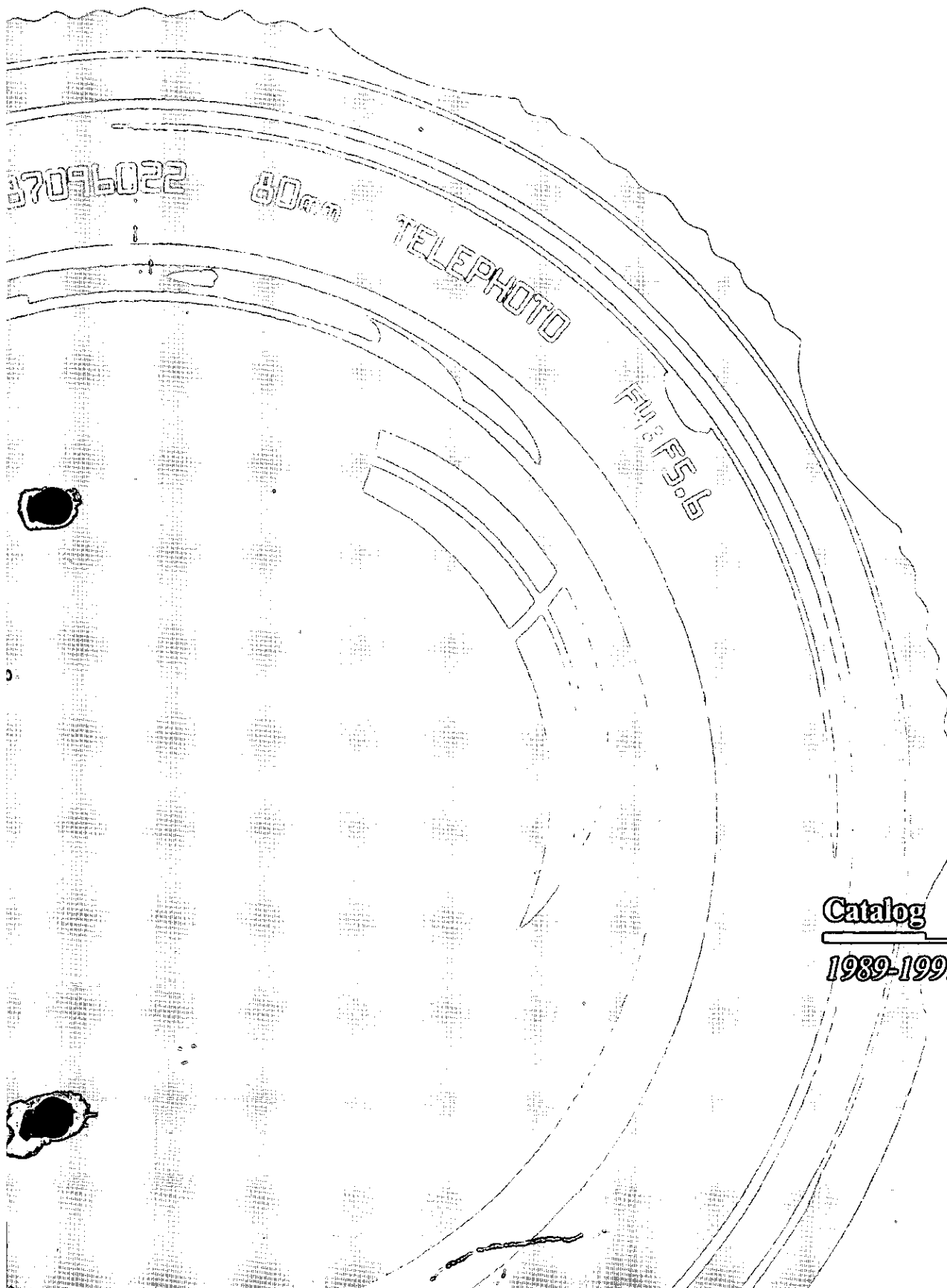


EAST CENTRAL COLLEGE

Focus on Your Future



Catalog

1989-1991

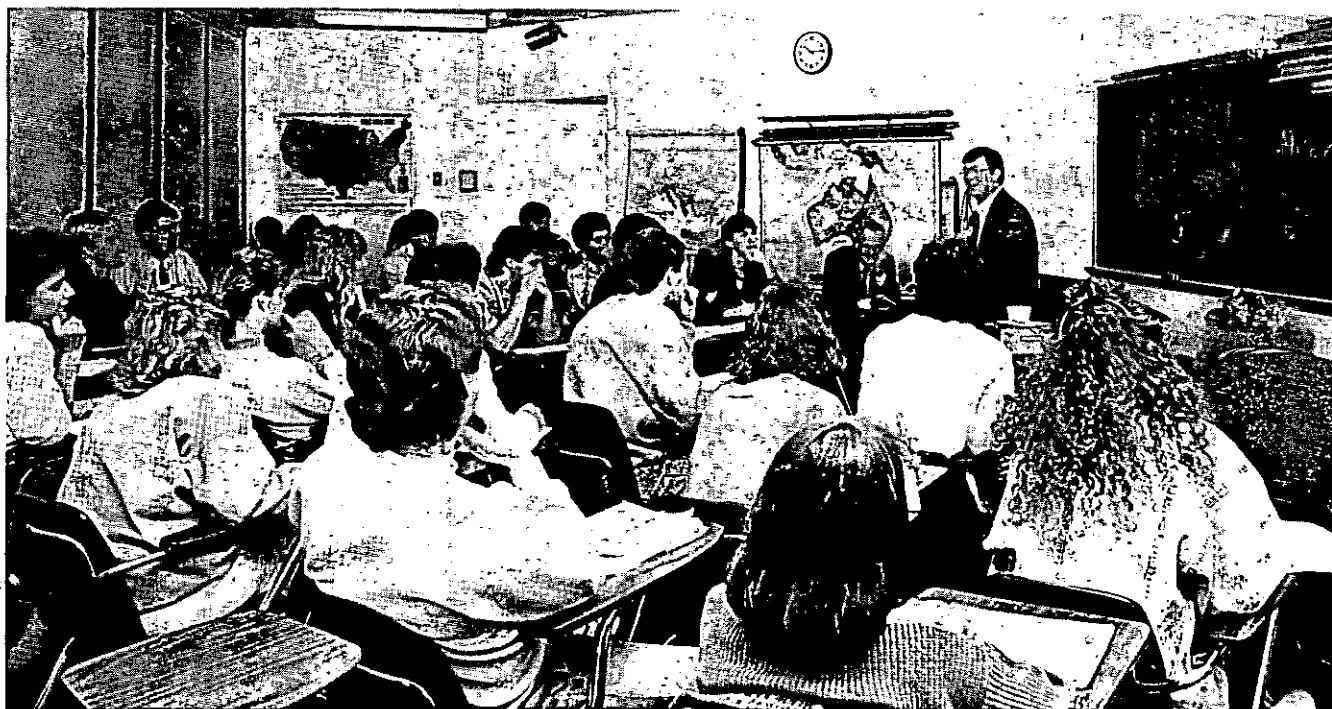
**East Central College
1989-91
Catalog**

Celebrating 20 years of classes

Highway 50 & Prairie Dell Road
P.O. Box 529
Union, MO 63084
314-583-5195

COURSE DESCRIPTIONS

Each course contains two alpha characters and four numerical characters. The two alpha characters denote the instructional department in which the course is taught. The first number indicates freshman or sophomore level, the second and third numbers usually indicate the sequence within the freshman or sophomore year, and the fourth number represents the semester hours credit attached to the course. In courses carrying a value of ten or more semester hours, the last two numbers represent the semester hours credit.



COURSE DESCRIPTIONS

Accounting

AC 0100, 1, 2, 3 .5-3 hours Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.
Prerequisite: none

AC 1003 3 hours Applied Accounting

An introductory course in the principles of accounting with emphasis on practice in bookkeeping techniques, designed to meet the needs of two types of students: (1) the vocational student who did not receive a B or better grade in high school bookkeeping within the past four years and who needs an accounting course to complete a degree or certificate program; and (2) the student with a need for developmental work in accounting prior to enrollment in Accounting I.
Prerequisite: none

AC 1023 (lec), 1031 (lab) 4 hours Accounting I

A study of basic principles and procedures of double-entry accounting for service and merchandising businesses. Includes the complete accounting cycle, special journals, notes, deferrals, accruals, and problems in receivables, payables, inventories, payrolls, plant assets, and partnerships. Lab is required for vocational accounting majors and recommended for all other students.
Prerequisite: high school bookkeeping, AC 1003, or consent of instructor

AC 1043 (lec), 1051 (lab) 4 hours Accounting II

A study of corporate accounting, job order, process cost, and standard accounting systems. Includes corporate statements, bond liabilities, investments, statement of cash flow, not-for-profit accounting and decision-making topics such as; variable (direct) costing, break-even analysis, economic order quantity, budgeting, alternative decision analysis, and financial statement analysis. Lab is required for vocational accounting majors and recommended for all other students.
Prerequisite: AC 1023

AC 2013 3 hours Computer Assisted Accounting

A study of accounting as it applies to computers. The course includes the use of spreadsheet templates to solve financial accounting problems and study "what if" situations and the use of a commercial general ledger package to process accounting information.
Prerequisite or Corequisite: AC 1043 and keyboarding or typewriting skills

AC 2021, 2031 1 hour Accounting Practicum

A course designed to give students practical working experience through the complete accounting cycle by the use of commercial general practice sets. Both manual and computer operated practice sets are used.
Prerequisite: AC 1023

AC 2043 3 hours Intermediate Accounting I

A review of the concepts and principles underlying accounting and their application in the accounting process. Valuation procedures and problems are considered for each class of assets on the balance sheet along with their related effect upon income measurement.
Prerequisite: AC 1043

AC 2053 3 hours Tax Accounting

A comprehensive study of the federal tax structure and the application of the principles involved to specific individual and business tax problems.
Prerequisite: AC 1043 or consent of instructor

AC 2063 3 hours Intermediate Accounting II

A continuation of Intermediate Accounting I. Valuation procedures and problems are considered for each class of liabilities and the equity section of the balance sheet along with their related effect upon income measurement. The statement of cash flows is studied along with various forms of financial statement analysis.
Prerequisite: AC 2043 or consent of instructor

AC 2073 3 hours Cost Accounting

A study of the job order, process, and standard cost systems and the flow of costs in the accounting for materials, labor, and overhead in the manufacturing process. Budgets are prepared and analyzed.
Prerequisite: AC 1043 or consent of instructor

AC 2083 3 hours Payroll Accounting

A course structured to develop an appreciation and understanding of personnel and payroll records required for the operation of a payroll system. Includes a study of the Fair Labor Standards Act, basic payroll accounting systems and procedures, the Social Security Act as it relates to payroll, and an introduction to the various types of automated equipment and data processing systems common to payroll accounting.
Prerequisite: AC 1003 or consent of instructor

AC 2093 3 hours Managerial Accounting

A course designed to teach future managers ways to use, analyze, and interpret accounting data once it is available to them. Emphasis is placed upon the analysis of data rather than the collecting and recording function as pertains to service and manufacturing enterprises.
Prerequisite: AC 1023

AC 2103 3 hours Advanced Tax Accounting

A continuation of the study of federal income tax. Consideration will be given to the special treatment received by the various business entities, including a study of partnerships, corporations, estates, and trusts. Study will focus on the impact of taxation on business planning and decision-making.
Prerequisite: AC 2043

AC 2113 3 hours Auditing

A course which features auditing theory, procedures, and practices, including verification of records, evaluation and analysis of accounts, and presentation of conditions. Students will be required to complete a fairly comprehensive set of illustrative audit work papers and prepare an audit based thereon.
Prerequisite: AC 2063

AC 2123, 2133 3 hours Accounting Internship

A supervised work experience (at least nine hours per week) in an actual accounting situation. Supervision will be by accounting personnel in business or industry with coordination of the work experience to classroom instruction by the instructor.
Prerequisite: AC 1043 or consent of instructor

AC 2132 3 hours Individual Income Tax

A course designed to cover practical applications of the Federal Tax System as it relates to the individual taxpayer. The 1040 and the short forms will be covered along with supporting schedules involving the most frequent types of reporting situations.
Prerequisite: none

AC 2661, 2672, 2683 1-3 hours Independent Studies in Accounting

Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

AC 2991 1 hour Accounting Job Placement

A course designed to assist accounting students in obtaining jobs suitable to their training and interests.
To be taken the last semester of study.

Air Conditioning and Refrigeration Technology

AI 0100, 1, 2, 3 .5-3 hours Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.
Prerequisite: none

AI 1001 1 hour Electrical Diagrams

A course designed to familiarize the student with the various factors involved in electrical diagrams. The students will acquire a working knowledge of electrical circuits using schematic and pictorial diagrams. The schematics will include different loads and various switches utilizing electrical symbols.
Prerequisite: none

AI 1013 3 hours**Theory of Refrigeration and Materials**

A study of the theory of refrigeration, along with the use and safety of refrigeration hand tools and commonly used materials.

Prerequisite: none

AI 1023 3 hours**Applied Electrical Fundamentals**

A course which starts with the basic fundamentals and processes of electrical wiring for refrigeration components and motors. After students acquire a working knowledge of electrical circuits, they apply this to laboratory tests on testing boards and refrigeration equipment.

Prerequisite: none

AI 1033 3 hours**Systems and Components**

An introductory course covering basic theory and applied applications of electricity pertaining to industrial and commercial systems, motors, and components comprising these systems. Students will gain technical knowledge and develop skills required in the areas of installation, maintenance, and diagnosis of problems.

Prerequisite: AI 1203 or consent of instructor

AI 1043 3 hours**Refrigerants**

A study of the various types of refrigerants and their characteristics, skills in handling refrigerants, pressure-temperature relationships, refrigerant oils, noncondensable gases, and their applications.

Prerequisite: none

AI 1053 3 hours**Domestic Refrigeration**

A study of application and knowledge of the fundamentals of refrigeration and electricity by means of troubleshooting and repairing domestic refrigerators and freezers.

Prerequisite: none

AI 1063 3 hours**Commercial Refrigeration**

A study of the selection, installation, servicing, diagnosing, and repair of commercial equipment. The student will gain knowledge and experience in food preservation and processing equipment by using the types of equipment found in supermarkets, restaurants, and other commercial installations.

Prerequisite: AI 1013, 1023, 1033, 1043, and 1053

AI 1073 3 hours**Theory of Air Conditioning and Psychrometrics**

A study which outlines the fundamental concepts of air conditioning and psychrometrics. Psychrometry is used to find and establish the conditions of air which will be the most comfortable for a specific situation.

Prerequisite: AI 1013, 1023, 1033, 1043, 1053

AI 1082 2 hours**Applied Air Distribution**

A course designed to familiarize the student with the various factors involved in the distribution of air in an air conditioning system.

Prerequisite: AI 1013, 1023, 1033, 1043, and 1053

AI 1094 4 hours**Air Conditioning Equipment and Installation**

A study of the proper selection, installation of, and adjustments to various systems of air conditioning equipment, with special emphasis on human comfort. Consumerism and/or customer-services technician relationships are discussed.

Prerequisite: AI 1013, 1023, 1033, 1043, and 1053

AI 1103 3 hours**Testing, Diagnosis, and Troubleshooting**

A detailed study of the application of the technical knowledge and skills of air conditioning and refrigeration. The student will learn to utilize systematic analysis procedures for speed as well as accuracy in diagnosing and troubleshooting equipment.

Prerequisite: AI 1013, 1023, 1033, 1043, and 1053

AI 1123 3 hours**Applied Sheet Metal I**

A course designed to provide a practical working knowledge and to develop skills required in the use of sheet metal in a residential duct system. After students become familiar with the tools and equipment and the set of safety standards used, they will apply this knowledge to practical application. This will include applying patterns, fabricating sheet metal, soldering, and drawing simple patterns.

Prerequisite: none

AI 1133 3 hours**Applied Sheet Metal II**

A course designed to provide a practical working knowledge and develop skills required in the use of sheet metal in a residential duct system. The breadth of this course is greater than Applied Sheet Metal I and allows for the in-depth application of plenums and duct work for heating and cooling systems in residential construction.

Prerequisite: AI 1123 or consent of instructor

AI 1143 3 hours**Heat Pump I**

An introductory course designed to cover the basic theory and applied application of the heat pump system. Students will gain a working knowledge and develop skills in the area of load calculations, (heat gain, heat loss) balance points of systems, installation and application, and methods of control of the equipment by different manufacturers. Servicing and troubleshooting the various heat pump systems will be dealt with.

Prerequisite: none

AI 1153 3 hours**Heat Pump II**

A detailed study of the applications and design of heat pumps. This course applies in-depth application of air distribution, performance, and system troubleshooting.

Prerequisite: AI 1143 or consent of instructor

AI 1163 3 hours**Oil Heat and Controls**

A course which provides advanced training and application pertaining to residential oil heating equipment. Through practical application in the

lab, students will gain experience and skills in the areas of installation, maintenance, and troubleshooting.

Prerequisite: completion of Air Conditioning and Refrigeration Program or consent of instructor

AI 1173 3 hours**LP, Electric Heat, and Controls**

A course which provides advanced training and application pertaining to liquid petroleum and electric residential heating equipment. Through practical application in the lab, students will gain experience and skills in the area of installation, maintenance, and troubleshooting.

Prerequisite: completion of Air Conditioning and Refrigeration Program or consent of instructor

AI 1183 3 hours**Understanding Solar Energy Systems**

A study of solar energy and its uses for heating and cooling buildings, heating of domestic hot water, and heating of water for swimming pools. Active solar energy systems and passive solar energy systems will be investigated and dealt with. Students will gain knowledge, skills, and experience in locating, collecting, storing, and distributing solar energy.

Prerequisite: none

AI 1193 3 hours**Introduction to Energy**

An introductory course on energy and the problems related to energy. The students will have opportunities to explore and experiment with possible solutions to the energy crisis. Students will also explore career opportunities as to the job openings available in this new and emerging field, and learn good conservation techniques.

Prerequisite: none

AI 1203 3 hours**Basic Electricity I**

An introductory course stressing basic electrical theory and applied practical wiring for residential systems. Students will gain technical knowledge and develop skills required in the areas of installation, maintenance, and diagnosis of problems.

Prerequisite: none

AI 1213 3 hours**Basic Electricity II**

An introductory course covering basic theory and applied application of electricity pertaining to industrial and commercial systems, motors, and components comprising these systems. Students will gain technical knowledge and develop skills required in the areas of installation, maintenance, and diagnosis of problems.

Prerequisite: AI 1203 or consent of instructor

AI 1661, 1672, 1683 1-3 hours**Independent Studies in Air Conditioning and Refrigeration**

Course content will be arranged by the instructor to meet individual needs of the student. For each semester-hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

AI 2991 1 hour**Air Conditioning and Refrigeration Technology Job Placement**

A course designed to assist air conditioning and

refrigeration students in obtaining jobs suitable to their training and interests.
To be taken the last semester of study.

Anthropology

AN 1003 3 hours

Introduction to Cultural Anthropology

An introductory course in cultural anthropology emphasizing the use of the cultural perspective in gaining understanding in the areas of social structure, political systems, economic systems, religious systems, and human communication.
Prerequisite: none

AN 1103 3 hours

Introduction to Physical Anthropology and Archaeology

An introduction to the study of physical anthropology and archaeology, with special emphasis on the connection between cultural and human development, human variability, major concepts in archaeological analysis, and some practical experience in archaeological method.
Prerequisite: none

AN 1203 3 hours

General Anthropology

A survey course providing an introduction to the basic concepts of archaeology, cultural anthropology, and physical anthropology.
Prerequisite: none

AN 2701, 2, 3 1-3 hours

Independent Studies (Honors) in Anthropology

Course content and hours arranged by instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

AN 2703 3 hours

Field Archaeology

Field study course aiming to increase the student's knowledge and understanding of primitive man and his culture with special emphasis on field methods and an archaeological understanding of local pre-history.
Prerequisite: none

Art

AR 1003 3 hours

Crafts

A course designed to allow the student to explore a number of different craft areas such as: mosaics, basketry, printmaking, etc. Individual projects will be developed in those areas in which the student has special interest. The course is especially well suited to teachers, parents, and other non-art majors who are interested in developing creative hobbies.
Prerequisite: none

AR 1103 3 hours

Design I

A study of the basic elements of design, what they are, how they function individually, and how they relate to what is observed by the viewer. The

application of elements is stimulated by a wide variety of projects stressing the development of ideas, and technical skills as related to the presentation of two-dimensional problems.
Prerequisite: none

AR 1113 3 hours

Design II

Advanced exploration of the basic elements of design as related to three-dimensional problem solving. Emphasis is on development of greater technical (finished art) skills. Problem solving is stimulated by assignments stressing creative ability with a high degree of difficulty.
Prerequisite: AR 1103 or consent of instructor

AR 1203 3 hours

Art Appreciation I

A general survey of the artistic activities of man from prehistoric to modern times. Slides and 16mm films are used in conjunction with the course.
Prerequisite: none

AR 1213 3 hours

Art Appreciation II

A survey of art history from 1900 to the present, with some studio applications. Selected art movements and techniques will be discussed.
Prerequisite: none

AR 1223 3 hours

Art Appreciation

An introduction to art through various media and techniques such as design, drawing, printmaking, color, shading, sculpture, and space relationship. Media used include ink, cray-pas, plaster, and acrylics. This is a survey course and not recommended for art majors. Slides and 16mm film are used in conjunction with the course.
Prerequisite: none

AR 1303 3 hours

Drawing I

An introduction to drawing as an approach to space and form through a variety of methods, both traditional and contemporary. Emphasis will be placed upon analytical perception as well as familiarization with and control of drawing material. Introduction to perspective and light and dark shades; some texture and other media will be used for creative drawings.
Prerequisite: AR 1103 or consent of instructor

AR 1313 3 hours

Drawing II

A course in the drawing of the human figure in charcoal, crayon, ink, and other media. Included are representational, abstract, and non-objective drawing; space and volume relations, movement and direction of planes in space; development of visual units of design and their integration in the whole organization.
Prerequisite: AR 1303 or consent of instructor

AR 1403 3 hours

Painting I

An introduction to the materials and techniques of oil and acrylic painting, intended to develop technical and expressive abilities. Forms, colors, line,

texture, and organization of painting will be studied, plus practical application of framing techniques.

