1-2
Provides the study and application of techniques for improving

personal appearance, mental attitude, poise and personality, such as hair care, skin care, wardrobe selection, weight control and personality development. (1/0-2/0)

PHILOSOPHY/ RELIGION

College Parallel

PH001T INTRODUCTION TO PHILOSOPHY 4
Examines the foundations of philosophical thought in the West from Descartes to the present day with emphasis on problems of ethics, aesthetics, epistemology and metaphysics. (4/0)

PH002T INTRODUCTION TO RELIGION 4
Includes a consideration of each of the great religions in the context of contemporary society. Variations in the structure, organizations and functions of religion are systematically examined. (4/0)

***PH003T RELIGIOUS LIBERTY IN AMERICA** 2
Examines the development of religious liberty in the United States and the critical church-state relations between the individual, religion, religious institutions and governmental authority. (2/0)

PHYSICS/ASTRONOMY

College Parallel

PH001T COLLEGE PHYSICS I 4
Is open to all students wanting a non-calculus level physics course. This is designed primarily for students interested in pre-medical, pre-dental, pre-pharmacy, pre-forestry, pre-teacher education programs and all who seek to meet the science requirement in their professional programs. It emphasizes introductory physics concepts and methods of scientific reasoning. The first quarter of this sequence treats the structure and properties of matter, descriptions of motion, Newton's Laws, conservation laws, rotation and vibration and an introduction to Einstein's theory of relativity. Prereq: An introductory algebra course in high school or college. (3/2)

PH002T COLLEGE PHYSICS II 4
Continues Physics I and covers wave motion, liquids, gases, the gas laws, heat and the laws of thermodynamics with applications. (3/2) Prereq: PH001T

PH003T COLLEGE PHYSICS III 4
Continues College Physics II and includes static and current electricity, electromagnetism, optics and optical devices, nuclear physics. Cosmology and environmental physics conclude the course. (3/2) Prereq: PH002T

PH004T GENERAL PHYSICS I 4
Is designed primarily for students in engineering, mathematics and physics as well as for those needing a problem solving physics course using calculus-level mathematics. The first quarter of this three-quarter sequence covers the topics of vectors, Newton's Laws, momentum, energy and rotational dynamics with applications to engineering problems. (3/2) Prereq: MA006T (May be taken concurrently)

PH005T GENERAL PHYSICS II 4
Continues General Physics I. This quarter includes the subjects of oscillatory and wave motion, gas laws, thermal properties of materials and the laws of thermodynamics. The quarter ends with an introduction to electricity. (3/2) Prereq: PH001T and MA007T concurrently.

PH006T GENERAL PHYSICS III 4
Continues General Physics I & II. It includes work in current electricity, electromagnetism, waves, optics and application of physics to current problems. (3/2) Prereq: PH005T and MA007T concurrently.

PH007T ASTRONOMY 4
Is an introductory course centered around a variety of topics including the universe and the earth in space, properties of stars, nuclear energy sources, the solar system, quasars, black holes and life in the universe. Laboratories and observations are incorporated. (3/2) Prereq: None.

PH008T 21st CENTURY INTRODUCTORY PHYSICS 4
Is a one-quarter introductory physics course with lab experience and provides basic work with scientific reasoning and with fundamental concepts in classical and modern physics. Recommended for students who plan to take college or general physics as well as all liberal arts students desiring an introductory science course. (3/2)

PH009T INDEPENDENT STUDY: PHYSICS 1-4
Provides readings, papers and/or basic research or other projects under the individual guidance of a staff member. Offers advanced work in the topics of general physics. The work is an extension in breadth and depth to the material covered in PH004T, PH005T, PH006T. Independent study may be taken each quarter (to a max-

158

imum of three quarters) with topics each quarter paralleling the topics of general physics. (1-4/0) Prereq: General Physics (may be taken concurrently) and consent of instructor.