Prerequisite: AR 1303, 1313, or consent of instructor

AR 1413 3 hours

Painting II

A course in the theory and practice of painting using oil and acrylics. Development of form through color and appropriate emphasis on texture is studied, along with objective appearance conditioned to meet the requirements of a controlled composition and aesthetic concept. While working with a variety of media, the student will be encouraged to emphasize individual expression.

Prerequisite: AR 1403

AR 1423 3 hours

Painting III

A continued application of principles of composition in the medium of opaque and watercolor materials. Emphasis on expression and refinement of personal techniques.

Prerequisite: AR 1403, 1413, or consent of instructor

AR 1503 3 hours

Figure Drawing I

An introduction to drawing from the human figure, analysis of structure and proportion of basic forms.

Prerequisite: consent of instructor

AR 1513 3 hours

Figure Drawing II

A continuation of AR 1503. The course emphasizes the use of various drawing media; and the analysis of the structure of the human figure through anatomy.

Prerequisite: AR 1503 or consent of instructor

AR 1523 3 hours

Figure Drawing III

A continued study of drawing from the model at rest and in action. Exploration of individual techniques in a creative studio atmosphere. Goals and refinement of techniques encouraged.

Prerequisite: AR 1503, 1513, or consent of instructor

AR 1603 3 hours

Lettering & Layout I

An analysis of alphabets, proportion, spacing and classifications. Emphasis will be placed upon layout procedures, typography, relationships of advertising elements and layout rendering in a variety of media.

Prerequisite: consent of instructor

AR 1613 3 hours

Lettering & Layout II

A continuation of AR 1603. Emphasis is placed upon the creative design of advertising layouts using drawings, photographs, lettering and type. Typography, lettering, composition and relationship to advertising elements will be covered.

Prerequisite: AR 1603 or consent of instructor

AR 1703 3 hours

Art History I

A historical study of art, tracing its development

from prehistoric times to the eighteenth century. Emphasis is on the study of the growth and development of art forms and movements, leading to an understanding of the relationship of art to the historical periods.

Prerequisite: none

AR 1713 3 hours

Art History II

An advanced art history course. Students will gain more experience in identification and study of 18th, 19th, and 20th century American and European artists and their works.

Prerequisite: none

AR 2003 3 hours

Watercolor I

The study of watercolor painting with emphasis on color, composition, and pictorial expression with experimentation in varied methods of watercolor painting. Studies will include washes and brush control.

Prerequisite: AR 1103 or consent of instructor

AR 2013 3 hours

Watercolor II

A continuation of the study of watercolor painting with emphasis on color, composition, and pictorial expression with experimentation in varied methods of watercolor painting. Studies will include washes and brush control.

Prerequisite: AR 2003 or consent of instructor

AR 2043 3 hours

Watercolor III

A continuation of the study of watercolor painting with emphasis on personal creative structure, topics and problems, and contemporary painting.

Prerequisite: AR 2013 or consent of instructor

AR 2023 3 hours

Art for Children

A study of the types of art activities related to various groups in the elementary school, including experience with art materials used in the classroom.

Prerequisite: none

AR 2103 3 hours

Printmaking I

An introduction to printmaking. Lecture and laboratory exercises deal with history and techniques of printmaking, including the making of prints from material such as wood blocks, cardboard, and linoleum by using surface printing techniques.

Prerequisite: AR 1223 or consent of instructor

AR 2113 3 hours

Printmaking II

A continuation of AR 2103. Laboratory exercises deal with the techniques of lithography, silkscreen, and dry point as a fine printing medium. Emphasis is on individual exploration with materials.

Prerequisite: AR 1223, 2103, or consent of instructor

AR 2203 3 hours

Photography I

A course dealing with the basics and principles of photography, primarily black and white, includ-

ing the mechanical and visual aspect for beginning photographers. Darkroom skills of black and white film developing and printing are taught.

Prerequisite: none

AR 2213 3 hours

Photography II

A course approaching photography primarily from the creative visual aspect. The course is meant to increase the photographer's awareness and sensitivity, and at the same time, refine basic mechanical skills.

Prerequisite: AR 2203 or consent of instructor

AR 2303 3 hours

Ceramics I

A course in hand construction, throwing on the potter's wheel, glazing, and decorating processes of ceramics.

Prerequisite: none

AR 2313 3 hours

Ceramics II

An advanced study of the principles of ceramics with emphasis on hand-built techniques. As the student progresses, there will be study on the kick wheel and extensive experimentation with glazes and oxides.

Prerequisite: AR 2303 or consent of instructor

AR 2403 3 hours

Sculpture I

An introduction to sculpture through the use of various media: cardboard sculpture, plaster sculpture, and wood or stone sculpture. Some drawing, model making, and research of sculptors and sculpture techniques is required.

Prerequisite: none

AR 2413 3 hours

Sculpture II

An examination and analysis of traditional and contemporary sculpture. Sculptural design as related to material and techniques such as clay, wood, stone, plaster, and metal are explored.

Prerequisite: AR 2403 or consent of instructor

AR 2701, 2, 3 1-3 hours

Independent Studies (Honors) in Art

Independent Studies in Art provides two alternatives. An exceptional art student may: (1) study or develop independently a specific prearranged topic or project within the field of art, or (2) develop experience in procedures, processes, and actual presentations of gallery displays. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Automotive Technology

AT 0100, 1, 2, 3 5-3 hours

Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

AT 1126 6 hours

Engine Technology

A detailed study of the gasoline-powered internal combustion engine. Emphasis is placed upon

procedures for repair and replacement of engine parts and components, cooling systems, lubrication systems, and valve train assemblies. Engine overhaul and machine procedures are discussed in detail. Lab work includes the correct disassembly, measuring, and reassembly of engine components.

This class and some experience will prepare the student for the ASE Engine Repair Test.

Requisite: must have own hand tools

AT 1132 2 hours

Carbureted Fuel Systems

A detailed study of the principles and theory of carburetion and fuel delivery systems. This class will be limited to carburetors and other equipment produced since 1980 on domestic vehicles. Classroom and lab work includes overhaul, service, and adjustment of fuel system components. Special emphasis is placed on a fuel system designed to meet Federal and State air pollution regulations and the resulting change in service techniques.

Prerequisite: AT 1126 or consent of instructor

Requisite: must have own hand tools

AT 1133 3 hours

Basic Electronics

A study of basic Direct Current. Theory and fundamentals as applied to the modern automobile. The student will study the use of a VOM while building several model circuits. The function and construction of electrical/mechanical solid state devices will be covered. Reading modern wiring diagrams for diagnosing and locating troubles will also be covered.

This class along with AT 1163 and some experience will prepare the student for the ASE Electrical System Test.

Prerequisite: AT 1126, 1132, or consent of instructor

Requisite: must have own hand tools

AT 1142 2 hours

Ignition and Tune-up

A study of automotive solid state ignition systems as used on domestic built cars since the mid 1970's. Classroom and lab work concentrates on troubleshooting and repair or replacement of malfunctioning units.

The use of an oscilloscope as a diagnostic tool will be stressed along with other tools of the trade such as a VOM, tachometer and timing light. This class does not include the fully computerized systems used on some cars since 1981.

This class along with 1172, 1132, and some experience will prepare the student for the ASE Engine Performance Test.

Prerequisite: AT 1126, 1132, or consent of instructor

Requisite: must have own hand tools

AT 1163 3 hours

Electrical Systems

A study of automotive electrical systems beginning with a review of simple wiring diagrams and then to chassis wiring diagrams. Application of this skill to real problems in lighting and accessory systems such as power windows, locks, and seats is next.

Requisite: must have own hand tools

AT 1172 2 hours

Emission Controls

A study of automotive exhaust systems and the

various atmospheric pollution control systems installed on today's cars. The course includes diagnosis, testing and repair of emission control systems. This class will stress the use of the infrared exhaust gas analyzer for diagnosis of these systems as well as for tune-up.

This class along with AT 1142, will prepare the student for the ASE Engine Performance Test.

Prerequisite: AT 1126, 1132, 1142

Requisite: must have own hand tools

AT 1193 3 hours

Automatic Transmission/Transaxles

A detailed study of the theory, operation and repair of automatic transmissions/transaxles. The course begins with a complete study of planetary gear trains and their operation. Hydraulics will be studied as applied to fluid coupling and clutch pack operation. Control hydraulics is stressed to insure proper diagnosis and repair. Classroom and lab work concentrates on disassembly, overhaul, and proper reassembly.

This class will prepare the student for the ASE Transmission/Transaxle Test.

Requisite: must have own hand tools

AT 1201 1 hour

Air Conditioning

A study of refrigeration and cooling theory with concentration on diagnosis and repair of common automotive air conditioning problems. Lab work includes checking and charging of the system, as well as leak-detection procedures. Safety is stressed while working with R-12 and around an operating automotive engine.

Requisite: must have own hand tools

AT 1213 3 hours

Steering and Suspension

A comprehensive study of coil and leaf spring, torsion bar and air suspension systems. This includes the replacement of the parts of these systems. Steering and four-wheel alignment will also be covered along with diagnosis and repair of common steering complaints. The student will be expected to accomplish at least three alignments. This class along with some experience will prepare the student for the ASE Front End Test.

Requisite: must have own hand tools

AT 1222 2 hours

Brakes

A course which covers hydraulic brake systems, both power assisted and non-powered. Disc and drum types are covered in detail, along with proper brake repair procedures. Lab work includes servicing and replacement procedures for pads and shoes, disc and drum reconditioning and repair or replacement of master cylinders, wheel cylinders, and calipers.

This course will prepare the student for the ASE Brake System Test.

Requisite: must have own hand tools

AT 1223 3 hours

Advanced Engine Controls

A detailed study of fuel and ignition controls found on today's vehicles. It begins with G.M.'s CCC, TBI, PFI, SFI then Chrysler's 02 Feedback system, TBI, PFI, and Ford's ECC IV systems. Lab work will concentrate on the use of the oscilloscope, VOM, and hand-held scanners to determine condition of controls and sensors. A systematic approach to diagnosis of these systems will be stressed.

This class and AT 1126, 1132, 1142, and 1172 along with some experience will prepare the student for the ASE Engine Performance Test.

Prerequisite: AT 1126, 1132, 1142, 1172

Requisite: must have own hand tools

AT 1315 1.5 hours

Computerized Engine Controls/GM

A detailed study of fuel and ignition controls found on today's vehicles. The course begins with a review of electronics and the use of the VOM. Lab work will stress the use of oscilloscopes, VOM, and hand-held scanners along with some special tools.

Prerequisite: Successful completion of AT 1142, or consent of instructor

AT 1415 1.5 hours

Computerized Engine Controls/Chrysler

A detailed study of fuel and ignition controls found on today's vehicles. The course begins with a review of electronics and the use of the VOM. Lab work will stress the use of oscilloscopes, VOM, and hand-held scanners along with some special tools.

Prerequisite: Successful completion of AT 1142, or consent of instructor

AT 1515 1.5 hours

Computerized Engine Controls/Ford

A detailed study of fuel and ignition controls found on today's vehicles. The course begins with a review of electronics and the use of the VOM. Lab work will stress the use of oscilloscopes, VOM, and hand-held scanners along with some special tools.

Prerequisite: Successful completion of AT 1142, or consent of instructor

AT 1615 1.5 hours

Computerized Engine Controls/Import

A detailed study of fuel and ignition controls found on today's vehicles. The course begins with a review of electronics and the use of the VOM. Lab work will stress the use of oscilloscopes, VOM, and hand-held scanners along with some special tools.

Prerequisite: Successful completion of AT 1142, or consent of instructor

AT 2991 1 hour

Auto Technology Job Placement

A course designed to assist auto technology students in obtaining jobs suitable to their training and interests.

To be taken the last semester of study.

Biological Science

BI 1003 3 hours

Nutrition

A study of the essential nutrients and their value in various food groups, their functions in the body, and how to determine the food needs of the individual.

Prerequisite: none

BI 1103 3 hours

Ecology of Wildlife and Man

A study of principles of ecology as they apply to such problems as pollution and wildlife, park,

urban, and resource management. Historical and political implications will be examined. Methods of coping with problems will be evaluated. Three hours lecture per week.

Prerequisite: none

BI 1112 2 hours

Medical Terminology

A course in biomedical terminology. The student learns to pronounce, spell, and interpret the meaning of word components and how they fit together in modern biomedical terminology. The student studies some 1,500 words and learns the basics for expanding his or her own biomedical vocabulary. Two hours lecture per week.

Prerequisite: none

BI 1202 2 hours

Health

A general course designed to develop proper attitudes and practices which will contribute to the fine art of living. Health problems which require community action are given consideration. The course is intended for the elementary education major and those not majoring in biology.

Prerequisite: none

BI 1203 3 hours

Introduction to Life Science

A study of fundamental biological concepts, with emphasis on human biology. Topics include: the cell, the chemistry of life, the structure and function of human organ systems, genetics, ecology, and evolution.

Prerequisite: none

BI 1303 (lec), 1312 (lab) 5 hours

General Biology

An introductory course involving fundamental biological principles of both plant and animal life. This course is designed to be used as a general education course and is not open to students with credit in botany or zoology or students planning to major in the biological sciences. Three hours of lecture and two two-hour laboratory periods per week.

Prerequisite: none

BI 1403 (lec), 1411 (lab) 4 hours

General Invertebrate Zoology

A study of the structure and function of invertebrates with special attention paid to the phylogenetic origins of taxonomic groups and the integration of their structural systems. Three one-hour lecture recitation periods and one three-hour laboratory period per week. This course is recommended for students majoring in the life sciences and related fields.

Prerequisite: none

BI 1503 (lec), 1511 (lab) 4 hours

General Vertebrate Zoology

A study of the structure and function of vertebrates with special attention paid to the phylogenetic origins of taxonomic groups and the integration of their structural systems. Three one-hour lecture recitation periods and one three-hour laboratory period per week. This course is recommended for students majoring in the life sciences and related fields.

Prerequisite: BI 1403 & 1411, or consent of instructor

BI 1603 (lec), 1612 (lab) 5 hours**General Botany**

An introduction to the plant kingdom, structure, physiology, life histories, economic importance, and the evolution of plants. Laboratory will include experimentation and observation to verify and enhance classroom lecture and recitation. Three one-hour lecture recitation periods and two two-hour laboratory periods per week.

Prerequisite: BI 1303 & 1312, 1403 & 1411, 1503 & 1511, or consent of instructor

BI 2003 3 hours**Genetics**

A study of the principles of heredity and biological evolution as applied to plants and animals.

Prerequisite: BI 1303 & 1312, 1403 & 1411, 1503 & 1511, 1603 & 1612, or consent of instructor

BI 2102 (lec), 2112 (lab) 4 hours**Human Anatomy and Physiology I**

Part one of a two-semester course where gross micro and macroscopic anatomy and the function of the respective structures are studied. The first semester includes the study of integument, skeletal, muscular, and nervous systems. Two lectures and two two-hour laboratory periods per week.

Prerequisite: BI 1303 & 1312, 1403 & 1411, or 1503 & 1511, and CH 1203 & 1212, or CH 1303 & 1312 or consent of instructor

College courses in math are useful.

BI 2202 (lec), 2203 (lab) or 2212 (lab) 4-5 hours**Human Anatomy and Physiology II**

Part two of a two-semester study. Systems studied are digestive, respiratory, circulatory, and urogenital. Sequencing of courses I and II is not important. The student may take Human Anatomy and Physiology II first. Two lectures and three two-hour laboratory periods per week.

Prerequisite: BI 1303 & 1312, 1403 & 1411, or 1503 & 1511, and CH 1203 & 1212, or CH 1303 & 1312 or consent of instructor

College courses in math are useful.

BI 2302 (lec), 2303 (lab) 5 hours**Comparative Anatomy**

A study of the comparative anatomy of vertebrate animals, including both embryological development and adult structure. Dissection includes a representative from each major vertebrate class. Includes classification of vertebrates, embryology, skeleton, muscles, coelom, digestive and respiratory systems, circulatory system, urogenital system, and nervous system. Two lectures and six hours laboratory per week.

Prerequisite: BI 1403 & 1411, 1503 & 1511 or consent of instructor

BI 2402 (lec), 2412 (lab) 4 hours**Microbiology**

An introduction to microorganisms, their morphology, physiology, classification, and importance. Two hours lecture and four hours laboratory per week.

Prerequisite: BI 1303 & 1312, 1403 & 1411, 1503 & 1511, or 1603 & 1612

BI 2503 (lec), 2512 (lab) 5 hours**General Ecology**

A course which involves the mathematical and descriptive principles of ecosystem structure, tro-

phic dynamics, population regulation, and evolutionary ecology. Three lectures and two two-hour laboratory periods per week. This course involves one two-hour field trip per week.

Prerequisite: none

BI 2701, 2, 3 1-3 hours**Independent Studies (Honors) in Biology**

The student enrolled in independent studies has two alternatives: (1) investigate or study independently a specific prearranged topic within the field of biological science, or (2) assist primarily in the laboratory or lecture when peer groupings are being utilized. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

BI 2802 2 hours**Practicum in Biology**

Biology practicum provides two types of learning experiences: (1) assisting students in laboratory sessions of life science courses, or (2) participating in a weekly biology topics seminar. May be repeated.

Prerequisite: Successful completion of course in which student will assist or consent of instructor

BI 2903 3 hours**Alpine Biology**

This course involves the descriptive principles of ecosystem structure, trophic dynamics, population regulation, and evolutionary ecology as applied to life zones of the Rocky Mountains. The course is taught at Colorado State University's Pingree Park Campus.

Prerequisite: none

Corequisite: GL 2703

Building Construction Technology

BC 0100, 1, 2, 3 .5-3 hours**Workshop/Seminar**

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

BC 1014 4 hours**Blueprint Reading and Layout**

A course in reading and interpreting prints of the building, mechanical, and electrical trades. Includes preparation of a complete set of working drawings for a structure.

Prerequisite: none

BC 1023 3 hours**Surveying and Layout**

A study of the theory involving basic surveying equipment, chaining, differential leveling, grade operations, layout of buildings, and building construction layout.

Prerequisite: none

BC 1033 3 hours**Concrete**

A study of the basic theory and processes involv-

ing Portland cement, mixing cement, testing and design of concrete mixture, curing concrete, tools for placing and finishing concrete, and estimating.

Prerequisite: none

BC 1043 3 hours**Carpentry**

A study of basic theory and application of building construction fundamentals.

Offered evenings only.

Prerequisite: none

BC 1045 5 hours**Carpentry**

A study of basic theory and application of building construction fundamentals including fabrication from architect's plans.

Prerequisite: none

BC 1055 5 hours**Electricity**

A study of basic A.C. and D.C. circuits with emphasis in commercial and residential applications.

Prerequisite: none

BC 1064 4 hours**Plumbing**

A study of basic theory involving materials tools and calculations, drainage and disposal systems, fittings, fixtures, and layout of systems.

Prerequisite: none

BC 1073 3 hours**Welding**

A study of fundamental processes involving oxy-acetylene and electric arc welding.

Prerequisite: none

BC 1083 3 hours**Commercial Carpentry**

A study of basic theory and application of commercial building construction fundamentals.

Prerequisite: none

BC 1093 3 hours**Sheet Metal and Preventive Building Maintenance**

A study of basic building, mechanical, and electrical maintenance. Includes applying patterned fabrication of sheet metal, soldering, and drawing simple patterns.

Prerequisite: none

BC 1103 3 hours**Energy Efficient Buildings**

A study of energy conservation practices used in new and existing structures.

Prerequisite: none

BC 1113 3 hours**Residential Construction Procedures**

A course dealing with building construction fundamentals including concrete, carpentry, plumbing, and electricity.

Prerequisite: none

BC 1123 3 hours**Farm and Home Shop Construction**

A course designed to provide a working knowledge of construction and to develop many different shop skills. Emphasis will be placed upon planning, designing, and executing a project.

Prerequisite: none

BC 1133 3 hours
Home Maintenance
A study of basic theory and application in repairing, maintaining, and remodeling residential structures.
Prerequisite: none

BC 1143 3 hours
Repair and Construction of Farm Machinery and Buildings
A study of basic theory and application of farm building construction and equipment repairs.
Prerequisite: none

BC 1153 3 hours
Blueprint Reading/Architectural Drawing
A course in reading, drawing, and interpreting prints of the building, mechanical and electrical trades. Students must prepare a complete set of working drawings for a structure.
Prerequisite: none

BC 1661, 1672, 1683 1-3 hours
Independent Studies in Building Construction Technology
Course content and hours arranged by instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

BC 2991 1 hour
Building Construction Technology Job Placement
A course designed to assist building construction technology students in obtaining jobs suitable to their training and interests.
To be taken the last semester of study.

Business Management

BU 0100, 1, 2, 3 .5-3 hours
Workshop/Seminar
Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.
Prerequisite: none

BU 1003 3 hours
Introduction to Business
A survey course designed to give the student a general knowledge of the modern business world and a better basis for choosing concentrated business offerings.
Prerequisite: none

BU 1013 3 hours
Principles of Marketing
A course designed to introduce the student to the managerial area of marketing. Although consumer and institutional behavior patterns and the overall role of marketing in the economy are covered, the major emphasis will be concerned with the types of problems confronting those involved in marketing management.
Prerequisite: none

BU 1023 3 hours
Salesmanship
A study of proper sales techniques for presenting and selling merchandise to the consumer including methods of organization, training, and management of the sales force.
Prerequisite: none

BU 1033 3 hours
Principles of Advertising
A study of the aspects of advertising with emphasis on the development of a proper marketing mix, the planning of advertising strategy, the management of personnel, the control of advertising operations, advertising research, and development of display plans. Each student will be assigned an advertising project concerned with a marketing plan, advertising strategy, and an advertising budget.
Prerequisite: none

BU 1043 3 hours
Principles of Finance
A broad introduction to the operation, mechanics, and structure of the financial system within the United States. Special emphasis is given to financial instruments, markets and institutions, the Federal Reserve System and monetary policy. The course stresses the impact of monetary policy on the economy and on the operation of financial institutions. The course is intended to be the first course in finance.
Prerequisite: EC 2103 is recommended

BU 1053 3 hours
Fundamentals of Management
A study in the evaluation and comparison of private and public personnel practices and the techniques of recruiting, selecting, transferring, promoting, classifying, and training workers.
Prerequisite: none

BU 1063, 2023 3 hours
Business Management Internship
Actual work experience in a business or industry with periodic discussions of the problems involved in applying classroom principles to the job.
Prerequisite: Enrollment in Business Management Program and consent of instructor

BU 2012 2 hours
Readings in Management
A study of selected readings in group dynamics, communications, decision-making theory, managerialism, and its economic justification.
Prerequisite: BU 1053

BU 2013, 4 3-4 hours
Survey Calculus
A study of the techniques of differential and integral calculus. The focus of the course is on functions and the applications of the calculus to the life, social, and managerial sciences, with particular emphasis on the latter. Trigonometry is not used.
Prerequisite: MT 1403, or 1505, or 2003, or 2004

BU 2033 3 hours
Business Law
A study of those areas of the Uniform Commercial Code which affect most businesses. Topics include, but are not limited to: contracts, sales, agency employment, business organization, torts, bailments, commercial transactions, personal property and bailments, and courts and procedures.
Prerequisite: none

BU 2043 3 hours
Business Simulation and Problem Solving
A computer assisted course in which the student encounters and attempts to solve the problems

common to business owners and managers. The student is able to participate in operating an enterprise, as well as managing inventories, financial resources, and personnel. In addition to operating an ongoing concern, the student will also participate in a number of related business oriented decision-making simulations, such as mergers, the economics of marketing a product, and management decision-making.
Prerequisite: sophomore standing and BU 1013, 1053, and CS 1013

BU 2053 3 hours
Family Law
A survey course with objectives of familiarizing the student with the basic concepts of law. The course includes the study of such areas as adoption, divorce, real estate transactions, credit transactions, basic familiarity with the criminal justice system, ownership of personal property, estates and trusts, and employer-employee relationships.
Prerequisite: none

BU 2063 3 hours
Concept of Quality and Productivity
A course which introduces the concepts of quality and productivity, demonstrating that quality improvements enhance productivity and competitive position.
Prerequisite: none

BU 2073 3 hours
Techniques to Improve Quality
A course which includes elements of a successful Quality Circle Program through a hands-on approach.
Prerequisite: none

BU 2103 3 hours
Basic Business Statistics
An introductory course dealing with the methods of collecting, organizing, presenting, and analyzing data related to business. The course deals with measures of central tendency and dispersion, elementary probability and probability distributions, statistical estimation and hypothesis testing, and linear correlation.
Prerequisite: MT 1403, or 1505, or 2003, or 2004, or consent of instructor

BU 2661, 2672, 2683 1-3 hours
Independent Studies in Business Management
Course content and hours arranged by instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

BU 2991 1 hour
Business Management Job Placement
A course designed to assist business management students in obtaining jobs suitable to their training and interests.
To be taken the last semester of study.

Chemistry

CH 1003 3 hours
Introduction to Chemistry
A non-laboratory course emphasizing elementary principles of chemistry with a strong emphasis on

applications of chemistry in society and in our individual lives. Students will learn to appreciate the chemical nature of our everyday world. The applications studied may include agriculture, body chemistry, cosmetics, energy, genetic engineering, household chemicals, medicine, polymers, poisons, pollution, and a variety of other issues currently in the world, national, and local news. This course is intended for non-science majors.

Prerequisite: MT 1013 or satisfactory ACT math score

CH 1103 (lec), 1112 (lab) 5 hours
Introduction to Chemistry

An introduction to the basic principles of chemistry, including inorganic, analytical, physical, and organic chemistry. Environmental and practical applications are emphasized with one lab session per week being used for small group discussions of current topics and one lab session for investigations involving experimental work. Three hours of lecture and two two-hour laboratory periods per week. This course is designed for the student with no background in chemistry.

Prerequisite: MT 1303 or consent of instructor

CH 1203 (lec), 1212 (lab) 5 hours
Chemistry for the Health Sciences

A course which emphasizes fundamental chemical principles and their application to the human organism. Classroom and laboratory work will include work with solutions, electrolytes and body fluids, and pertinent organic and biochemical topics related to digestion and metabolism. Three hours lecture and four hours laboratory per week.

Prerequisite: A math placement score equivalent to enter MT 1303 or completion of MT 1013

CH 1303 (lec), 1312 (lab) 5 hours
General Chemistry I

A study of atomic and molecular structure, bonding, chemical equations, stoichiometry, gases, solutions, and an introduction to organic chemistry. Three one-hour lecture periods and two two-hour laboratory periods per week, emphasizing quantitative techniques.

Prerequisite: A satisfactory score on the ACT and either CH 1103 & 1112 or high school chemistry

CH 1403 (lec), 1412 (lab) 5 hours
General Chemistry II

A continuation of CH 1303 & 1312, including the study of chemical equilibria, acid-base chemistry, complex ions, thermodynamics, oxidation-reduction reactions, nuclear chemistry, and qualitative analysis. Three one-hour lecture and recitation periods and two two-hour laboratory periods per week.

Prerequisite: CH 1303 & 1312

CH 2102 (lec), 2112 or 2113 (lab)
Quantitative Analysis 4-5 hours

A study of the fundamental principles of quantitative analytical chemistry, including gravimetric, volumetric, and spectrophotometric determinations. Two hours lecture and two or three three-hour laboratory periods per week.

Prerequisite: CH 1403 & 1412

CH 2203 (lec), 2212 (lab) 5 hours
Organic and Biological Chemistry

A survey of major topics of organic and biological chemistry, including aliphatic and aromatic hy-

drocarbons, carbohydrates, lipids, amino acids, the vitamins, and steroids. The course relates chemical applications to human metabolism, agriculture, home economics, and medical technology programs. Four hours lecture and three hours laboratory per week.

Prerequisite: CH 1103 & 1112 or 1303 & 1312

CH 2303 (lec), 2312 (lab) 5 hours
Organic Chemistry I

A study of the basic principles of organic chemistry including acid-base theory, carbonium ions, stereochemistry, electrophilic aromatic substitution, spectroscopy, and reaction mechanisms. Three hours of lecture and two three-hour laboratory periods per week.

Prerequisite: CH 1403 & 1412 or consent of instructor

CH 2403 (lec), 2412 (lab) 5 hours
Organic Chemistry II

A continuation of CH 2303 & 2312, including application of basic principles to the study of the important classes of organic and biochemical compounds. Three hours of lecture and two three-hour laboratory periods per week.

Prerequisite: CH 2303 & 2312

Prerequisite or Corequisite: CH 1403 & 1412

CH 2701, 2, 3, 4 1-4 hours
Independent Studies (Honors) in Chemistry

The student enrolled for independent studies has two alternatives: (1) investigate a specific topic within the field of chemistry, or (2) assist in the laboratory, stockroom, or with individualized instruction under the supervision of an instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Communication, Media and Theatre

CT 1003 3 hours
Oral Communications

A fundamentals of speech course designed to develop student improvement in the critical understanding of ideas about communication as well as the critical issues of our time, and subsequently to improve individual communication skills. Intended to meet the DESE communications requirement for education majors.

Prerequisite: none

CT 1103 3 hours
Public Speaking

An introduction to the basic elements of public speaking. Assignments include the presentation of speeches, preparation of outlines, and the discussion of evaluation techniques.

Prerequisite: none

CT 1203 3 hours
Oral Interpretation

A study in the basic techniques of oral interpretation. The recreation of literature is stressed through acquiring the skills and techniques necessary to convey the intellectual, emotional, and aesthetic values of literature to an

audience. The course will include study in the oral interpretation of prose, drama, and poetry.

Prerequisite: none

CT 1303 3 hours
Theatre Appreciation

An appreciation course designed to give a comprehensive introduction to theatre, including theatre history and contributions made by directors, actors, designers, technicians, and playwrights to modern dramatic productions.

Prerequisite: none

CT 1403 3 hours
Beginning Acting

A course designed to introduce the student to the basics of acting.

Prerequisite: none

CT 1603 3 hours
Television Production I

A basic course establishing the television production process as a system, in which many elements interact to produce television programming. Students will receive hands on experience with all of the elements: cameras, switchers, lighting equipment, character generators, VCR's, film islands, etc.

Prerequisite: none

CT 1703 3 hours
Intro to Mass Communications

Through lectures, discussions and audio-visual presentations, the class will examine the history, organization, role, and current status of newspapers, magazines, broadcasting, film, cable, public relations advertising and corporate communications.

Prerequisite: none

CT 1803 3 hours
Basic Radio

An experience-oriented course in radio production and performance with emphasis on career and entry-level skills in announcing and the operation of the broadcast and production control rooms. Includes an overview of programming and promotional strategies, commercial scripting and sales, radio news reporting and current broadcasting technology.

Prerequisite: none

CT 1903 3 hours
Television Production II

A continuation of CT 1603.

Prerequisite: CT 1603 or consent of instructor

CT 1912 2 hours
Stage Makeup

A course in materials and methods of application of makeup artistry for cosmetic and character effects on stage.

Prerequisite: none

CT 2002 2 hours
Stagecraft

Study of fundamentals or properties and scenic construction, stressing terminology and practical production experience.

Prerequisite: none

CT 2012 2 hours
Advanced Stagecraft

Study of applying principles learned in lighting,

construction, or painting will be developed toward a student designed project. Each project will be documented and include at least one of the following: plot or plans; a limited number of elevations; a rendering and white model. Documentation will include how basic principles taught apply to design.

Prerequisite: CT 2002, or consent of instructor

CT 2022 2 hours

Advanced Stage Makeup

A study in the principles and techniques of three-dimensional makeup. Exercises include preparation and application of beards, latex, putty, scar-wax, and balding. Procedures and steps followed will be documented by each makeup artist.

Prerequisite: CT 2001, or consent of instructor

CT 2102 2 hours

Voice and Diction

A study of respiration, phonation, resonance, articulation, and diction for the stage.

Prerequisite: none

CT 2112 2 hours

Advanced Voice and Diction

Development of a set of specific exercises tailored to achieve a constant performing level of clarity, enunciation, breathing, projection, and inflection in voice. Application of these principles will then be tested in the selections of reading from scripts to be performed before conservatory students.

Prerequisite: CT 2102, or consent of instructor

CT 2203 3 hours

Advanced Public Speaking

An in-depth study into the persuasive elements of communication including audience analysis and motivational techniques.

Prerequisite: CT 1103

CT 2503 3 hours

Acting II

An intensified study of characterization centering around the study of characters in production and the adaptation of acting techniques to various characters in production and the adaptation of acting techniques to various styles.

Prerequisite: CT 2403 or consent of instructor

CT 2603, 2613, 2623, 2633 3 hours

Forensics

A course in intercollegiate debate and speech competition.

Prerequisite: consent of instructor

CT 2701, 2, 3 1-3 hours

Independent Studies in

Communication/Media/Theatre Arts

The student enrolled for independent studies has two alternatives: (1) investigate a specific topic within the field of communication/media/theatre arts, or (2) assist with tutorial instruction under the supervision of an instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

CT 2801, 2, 3 1-3 hours

**Communication/Media/Radio/
Television/Theatre Practicum**

A course designed to give interested students the opportunity to work in a controlled environment.

The course provides experience and training in communications, media, radio, television, or theatre arts under the direct supervision of an instructor.

Prerequisite: consent of instructor

CT 2803 3 hours

Children's Theatre

This course involves seven weeks of study, rehearsal and preparation for a performance that will tour East Central College District elementary schools during spring break. May be repeated.

Prerequisite: none

CT 2901, 2, 3 1-3 hours

Acting Practicum

A course designed to give interested students the opportunity to work in a controlled theatrical environment. The course provides experience and training in the art of acting under the direct supervision of a theatre instructor.

Prerequisite: consent of instructor

**Computer Information
Systems**

CS 0001 1 hour

**Introduction to Personal Computer/
APPLE**

An introductory course in personal computers to acquaint the student with the operation of a microcomputer system. Word processing, spreadsheet processing, file management and simulation programs are used by the student to develop an appreciation of the kinds of problems a computer can handle. All course activity is conducted in the microlab. Each student uses the microcomputer for approximately fifteen hours.

Prerequisite: none

CS 0011 1 hour

Intro to Personal Computers/IBM

A course designed to introduce the capabilities of an IBM/PC to the beginning student. The operating system, editor, word processing, file processing and spreadsheet processing will be introduced. All coursework will be done using the IBM/PC and appropriate software.

Prerequisite: none

CS 0021 1 hour

VP Planner Spreadsheet (Lotus)

A course designed to introduce the student to the Lotus 1-2-3 Spreadsheet capabilities on the IBM/PC system. Through lectures, demonstrations, handouts and hands-on experiences the students learn to define formulas, use commands and develop worksheets. Some knowledge of a microcomputer and accounting principles is necessary.

Prerequisite: none

CS 0031 1 hour

VP Planner Files and Graphs (Lotus)

A course designed for students familiar with the spreadsheet capabilities of Lotus 1-2-3. Topics include managing data files, producing graphs, and developing simple macros.

Prerequisite: CS 0021 or consent of instructor

CS 0041 1 hour

**Advanced Microcomputer
Applications/IBM**

A course designed to introduce the student to an

integrated approach to business procedures on the IBM/PC. Several popular software packages will be discussed and demonstrated. Extensive hands-on experience will allow the student to analyze and design a system to handle problems common to most businesses and to use several software packages to support the system they develop.

Prerequisite: CS 0011

CS 0051 1 hour

**Advanced Microcomputer
Applications/APPLE**

A course designed to introduce the student to an integrated approach to business procedures on the Apple computer. Several popular software packages will be discussed and demonstrated. Extensive hands-on experience will allow the student to analyze and design a system to handle problems common to most businesses and to use several software packages to support the system they develop.

Prerequisite: CS 0001

CS 0061 1 hour

Introduction to Dbase III

A course designed to teach the use of a data base program. The development of specifications for files and records, sorting, retrieving records and updating records will be the main topics. Beginning programming techniques using Dbase III will also be taught. At least ten hours of the course will be devoted to using Dbase III on IBM personal computers.

Prerequisite: CS 0011

CS 0071 1 hour

**Using a Microcomputer for Data
Entry**

A course to introduce the student to data entry skills on a microcomputer. Identifying the function and capabilities of the keyboard, maximizing the use of the keyboard and the development of data entry skills will be covered. The course emphasis will be on using the microcomputer and all students will use a microcomputer throughout the course as the primary learning tool.

Prerequisite: none

CS 0081 1 hour

Advanced Dbase III

This course is designed for individuals who are familiar with the basic commands of Dbase either through experience or the Dbase III course. Through discussion, demonstration and extensive hands-on use of Dbase, the student will learn how to develop programs in Dbase, how to create special input and output screens, and how to solve complex problems in Dbase.

Prerequisite: CS 0061 or consent of instructor

CS 0091 1 hour

IBM DOS & Utility Programs

A course designed to introduce the IBM Personal Computer user to the capabilities of the disk operating system and various utility programs to help the user in operating their microcomputer. Demonstration, discussion, lecture and extensive hands-on experience will be used to teach file management, back-up and recovery procedures. Batch files and automatic start-up files will be covered as well as other public domain software appropriate to the class.

Prerequisite: CS 0011

CS 0100, 1, 2, 3 .5-3 hours

Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

CS 1003 3 hours

Microcomputer Applications

A course designed to introduce the student to a variety of ways to use microcomputers in business. Spreadsheet processing, data base management, word processing, forecasting development and the operating system of a microcomputer will be the focus of the course.

Prerequisite: CS 1013 or consent of instructor

CS 1013 3 hours

Introduction to Computers and Information Systems

An analysis of computer systems, their present uses and future roles in society, business, and public organizations. Topics emphasized include computer algorithms, computer organization (both hardware and software), data structures, program design and elementary programming in high level languages using microcomputers. IBM microcomputers are used to complete lab work in the course.

Prerequisite: none

CS 1023 3 hours

Computer Fundamentals and Operations

A course to familiarize students with the general hardware of modern computer systems and to explain the relationship between computer hardware concepts and operating system software organization. Topics include: data and storage representations including binary arithmetic, Boolean algebra applications, operating system concepts, computer system components, device characteristics (including data base structure), and operations principles and documentation.

Prerequisite: CS 1013 and/or previous programming experience

CS 1033 3 hours

Problem Solving Techniques

A basic course in logical problem-solving methods employed in today's computer systems. Emphasis is placed upon developing the student's skills to logically apply the concepts to the problem solutions. Emphasis is placed upon maintaining an overall structure and discipline in logical design. General conceptual areas covered include: problem definition, problem analysis, solution development, and documentation.

Corequisite: CS 1013

Prerequisite: none

CS 1043 3 hours

BASIC Programming

A course in the BASIC language, designed to expand the student's knowledge, understanding, and skill development in solving problems using BASIC on a microcomputer system. Topics covered in the course include: BASIC fundamentals, editing capabilities in BASIC on a microcomputer, character string functions, table processing, subroutines and functions, extended I/O and for-

mat features, disk processing techniques, and system and utility commands.

Prerequisite: CS 1013 or elementary experience with the BASIC language

CS 1053 3 hours

RPG II Programming

A beginning course in business programming using the problem-oriented language, Report Program Generator II. The capabilities and limitations of RPG II and the structure and design of this report writer will be examined. The preparation and integration of RPG II's specification forms and its sundry features will be studied and applied to the solution of various business reporting requirements.

Prerequisite: CS 1013

CS 2003 3 hours

Data Base Structures

Data base structure definition and creation as well as development on microcomputers and minicomputers will be the major topics. Software appropriate to the hardware will be used to create, update and extract data from databases on the IBM/PC and PRIME computers. Much of the course will involve hands-on experience, supplemented by lectures and demonstrations as appropriate.

Prerequisite: CS 1023 or consent of department chairperson

CS 2013 3 hours

COBOL Programming I

A beginning course in computer programming techniques and structure using the COBOL language, emphasizing programming concepts and methodologies (i.e., structured design and structured COBOL programming). It also stresses development of the student's skills in applying these methods and concepts during the process of designing and coding COBOL programs. The tools and facilities of the language are also explored and utilized. Topics include: structured design and programming, design and coding walk-through using the team concept, and basic and special features of the COBOL language, including sequential disk files, sorting, tables and arrays, and report writing.

Corequisite: CS 1033

Prerequisite: CS 1013

CS 2023 3 hours

COBOL Programming II

An advanced course in the COBOL language, emphasizing completion of the student's knowledge, understanding, and skill development in solving business problems in the COBOL language. Structured design/programming concepts/methods that are available in COBOL are stressed and implemented in program design/composition. Topics covered include: program optimization, input data editing, sequential file processing and methodology, random file processing, and multi-file methods. Disk processing methodology is stressed throughout the course.

Prerequisite: CS 2013

CS 2033 3 hours

Systems Development & Design I

Basic approaches and techniques used in the analysis, design, and development of integrated business information systems. Typical business information problems will be examined via case

studies. Topics covered are: general systems theory, management organization and systems, system functions/concepts, survey initiation and fact gathering, charting, systems analysis/design/implementation, evaluation and review, and feasibility studies.