PH011T MEDICAL PHYSICS 4
Is designed for students enrolled in respiratory therapy and deals with theory and applications of the gas laws, fluid dynamics, hydrostatics, simple machines and electricity as they apply to respiratory therapy. (3/1)

Vocational-Technical

PH001U APPLIED PHYSICS I 4
Studies properties of matter and mechanics, including the following topics: force, motion, relationships, work energy and power, vectors and graphic solutions, simple machines, rotation, torque, power and transmission; properties of solids, liquids and gases; temperature and thermal properties; vibration and wave motion, and basic sound and light. (3/2)

PH007U INTRODUCTION TO PHYSICS 4
Studies topics in physics related to career education. (4/0)

PH002U APPLIED PHYSICS II 4
Studies control system technology including the following topics: concepts and evaluation of control systems; methods of describing components; characteristics; control system components; analysis and design considerations. (3/2) Prereq: PH001U

PH003U HEAT, LIGHT, AND SOUND 5
Studies theoretical considerations and techniques of application of the topics of heat, light and sound, Major emphasis is placed on the application of heat energy conversion, heating and air conditioning. (4/2) Prereq: Technical Math II.

PH004U TECHNICAL CHEMISTRY AND PHYSICS I 3.5
Content includes study of weights and measurements, charts, proportions, chemical and physical properties, and reactions relating to the mixing, gelation, and solidification of dental materials, including the laws of physics as they relate to the dental laboratory fabrication. (2/3)

PH005U TECHNICAL CHEMISTRY AND PHYSICS II 3
Is the study and application of principles contained in Technical Chemistry and Physics I. (3/0)

PH006U TECHNICAL PHYSICS III 2
Studies forces, stresses, and support relating to anatomical structures, dental materials or designs; principles of splinting and broken stress; and color or optical illusions created in restorations; applicable to the construction of crowns, and fixed or removable partial dentures. (2/0)

PH001V MECHANISMS 4
Studies the theory of mechanics and machines. Included are topics in forces and their effects, balance, equilibrium, gravitation, motion and mechanical movements. Also covered are simple machines, mechanical power transmission, friction and lubrication, and pressure. (3/2)

POLITICAL SCIENCE

College Parallel

PS002T AMERICAN GOVERNMENT 4
Studies American policy based on a close examination of the processes of decision making. Emphasis is placed on voting behavior and citizen interaction within the system. Empirical data is employed as a basis for many analytical techniques. (4/0)

PS004T WORLD POLITICS 4
Introduces the basic theories and principles of international relations. Examines the concepts underlying definitions of "first," "second," and "third" world nations and their inter-relationships. Examines states in each category cited and stresses commonality of goals and principles in each nation examined. (4/0)

PS005T INDEPENDENT STUDY IN POLITICAL SCIENCE 0,1,2,3,4
Provides readings, papers and/or basic research or other projects under the individual guidance of a staff member. Prereq: Consent of instructor and department chairman is required before registering.

***PS006T IOWA GOVERNMENT: TODAY AND TOMORROW** 4
Provides close examination of Iowa governmental processes and institutions with specific emphasis on decision making. (4/0)

PSYCHOLOGY/EDUCATION

College Parallel

- PY002T GENERAL PSYCHOLOGY** 4
Provides an introduction to the study of human and animal behavior with emphasis on such topics as learning, motivation, personality and abnormal psychology. Wherever possible psychological theories and principles are utilized to explain and predict behavior. (4/0)
- PY004T EDUCATIONAL PSYCHOLOGY AND MEASUREMENT** 4
Considers and evaluates the following items: factors of physical and mental development; child and adolescent characteristics as they may effect the general learning situation; problems of classroom management, construction, use, interpretation and evaluation of standardized and teacher-constructed tests. (4/0) Prereq: PY002T
- PY005T AMERICAN PUBLIC EDUCATION** 4
Provides an overview of the field of education with special emphasis on sociological, political and economic factors. (4/0)
- PY006T INDEPENDENT STUDY IN PSYCHOLOGY** 0, 1, 2, 3, 4
Provides readings, papers, and/or basic research or other projects under the individual guidance of a staff member. Prereq: Consent of instructor and department chairman is required before registering. (Hours arranged)
- PY007T PRACTICUM FOR TEACHER ASSOCIATES** 4
Offers experience in a classroom or educational setting in which students serve as teacher aides. Student spends 10 to 12 hours per week at a practicum site working under the supervision of a teacher. Students may choose to work in preschools, elementary or secondary schools. (0/10-12) Prereq: Consent of instructor.
- PY009T INTRODUCTION TO TEACHING** 4
Surveys current issues in secondary and elementary school teaching with emphasis on recent critical approaches to these issues as exemplified in Holt, Kozol, Leonard, Kohl, Glasser and Silverman. Students will have an opportunity to stress the level (elementary or secondary) in which they are likely to major. (4/0)
- PY020T PSYCHOLOGY OF GROWTH AND DEVELOPMENT: CONCEPTION TO SENESCENCE** 4
Examines the process of human development with special em-