Prerequisite: CS 1023, 1033, and one computer language course

CS 2043 3 hours

Systems Development & Design II

An advanced course in systems analysis, design, development, and implementation using skills developed in CS 2033. An on-the-job environment will be created with students working in teams to design actual systems, generally business-oriented. Attempts will be made to design systems of various sizes and complexities, drawing upon the experiences of the students regarding languages and equipment used.

Prerequisite: CS 2033

CS 2053 3 hours

FORTAN 77 Programming

A basic course in computer programming techniques and structure using the FORTRAN 77 language which is oriented primarily toward mathematical, scientific, or engineering problem solutions. Emphasis is placed upon expanding the student's knowledge, understanding, and awareness of fundamental problem-solving concepts and upon developing, in each student, basic skills in applying these concepts to problem solutions using the tools, techniques, and features of the FORTRAN 77 language.

Prerequisite: MT 1303 or consent of instructor

CS 2063 3 hours

Advanced RPG II Programming

An advanced course in the RPG II language, emphasizing completion of the student's knowledge and understanding in solving business problems in RPG II. Topics covered include random file processing and multi-file methods. PRIME Data File Utility procedures and Source Entry procedures will be explored.

Prerequisite: CS 1053

CS 2073, 2083 3 hours

Computer Information Systems

Internship

A supervised work experience in a data processing environment using the skills and related knowledge learned in previous courses. Coordination of work experience to classroom learning will be done by the instructor. Time will be arranged. A one hour seminar will be held each week to discuss work experiences.

Prerequisite: enrollment in the Computer Information Systems Program and consent of the instructor

CS 2113 3 hours

Assembly Language Programming

A basic course in symbolic computer programming at the machine level. This course emphasizes the development of the student's abilities in the minutely detailed process of writing, debugging, and testing Assembly language programs. Prerequisite: CS 1023 and prior experience with programming a high-level computer language

CS 2123 3 hours
Pascal Programming

An intermediate level course in computer programming and problem-solving techniques, using the general-purpose Pascal language. Emphasis is placed upon expanding the student's knowledge and understanding of state-of-the-art problem-solving concepts and methods, and upon developing skills in applying these concepts to problems solved by usage of the block-structured language, Pascal. Areas covered include: structured programming and problem solving, algorithm design and development, basic Pascal data types and program structure, computational structure, logical and I/O structures, flow of control structures, advanced data types, functions and procedures, UCSD extensions to standard Pascal, and Turtle graphics.
Prerequisite: CS 1013 and one computer language course

CS 2661, 2672, 2683 1-3 hours
Independent Studies in Computer Information Systems

Course content and hours arranged by instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

CS 2991 1 hour
Computer Information Systems Job Placement

A course designed to assist computer information systems students in obtaining jobs suitable to their training and interests.
To be taken the last semester of study.

Criminal Justice

CJ 0100, 1, 2, 3 .5-3 hours
Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.
Prerequisite: none

CJ 1013 3 hours
Introduction to Criminal Justice

An introduction to the criminal justice system in America. This course stresses the inter-relatedness of the three components-police, courts, and corrections. Included is a study of current national problems within the system with an examination of proposed changes. The course provides historical and philosophical insights into the system of criminal justice.
Offered evenings only.
Prerequisite: none

CJ 1023 3 hours
Criminal Law and Procedures

A study of criminal, common, and statutory law within the context of enforcement. Study includes substantive criminal law, its development, interpretation, and administration with emphasis on the criminal law and procedures in the state of Missouri.
Offered evenings only.
Prerequisite: none

CJ 1033 3 hours
Rules of Criminal Evidence

A study of basic rules of evidence applicable to criminal and other related police duties. Emphasis is placed on the question of admissibility of evidence and the practical application of procedural and substantive constitutional guarantees.
Offered evenings only.
Prerequisite: none

CJ 1043 3 hours
Juvenile Procedures

A study of the organization, functions, and jurisdiction of juvenile agencies; the detention of juveniles; and the processing of neglected children. Topics include the intent, application, and procedures of the Missouri Juvenile Code: juvenile case disposition, crime prevention methods, and diversion programs.
Offered evenings only.
Prerequisite: CJ 1013

CJ 1013 3 hours
Introduction to Corrections

This course provides a basic knowledge of the correctional process as it proceeds from the time of arrest and incarceration, through the criminal justice system, and into the correctional institution or alternative program. It includes a description of various treatment modalities and philosophies.
Offered evenings only.
Prerequisite: CJ 1013

CJ 2023 3 hours
Criminal Investigation I

A study of the criminal act and its investigation, including specific crimes against the person and against property, the process of fact-gathering testing of hypotheses, and the problem of proof.
Offered evenings only.
Prerequisite: CJ 1023 and 1033

CJ 2033 3 hours
Criminal Investigation II

A study of the recognition, collection, identification, preservation, transportation, and development of criminal evidence. Narrative police report writing and the preparation of cases for prosecution are also covered.
Offered evenings only.
Prerequisite: CJ 2023

CJ 2043 3 hours
Police Patrol and Services

A study of the foundations of police operations, providing patrol coverage and called-for services, the principle of conspicuous presence as a means of crime prevention, and preservation of the peace.
Offered evenings only.
Prerequisite: CJ 1013

CJ 2053 3 hours
Police Supervision & Administration

A study of the organization and administration of various police systems. The specialized characteristics of individual police organizations and police personnel, the relationship of police to other public agencies, and the control and responsibility of police departments. The most popular and prevalent ideals, principles, and assumptions pertaining

to police administration are presented utilizing a multi-disciplinary orientation to analyze these concepts.
Offered evenings only.
Prerequisite: nine credits in criminal justice

CJ 2063 3 hours
Street Survival

A fundametal course in officer survival. Topics covered will include arrest techniques, felony car stops, officer-violator confrontations, and officer protection.
Prerequisite: CJ 1013 or consent of instructor

CJ 2073, 2083 3 hours
Criminal Justice Practicum

A supervised work experience in a criminal justice setting. Work periods will be arranged. A seminar will be held to discuss work experiences and students will be required to prepare a paper at the end of the practicum.
Prerequisite: consent of instructor

CJ 2661, 2672, 2683 1-3 hours
Independent Studies in Criminal Justice

Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

CJ 2991 1 hour
Criminal Justice Job Placement

A course designed to assist criminal justice students in obtaining jobs suitable to their training and interests.
Offered evenings only.
To be taken the last semester of study.

Dental Assisting

DA 0100, 1, 2, 3 .5-3 hours
Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.
Prerequisite: none

DA 1015 5 hours
Chairside Assisting I

An introduction to the profession of dentistry, including the use and care of dental equipment, functions of a chairside assistant, and common operative procedures. Activities include operating and cleaning dental equipment, performing four-handed sit-down instrument exchange, operating evacuator and air/water-syringe, operating an autoclave and preparing instruments for sterilization, placing topical anesthetic onto mucosa, handling of anesthetic syringes, charting procedures on a dental chart, assisting with placement and removal of rubber dam and cotton rolls, assisting with a Class I and II amalgam procedure, and assisting with a Class III, IV and V composite procedure.
Prerequisite: admission to Dental Assisting Program
Corequisite: DA 1034, 1021

DA 1021 1 hour
Chairside Assisting I Lab
Activities to include the practice of and evaluations of those activities listed in DA 1015.
Corequisite: DA 1015

DA 1025 5 hours
Chairside Assisting II
The concepts taught in Chairside Assisting I will be applied to the specialty areas of dentistry, including theories of orthodontics, periodontics, endodontics, pedodontics, and oral surgery. Activities include setting up armamentarium for basic procedures and assisting in each of the specialty areas in prerequisite order.
Prerequisite: DA 1015
Corequisite: DA 1031

DA 1031 1 hour
Chairside Assisting II Lab
Activities to include the practice of and evaluations for those activities listed in DA 1025.
Corequisite: DA 1025

DA 1034 4 hours
Dental Science I
A study of head and neck anatomy, oral embryology and histology, and tooth morphology. Also included is the study of gross human anatomy of body systems and organization comprising normal human anatomy and physiology, as well as disorders and pathologies. Emphasis on the relationship of the whole body as related to dentistry.
Prerequisite: admission to the Dental Assisting Program

DA 1042 2 hours
Dental Science II
A study of oral pathology, microbiology, and pharmacology. Activities include identification of common disorders. Also includes dental office emergencies with emphasis on recognition of emergencies which may occur in a dental office and how to handle these emergencies. Activities include demonstration of ambubag and oxygen units, monitoring of nitrous oxide, CPR training, taking and recording blood pressure and temperature, and taking a medical history.
Prerequisite: DA 1034

DA 1052 2 hours
Dental Materials I
A study of the science of dental materials, their composition, structures and properties, uses in dentistry, and manipulation techniques. Topics include gypsums, impression materials, cements and bases, and restorative materials.
Prerequisite: admission to Dental Assisting Program
Corequisite: DA 1062

DA 1062 2 hours
Dental Materials I Lab
An introduction to lab procedures, identification of equipment and instruments, and instruction in safety procedures. Instruction in and manipulation of restorative materials, cements and bases, and impression materials used in the dental office is included. Other activities include pouring models in stone and plaster, and taking alginate impressions for diagnostic models, trimming diagnostic models.
Prerequisite: admission to Dental Assisting Program
Corequisite: DA 1052

DA 1072 2 hours
Dental Materials II
A continued study of the science of dental materials to include waxes, abrasives, metals, resins, and porcelains.
Prerequisite: DA 1052
Corequisite: DA 1082

DA 1082 2 hours
Dental Materials II Lab
Activities include taking waxbites, mounting casts on an articulator, constructing custom-made trays, fabricating and seating a temporary crown, constructing biterims and biteblocks, and repairing a broken denture. Demonstrations include taking impressions of crown or inlay preparation, pouring cast, mounting casts on articulator, wax-up, investment and casting of crown or inlay, and the finishing and polishing of these.
Prerequisite: DA 1062
Corequisite: DA 1072

DA 1091 1 hour
Dental Radiology I
An introduction to radiographic procedures, basic terms and nomenclature, theory of production and effects of x-radiation, instruction in dental radiographic health, theory of bitewing and bi-section exposures, and identification of anatomical landmarks.
Prerequisite: admission to Dental Assisting Program
Corequisite: DA 1101

DA 1101 1 hour
Dental Radiology I Lab
Theory of darkroom and darkroom chemistry, processing and mounting techniques are covered. Exposing, processing, mounting, and evaluating bitewing and bi-section techniques for taking radiographs is also included. Special emphasis is placed on the diagnostic quality of radiographs and maximum radiation protection.
Prerequisite: admission to Dental Assisting Program
Corequisite: DA 1091

DA 1111 1 hour
Dental Radiology II
This course outlines the theory of techniques for paralleling, edentulous, child, occlusal, third molar, and extra-oral exposures.
Prerequisite: DA 1091
Corequisite: DA 1121

DA 1121 1 hour
Dental Radiology II Lab
Continued emphasis is placed upon diagnostic quality of radiographs and maximum radiation protection. The course includes practice in exposing, processing, and mounting of the paralleling techniques and edentulous and child radiographs. Exposing and processing occlusal and third molar radiographs are also covered along with demonstration of extra-oral techniques.
Prerequisite: DA 1101
Corequisite: DA 1111

DA 1131 1 hour
Dental Health
A study of the principles of dental health education including preventive dentistry related to community health, diet, and nutrition. Activities

include giving Personal Oral Hygiene instructions for home care, giving fluoride treatments, patient motivation, doing a dietary analysis and diet evaluation.
Prerequisite: admission to Dental Assisting Program

DA 1143 3 hours
Clinical Practice I
Eight hours per week assisting dental students at the Washington University School of Dental Medicine with rotation in the specialty areas, for a specified length of time and rotation through a Dental Office for the remaining time.
Prerequisite: none
Corequisite: DA 1034

DA 1155 5 hours
Clinical Practice II
Students work in dental offices on a rotational basis to gain proficiency in chairside skills and front office procedures.
Prerequisite: DA 1143

DA 1162 2 hours
Dental Office Procedures
A study of the principles of business management for the dental office including appointment control, filing, insurance forms, supply inventory and collections and disbursements.
Prerequisite: DA 1025

DA 1661, 1672, 1683 1-3 hours
Independent Studies in Dental Assisting
Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

DA 2991 1 hour
Dental Assisting Job Placement
A course designed to assist dental assisting students in obtaining jobs suitable to their training and interests.
To be taken last semester of study.

Drafting and Design Technology

DF 0100, 1, 2, 3 .5-3 hours
Workshop/Seminar
Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.
Prerequisite: none

DF 1001 1 hour
Blueprint Reading
A course designed to give the student a working knowledge of standard drawing conventions and dimensioning practices. Areas covered include drafting and blueprint reading procedures, notes and title block information, and machining specifications.
Prerequisite: none

DF 1013 3 hours
Engineering Drawing
A course designed to give the student a working

knowledge of fundamental drawing practices and the geometric relationship of points, lines, and planes in space. Areas covered include the techniques of lettering, sketching, drawing of mechanical parts, sectional and auxiliary views, conventional drafting practices, and an introduction to computer aided drafting.
Prerequisite: none

DF 1023 3 hours
Descriptive Geometry

A study of the graphic analysis and solution of typical three-dimensional space problems through the application of the principles of multi-view projections. Fundamental problems are related to points, lines, planes, intersections, and development of plane and curved surfaces, revolutions, and vector geometry.
Prerequisite or Corequisite: DF 1013

DF 1033 3 hours
Principles of Power

A study of the principles of hydraulics and pneumatics fundamental to fluid power design. Other topics include principles of mechanical and electrical powered systems and power system schematics.
Corequisite: DF 1043 or consent of instructor

DF 1043 3 hours
Technical Computations I

A study of the treatment of measured data, significant figures, applications in geometry, basic algebra, and linear equations.
Prerequisite: none

DF 1055 5 hours
Materials and Processes

A survey of current engineering materials and the various processes used to shape them. Materials studied include a review of ferrous and nonferrous metals, plastics, rubbers, and ceramics. Emphasis is placed on the advantages and limitations of the various casting, forging, machining, grinding, forming, molding, welding, heat treating, and powder metallurgy processes used to shape materials.
Prerequisite: none

DF 1063 (lec), 1072 (lab) 5 hours
Machine Drawing

A course dealing with problem situations involving the development of drawings of castings, forgings, and machine parts. Drawings are produced using conventional drafting procedures and computer aided drafting.
Prerequisite: DF 1013

DF 1083 3 hours
Technical Computations II

A study of numerical trigonometry of the right angle, analytic trigonometry, oblique triangles, functions and graphs, logarithms, and application of numerical trigonometry and vectors.
Prerequisite: DF 1043

DF 2013 3 hours
Machine Design

A course designed to bring together in practical applications the skill and knowledge developed in courses covering mechanics and drafting. Instruction provided permits logical organization of facts for economical solution of machine design problems. Emphasis is placed on standardization,

the use of stock parts, and using manufacturers' catalogs. Drawings are produced using the drawing board and the computer aided drafting system.
Prerequisite: DF 1063

DF 2023 3 hours
Tool and Die Design

A course designed to give the student a fundamental knowledge of the design of tools and fixtures used in manufacturing. Projects include design and drawing of jigs, fixtures, and blanking dies utilizing conventional drafting practices and computer aided drafting. Mass production methods are discussed so that this knowledge may be applied to the practical work of tool design.
Prerequisite: DF 1063

DF 2033 (lec), 2042 (lab) 5 hours
Technical Physics

A study of mechanics, heat, sound, light, electricity, and physical properties of matter. A noncalculus course which features problem solving. Three hours lecture and two lab periods per week.
Prerequisite: either DF 1083, MT 1303, or satisfactory score on the MMPT

DF 2053 3 hours
Statics and Strength of Materials

A study of statics and strength of materials as applied to structures, beam theory, beam design, and theory of column formulas. The course includes study of stress and strain experienced by machine parts and structural members. Emphasis is placed on applications and problem solving.
Prerequisite: DF 1083 or consent of instructor

DF 2063 3 hours
Technical Writing

Introduction to the practical aspects of preparing reports. Emphasis is on the techniques of collecting and presenting scientific data by means of formal and informal reports. Also included are other elements of Prerequisite: EN 1003, 1223, or consent of instructor

DF 2073 (lec), 2082 (lab) 5 hours
Architectural Drawing

An introduction to the fundamental principles of residential design, building materials, methods of construction, design standards, room arrangements, and energy efficient design.
Prerequisite: DF 1013

DF 2093 3 hours
Civil Drawing

A course encompassing the methods and conventions of the civil engineering field and its allied industries. Primary focus is on drawing and detailing civil projects such as land division and subdivision, municipal utility facilities, contours, and land cut and fill using the drawing board and computer aided drafting.
Prerequisite: DF 1013

DF 2102 (lec), 2111 (lab) 3 hours
Structural Drawing

A course which concentrates on detailing and delineating the structural systems encountered in architectural and civil construction. Systems included are those structures based on wood, steel, and concrete components.
Prerequisite: DF 1013 and 2053

DF 2123 3 hours
Technical Illustration

A course to develop the understanding and skills to produce technical illustrations in the many forms required by industry. Includes an intensive study of the pictorial forms of isometric, diametric, oblique, and perspective drawing, and the methods and media used in creating illustrations.
Prerequisite: DF 1013

DF 2132 2 hours
Modern Drafting Techniques

An exploratory course which has major emphasis on photography, film processing, model building, and their industrial applications. Students participate in the development of projects utilizing the latest available industrial techniques.
Prerequisite: DF 1013

DF 2143 3 hours
Introduction to CAD Applications I

A course designed to acquaint the student with the basic fundamentals of computer aided drafting. Problems and solutions include construction of basic drawings, saving drawings, using a file system, modification of existing drawings, and plotting drawings using the computer plotter.
Prerequisite: DF 1013 and 1023 or consent of instructor

DF 2153 3 hours
CAD Applications II

A course designed to acquaint the student with advanced applications of computer aided drafting. Projects and solutions include the production of working drawings, layering concepts, and the construction and use of specialized symbol libraries.
Prerequisite: DF 2143

DF 2661, 2672, 2683 1-3 hours
Independent Studies in Drafting and Design

An in-depth investigation of a specific industrial problem or actual experience in related office practices. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

DF 2991 1 hour
Drafting and Design Technology Job Placement

A course designed to assist drafting students in obtaining jobs suitable to their training and interests.
To be taken the last semester of study.

Economics

EC 2103 3 hours
Principles of Macroeconomics

An introduction to the total level of economic activity—the rate of production and income. Topics include inflation, unemployment, government spending and fiscal policy, incomes policy, the banking system and monetary policy, and international economics.
Prerequisite: none

EC 2203 3 hours**Principles of Microeconomics**

An introduction to how prices are determined. Topics include how prices are set in markets of varying degrees of competition; how income is determined: wages and salaries, rent, interest, and profits; unions; environmental problems; wealth and poverty in the United States of America; and non-market economic systems.

Prerequisite: none

EC 2701, 2, 3, 4 1-4 hours**Independent Studies in Economics**

Course content and hours arranged by instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Education

ED 1001 1 hour**Orientation for Student Success**

This class is required of all ECC students seeking a degree and is composed of three elements: (1) a five hour orientation session to be taken prior to the student's first semester of classes and which includes a campus tour, introduction to college life, and basic assessment testing; (2) at least three hours during the semester spent with an academic advisor to explore college programs and to plan academic coursework; (3) at least four two hour seminars during the semester on subjects such as basic learning and study skills, financial planning, stress and anxiety, student services, college organizations and activities, lifetime learning opportunities, and other appropriate topics.

Prerequisite: none

ED 1011, 2, 3 1-3 hours**Career Planning**

A course designed to involve students in (1) orientation to college, (2) self-study and understanding, (3) occupational exploration, and (4) educational and career planning. As set forth in this work text, career exploration and planning involves self-study, knowing vocational requirements and trends, and understanding different lifestyles. Students will learn how to make decisions regarding themselves and their relationship to the world of work.

Prerequisite: none

ED 1022, 3 2-3 hours**Perspectives in Education**

An introduction to the many facets of American education designed to give students accurate information about education and to provide them with opportunities to determine their interest and aptitude for pursuing an educational profession.

Prerequisite: none

ED 1031, 2, 3 1-3 hours**Field Experience**

Supervised field experience in an actual classroom setting.

Prerequisite: consent of elementary/secondary education advisor

BI 1202 2 hours**Health**

A general course designed to develop proper attitudes and practices which will contribute to the fine art of living. Health problems which require

community action are given consideration. The course is intended for the elementary education major and those not majoring in biology.

Prerequisite: none

AR 2023 3 hours**Art for Children**

A study of the types of art activities related to various age groups in the elementary school, including experience with art materials used in the classroom.

Prerequisite: none

EN 2033 3 hours**Literature for Children**

A study of children's literature from pre-school to sixth grade to acquaint the student with the best forms of literature for children and to develop standards of judgment in the selection of reading materials for children. Recommended for elementary education majors.

Prerequisite: EN 1223

MU 2043 3 hours**Music for Children**

A course designed to prepare an elementary classroom teacher to assist with music instruction. Includes units in music reading and performing skills, approaches to music teaching at K-6 levels, and the teaching of lesson plans to the class. Recommended for the elementary education major.

Prerequisite: none

PE 2052 2 hours**Physical Education for Children**

A course in organizing and planning physical education programs for the elementary school with emphasis on identifying and selecting appropriate content and teaching methods. This course is designed for physical education majors and minors and elementary education majors. The course involves eight weeks of teaching in the elementary grades.

Prerequisite: none

PY 2203 3 hours**Child Psychology**

A study of development from conception to adolescence emphasizing both current and historical approaches to research and theory, genetic and environmental influences on development, and the sequence and timing of physical, mental, and personality development throughout the years of childhood.

Prerequisite: PY 1103 or consent of instructor

PY 2503 3 hours**Adolescent Psychology**

A broad, general introduction to human development and, specifically, adolescent development. Adolescence will be viewed in the entire life cycle and in the social, cultural, political, and historical contexts. An integrated approach involving biological, psychological, and cultural perspectives will be used.

Prerequisite: PY 1103 or consent of instructor

TA 2013 3 hours**Teacher Aide Seminar**

A seminar designed to acquaint the prospective teacher aide with the responsibilities and requirements of the position and to discover how the teacher aide fits into the instruction team. The student prepares through the seminar to do an in-

ternship in one of the district schools. A college staff member moderates the seminar which serves to tie coursework and experience together.

Prerequisite: none

TA 2021, 2032, 2043 1-3 hours**Teacher Aide Internship**

A supervised work experience in an actual educational setting coordinated with the student's regular classwork to provide a realistic view of the duties of a teacher aide.

Prerequisite: consent of instructor

ED 2701, 2, 3 1-3 hours**Independent Studies in Education**

The student enrolled for directed studies has two alternatives: (1) investigate a specific topic within the field of education, or (2) assist with tutorial history instruction under the supervision of an instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Electronics

EL 0100, 1, 2, 3 1.5-3 hours**Workshop/Seminar**

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

EL 1003 (lec), 1011 (lab) 4 hours**Direct Current Circuits**

A study of direct current circuit operations. Passive electronic devices are analyzed as to their physical and electrical properties. Interpretation of fundamental schematic symbols is developed.

Prerequisite: none

Corequisite: EL 1023, 1031

EL 1023 (lec), 1031 (lab) 4 hours**Alternating Current Circuits**

A study of alternating current and reactive components. Fundamental theory of alternating electrical and magnetic fields are developed and applied to dynamic circuit configurations. Interpretation of associated schematic diagrams is advanced.

Prerequisite: none

Corequisite: EL 1003, 1011

EL 1046 (lec), 1052 (lab) 8 hours**Fundamentals of Semiconductors**

A study of the semiconductor devices and associated circuitry with modern applications. Operational theories of diodes, bipolar junction transistors, four layer devices, voltage regulator and operational amplifier integrated circuits in addition to opto-electronic devices are made known. Circuit applications include basic analog amplifiers, oscillators, timers, pulse circuits and power supplies.

Prerequisite: EL 1003, 1011, 1023, 1031

EL 1063 3 hours**Advanced Circuit Analysis**

This course provides an advanced study of analog circuit theory. Active filters, Op-Amp frequency response, R.F. amplifiers, Thyristor circuit applications and Opto-Electronic principles are studied. Circuit formulations developed are incorpo-

rated into systems configurations to introduce the student to a comprehensive analysis of large circuits.

Prerequisite: EL 1046

EL 1103 3 hours
Basic Electronics

A study of the principles of direct and alternating current, motors and generators, and an introduction to semiconductor devices. Soldering and desoldering, operation of test equipment, and laboratory experimentation are included.

Prerequisite: none

EL 1114 4 hours
Industrial Control I (Industrial Electricity)

A study of basic D.C. and A.C. electricity and its application in the industrial environment. Electrical safety, D.C. and A.C. generation, transmission, and installation, along with D.C./A.C. motor theory will be covered.

Prerequisite: consent of instructor

EL 1124 4 hours
Industrial Control II (Solid State Control Circuits)

A thorough and comprehensive study of modern electronic solid state circuit components with applications in industrial controls. The course provides an initial review of basic electronics, followed by a study of semiconductor theory. Analysis is made of rectifiers and power supplies, bipolar transistors and transistor biasing, and solid state sensors and transducers. The student is provided examples of industrial control circuits that make use of these electronic devices. The final portion of the course covers field effect transistors, U.J.T.s, S.C.R.s, TRIACS, DIACS, and thyristors as used in motor control circuits. Operational amplifiers are studied and applications demonstrated. Voltage regulator circuits are also analyzed.

Prerequisite: EL 1103 or EL 1114

EL 1134 4 hours
Industrial Control III (Digital Control Circuits)

A study of the concepts associated with modern industrial control systems. Digital fundamentals and basic microprocessor systems are covered. Includes topics such as numbering systems, logic circuits, microprocessor architecture, interfacing methods, and fundamentals of programmable control.

Offered evenings only.

Prerequisite: consent of instructor

EL 1143 3 hours
R.F. Electronic Communications

This course presents information about the circuits and building blocks of communications systems. Fundamental A.M., F.M., and single sideband transmitters and receivers are analyzed. Principles of waveguides, antennas, and microwave devices are discussed. Digital communication systems, radar systems and television broadcast standards are studied.

Prerequisite: EL 1046 and 1052 or consent of instructor

EL 1164 4 hours
Industrial Control IV (Intelligent Machines)

An advanced study of microprocessor controlled machine operations. A view is presented of the sensory activities, movement and interactive information exchange involved in intelligent machine communication. Advanced vision and tactile sensor systems are discussed. The course concludes with an overview of computer-aided manufacturing, computer-aided design, and other flexible manufacturing systems.

Prerequisite: EL 1144 or consent of instructor

EL 2054 (lec), 2061 (lab) 5 hours
Introduction to Digital Circuits

A general study of digital electronics. Areas covered include numbering systems and codes, decision-making logic elements, sequential and combination logic elements, memories, data conversion, and digital applications.

Prerequisite: EL 1046, 1052 or consent of instructor

EL 2072 (lec), 2081 (lab) 3 hours
Sensors and Transducers

A study of sensors and transducers as related to industrial control applications. The student is introduced to industrial ladder diagrams with an overview of Robotics fundamentals. Emphasis is placed on current applications of these devices in industrial systems.

Prerequisite: EL 1046, 1052

EL 2084 (lec), 2091 (lab) 5 hours
Introduction to Microprocessors

A study of general microprocessor theory and operation. Topics include numbering systems, architecture, assembly language programming, I/O interfacing, and troubleshooting methods.

Prerequisite: EL 2054, 2061, or consent of instructor

EL 2102 (lec), 2112 (lab) 4 hours
Advanced Microprocessors

A study of the theory and operation of the 8088 and 68000, 16 bit microprocessors. Advanced interfacing techniques will be discussed along with operating systems, advanced assembly language programming, and servicing techniques.

Prerequisite: EL 2084, 2091, or consent of instructor

EL 2113 3 hours
Electronic Systems Troubleshooting and Maintenance

This course is designed to allow the student to gain knowledge in a practical area of electronics. Maintenance procedures, troubleshooting techniques, and specific electronic systems are studied.

Prerequisite: EL 2084

EL 2123, 2133 3 hours
Electronics Internship

Students are placed with cooperating employers in various specialized areas of electronics. The internship involves students working with experienced technicians to gain limited experience in the field of electronics. Positions are arranged by the department and assigned to the student. The trainee is expected to spend six clock hours on the job per week.

Prerequisite: electronics major and consent of instructor

EL 2661, 2672, 2683 1-3 hours
Independent Studies in Electronics

Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be expected to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

EL 2991 1 hour
Electronics Job Placement

A course designed to assist electronics students in obtaining jobs suitable to their training and interests.

To be taken the last semester of study.

Emergency Medical Technology

* All courses must be taken in the same academic year.

EM 0100, 1, 2, 3 5-3 hours
Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

EM 1014 4 hours
Emergency Medical Technician Refresher

A course which provides review in the emergency care of the sick and injured. It is designed to prepare the student for relicensure as an EMT. It includes both didactic and practical review. Upon successful completion of the course, the student is qualified to retake the Missouri State Licensure Examination. The course is held in conjunction with EM 1027. May be repeated.

Offered evenings only.

Prerequisite: A currently licensed EMT having previously passed the Missouri State Licensure Examination within the last three years.

EM 1027 7 hours
Emergency Medical Technician

A course which provides training in the emergency care of the sick and injured. The course includes didactic, practical, and off-campus clinical experiences. It fulfills the requirements of Senate Bill No. 57. Those completing the course are eligible for the Missouri State Licensure Examination and/or the National Registry Examination to become a licensed/registered EMT.

Offered evenings only.

Note: A student can take the course and sit for the Missouri State Licensure Examination; however, a state license will not be issued until the student reaches the age of 18.

***EM 1112 12 hours**
Emergency Medical Technician-Paramedic I

A course which provides advanced training in emergency care and advanced life support techniques for the sick and injured. Course includes didactic, practical, and off-campus clinical experiences covering the roles and responsibilities of a paramedic, legal-aspects, communications, stress management, anatomy and physiology, advanced

respiratory care, shock and fluid management, and pharmacology. An advanced life support internship is available for those students needing ALS exposure. Offered evenings only.
Prerequisite: A high school diploma or GED, current license as an EMT in Missouri, successful completion of a paramedic pretest, and at least two letters of recommendation from specified persons. Experience is highly recommended and preferred.
Exception is by consent of the course medical director only.

***EM 1212 12 hours**
Emergency Medical Technician-Paramedic II
A course which provides advanced life support techniques for the sick and injured. Course includes didactic, practical, and off-campus clinical experiences, covering cardiology, trauma, burns, central nervous system, medical emergencies, environmental emergencies, rescue/extrication, pediatrics, OB/Gyn, and psychiatric. Upon successful completion, the student is eligible to sit for the Missouri State Licensure Examination as a paramedic.
Prerequisite: EM 1112 in the preceding semester

EM 1144 4 hours
MEMT/EMT-Paramedic Refresher
A course designed to meet the state requirements for relicensure as a paramedic. It includes didactic, laboratory, and clinical experiences. (Clinical may be waived.) Course is offered on an as needed basis. May be repeated.
Offered evenings only.
Prerequisite: Current Missouri License as an MEMT or EMT-P. Acceptance is based on the nearest expiration date of the paramedic license.

EM 1152 2 hours
MEMT/EMT-P Refresher Clinical
Opportunities are provided for EMT-Paramedics to have their clinical skills evaluated under the controlled environment of the hospital. Meets BEMS requirements for inactive EMT-P relicensure. May be repeated.
Prerequisite: EM 1144

EM 1153 3 hours
Teaching Techniques for EMS/Fire Personnel
A study of the basic theories of learning and methods of instruction. The use of lectures, demonstrations, and visual aids as applied to the instruction of emergency medical services/fire department personnel are illustrated. Practice is provided in the use of lesson plans, visual aids, tests, and other teaching devices. Each student's application of a teaching procedure is critically discussed and evaluated.
Meets a partial requirement to become a Missouri EMS instructor.
Offered evenings only on an as needed basis.
Prerequisite: none

***EM 1306 6 hours**
Emergency Medical Technician-Paramedic Field Internship
Opportunities are provided for students to perfect skills and apply knowledge acquired in EM 1130, 1140, 1230, and 1240, by gaining experience in actual field setting under experienced preceptors.
Prerequisite: EM 1112, 1212

EM 1661, 1672, 1683 1-3 hours
Independent Studies in Emergency Medical Technology
Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

EM 1705, 1710 5 or 10 hours
Independent Studies-EMT-P Review
A course which provides remedial study in designated areas for the EMT-Paramedic candidate not meeting the Bureau of Emergency Medical Services practical skills abilities. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

Engineering

EG 1103 3 hours
Engineering Drawing and Descriptive Geometry
A study of the graphic analysis and solution of typical three-dimensional space problems through the application of the principles of multi-view projections. Fundamental problems are related to points, lines, planes, intersections, and developments of plane and curved surfaces, revolutions, and vector geometry.
Prerequisite: none

EG 2003 3 hours
Engineering Mechanics-Statics
A study of the application of the principles of mechanics to engineering problems of equilibrium. Topics include resultant, equilibrium, friction, trusses, center of gravity and moment of inertia.
Prerequisite: PH 2103, 2112
Prerequisite or Corequisite: MT 2205

EG 2102 2 hours
Engineering Mechanics Dynamics
A study of application of the principles of mechanics to engineering problems of motion and acceleration. Topics include plane motion, force, mass, and acceleration; work and energy, and impulse and momentum.
Prerequisite: EG 2003

EG 2303 3 hours
Introduction to Circuit Theory
An introduction to electrical circuits, electronic devices, nodal methods, steady state, and transient circuits. Resistors, capacitors, voltage sources, and current sources are included.
Prerequisite: MT 2105 and PH 2103 & 2112
Prerequisite or Corequisite: MT 2205 and PH 2203 & 2212

EG 2701, 2, 3 1-3 hours
Independent Studies in Engineering
The student enrolled for directed studies will study a specific topic in engineering. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

English

EN 0002 2 hours
Developmental Reading
A developmental course in reading, designed for students whose reading level is too low for college work. Comprehension, vocabulary, and phonetics are stressed.
Prerequisite: none

EN 1003 3 hours
Developmental English
A review of the basics of grammar and writing using the text, English 2600. Includes sentence combining and the construction of a basic paragraph.
Prerequisite: none

EN 1112 2 hours
Reading Comprehension
An individualized course in reading comprehension improvement designed for the student whose score on the Nelson-Denny reading diagnostic test illustrates a weakness in comprehension skills and vocabulary.
Prerequisite: none

EN 1212 2 hours
Spelling
A programmed course in spelling designed to review the basic spelling problems. The course reviews the basic phonics rules and goes through exercise units dealing with specific areas of weakness.
Prerequisite: none

EN 1213 3 hours
English Grammar
Advanced grammar using the text, English 3200, including sentence combining and the construction of the paragraph.
Prerequisite: none

EN 1223 3 hours
English Composition I
A course dealing with the principles of composition, including rhetoric and usage. The course emphasizes the development of ideas through the use of various rhetorical patterns.
Prerequisite: demonstrated proficiency on the ACT or EN 1003

EN 1233 3 hours
English Composition I (Honors)
An intensified composition course open only to students who demonstrate a high degree of proficiency in English demonstrated by placement test scores and writing samples. The student will be required to take EN 1233, EN 1343 and a literature course to fulfill the English requirement. (Any literature course taught at ECC is acceptable in fulfilling this requirement except EN 2033.) While emphasis in this course is on the development of ideas through the use of various rhetorical patterns, as is the case in EN 1223, the student is required to write a research paper and critical papers on literature. Grading standards are higher in Honors than in EN 1223.
Prerequisite: demonstrated high proficiency on the ACT and/or a writing sample

EN 1301 1 hour
Library Skills
 A programmed course designed to introduce students to the library, making it possible for them to use its resources effectively.
 Prerequisite: none

EN 1333 3 hours
English Composition II
 A second course in composition which provides practice in writing longer units of exposition than does EN 1223, and includes the writing of a research paper and critical papers on literature.
 Prerequisite: EN 1223

EN 1343 3 hours
English Composition II (Honors)
 A second intensified composition course open only to students who have completed EN 1233.
 Prerequisite: EN 1233

EN 1403 3 hours
Technical Writing
 An introduction to the practical aspects of preparing reports. The emphasis is on the techniques of collecting and presenting scientific data by means of formal and informal reports. Also included are other elements of communication concerning science and industry.
 Prerequisite: EN 1003 or 1223

EN 1503 3 hours
Poetry
 A study of literature concentrating on the forms, techniques, and themes of poetry. Emphasis is placed upon analysis and interpretation.
 Prerequisite: none

EN 1603 3 hours
Fiction
 A study of literature concentrating on the forms, techniques and themes of prose fiction. The course includes the study of a novel, but the emphasis is placed upon the analysis of the short story.
 Prerequisite: none

EN 1703 3 hours
Drama
 A study of the forms, techniques, and themes of drama through reading and discussing plays destined for the theatre. Film and television drama may also be considered.
 Prerequisite: none

EN 1803 3 hours
Art of the Novel
 A course in which English and American novels, selected to give a fair sampling of 18th, 19th, and 20th century writers, are read, with emphasis placed upon how to read the novel. The course is an introduction to the pleasures of the novel and not just a survey.
 Prerequisite: none

EN 1903 3 hours
Classical Mythology
 A study of the ancient mythology and religion of the Greeks and others shown in literature past and present.
 Prerequisite: none

EN 2002 2 hours
Vocabulary
 A programmed course that teaches vocabulary by letting students hear and see the words in use, thereby enabling them to improve their reading, writing, and speaking.
 Prerequisite: none

EN 2033 3 hours
Literature for Children
 A study of children's literature from pre-school to sixth grade to acquaint the student with the best forms of literature for children and to develop standard of judgement in the selection of reading materials for children. Recommended for elementary education majors.
 Prerequisite: EN 1223

EN 2102 2 hours
Speed Reading
 A programmed course in reading improvement stressing comprehension and vocabulary development while emphasizing speed. The student uses pacing machines to build speed and answers questions to measure comprehension of material read at particular speeds.
 Prerequisite: 35 percentile in speed and comprehension on the Nelson-Denny Reading Test

EN 2103 3 hours
English Literature I
 A survey of English literature from the Anglo-Saxon period through the Age of Reason.
 Prerequisite: none

EN 2113 3 hours
English Literature II
 A survey of English literature from the romantic period to the present.
 Prerequisite: none

EN 2203 3 hours
American Literature I
 A survey of American literature from the colonial period to the present.
 Prerequisite: none

EN 2213 3 hours
American Literature II
 A survey of American literature from the Civil War to the present.
 Prerequisite: none

EN 2303 3 hours
Mexican/American Literature
 A study of selected readings in Mexican/American writings, particularly drama, prose, poetry, and essay. All readings are in English.
 Prerequisite: none

EN 2313 3 hours
Creative Writing
 A course in imaginative writing involving student production of poems, stories, and plays.
 Prerequisite: EN 1223 or consent of instructor

EN 2403 3 hours
Literature of Fantasy
 A study of the development of fantasy as a literary form, with emphasis on J.R.R. Tolkien. The course aims at defining fantasy in a basic way, and then showing, through an analysis of the works, the pleasures particular to the genre.
 Prerequisite: none

EN 2503 3 hours
Literature of Science Fiction
 A study of the development of science fiction, especially in the 20th century. The emphasis is on reading the works themselves, for themselves, but an attempt is made to show the development of the form toward literary maturity.
 Prerequisite: none

EN 2603 3 hours
Shakespeare on Stage
 Selected Shakespearian plays are studied in conjunction with KETC's telecast of the plays. Spring semester only.
 Prerequisite: none

EN 2701, 2, 3, 4 1-4 hours
Independent Studies in English
 An intensive study of some specific topic in English to be determined by the instructor and student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
 Prerequisite: consent of instructor and a grade point average of 3.00 or better in the department

Fire Technology

FT 0100, 1, 2, 3 1.5-3 hours
Workshop/Seminar
 Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.
 Prerequisite: none

FT 1003 3 hours
Introduction to Fire Science
 This course is designed to acquaint the student with the broad field of fire science. Topics included are history of fire problems, evaluation and survey of the fire protection characteristics and behavior of fire, chemistry of fire, building construction, extinguishing agents, and hazardous materials.
 Offered evenings only.
 Prerequisite: none
 *If state certified, this course not required.

FT 1013 3 hours
Basic Fire Protection and Alarm Systems
 A study of modern fire protection including water supply and distribution systems, housing of equipment and personnel, private fire protection methods, chemical extinguishers, building construction, and a study of the various types of fixed and portable fire detection and alarm systems. Written documentation included as applicable.
 Offered evenings only.
 Prerequisite: FT 1003 recommended

FT 1023 3 hours
General Building Construction
 A study of fundamentals of building construction and materials related to fire protection. Includes building plan layouts, conventional representations, symbols and abbreviations for building materials, methods of showing floor plans, elevations, sections, and dimensions.
 Offered evenings only.
 Prerequisite: FT 1003 recommended

FT 1034 4 hours
Fire Service Hydraulics and Equipment

This course is designed to acquaint firefighters, pump operators, and engineers with the following: characteristics of water flow, friction loss, engine pressure, multiple lines, unequal layouts, pump and pumpers, and field equations. Written documentation included as applicable.

Offered evenings only.

Prerequisite: FT 1003 recommended; mathematics and physics advisable

FT 1043 3 hours
Fire Department Organization and Supervision

Instruction in management and administration for the fire service including the functions of management, planning, organizing, directing, controlling, the management cycle, motivation, behavioral science, executive development, educational development, and labor relations. Written documentation included as applicable.

Offered evenings only.

Prerequisite: FT 1003 recommended

FT 1063 3 hours
Codes and Ordinances

This course is designed to acquaint students with necessary procedures to properly enforce national, state, and local ordinances related to fire protection. Includes building and electrical codes.

Offered evenings only.