phasis on the formative years -- birth to adolescence. Topics range from socialization and personality development to identity crisis and death. Prereq: PY002T

- PY021T INTRODUCTION TO PERSONALITY & SOCIAL PSYCHOLOGY** 4
Involves three central areas of concern. The first deals with the various theories of personality and personality development (Freud, Miller and Pollard, Lewis, and Kelly) and how these relate to human behavior. The second deals primarily with the method and core topics (aggression, conformity, attitude formation and change) within the domain of social psychology. Finally, in a synthesis of these two approaches, the interrelations between social and personality processes are emphasized. (4/0) Prereq: PY002T
- PY022T PSYCHOLOGY OF HUMAN RELATIONS** 3
The course provides both a theoretical and a practical approach to the study of human interaction. Lectures will emphasize the various theories underlying such topics as sensitivity training, non-verbal communication, group dynamics and interpersonal perception. In addition, discussion will be used to demonstrate, wherever possible, the disparate forms of human communication and interaction. Texts and readings will present an overarching framework for studying the above phenomena. (3/0)
- PY023T INDEPENDENT STUDY: EDUCATION** 1-4
Provide readings, papers and/or basic research or other projects under the individual guidance of the staff member. (1-4/0) Prereq: Consent of instructor and department chairman is required before registering.
- *PY024T EXCEPTIONAL CHILD** 4
Studies children who are exceptional in the context of mental, emotional, physical and social development. The adult manifestations of the above developmental patterns also will be examined. (4/0) Prereq: PY002T
- *PY025T THE YOUNG CHILD** 4
Characteristics and development of the young child are examined via current literature on early childhood. Observations and readings will provide students with an understanding of educational strategies relating to the developing child. (4/0)
- PY025T ORIENTATION TO HUMAN SERVICES** 2
Provides an introduction to the Aide for the Handicapped program, its scope, requirements and practicum sites within local agencies and institutions. Examines the roles of professional and para-professional. Works to develop positive self-concept and at-

tributes important for harmonious interpersonal relationships. (2/0)

PY027T SKILL DEVELOPMENT IN HUMAN SERVICES I 4
 Covers the development and designing of individualized programs for persons of all ages. Includes observation skills, writing performance objectives, designing program strategies, assessment and evaluation procedures. Specific examples in the areas of self help skills, communication, socialization and cognitive skills will be utilized. (4/0)

PY028T SKILL DEVELOPMENT IN HUMAN SERVICES II 4
 Continues Skill Development in Human Services I by applying the model developed to developmental disabilities. Role playing, modeling, cues and prompts will be utilized. (4/0) Prereq: PY027T

PY029T HUMAN SERVICES PRACTICUM & SEMINAR I 4
 Places the student in an agency or educational setting working as an aide in a program for the handicapped. A weekly seminar will be held to discuss readings and experiences of students in their practicum setting. Students assigned to a practicum site will have specific objectives related to identified competencies. (1/11) Prereq: PY027T and consent of instructor.

PY030T PRACTICUM & SEMINAR IN HUMAN SERVICES II 8
 Continues practicum & seminar in Human Services. A bi-weekly seminar will be held to discuss readings and experiences of students in their practicum setting. (1/21) Prereq: PY029 and consent of instructor.