Prerequisite: FT 1023 recommended

EM 1153 3 hours
Teaching Techniques for EMS/Fire Personnel

A study of the basic theories of learning and methods of instruction. The use of lectures, demonstrations, and visual aids as applied to the instruction of emergency medical services/fire department personnel are illustrated. Practice is provided in the use of lesson plans, visual aids, tests, and other teaching devices. Each student's application of a teaching procedure is critically discussed and evaluated.

Meets a partial requirement to become a Missouri EMS instructor.

Offered evenings only on an as needed basis.

Prerequisite: none

FT 2023 3 hours
Hazardous Materials

Content will provide students with basic information concerning the properties of hazardous materials and the methods that are most appropriate for handling the various kinds of accidents that can occur with these substances.

Offered evenings only.

Prerequisite: FT 1003 recommended

FT 2033 3 hours
Inspection and Fire Prevention

This course is designed to introduce students to various inspection practices which include surveying and mapping procedures associated with the organization and functions of fire prevention. Also includes areas of legal responsibilities and fire hazard characteristics. Opportunity is provided to make at least one complete inspection and report on an operation industry. Written documentation included as applicable.

Offered evenings only.

Prerequisite: FT 1003, 1063 recommended

FT 2043 3 hours
Fire Investigation

This course is designed to introduce students to methods of determining point of origin, path of fire travel, and fire causes. Topics include motives and methods of fire setting, recognizing and preserving evidence, arson laws, types of arson fires, court testimony, reports, and records.

Offered evenings only.

Prerequisite: FT 1003 recommended

FT 2054 4 hours
Fire Fighting Tactics and Strategy I

This course is designed to provide experience in the fundamental strategy and methods of attack employed for various fire protection problems. Includes principles of command and control, and techniques required at the scene of an incident which may be small or large, complex or unique in nature. Offered evenings only.

*May substitute 81 hour EMT course.

Prerequisite: FT 1003 recommended

FT 2063 3 hours
Rescue Techniques

A course designed to provide technical knowledge and practical skills necessary to perform emergency rescue procedures. Content will include: auto extrication, water and ice rescue, rope rescue, cave rescue, trenching incidents, search and rescue, electrical emergencies, and proper use and care of equipment.

Offered evenings only.

*May substitute 81 hour EMT course.

Prerequisite: FT 1003 recommended

FT 2073 3 hours
Fire Fighting Tactics and Strategy II

A course designed to provide advanced techniques of fire control involving the utilization of personnel, equipment, and extinguishing agents in emergency situations.

Offered evenings only.

Prerequisite: FT 1003, 2054

FT 2661, 2672, 2683 1-3 hours
Independent Studies in Fire Technology

Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

FT 2991 1 hour
Fire Technology Job Placement

A course designed to assist fire technology students in obtaining training and jobs suitable to their interests.

To be taken last semester of study.

Foreign Languages

FR 1104 4 hours
Elementary French I

An introductory French course stressing basic language skills: listening comprehension, speaking, reading, and composition. Additional audio-lingual laboratory practice.

Prerequisite: none

FR 1204 4 hours
Elementary French II

A continuation of FR 1104.

Prerequisite: FR 1104

FR 2104 4 hours
French Readings

A study of selected readings in prose and poetry along with grammar review, vocabulary building, and additional audio-lingual practice.

Prerequisite: FR 1204 or consent of instructor

FR 2701, 2, 3 1-3 hours
Independent Studies in French

An intensive study of some specific topic in French to be determined by instructor and student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

German

GR 1104 4 hours
Elementary German I

An introductory German course stressing basic language skills: listening, comprehension, speaking, reading and composition. Additional audio-lingual laboratory practice.

Prerequisite: none

GR 1204 4 hours
Elementary German II

A continuation of GR 1104.

Prerequisite: GR 1104

GR 2102 2 hours
German Readings (Part I)

A study of selected readings in prose and poetry along with grammar review, vocabulary building, and additional audio-lingual practice.

Prerequisite: GR 1204

GR 2104 4 hours
German Readings

A study of selected readings in prose and poetry along with grammar review, vocabulary building, and additional audio-lingual practice. Also available in two-hour courses. GR 2102 and GR 2112.

Prerequisite: GR 1204 or consent of instructor

GR 2112 2 hours
German Readings (Part 2)

This course is a continuation of GR 2102.

Prerequisite: GR 2102

GR 2701, 2, 3 1-3 hours
Independent Studies in German

An intensive study of some specific topic in German to be determined by instructor and student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Spanish

SP 1104 4 hours
Elementary Spanish I

An introductory Spanish course stressing basic language skills: listening comprehension, speaking, reading, and composition. Additional audio-lingual laboratory practice is included.

Prerequisite: none

SP 1204 4 hours**Elementary Spanish II**

A continuation of SP 1104.

Prerequisite: SP 1104

SP 2104 4 hours**Spanish Reading I**

A study of selected readings in Mexican drama and the short story.

Prerequisite: SP 1204 or consent of instructor

SP 2204 4 hours**Spanish Readings II**

A study of selected readings in prose along with grammar review, vocabulary building, and additional audio-lingual practice.

Prerequisite: SP 1204 or consent of instructor

SP 2213 3 hours**Spanish Composition & Conversation**

A review of Spanish grammar with practice in composition and conversation.

Prerequisite: SP 1204 or consent of instructor

SP 2303 3 hours**Mexican/American Literature**

A study of selected readings in Mexican/American writings particularly drama, prose, poetry, and essay. All readings are in English.

Prerequisite: none

SP 2701, 2, 3 1-3 hours**Independent Studies in Spanish**

An intensive study of some specific topic in Spanish to be determined by instructor and student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Geography**GE 1003 3 hours****World Geography**

An introductory study of the basic geographic and cultural regions of the world, including North and South America, Europe, Africa, and Asia with emphasis on the natural resources, political conditions, economy, population, religions, and cultural patterns of each area. Special units are included on Missouri geography and the technology of mapping.

Prerequisite: none

Geology**GL 1103 (lec), 1112 (lab) 3 or 5 hours****Introduction to Physical Geology**

An introductory course in physical geology in which materials of the earth's crust, structures, and geologic features of the surface are studied. Field trips and laboratory study of common minerals and rocks will be included.

Prerequisite: none

GL 2703 3 hours**Alpine Geology**

A course which studies the geological structures and features of the Rocky Mountains. The course is taught at Colorado State University's Pingree Park Campus.

Prerequisite: none

Corequisite: BI 2903

History**HI 1103 3 hours****U.S. History to 1877**

A survey of the cultural, economic, institutional, political, and social forces and events which have shaped the United States from the "Age of Discovery" through the reconstruction period. U.S. History 1103 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions.

Prerequisite: none

HI 1203 3 hours**U.S. History Since 1877**

A survey of the cultural, economic, institutional, political, and social forces and events which have shaped the United States from the reconstruction period to the present day. U.S. History 1203 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions.

Prerequisite: none

HI 1303 3 hours**U.S. History (Special Focus)**

Organized study of selected topics in American History.

Prerequisite: none

HI 1403 3 hours**Missouri & Mississippi Valley History**

A course on Missouri and the Central Mississippi River Valley region tracing the period from French colonial origins through the present and focusing on social, cultural and political developments. (Field trips may be included.)

Prerequisite: none

HI 2103 3 hours**Foundations of World Civilization I (Europe to 1500)**

An interdisciplinary study of the development of Western culture from prehistoric man through the Renaissance, with special emphasis on social, economic, intellectual, religious, and political institutions. The course is designed for students of history and others who desire an elective in humanities.

Prerequisite: none

HI 2203 3 hours**Foundations of World Civilization II (Europe since 1500)**

An interdisciplinary study of the development of Western institutions from the Renaissance and the Reformation to the present, with special emphasis on economic, intellectual, social, political, and religious movements. The course is designed for students of history and others who desire an elective in humanities.

Prerequisite: none

HI 2303 3 hours**Foundations of World Civilization III (Latin America)**

An interdisciplinary topical study of the social, economic, political, cultural, and intellectual conditions of modern Latin America from 1800 to the present. The course is designed for students of history and others who desire an elective course in humanities.

Prerequisite: none

HI 2403 3 hours**Foundations of World Civilization IV (Africa and Asia)**

An interdisciplinary study of Africa and Asia from 1800; including studies of the politics, culture, and people of both recent and contemporary Africa, China, Japan, India, and other selected nations of Asia. The course is designed for students of history and others who desire an elective course in humanities.

Prerequisite: none

HI 2503 3 hours**Foundations of World Civilization V (Special Focus)**

Organized study of selected topics in world civilization.

Prerequisite: none

HI 2603 3 hours**Foundations of World Civilization VI (Japan)**

An interdisciplinary topical study of Japan from pre-historic times to the present including studies of the geography, politics, cultural and intellectual conditions. Also includes a study of Japanese business methods and organizations. The course is designed for students of history and for others such as business students who desire an in-depth study of a non-European culture. Counts as an elective course in the humanities.

Prerequisite: none

HI 2701, 2, 3 1-3 hours**Independent Studies (Honors) in History**

The student enrolled for directed studies has two alternatives: (1) investigate a specific topic within the field of history, or (2) assist with tutorial history instruction under the supervision of an instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

HI 2802 (lec), 2803 (tour) 5 hours**Heritage Studies**

The course involves focused studies of varying duration which include both lectures and historical site tours. History and culture are the primary emphasis of focused study. May be repeated.

Prerequisite: none

HI 2903 3 hours**The World Since 1945**

Covers the major events of world history from the end of the Second World War to the present. A study of social and economic change, diplomacy and political change. Covers the emergence of the Superpowers, the Cold War, and the end of colonialism. Discusses third world areas of Asia, Africa, and Latin America both in terms of domestic conflicts and as arenas for Superpower conflict.

Prerequisite: none

Horticulture**HR 0100, 1, 2, 3 1.5-3 hours****Workshop/Seminar**

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

HR 1003 3 hours
The Home Gardener (Telecourse)
An introductory course outlining the basics of gardening. Greenhouse labs support this interesting course covering the general plant types and their planting requirements.
For special interest students only.
Prerequisite: none

HR 1013 (lec) 3 hours
Introduction to Horticulture
An introductory course covering the many varied occupational areas of horticulture. Students will be given extensive exposure to each area in order to better determine which area of horticulture they want to pursue vocationally. The biological aspects of plant life and the environmental factors which affect plant growth will be covered as well. This course is a prerequisite for most other horticulture courses.
Prerequisite: none

HR 1033 3 hours
Plant Propagation
An introduction to the common methods of commercial plant reproduction including seeds, cuttings, layering, grafting, and division. The course makes use of the greenhouse propagation facilities. Hormonal relationships and growth-promoting substances are explored.
Prerequisite: HR 1013

HR 1043 3 hours
Greenhouse and Nursery Management
A course with a greenhouse field/lab approach. Modern growing structures are studied. Containerized nursery stock is explored. Topics studied include systems of nursery production, bedding plants, bulbous crops, potted plants, and commercial cut flowers. The business management aspect of owning or managing a greenhouse, nursery, or gardening center business will be discussed.
Prerequisite: HR 1013, 1033, 2073, 2093 and sophomore standing

HR 1053, 1063 3 hours
Horticulture/Nursery Management Internship
A course which combines on-the-job training at the campus growing center, the Missouri Botanical Garden's Arboretum (Gray Summit), and/or ornamental horticulture businesses to provide the student with opportunities to use competencies developed in the classroom and laboratory. Emphasis is on preparation for full-time employment. Independent project studies may be included in the internship studies.
Prerequisite: consent of instructor

HR 1093 3 hours
Residential Landscape Design
A survey course for non-majors. Students will explore basic landscape design concepts. Basic plant materials and graphics will be covered. Students will analyze landscape situations and develop appropriate plans mainly at the residential level.
Prerequisite: none

HR 2003 3 hours
Landscape Maintenance
A course designed to tie together the skills and knowledge acquired in soils, nursery manage-

ment, and woody plants as related to the management of commercial and large residential grounds. Labs covering maintenance skills will be incorporated.
Prerequisite: HR 2013, 2053
Corequisite: HR 2063

HR 2013 3 hours
Woody Plants I
A study of trees, with regard to their identification, culture, growth habits, and landscape values. Major emphasis is given to the development of a functional use concept in planting design.
Prerequisite: none

HR 2023 3 hours
Landscape Design I
A detailed study of the functional uses of ornamental plants. Landscape design is introduced with concern for design development, site analysis, plant graphics, and lettering. Principles of landscape design are applied to residential design problems.
Prerequisite: HR 2013, 2063, and one course in drafting

HR 2033 3 hours
Floral Design I
A course which includes student involvement in wholesale-retail management activities. Segments of the course include floriculture, with floral design and retail flower shop management. This practical course earmarks a trend toward a broadening approach to commercial horticulture. A special fee of \$25 is charged.
Prerequisite: AR 1103, HR 2073 and sophomore standing

HR 2043 3 hours
Landscape Design II
A study in landscape plan, landscape surfaces, plant materials, construction and maintenance, and implementation of landscape plans. The process of design is given particular emphasis.
Prerequisite: HR 2023

HR 2053 3 hours
Soil Science
A study of interactions between water, air, organisms, and soil minerals important in plant growth and land use. The course includes up-to-date studies of new soil mixes and plant nutrition. Field observations and soil testing-labs complete the course.
Prerequisite: none

HR 2063 3 hours
Woody Plants II
A study of shrubs, vines, and ground covers with regard to their identification, culture, growth habits, and landscape value. Special concern is given to the cultural aspects of proper planting in functional landscape design.
Prerequisite: none

HR 2073 3 hours
Herbaceous Plants I
This course pursues the increasingly popular interior plantscaping where interior design skills are developed along with cultural management of these tropical plants. The course stresses identification and functional uses of indoor tropical plants.
Prerequisite: none

HR 2083 3 hours
Floral Design II
A continuation of Floral Design I. Professional practices will be stressed. A special fee of \$25 will be charged.
Prerequisite: HR 2033

HR 2093 3 hours
Herbaceous Plants II
A study of the major plant groups: annuals, perennials, bulbs, and wild flowers grown in the landscape garden. Identification, growth habits, and functional uses will be stressed.
Prerequisite: none

HR 2661, 2672, 2683 1-3 hours
Independent Studies in Horticulture/Nursery Management
Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

HR 2703 3 hours
Home Horticulture
An introductory course for special interest students. Topics of interest to the homeowner or hobby horticulturist will be discussed. Greenhouse labs will support lectures on plant propagation and plant growth. Other topics covered will include: home greenhouses; garden planning; rose growing; fruit and vegetable production; plant maintenance; flower arranging; landscaping; and lawn care.
The course cannot be taken for credit for major.

HR 2991 1 hour
Horticulture/Nursery Management Job Placement
A course designed to assist horticulture students in obtaining jobs suitable to their training and interests.
To be taken the last semester of study.

Journalism

JR 1003 3 hours
Introduction to Journalism
A survey of the journalism profession, including the history and study of various news media. Emphasis is placed upon journalistic principles, writing, editing and makeup, including work on official student publications.
Prerequisite: none, typing skills recommended

JR 1103 3 hours
Journalism Productions
An in-depth study and practical application of news writing, editing, headline writing, and makeup skills. The course includes production experience on official student publications. May be repeated.
Prerequisite: JR 1003, typing skills recommended

JR 2701, 2, 3 1-3 hours
Independent Studies in Journalism
The student enrolled for directed studies has two alternatives: (1) investigate a specific topic within the field of journalism, or (2) assist with tutorial journalism instruction under the supervision of an

instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
Prerequisite: consent of instructor

JR 2801 1 hour
Journalism Practicum

A course which offers students an opportunity to do writing for and assist in the production of official student publications under the instructor's guidance. It is designed for students who enjoy working on a campus newspaper and yearbook but cannot take the three-hour course. May be repeated.

Prerequisite: consent of instructor

Mathematics

MT 1000 3 hours
Arithmetic Skills

A self-paced arithmetic course designed for those students not ready to start in algebra.
Prerequisite: none

MT 1003 3 hours
Introductory Algebra I

An introductory course in arithmetic and algebra designed for any student scoring less than 45 on the Level I Math Placement Test or less than 17 on the math portion of the ACT test. Introductory Algebra I consists of the first thirteen topics of the "Basic Mathematics" textbook and a final exam over the first thirteen topics. Topics covered include whole numbers, fractions, decimals, percentages, exponents, directed numbers, solving linear equations, and applications of arithmetic and algebra.

Prerequisite: none

MT 1013 3 hours
Introductory Algebra II

A beginning course in arithmetic and algebra. Introductory Algebra II consists of all twenty-two topics of the "Basic Mathematics" textbook and a final exam over the twenty-two topics. Credit for Introductory Algebra II can also be received by passing a final exam over the first thirteen topics, a test on each topic, 14-22, and a final exam over all twenty-two topics. Direct entrance into Introductory Algebra II may be achieved by making a passing score on the Introductory Algebra I final. Topics covered include exponents, solving linear equations, word problems, graphing, multiplying polynomials, fractions containing variables, radicals, and quadratic equations.

Prerequisite: A grade of "C" or better in MT 1003 or a satisfactory score on the math placement test

MT 1103 3 hours
Real Number System

A course designed for students who are potential elementary teachers. Topics covered include the following: sets, logic, number bases, systems of numeration, system of whole numbers, system of integers, system of rational numbers, development of the real number system, field properties, algorithms for whole numbers, and terminology of mathematics.

Prerequisite: MT 1303 or satisfactory score on the math placement test

MT 1113 3 hours

Metric and Non-Metric Geometry

A course designed to make the potential elementary teacher familiar with all topics which are taught in the math curriculum in grades K-10 and the modern approach of teaching these topics. Topics covered include the following: review of topics covered in MT 1103, logic, number theory, decimals and real numbers, non-metric geometry, metric geometry, statistics and probability.

Prerequisite: MT 1103 or consent of instructor

MT 1213 3 hours
Electronics Algebra-Trigonometry

The major emphasis of the course is solving first and second degree equations and using trigonometry to solve right triangle and vector problems. Other topics covered include: powers of 10 units and dimensions, algebraic fractions, graphs, exponents, radicals, and logarithms.

Prerequisite: high school algebra or consent of instructor

MT 1243 3 hours
Electronics Calculus

The major emphasis of the course will be an understanding of differentials and integrals of various functions; maxima and minima; and differentiating and integrating circuits.

Prerequisite: MT 1213 or consent of instructor

MT 1303 3 hours
Intermediate Algebra

A preparatory course covering the fundamental principles of algebra designed to prepare the student to take College Algebra or College Mathematics. It is recommended for those students who have one or two years of high school algebra. Topics covered include the following: sets, factoring, linear and quadratic equations, fractions and fractional equations, exponents and radicals, simple analytical geometry, and systems of equations.

Prerequisite: MT 1013 or satisfactory score on the math placement test

MT 1323 3 hours
College Mathematics

A course designed to give the student an appreciation of mathematics and an understanding of the role of mathematics in today's world. College Mathematics will satisfy the math requirement at most four-year colleges but is not intended for students planning to take additional math courses. This course contains a substantial component of College Algebra to meet the CBHE Guidelines for the mathematics requirement for the A.A. degree. Topics covered include: history of mathematics, math in the humanities and social sciences, geometry, trigonometry, probability, statistics, complex number system, exponents, polynomials, rational expressions, radicals, solving equations, solving inequalities, graphing equations, graphing inequalities, linear programming.

Prerequisite: MT 1303 or satisfactory score on the math placement test

MT 1402 2 hours
Trigonometry

A study of trigonometric functions and their applications. Topics covered include the following: angles, length of arc, tables of trigonometric functions, law of cosines, law of sines, identities, trigo-

metric equations, inverse functions, complex numbers, logarithms, and polar coordinates.

Prerequisite: MT 1303

Prerequisite or Corequisite: MT 1403

MT 1403 3 hours
College Algebra

A course designed to meet the needs of the student in a transfer program. This course is a prerequisite for all other math courses numbered 1600 or above. Topics covered include: complex number system, exponents, polynomials, rational expressions, radicals, solving equations, solving inequalities, graphing equations, graphing inequalities, linear programming, permutations, combinations, probability, sequences, theory of equations, matrices and determinants.

Prerequisite: MT 1303 or satisfactory score on the math placement test

MT 1505 5 hours
Pre-Calculus Mathematics

A unified study of College Algebra and Trigonometry. Topics include sets, exponents, solutions of equations, inequalities, theory of equations, systems of equations, graphing, radicals, complex numbers, matrices and determinants, analytical geometry, solutions of right triangles, identities, solutions of oblique triangles, inverse functions, logarithms, and polar coordinates.

Prerequisite: MT 1303 or satisfactory score on the math placement test

MT 1605 5 hours
Analytic Geometry and Calculus I

A first course in a sequence of courses including analytic geometry, differential calculus, and integral calculus. This series is recommended for majors in engineering, the physical sciences, and mathematics. Topics include the following: properties of real numbers, introduction to analytic geometry, functions, limits, continuity, the derivative, differential of algebraic functions, applications of the derivative, antidifferentiations, and the definite integral.

Prerequisite: MT 1402 and 1403, 1505, or a satisfactory score on the ACT or MMPT

MT 2003, 4 3-4 hours
Finite Mathematics

A study of set theory, counting and probability theory, matrix algebra and linear programming, stochastic processes, Markov chains, and game theory. Special emphasis will be given to business applications of the techniques of finite math.