PY031T SKILL DEVELOPMENT IN HUMAN SERVICES III 4
 Continues Skill Development in Human Services I and II by utilizing specific case studies and requiring educational report writing. Students will also be trained to assist in implementing programs. (4/0) Prereq: PY028.

***PY032T BIOFEEDBACK AND ALTERED STATES OF CONSCIOUSNESS 2**
 Surveys a wide variety of non-ordinary states of consciousness including hypnosis, dreams, mystical experiences and drug-induced states. These will be examined in the light of contemporary findings in biofeedback and brain lateralization research. (2/0)

Vocational-Technical

PY003U THE PROFESSION 1
 Familiarizes students in architectural drafting with ethics and procedures. Personal appearance and human relations are also

stressed. (1/0)

PY004U PSYCHOLOGY OF HUMAN RELATIONS I 2-4
 Covers basic psychological principles of human behavior. Designed to help students understand themselves and those persons with whom they will work. The course is adapted to the needs and interests of students depending on the program in which they are enrolled and is open to students in vocational or technical programs only. (3-5/0)

PY005U PSYCHOLOGY OF HUMAN RELATIONS II 2-4
 Continues Psychology of Human Relations I. Open to students in vocational-technical programs. Includes a study of self-concepts and individual and group relationships and adjustment factors. Considers the special needs of persons at various ages from early childhood through adulthood. (3/0)

PY007U SALES PSYCHOLOGY & HUMAN RELATIONS 3
 Explores human motivational and behavior factors. Emphasis is placed on understanding human behavior from a supervisor's point of view. Basic fundamentals of salesmanship are studied with emphasis on successfully approaching professional people. (3/0)

PY001V HUMAN RELATIONS & SHOP SUPERVISION 1
 Covers organizational principles and patterns of shop leadership. (2/2)

PY002V INTERPERSONAL RELATIONSHIPS 4
 Studies people-to-people responses, emphasizing the less obvious, such as what people tell about themselves by interaction with their environment. (4/0)

RECREATION

***RE001T INTRODUCTION TO RECREATION 2**
 Introduces students to the fields of modern recreation. The students will be involved in practical aspects of working with specific community recreation programs and will have the opportunity to involve themselves in planning, supervising and evaluating new and on-going recreation program under the direction of the instructor. (0/4)

may not be reported

SOCIAL WELFARE

SW001T INTRODUCTION TO SOCIAL WELFARE 3

Designed to provide the student with an overview of social welfare. The historical development of social welfare services will be traced in terms of social change and changing attitudes toward social problems. Present procedures, philosophy and problems of social welfare will be discussed and selected social service areas will be described. (3/0)

SW002T SOCIAL WELFARE PROGRAMS 3

Designed to provide the student with an overview of social welfare in terms of specific services provided by both public and voluntary agencies in the community. By direct contact with representatives of community agencies the student is exposed to roles of human services personnel (particularly professional social workers), funding and present problems and procedures of these agencies. (3/0)

SOCIOLOGY

College Parallel

SO004T INTRODUCTION TO SOCIOLOGY 4

Examines the range of human behavior. Drawing from the fields of anthropology and social psychology, a survey of contemporary behavior is made. An examination of the major findings of sociology will be presented and their impact on contemporary thought. (4/0)

SO005T MARRIAGE AND THE FAMILY 4

Studies the process of the marital life cycle: courtship, dating, engagement, marriage, the child bearing years, the child rearing years and marriage during the middle years. These are examined in the light of current and past research, with stress on the consequences of premarital, marital and child-bearing decision making. The implication of marital dissolution is also explored. (4/0)

SO006T SOCIAL PROBLEMS 4

Examines various objective social conditions which have come to be defined as social problems, using the structure-function approach to examine the consequences of social structure in relation to the production of social problems. Facts, interpreted theoretically, form the nucleus of the examination of social problems. (4/0)

SO007T CRIMINOLOGY 4

Surveys the nature, causes, and extent of crime and delinquency; major consideration is given to apprehension, control and treatment. (4/0)

SO008T INTRODUCTION TO CULTURAL ANTHROPOLOGY 4

Considers group life in various cultures. Involves anthropological insights relative to human behavior in a comparative perspective. Includes selected aspects of both physical and cultural anthropology. (4/0)

SO009T INDEPENDENT STUDY IN THE SOCIAL SCIENCES (ANTHROPOLOGY) 0,1,2,3,4

Provides readings, papers and/or basic research or other projects under the individual guidance of a staff member. Prereq: Consent of instructor and department chairman is required before registering. (Hours arranged)

SO010T INDEPENDENT STUDY IN THE SOCIAL SCIENCES (SOCIOLOGY) 0, 1, 2, 3, 4

(See above course description for SO009T.)

SO011T JUVENILE DELINQUENCY AND DEVIANCY 4

Analyzes the various components of delinquency, home, school, peer group and community structure. Explores the role of therapeutic and detention centers, and the juvenile court, as well as approaches to prevention and treatment. (4/0)

*SO013T SOCIOLOGY OF POVERTY 4

Focuses on structured social inequality and its consequences on the life changes of the poverty group in the United States. The course is problem oriented and examines the possibilities of redistribution of income, status, etc., as a means of reducing the size of the poverty group and ameliorating the effects of poverty on society as a whole. (4/0)

Vocational-Technical

SO001U INDUSTRIAL ORGANIZATION 3

Studies the union systems in the United States. Studies wages, union policy, local and national union organization and the laws pertaining to union and employer. (3/0)

THERAPY

Vocational-Technical

- TH001V CLINICAL EXPERIENCE OTA I** 5
Offers learning activities in an occupational therapy clinic emphasizing the psychosocial aspects of therapy. (0/15) Prereq: Approval of program coordinator.
- TH002V CLINICAL EXPERIENCE OTA II** 5
Offers learning activities in an occupational therapy clinic emphasizing the physical disability aspects of therapy. (0/15) Prereq: Approval of program coordinator.
- TH003V CLINICAL EXPERIENCE OTA III** 5
Offers learning activities in an occupational therapy clinic emphasizing aspects of therapy in specialty areas (i.e., pediatrics, mentally retarded, nursing home, etc.) (0/15) Prereq: Approval of program coordinator.
- TH004V FUNCTION AND DYSFUNCTION (OCCUPATIONAL THERAPY THEORY)** 5
Provides basic understanding of processes by which function becomes dysfunction. Emphasis is placed on conditions relevant to the occupational therapist. (5/0) Prereq: BY006U
- TH005V MANAGEMENT OF PHYSICAL DISABILITY CLINICAL CONDITIONS** 4
Management of the physical disability clinical conditions as seen in the occupational therapy clinic. (4/0) Prereq: BY011U and TH004V
- TH006V MANAGEMENT OF PSYCHO-SOCIAL CLINICAL CONDITIONS** 4
Studies management of psychosocial clinical conditions relative to the occupational therapy clinic. (4/0) Prereq: PY002T and PY020T
- TH007V MEDIA AND SKILLS I** 3
Involves basic skills in activities. Introduces the student to various major and/or minor crafts. Emphasizes the relationship between a person and an activity such as arts and crafts. (1/3)
- TH008V MEDIA AND SKILLS II** 3
Continues TH007V and introduces the student to additional major and/or minor crafts. (1/3)
- TH010V ORIENTATION TO OCCUPATIONAL THERAPY** 2
Presents a basic orientation to and understanding of occupational

therapy and the orientation of assistants to their roles. (1/4)

- TH011V PRINCIPLES AND PRACTICES OF REHABILITATION** 5
Presents basic principles of rehabilitation as a process in the treatment of physical and psychosocial disabilities. (4/2) Prereq: BY011U and TH004V.