Prerequisite: MT 1403, or 1505, or consent of instructor

MT 2013, 4 3-4 hours
Survey Calculus

A study of the techniques of differential and integral calculus. The focus of the course is on functions and the applications of the calculus to the life and social sciences. Trigonometry is not used.

Prerequisite: MT 1403, or 1505, or 2003, or 2004

MT 2103 3 hours
Statistics

An introductory course in statistics with an emphasis on the collection, presentation, and analysis of data; measures of location and dispersion; introductory probability and statistical inference; correlation and linear regression.

Prerequisite: MT 1403 or consent of instructor

MT 2105 5 hours
Analytic Geometry and Calculus II
 A continuation of MT 1605 including the following topics: applications of the definite integral, logarithmic and exponential functions, trigonometric functions, techniques of integration, approximate integration, polar coordinates, conic section, vectors, and parametric equations.
 Prerequisite: MT 1605

MT 2205 5 hours
Analytic Geometry and Calculus III
 A continuation of MT 2105 including the following topics: hyperbolic functions, indeterminate forms, improper integrals, vectors in three-dimensional space, solid analytic geometry, differential calculus of functions of several variables, multiple integration, and infinite series.
 Prerequisite: MT 2105

MT 2303 3 hours
Differential Equations
 A study of separable variables, homogeneous equations, exact equations, integrating factors, linear differential equations, Laplace transform, and applications.
 Prerequisite: MT 2205

MT 2701, 2, 3, 4 1-4 hours
Independent Studies (Honors) in Mathematics
 The student enrolled for directed studies has two alternatives: (1) investigate a specific topic within the field of mathematics, (2) assist with tutorial mathematics instruction under the supervision of an instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.
 Prerequisite: consent of instructor

Music

MU 0341 1 hour
Applied Piano-Secondary (Level 0)
 Private lessons in piano. Enrollment restricted to pre-college level students. May be repeated.
 Prerequisite: consent of instructor

MU 0401 1 hour
Applied Organ (Level 0)
 Private lessons in pipe organ. Enrollment restricted to pre-college level students with consent of the instructor. May be repeated.
 Prerequisite: none

MU 1003 3 hours
Fundamentals of Music
 A basic study of music, including notation, scales, intervals, chords, and rhythms; intended to provide basic music reading, writing, and performing skills. Open to all students.
 Prerequisite: none

MU 1021, 1061, 2021, 2031 1 hour
East Central Choral Association
 A performance course open to all students and community members with consent of instructor, who have had previous choral experience.
 Prerequisite: none

MU 1041, 1071, 2041, 2061 1 hour
ECC Community Orchestra
 A performance course open to all students and

community members, with consent of instructor, who have had previous instrumental experience.
 Prerequisite: none

MU 1051, 2051 1 hour
College Wind Ensemble
 A performance course open to all students and community members, who have had previous instrumental experience.
 Prerequisite: none

MU 1101, 1121, 2101, 2141 1 hour
ECC Singers
 A wide variety of styles from traditional choral concert music to choreographed popular music. Open through audition to all students with previous musical experience.
 Prerequisite: none

MU 1111, 1131, 2111, 2131 1 hour
Jazz Band
 A studio band which prepares and presents concerts, while dealing primarily with music of the jazz idiom. Open by the consent of the director to all college students who are qualified instrumentalists.
 Prerequisite: none

MU 1201 1 hour
Applied Voice (Level 0)
 Pre-college level private lessons in voice. Enrollment open to pre-college age students and college non-music majors. May be repeated.
 Prerequisite: consent of instructor

MU 1211 1 hour
Voice Class (Level I)
 A group lesson experience for the beginning voice student. Required of all first semester voice students. Open to all students.
 Prerequisite: none

MU 1221, 2201, 2221 1 hour
Applied Voice (Levels II, III, IV)
 Private lessons in voice. Enrollment restricted to advanced voice students. Proper placement will be determined by the instructor.
 Prerequisite: completion of previous level

MU 1301, 1311, 1321, 1331 1 hour
Piano Class I, II, III, IV
 A group lesson experience for the beginning piano student. Open to all students regardless of major.
 Prerequisite: none for Piano Class I; completion of previous level for Piano Class II, III, IV

MU 1341, 1351, 1361, 1371 1 hour
Applied Piano-Secondary (Levels I, II, III, IV)
 Private lessons in piano. Open to all students with some previous piano training, with consent of the instructor. Proper placement will be determined by the instructor.
 Prerequisite: MU 1331 or equivalent

MU 1401, 1411, 2401, 2411 1 hour
Applied Organ (Levels I, II, III, IV)
 Private lessons in organ. Open to any college student, with consent of instructor. Proper placement will be determined by the instructor.
 Prerequisite: none for level I, completion of previous level for II, III, IV

MU 1501, 1511, 2501, 2511 1 hour
Applied Instrument (Levels I, II, III, IV)
 Private lessons in string, woodwind, brass, percussion, or guitar. Open to any college student, with consent of instructor. Proper placement will be determined by the instructor.
 Prerequisite: none for Level I, completion of previous level for II, III, IV

MU 1603 3 hours
Music Appreciation
 A historical survey of the development of music, intended to provide a background for the understanding and application of music. Recommended for non-music majors.
 Prerequisite: none

MU 1613 (written), 1621 (aural)
Music Theory I 4 hours
 A beginning course in music theory, study of intervals, triads, four-part diatonic harmony, connection of triads, and their inversions. Sight singing, diction, and elements of music; aural recognition of all diatonic intervals; melodic phrases; and rhythms are studied. Includes two hours aural theory per week.
 Prerequisite: none

MU 1623 3 hours
Music Appreciation-Honors
 A historical survey of the development of music through the study of compositions. Works studied will include examples of the major musical forms used by composers from the Middle Ages into the 20th century. In addition to class work, supplementary projects will acquaint the student with resources for more in-depth study. Recommended for non-music majors with a strong music background.

MU 1703 (written), 1711 (aural)
Music Theory II 4 hours
 A second course in music theory, extending into areas of seventh chords and non-harmonic tones. Includes two hours aural theory per week.
 Prerequisite: MU 1613 & 1621

MU 1803 3 hours
Music Literature
 A study of music through aural perception and analysis. Music studied will include examples of the major musical forms used by composers from the Middle Ages into the 20th century. In addition to class work, supplementary projects will acquaint the student with preliminary music research sources and written presentation of analysis.
 Prerequisite: MU 1613 & 1621, 1703 & 1711, and 2103 & 2121

MU 1903 3 hours
Popular Music
 A survey of the historical and stylistic development of jazz, rock, folk, and country music, as well as musical theatre. Special attention will be given to listening and research assignments.
 Prerequisite: MU 1603 or 1803

MU 2043 3 hours
Music for Children
 A course designed to prepare an elementary classroom teacher to assist with music instruction. Includes units in music reading and performing

skills, approaches to music teaching at K-6 levels, and the teaching of lesson plans to the class. Recommended for the elementary education major.
Prerequisite: none

MU 2103 (written), 2121 (aural)

Music Theory III 4 hours

A third course in music theory. A study of chromatic harmony including secondary dominants, modulation, and altered chords. Two hours aural theory per week.

Prerequisite: MU 1703 & 1711

MU 2203 (written), 2211 (aural)

Music Theory IV 4 hours

A continuation of MU 2103 & 2121 to more complex areas of chromatic, borrowed, and altered chords; and finally to the appearance of complex modern techniques. Includes two hour aural theory per week.

Prerequisite: MU 2103 & 2121

MU 2301, 2311, 2321, 2331 1 hour

Applied Piano (Levels I, II, III, IV)

Private lessons in piano. Open to all students with considerable training and music major level piano skills. Proper placement will be determined by the instructor.

Prerequisite: none for Level I, completion of previous level for II, III, IV

MU 2701, 2, 3, 4 1-4 hours

Independent Studies in Music

The student enrolled for directed studies will investigate a specific topic within the field of music. Enrollment usually restricted to sophomore level music major courses. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Nursing-Associate Degree

NR 1000, 1, 2, 3 5-3 hours

Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

NR 1001 1 hour

Nursing Physical Assessment Refresher

A course designed for the licensed LPN/RN who wishes to enhance or develop their physical assessment skills. The course will include theory and skills to assist the practicing nurse in performing patient physical assessments. The content includes interviewing techniques, nursing histories, with emphasis on performing "head-to-toe" client assessments.

Prerequisite: LPN/RN license

NR 1014 4 hours

Fundamentals of Nursing Lecture

A course designed to introduce the student to the nature of man and his response to illness. Abdelah's Nursing Problems are used to show the human as a whole as well as various alterations

that may occur as a result of illness. The primary focus is to develop a high degree of skill in performing commonly prescribed therapeutic and nursing regimes. Normal nutrition and pharmacology are introduced. Pediatrics is integrated. Four hours lecture per week.

Prerequisite: admission to program

Corequisite: NR 1022; BI 2102, 2112; PY 1103; history/government elective

Placement: fall semester, first year

NR 1022 2.5 hours

Fundamentals of Nursing Lab

Opportunities are provided for students to perfect skills and apply knowledge acquired in NR 1014. Includes initial practice sessions in the college laboratory and clinical experience in community hospitals. Eight hours practicum per week.

Prerequisite: admission to program

Corequisite: NR 1014; BI 2102, 2112; PY 1103

Placement: fall semester, first year

NR 1035 5 hours

Nursing of Adults and Children I

Lecture

A course designed to give the student an opportunity to apply previously learned scientific knowledge and nursing skills in caring for adults and children with common medical and surgical conditions. Pathophysiology, therapeutic nutrition, and teaching learning principles are introduced. Application of the nursing process is broadened to include assessment of the patient's total needs and preparation of more comprehensive nursing care plans. Five hours lecture per week.

Prerequisite: NR 1014, 1022; BI 2102, 2112; PY 1103

Corequisite: NR 1045; BI 2202, 2203; PY 2403

Placement: spring semester, first year

NR 1045 5 hours

Nursing of Adults and Children I Lab

General hospitals and other health care agencies are utilized for observation and/or practice in caring for adults and children clients/patients. Knowledge acquired in NR 1035 is applied, with emphasis on physical assessment and patient/client teaching.

Sixteen hour practicum per week

Prerequisite: NR 1014, 1022; BI 2102, 2112; PY 1103

Corequisite: NR 1035; BI 2202, 2203; PY 2403

Placement: spring semester, first year

NR 1052 2 hours

Mental Health Nursing Lecture

A course designed to increase the student's understanding of the psychosocial component of man. Communication skills are enhanced as well as therapeutic use of self in the nurse-client relationship. Knowledge and skills in the nursing process are broadened as the student learns factors and behaviors significant in psychiatric assessment, intervention, and evaluation. Four hours lecture per week. Eight-week course.

Prerequisite: NR 1014, 1022, 1035, 1045; BI 2102, 2112, 2202, 2203; PY 1103, 2403

Corequisite: NR 1063; PR 2103

Placement: summer session, first year

NR 1063 3 hours

Mental Health Nursing Lab

Mental health facilities and the college laboratory

are utilized for students to perfect communication skills and apply knowledge acquired in NR 1052. Fifteen hours practicum per week.

Prerequisite: NR 1014, 1022, 1035, 1045; BI 2102, 2112, 2202, 2203; PY 1103, 2403

Corequisite: NR 1052

Placement: summer session, first year

Course completed in eight-week session.

NR 2012 2.5 hours

Maternal and Newborn Nursing

Lecture

A course which will provide the student with basic knowledge of the childbearing process from conception through post-partum care and management of the newborn. Family-centered health education is taught with emphasis on childbirth preparation, care of the newborn, and maternal health. Common disorders of the reproductive system are covered. Five hours lecture per week.

Prerequisite: NR 1014, 1022, 1035, 1045, 1052, 1063; BI 2102, 2112, 2202, 2203; PY 1103, 2403; PR 2103

Corequisite: NR 2022, 2032, 2042, 2991; BI 2402, 2412; EN 1223

Placement: fall semester, second year

Completed in eight-week session.

NR 2022 2.5 hours

Maternal and Newborn Nursing Lab

Opportunities are provided for students to utilize the nursing process as it relates to the skills and knowledge acquired in NR 2012. Sixteen hours practicum per week occurs in a hospital setting.

Prerequisite: NR 1014, 1022, 1035, 1045, 1052, 1063; BI 2102, 2112, 2202, 2203; PY 1103, 2403

Corequisite: NR 2012, 2032, 2042, 2991; BI 2402, 2412; EN 1223

Placement: fall semester, second year

NR 2032 2 hours

Nursing of Adults and Children II

Lecture

A course designed to strengthen and increase the student's ability to identify the pathophysiological processes as they affect the adult/child's ability to maintain his regulatory, immunosuppressive and mobility needs. The student will utilize the nursing process in providing patient/family centered care with emphasis on setting short and long term goals. The course is planned to help the student recognize the adult/child's physical, psychosocial and developmental needs. Students will deliver nursing care in a safe and prudent manner. Four hours lecture per week.

Prerequisite: NR 1014, 1022, 1035, 1045, 1052, 1063; BI 2102, 2112, 2202, 2203; PY 1103, 2403; PR 2103

Corequisite: NR 2012, 2022, 2042, 2991; BI 2402, 2412; EN 1223

Placement: fall semester, second year

Completed in eight-week session.

NR 2042 2.5 hours

Nursing of Adults and Children II

Lab

Clinical practice opportunities are provided in community hospitals for students to administer nursing care to adults and children as it relates to the skills and knowledge acquired in NR 2032. Emphasis is placed upon utilization of community resources. Sixteen hours practicum per week.

Prerequisite: NR 1014, 1022, 1035, 1045, 1052,

1063; BI 2102, 2112, 2202, 2203; PY 1103, 2403
Corequisite: NR 2032, 2012, 2991; BI 2402, 2412; EN 1223

Placement: fall semester, second year

NR 2045 5 hours
Nursing of Adults and Children III Lecture

A course designed to provide the student with the opportunity to utilize the nursing process in complex nursing care situations, including critical care and management areas. Management and leadership skills are introduced and applied in various settings. Students will direct and deliver nursing care in a prudent and safe manner for patients in an episodic setting through the different nursing modalities. Four hours lecture per week.

Prerequisite: NR 1014, 1022, 1035, 1045, 1052, 1063, 2012, 2022, 2032, 2042, 2991; BI 2102, 2112, 2202, 2203, 2402, 2412; PY 1103, 2403; PR 2103

Corequisite: NR 2055, 2061; EN 1333

Placement: spring semester, second year

NR 2055 5 hours
Nursing of Adults and Children III Lab

Opportunities are provided for students to apply knowledge acquired throughout the curriculum, but with emphasis on organization and delivery of health care in an episodic setting through the different nursing modalities. Twenty-four hours practicum per week.

Prerequisite: NR 1014, 1022, 1035, 1045, 1052, 1063, 2012, 2022, 2032, 2042, 2991; BI 2102, 2112, 2202, 2203, 2402, 2412; PY 1103, 2403; PR 2103

Corequisite: NR 2045, 2061; EN 1333

Placement: spring semester, second year

NR 2061 1 hour
Nursing Trends

A study of selected topics related to the development of nursing practice and education; current issues; trends; ethical and legal aspects; professional organizations; and professional conduct. One hour discussion per week.

Prerequisite: NR 1014, 1022, 1035, 1045, 1052, 1063, 2012, 2022, 2032, 2042, 2991; BI 2102, 2112, 2202, 2203, 2402, 2412; PY 1103, 2403; PR 2103

Corequisite: NR 2045, 2055; EN 1333

Placement: spring semester, second year

NR 2991 1 hour
Nursing Job Placement

A course designed to assist nursing students in obtaining jobs suitable to their training and interests.

Prerequisite: none

To be taken in the fall semester, second year.

Office Occupations

OF 0001 1 hour
WordStar

Instructs the student in the features of WordStar Professional Release, 4.0 word processing software using the IBM computer. Topics include create, edit, format, print, save documents, text and column move, and mail merge.

Prerequisite: none

OF 0011 1 hour
MultiMate

Instructs the student in the features of MultiMate word processing software using the IBM computer. Topics include create, edit, format, print, save documents, multi-columns, spelling correction, mail merge, thesaurus, and line and box drawing.

Prerequisite: none

OF 0021 1 hour
DisplayWrite 3

Instructs the student in the features of DisplayWrite 3 word processing software using the IBM computer. Topics covered include create, edit, format, print, and save documents while using the spelling dictionary, math feature, and multi-column layout capabilities.

Prerequisite: none

OF 0033 3 hours
Desktop Publishing

Instruction in major features used in PageMaker desktop publishing software on the IBM computer. Students will produce professional quality fonts and images, and learn editing, page layout (1-4 columns), art (pictures), and graphics tools of desktop publishing.

Prerequisite: previous word processing experience preferred

OF 0042 2 hours
WordPerfect

Instructs the student in the features of WordPerfect Release, 5.0 word processing software using the IBM computer. Topics covered include create, edit, format, print, and save documents while using the thesaurus, spelling dictionary, math feature, and multi-column layout capabilities.

Prerequisite: none

OF 0100, 1, 2, 3 .5-3 hours
Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

OF 1011 1 hour
Keyboarding

Designed for the student who has not typed before. Includes beginning instruction on the keyboard and numbers-only.

Prerequisite: none

OF 1013 3 hours
Typewriting I

A study of the keyboard and techniques of touch typewriting, development of basic skills, and the arrangement of typewritten material. Individualized instruction.

Prerequisite: none

OF 1023 3 hours
Typewriting II

A course in further development of typewriting skills, with special attention given to improving accuracy and increasing speed. Major emphasis is given to producing mailable copy on tables, letters, business forms, and rough draft manuscripts under timed conditions. Individualized instruction.

Prerequisite: OF 1013 or speed of at least 40 wpm for five minutes with a maximum of five errors.

OF 1033 3 hours
Typewriting III

A continuation of OF 1023 with further development of accuracy and speed in typewritten work. Emphasis is placed upon high production standards and more complex material for mailable copy under timed conditions. Individualized instruction.

Prerequisite: OF 1023

OF 1043 3 hours
Shorthand I (Gregg)

A study of Gregg shorthand theory and shorthand dictation at moderate rates. Attention is given to punctuation, spelling, word usage, and reading shorthand notes rapidly. Beginning transcription is also introduced. Individualized instruction.

Prerequisite or Corequisite: OF 1013

OF 1053 3 hours
Shorthand II (Gregg or Speedwriting)

A course emphasizing the development of shorthand speed. Stenographic skills of punctuation, spelling, vocabulary, and transcribing techniques are stressed. Specifically designed for students who have completed one semester of shorthand instruction. The course is also helpful to students who want to review shorthand theory. Individualized instruction.

Prerequisite: OF 1013, 1043 or consent of instructor

OF 1063 3 hours
Shorthand III (Gregg)

A course with emphasis on continued development of shorthand speed. The course is specifically designed for the individual who has completed at least one year of shorthand instruction. The student should be able to pass an 80 wpm speed-take comfortably. Stenographic skills of punctuation, spelling, vocabulary, and transcribing, etc. are stressed. Individualized instruction.

Prerequisite: OF 1013 and the ability to pass an 80 wpm speed-take comfortably for three minutes.

OF 1073 3 hours
Shorthand IV (Gregg or Speedwriting)

A transcription course designed to increase the quantity and quality of transcribing reports, memos, manuscripts, and letters in conformity with occupational standards. Continued attention is given to maintaining speed, punctuation, word usage, and spelling. Individualized instruction.

Prerequisite: OF 1053 or 1063, and OF 1023

OF 1083 3 hours
Business Writing Skills

A course in the improvement of basic language skills through the study of sentence structure, punctuation, capitalization, spelling, and other grammatical areas as they pertain to the business world in particular.

Prerequisite: none

OF 1093 3 hours
Filing and Records Management

A study of filing rules and their application to alphabetic, numeric, subject, and geographic filing. Attention is given to the selection and organization of filing systems, equipment and supplies, microrecords and automated records, retention and disposition of records, and administrative duties.

Prerequisite or Corequisite: OF 1013

OF 1103 3 hours**Introduction to Office Automation**

An introduction to word processing and office automation concepts and how technology is changing today's office. During one-third of the class, students will gain hands-on microcomputer experience using word processing, spreadsheet, database management, and graphics software. Prerequisite: none

OF 1113 3 hours**Secretarial Procedures**

A study of business information and office skills applicable to the secretarial or clerical profession. Special attention is given to human relations, organization and maintenance of an office, work efficiency, setting priorities, and employment standards. Prerequisite: OF 1013

OF 1123 3 hours**Office Machines**

A course which offers basic training on desktop publishing, electronic typewriters, and electronic calculators. The course acquaints the student with machine terminology, office problems, and work standards. Prerequisite: OF 1013 or consent of instructor

OF 1133 3 hours**Machine Transcription**

A course designed to develop proficiency in machine transcription. Through study and supervised practice on transcribing equipment, both typing and transcribing skills are merged and further ability developed in proofreading, editing, spelling, punctuation, grammar, word usage, good judgment, and decision-making as applied to business letters, memorandums, tables, and reports. Individualized instruction. Includes specialized projects for medical secretarial students. Prerequisite: OF 1083

Prerequisite or Corequisite: OF 1023

OF 1143 3 hours**Business Communications**

A study of communication needs in business both oral and written, with emphasis on interoffice communication, letters, and reports. Special attention is given to organization, mechanics, and the business vocabulary. Prerequisite: Either EN 1223 or 1003, or OF 1083

OF 2013 3 hours**Business Mathematics**

A course in business and financial applications of mathematics. Intended for students in office, business, and other A.A.S degree programs. Individualized instruction. Prerequisite: none

OF 2033, 2133 3 hours**Internship and Seminar**

Supervised work experience in an actual office situation putting to use the skills and related knowledge learned in previous courses. Supervision on the job will be led by office personnel. Coordination of work experience to classroom learning will be done by the instructor. Time will be arranged. A one-hour seminar will be held each week to discuss work experiences and the latest trends in office equipment and techniques gathered through assigned readings in current publications.