- TH014V SEMINAR OTA** 2
Helps the student form an interpretation of the individual's practical experiences and their meaning. Provides feedback from the students on the effectiveness of their clinical experience. (2/0)

- TH015V MEDIA AND SKILLS III** 3
Continues TH008V and includes instruction in purchasing, storage and maintenance of supplies. (2/2)



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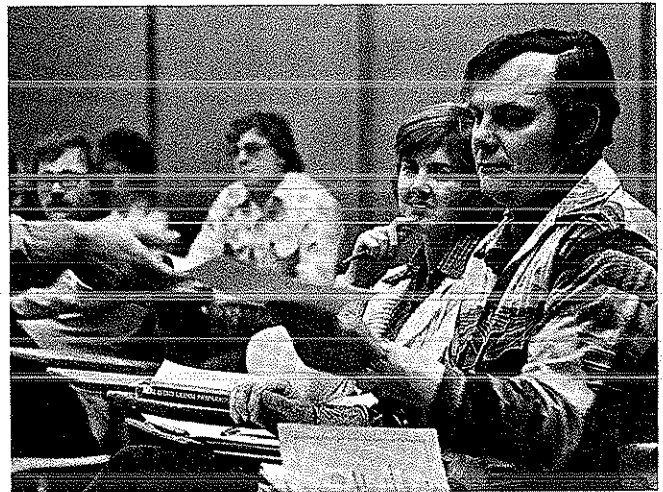
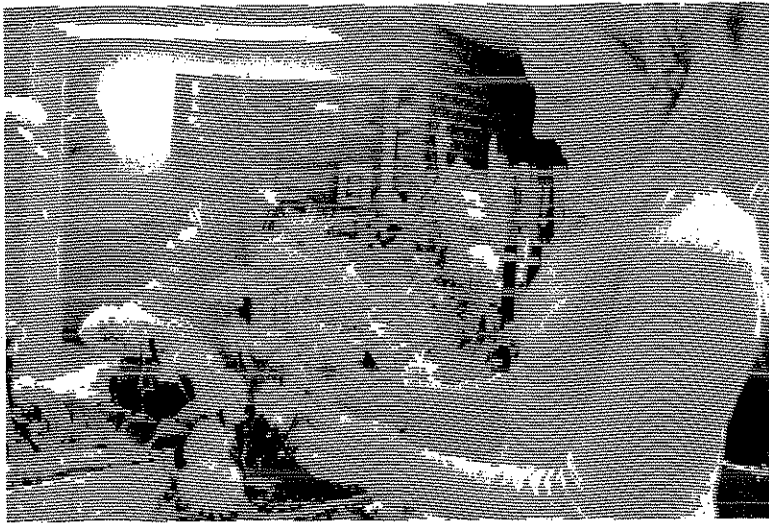
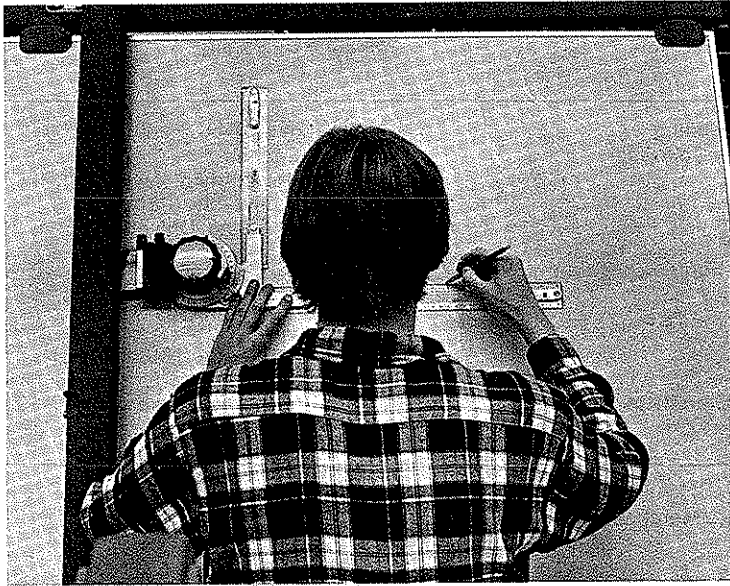
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INDEX

A

Academic Honors	28
Academic Information and Regulations	24
Accounting Specialist	53
Accounting Courses	90
Accreditation	10
Activities Calendar	19
Administration and Management Courses	92
Administrative Secretary	57
Admission Policies	21
Admission Requirements and Procedures	21
Adds and Drops Policy	26
Adult and Continuing Education	85
Adult Basic Education	87
Adult High School Completion	87
Agribusiness and Natural Resources Careers	45
Agribusiness Management Program	46
Agribusiness Program	45
Agricultural Mechanics Program	47
Agriculture Courses	97
Agriculture Programs	45
Aide for the Handicapped Program	37
Alumni Association	11
Animal Health Management Program	46
Annual Fund Drives	10
Application Procedures	21
Architectural Drafting	62
Art Courses	105
Arts and Sciences Admission	21
Arts and Sciences Career Areas	36
Arts and Sciences Core Requirements	42
Arts and Sciences Programs	36
Assignments and Examinations	28
Associate of Applied Science Degree	31

Associate of Arts Degree	31
Associate of Science Degree	31
Auditing Courses	26
Automotive Collision Repair Program	75
Automotive Mechanics Program	75

B

Basic Educational Grants	16
Benton Hall Learning Resource Center	13
Biological Science Courses	107
Bookstore	13
Business and Office Careers	53
Business Programs	53
Bus Service	18

C

Certificates, Requirements for	32
Change of Majors	27
Chemistry Courses	109
Child Care Center	18
Clerical-Receptionist Program	57
Clubs and Organizations	19
Co-curricular Activities	19
College and University Extension Courses	87
College Magazine	19
College Parallel-Career Programs	36
College Parallel-Transfer Programs	36
College Work-Study	16
Communications Courses	110
Communications Electronics	76
Communique, Student Newspaper	19
Community Education Division	85

Computer Operations Program	54
Construction Careers	62
Construction Courses	112
Cooperative Education	113
Corrections Careers	37
Correspondence Studies (High School)	87
Counseling Services	15
Course Descriptions	90
Course Load	24
Credit Assignment in Emergency Situations	26
Credit by Examination	42
Credits, Incoming, Transfer of	29
Criminal Justice Program	37

D

Data Processing Courses	114
Degree Requirements	29
Dental Courses	118
Dental Assistant Program	66
Dental Laboratory Technician Program	67
Developmental Program	83
Diploma, Requirements of	32
Drama Courses	121
Driver Education Courses	120

E

Economics Courses	121
Electrical Equipment Servicing	77
Electronics Courses	122
Electronics Engineering Technology Program	73
Environmental Careers	64
Environmental Health Technology	65
Environmental Courses	127
Expanding Horizons for Women	11
Extension Courses, Arts and Sciences	87

F

Facilities	11
Faculty and Administrative Staff	163

Farm Equipment Mechanics Program	47
Fashion Merchandising Program	77
Federally Insured Student Loans	16
Fees and Tuition	23
Filing a Graduation Application	32
Financial Aids	16
Floriculture Program	79
Food Service Management	78
Food Service, Student	18
Food Service Training	78
Food Store Management	79
Foreign Language Courses	130
Foreign Students, Admission	22
Foundations, Kirkwood	10

G

General Adult Education	88
General Interest Classes	88
General Secretary Program	57
Geography Course	131
Grading System	25
Graduation Requirements	29
Grade Reports	25
Graduation Fee	24
Graphic Arts Program	80
Graphics Courses	131
Grounds and Recreational Vehicle Repair Program	48
Grounds and Turf Management	50

H

Health Service, Student	18
Health Careers	66
High School Completion, Adult	87
History Courses	133
History of College	9
Home Economics Courses	133
Home Furnishings Program	81

Horse Husbandry Program	49
Horticulture and Natural Resources Program	50
Human Potential Labs	15

I

Incoming Transfer of Credit	29
Incomplete Grade Policy	25
Institutional Programs	87
Insurance Secretary Program	58
Insurance, Student Accident and Health	18
Interdisciplinary Studies	135
International Trade Program	38
Intramurals	19
Iowa High School Equivalency Certificate	33

J

Journalism Courses	135
Junior Accounting Program	54

K

KEY Program	88
Keypunch	56
Kirkwood Alumni Association	11
Kirkwood Foundations	10
Kirkwood Scholarships	16

L

Landscape/Nursery/Garden Center	50
Law Courses	136
Law Enforcement Program	37
Learning Resource Center	13
Legal Assistant Program	39
Legal Secretary Program	58
Library Services Program	39
Literature Courses	138

M

Machinist Program	73
Management Development	59, 87
Manufacturing Production Careers	73
Manufacturing Service Careers	75
Marketing and Distribution Careers	77
Marketing Courses	139
Mathematics Courses	143
Mechanical Engineering Technology Program	74
Mechanics Courses	144
Medical Assistant Program	68
Medical Secretary Program	58
Medical/Surgical Courses	146
Memorial Funds	11
Metals and Manufacturing	149
Mission and Purpose of the College	9
Music Courses	151

N

National Direct Student Loans	16
Non-Credit Vocational and Adult Education	88
Nursing Courses	152
Nursing Program	69

O

Occupational Therapy Assistant Program	71
Office Education Program	53
Orthopaedic Physician's Assistant Program	71

P

Parking	18
Parks and Natural Resources Program	50
Personal Achievement Department	83
Personal Development Courses	156
Philosophy and Religion Courses	157

Physics/Astronomy Courses	158
Placement Services	17
Political Science Courses	158
Practical Nursing Program	69
Privacy Act	29
Probation	27
Production Agriculture	51
Programs, Instructional	35
Public Service Careers	37
Psychology/Education Courses	159
Programmer/Computer Programmer Analyst	55

R

Re-admission	28
Record Retention Policy	28
Recreational Classes	88
Refund of Tuition	24
Registration Bulletin	19
Rehabilitation Counseling	16
Religion, Philosophy Courses	157
Repeating Courses	25
Residence Qualifications	23
Respiratory Therapy Program	72
Retail Marketing Program	82
Retirement Programs	88
Right-to-Read Program	88
Rural Building Construction Program	63

S

Secretarial Programs	56
Scholastic Probation and Suspension	27
Scholarships	16
Short-Term Loans	16
Skills Center	84
Social and Special Events	19
Social Science Courses	161
Social Welfare Courses	161
Sociology Courses	161
Speech Courses	111
State of Iowa Scholarship	16

Student Accident and Health Insurance	18
Student Congress	19
Student Handbook (See Registration Bulletin)	
Student Housing	17
Student Newspaper	19
Student Responsibility for Catalog Information	33
Supplemental Education Opportunity Grants	16
Supplementary Vocational Programs	88
Suspension	27

T

Teacher Associate Program	40
Therapy Courses	162
Transcripts	32
Transfer Credit (Arts and Sciences Extension)	87
Tuition and Fees	23
Tuition, Refund of	24
Turf Management	50
Truck Driving Program, Semi-Trailer	87

U

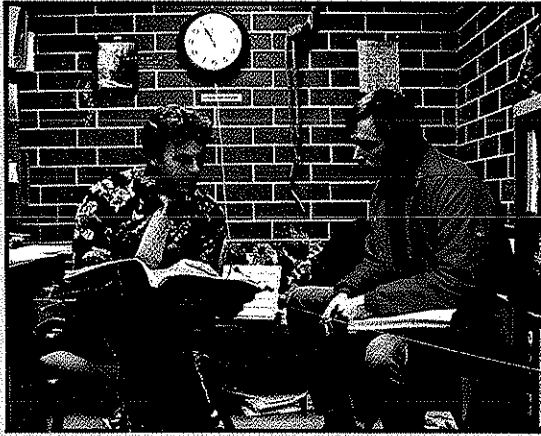
University Extension	87
Unit of Credit	24

V

Veterans Education Benefits	16
Veterans Farm Management Program	52
Vocational Keypunch Program	56
Vocational-Technical Admission	22
Vocational-Technical Programs	45

W

Waiver of Regulations	33
Water and Wastewater Technology	65
Welding	63
Withdrawal Policy	27
Women's Activities	11



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