Prerequisite: enrollment in the Office Occupations Program and consent of instructor

OF 2043 3 hours**Legal Typewriting**

A course specializing in the typing of a wide range of legal documents and correspondence into mailable form. Continued emphasis on speed and accuracy. Individualized instruction. Prerequisite: OF 1023 or consent of instructor

OF 2053 3 hours**Legal Shorthand**

A course specializing in the dictation and transcription of various legal documents and correspondence into mailable form. Legal terminology will be emphasized. Individualized instruction. Prerequisite: OF 1073 or consent of instructor

OF 2063 3 hours**Legal Secretarial Procedures**

A course specializing in the organization, functions, and duties in a legal office. Special attention is given to office and client financial records, law office files, litigation, and preparing court and noncourt documents. Prerequisite: OF 1013

OF 2073 3 hours**Medical Office Procedures**

A self-paced course specializing in the organization, functions, and duties in a medical office. Special attention is given to patient records, financial responsibilities, medical abbreviations, and professional activities. Simulation exercises will be included in the course. Individualized instruction. Prerequisite: OF 1023, 1083, 1133, and BI 1112

OF 2083 3 hours**Medical Transcription**

A specialized course in medical terminology transcription for students who are proficient in typewriting and medical terminology, and who have a working knowledge of transcription equipment. Individualized instruction. Prerequisite: OF 1023, 1083, and 1132, and BI 1112

OF 2103 3 hours**Office Automation Computer Applications I**

A course designed to give students with varying computer backgrounds hands-on microcomputer-experience. IBM computer will be used in everyclass. Topics include learning to operate micro-computers, using Word Perfect 4.2, VP Planner (Lotus), and Dbase III +. Prerequisite: none

OF 2113 3 hours**Office Automation Computer Applications II**

Students will use the IBM computer during every class and learn the advanced commands of popular spreadsheet, database, and Word Perfect 5.0 software programs. Students also learn the basic commands to create business and office publications using desktop publishing software. Prerequisite: none

OF 2123 3 hours**Information Systems for Business**

Topics include computer technology and its impact on business organizations, role of people in an information system environment, and comput-

ers in solving business management problems. During one-fourth of classes, student will use the IBM computer and complete introductory activities using word processing, spreadsheet, database management and other software. Prerequisite: none

OF 2661, 2672, 2683 1-3 hours**Independent Studies in Office Occupations**

Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated. Prerequisite: consent of instructor

OF 2991 1 hour**Office Occupations Job Placement**

A course designed to assist office occupations students in obtaining jobs suitable to their training and interests. To be taken the last semester of study.

Philosophy/Religion

PR 1003 3 hours**Introduction to Philosophy**

A course which introduces the student to some of the major areas of philosophic inquiry concerning human experiences and the nature of the reality through the reading and discussion of representative selections from contemporary and classical writings. Prerequisite: none

PR 1103 3 hours**Introduction to Logic**

A study of techniques for distinguishing between adequate and inadequate arguments. The course will introduce several techniques that may be used to evaluate arguments. Primary emphasis will be on learning to use the techniques of propositional and monadic predicate calculi in evaluation arguments. Prerequisite: none

PR 1203 3 hours**History of Modern Philosophy**

A study of the historical development in the awareness and solutions to western philosophic problems from modern times to the present. The course is based upon the teachings of the great philosophers, with emphasis upon their importance for us today. Prerequisite: none

PR 1303 3 hours**Living World Religions**

An introductory survey course of the major Eastern and Western religions of the world today, with emphasis on the similarities and differences in their basic teachings and practices, historical backgrounds, and lives of their founders. Prerequisite: none

PR 2103 3 hours**Contemporary Ethical Problems**

A course concerned with moral action—deciding whether acts are good or bad, right or wrong. It begins with a study of why people act the way they do and considers different approaches to moral conduct. Discussions center on such modern problems as mercy killing, abortion, capital punishment, and sexual, medical, and business ethics. Prerequisite: none

PR 2403 3 hours**Biblical Literature I: Old Testament**

A critical-historical survey of the Old Testament as literature. Emphasis is placed upon the different modern approaches to Biblical understanding and criticism, especially as it applies to the Exodus Event in the history of Israel through the Division of the Kingdom. The course is designed to help the student appreciate the Bible as great literature from a critical point of view.

Prerequisite: none

PR 2503 3 hours**Biblical Literature II: Old Testament**

A critical-historical survey of the Old Testament as literature. Emphasis is placed upon the different modern approaches to Biblical writings after the Division of the Kingdom until the end of the Old Testament period. The course is designed to help the student appreciate the Bible as great literature from a critical point of view.

Prerequisite: none

PR 2603 3 hours**Biblical Literature III: New Testament**

A critical-historical survey of the New Testament as literature. Special emphasis is placed upon the different modern approaches to Biblical understanding and criticism, and upon the different literary types of writings found in the New Testament itself, especially the Gospels and Letters of Paul. The course is designed to help the student appreciate the Bible as great literature from a critical point of view.

Prerequisite: none

PR 2701, 2, 3 1-3 hours**Topics in Philosophy/Religion**

An intensive study of various topics in philosophy, individual philosophers, or philosophical schools. The study will include extensive reading, discussion, and an in-depth paper. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: none

Physical Education

PE 1011, 1021, 2011, 2021 1 hour
Aerobic Dance

An exercise program choreographed and set to music for continuous rhythmic activity. Selected conditioning exercises and dance movements are designed to allow students to work toward improved cardiovascular fitness. May be taken at the beginning, intermediate or advanced levels.

Prerequisite: none for PE 1011, completion of previous level for 1021, 2011, and 2021 or consent of instructor

PE 1051, 1061 1 hour**Archery**

A basic introduction to the fundamental skills and safety rules of archery activities. May be taken at the beginning or intermediate levels.

Prerequisite: none for PE 1051, completion of previous level for 1061 or consent of instructor

PE 1091 1 hour**Backpacking**

Introduction to backpacking as a lifetime recrea-

tional activity. Instruction in techniques, safety, equipment, trip planning and map and compass skills. Field trips are required.

Prerequisite: none

PE 1121, 1131 1 hour**Basketball**

Introduction to the fundamental skills, strategies and rules of basketball. May be taken at the beginning or intermediate levels.

Prerequisite: none for PE 1121, completion of previous level for 1131 or consent of instructor

PE 1161, 1171 1 hour**Bowling**

Introduction to the fundamental skills, strategies and rules of bowling. May be taken at the beginning or intermediate levels.

Prerequisite: none for PE 1161, completion of previous level for 1171 or consent of instructor

PE 1201 1 hour**Canoeing**

Introduction to river canoeing as a lifetime recreational activity. Instruction in safety, canoeing techniques, trip planning, equipment and map and compass skills. Field trips are required.

Prerequisite: none

PE 1231, 1241, 2231, 2241 1 hour**Chinese Martial Arts**

A modern eclectic martial art utilizing techniques from a variety of systems concentrating on footwork, pressure points, blocks, and self defense. May be taken at the beginning, intermediate or advanced levels.

Prerequisite: none for 1231, completion of previous level for 1241, 2231, 2241 or consent of instructor

PE 1271 1 hour**Folk and Square Dance**

Instruction in the skills and patterns of square dancing and selected international and American folk dances.

Prerequisite: none

PE 1301, 1311, 2301, 2311 1 hour**Golf**

Introduction to the fundamental skills and rules of golf activities. May be taken at the beginning, intermediate or advanced levels.

Prerequisite: none for 1301, completion of previous level for 1311, 2301 and 2311 or consent of instructor

PE 1341, 1351, 2341, 2351 1 hour**Karate**

Basic principles and practices of traditional Japanese karate through participation in systemically organized patterns of assertive/reactive exercises. May be taken at the beginning, intermediate or advanced levels.

Prerequisite: none for 1341, completion of previous level for 1351, 2341, and 2351 or consent of instructor

PE 1381, 1391, 2381, 2391 1 hour**Physical Fitness**

Introduction to various lifelong fitness activities tailored to the individual student's age and fitness category. May be taken at the beginning, intermediate or advanced levels.

Prerequisite: none for 1381, completion of previ-

ous level for 1391, 2381 and 2391 or consent of instructor

PE 1421 1 hour**Racquet Sports**

Introduction to the fundamental skills, strategies and rules of racquet sport. Includes table tennis, badminton, and pickleball.

Prerequisite: none

PE 1451 1 hour**Racquetball**

Introduction to the fundamental skills, strategies and rules of racquetball.

Prerequisite: none

PE 1461 1 hour**Self Defense for Women**

Introduction to the physical skills and strategies used in self defense along with lectures on prevention of physical attack.

Prerequisite: none

PE 1481, 1491 1 hour**Skeet & Trap Shooting**

Introduction to the fundamental skills and safety rules of skeet and trap shooting. May be taken at the beginning or intermediate levels.

Prerequisite: none for 1481, completion of previous level for 1491 or consent of instructor

PE 1521, 1531 1 hour**Skiing**

Instruction in the fundamental skills of Alpine skiing. Classes are taught at Hidden Valley Ski Area. May be taken at the beginning or intermediate levels.

Prerequisite: none for 1521, completion of previous level for 1531 or consent of instructor

PE 1561, 1571 1 hour**Soccer**

Introduction to the fundamental skills, strategies and rules of soccer. May be taken at the beginning or intermediate levels.

Prerequisite: none for 1561, completion of previous level for 1571 or consent of instructor

PE 1601, 1611 1 hour**Softball**

Introduction to fundamental skills, strategies and rules of softball. May be taken at the beginning or intermediate levels.

Prerequisite: none for 1601, completion of previous level for 1611 or consent of instructor

PE 1641 1 hour**Tennis**

Instruction in the fundamental skills, strategies and rules of tennis.

Prerequisite: none

PE 1671, 1681 1 hour**Volleyball**

Instruction in the fundamental skills, strategies and rules of power volleyball. May be taken at the beginning or intermediate level.

Prerequisite: none for 1671, completion of previous level for 1681 or consent of instructor

PE 1711, 1721, 2711, 2721 1 hour**Weight Training**

Introduction to the fundamental techniques, skills and safety rules required in an overall fitness/body conditioning program. May be taken at the beginning, intermediate or advanced levels.

Prerequisite: none for 1711, completion of previ-

ous level for 1721, 2711, and 2721 or consent of instructor

PE 1751, 1761 1 hour

Adapted Physical Activity

An individualized course designed to offer various physical activities to individuals who cannot enroll in a regular activity course because of a temporary or permanent physical disability or handicap. May be taken at the beginning or intermediate levels.

Prerequisite: none for 1751, completion of previous level for 1761 or consent of instructor

PE 1791, 1801, 2791, 2801 1 hour

Varsity Baseball

A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.

Prerequisite: permission from coach and completion of previous level for 1801, 2791 and 2801

PE 1831, 1841, 2831, 2841 1 hour

Varsity Basketball

A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.

Prerequisite: permission from coach and completion of previous level for 1841, 2831 and 2841

PE 1871, 1881, 2871, 2881 1 hour

Varsity Soccer

A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.

Prerequisite: permission of coach and completion of previous level for 1881, 2871, and 2881

PE 1911, 1921, 2911, 2921 1 hour

Varsity Softball

A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.

Prerequisite: permission of coach and completion of previous level for 1921, 2911, and 2921

PE 1951, 1961, 2951, 2961 1 hour

Varsity Volleyball

A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.

Prerequisite: permission of coach and completion of previous level for 1961, 2951 and 2961

PE 1102 2 hours

Officiating Sports

A course designed to teach the techniques and rules of officiating. Students may choose courses in baseball, basketball, football, soccer, softball, or volleyball officiating.

Prerequisite: none

PE 1402 2 hours

Introduction to Physical Education

An introductory professional course for the physical education major and minor, designed to provide the opportunity to explore the history, scope, values and philosophy of physical education,

professional responsibilities and career opportunities.

Prerequisite: none

PE 2052 2 hours

Physical Education for Children

A course in organizing and planning physical education programs for the elementary school with emphasis on identifying and selecting appropriate content and teaching methods. This course is designed for physical education majors and minors and elementary education majors.

Prerequisite: none

PE 2202 2 hours

Care and Prevention of Athletic Injuries

A study of the treatment of wounds, shock, poisoning, fractures, unconsciousness, stoppage of breathing, and the care and prevention of athletic injuries. Designed for physical education majors.

Prerequisite: none

PE 2302 2 hours

Coaching Baseball

A physical education major course in organization and management of a competitive baseball program to include individual techniques, team play, rules and problems with coaching baseball. Includes "little league" applications.

Prerequisite: none

PE 2402 2 hours

Coaching Basketball

A course in organization and management of a competitive basketball program. Topics include systems of offense and defense, game rules, training schedules and problems arising during training and the regular playing season.

Prerequisite: PE 1121, 1131, 1831, 1841, 2831 or 2841, or consent of instructor

PE 2502 2 hours

Coaching Volleyball

A study of the organization and management of a school volleyball program to include individual techniques, offensive and defensive strategy, rules and problems in coaching volleyball.

Prerequisite: PE 1671, 1681, 1951, 1961, 2951 or 2961, or consent of instructor

PE 2701, 2702 1-2 hours

Independent Studies in Physical Education

A course involving independent study (usually by physical education majors) in the various aspects of the physical education curriculum. This could include: (1) specialized study in one area of physical education, (2) assisting with instruction or administration of class, (3) assisting with operation of varsity sports, or (4) assisting with organization or administration of intramural sports. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Physics

PH 1003 3 hours

Physical Science I

Introduction to the various constituents of the universe including earth. Recommended for non-science majors.

Prerequisite: none

PH 1013 3 hours

Physical Science II

Introduction to the origin, characteristics, and evolution of the solar system. Recommended for non-science majors.

Prerequisite: none

PH 1023 3 hours

Physical Science III

A lecture/demonstration course covering topics in physics, chemistry, geology, and astronomy. Recommended for elementary education majors.

Prerequisite: none

PH 1103 (lec), 1112 (lab) 5 hours

Introductory Physics

A study of mechanics, heat, sound, light, electricity, and physical properties of matter. A non-calculus course which features problem-solving and laboratory work. Three hours lecture and two lab periods per week.

Prerequisite: DF 1083, MT 1303, or satisfactory score on the ACT

PH 1703 (lec), 1712 (lab) 5 hours

College Physics I

A study of mechanics, properties of matter, and thermodynamics. Not recommended for math, physical science, or engineering students.

Prerequisite: MT 1402 and 1403, 1505, or equivalent

PH 1803 (lec), 1812 (lab) 5 hours

College Physics II

A continuation of PH 1703 & 1712, including a study of electricity, magnetism, light, and atomic physics. Not recommended for math, physical science, or engineering students.

Prerequisite: PH 1703 & 1712

PH 2103 (lec), 2112 (lab) 5 hours

General Physics I

A study of the mechanics of solids, liquids, and gases; and of heat and sound. A course intended for the student who plans to major in mathematics, the physical sciences, or engineering. Three hours lecture and two two-hour laboratory periods per week.

Prerequisite or Corequisite: MT 2105

PH 2203 (lec), 2212 (lab) 5 hours

General Physics II

A study of electricity, magnetism, light, and modern physics. Three hours lecture and two two-hour laboratory periods per week.

Prerequisite: PH 2103 & 2112

Prerequisite or Corequisite: MT 2205

PH 2701, 2, 3 1-3 hours

Independent Studies (Honors) in Physics

The student enrolled for independent studies has two alternatives: (1) investigate a specific topic within the field of physics, or (2) assist in the laboratory, stockroom, or with individualized instruction under the supervision of an instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Political Science

PS 1103 3 hours

Introduction to Political Science

A course which introduces the student to the theory and content of politics: specifically a comparative study of democracies and non-democratic governments. Basic concepts and approaches to the study of political activity are discussed. PS 1103 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions.

Prerequisite: none

PS 1203 3 hours

U.S. Government I: National & State

An introduction to the basic principles and structures of American national, state, and local governments. Emphasis will be placed upon the federal system; constitutional development and interpretation; civil liberties; political parties; the executive, legislative, judicial branches; and federal administrative agencies. PS 1203 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions.

Prerequisite: none

PS 1303 3 hours

U.S. State & Local Government

An introduction to the basic principles and structures of American, state, and local government with emphasis on Missouri. State government structure and politics, state-local relationships will be considered as will county, municipal, special district and school district governments. The political and administrative problems of metropolitan areas will be given special attention. Meets Missouri component of Section 170.011 Rs Mo. requiring the study of state and federal constitutions.

Prerequisite: none

PS 2103 3 hours

International Relations

A study of the major factors underlying international relations: climate and geography, national concepts and institutions, and the development of foreign policy. Today's problems of developing nations, East vs. West, and nuclear potentials are considered.

Prerequisite: none

PS 2203 3 hours

Introduction to Public Administration

A study of the analysis of concepts and functions of administrative organizations. Included is a study of internal dynamics of governmental agencies: management, supervision, financial control, personnel supervision, and democratic accountability.

Prerequisite: none

PS 2701, 2, 3 1-3 hours

Independent Studies (Honors) in Political Science

The student enrolled for directed studies has two alternatives: (1) investigate a specific topic in the field of political science, or (2) assist with tutorial political science instruction under the supervision

of an instructor. For each semester enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Psychology

PY 1103 3 hours

General Psychology

A course designed to provide the student with a broad, general introduction to the field of psychology. It is a study of behavior designed to present an account of the significant concepts and findings of contemporary psychology. The course should provide a clear description of the bodies of knowledge in the core areas of psychology.

Prerequisite: none

PY 1203 3 hours

Experimental Psychology

A study of the various processes by which behavioral researchers discover facts about the behavior of individuals. The emphasis is on methodology rather than statistical concepts, tests, or content areas. This course should locate experimental psychology within the context of psychological research in general. A number of indispensable concepts will be introduced and defined which will form a foundation for future study.

Prerequisite: PY 1103

PY 2103 3 hours

Personal and Social Adjustment

A study of the everyday task of coping with ourselves, our environment, and the people we encounter. Emphasis will be placed on coping with problems, obstacles, and depressions.

Prerequisite: PY 1103 or consent of instructor

PY 2203 3 hours

Child Psychology

A study of development from conception to adolescence emphasizing both current and historical approaches to research and theory, genetic and environmental influences on development, and the sequence and timing of physical, mental, and personality development throughout the years of childhood.

Prerequisite: PY 1103 or consent of instructor

PY 2403 3 hours

Human Development

A course designed to provide the student with a broad, general introduction to human development. The entire life span will be covered including those concepts and principles basic to an understanding of human development. Development will be studied using an integrated approach from the biological, psychological, sociological, and cultural perspectives.

Prerequisite: PY 1103 or consent of instructor

PY 2503 3 hours

Adolescent Psychology

A broad, general introduction to human development and, specifically, adolescent development. Adolescence will be viewed in the entire life cycle and in the social, cultural, political, and historical contexts. An integrated approach involving biological, psychological, and cultural perspectives will be used.

Prerequisite: PY 1103 or consent of instructor

PY 2701, 2, 3 1-3 hours

Independent Studies in Psychology

Course content and hours arranged by instructor. For each semester enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

PY 2803 3 hours

Child Abuse Practicum

A course designed to give selected behavioral science students the opportunity and actual experience in the treatment of child abuse. Selected students will work in a treatment program under the direct supervision of a licensed psychologist. Minimum commitment is for an academic year [from September through May].

Prerequisite: PY 1103 and consent of instructor

Real Estate

RE 0100, 1, 2, 3 1.5-3 hours

Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

RE 1014 4 hours

Principles of Real Estate (Salesman's Class)

The study of the nature of real estate and its ownership, titles, legal descriptions, contracts, leases, taxation, and values. A total of 60 clock hours is required. The purpose of this class is to prepare students to pass the Missouri Real Estate Salesperson licensing examination.

Prerequisite: none

RE 2023 3 hours

Real Estate Appraisals

An introduction to real estate appraisals, the study of the nature of real property, property values, general and local trends, site evaluation, building cost estimates, depreciation, and estimates on remodeling and modernization. Certification by the Independent Fee Appraisers Association may be necessary before employment.

Offered evenings only.

Prerequisite: none

Retailing

RT 0100, 1, 2, 3 1.5-3 hours

Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

RT 2003 3 hours

Display Project

A study of visual and promotional merchandising activities that are vital to the success of a retail firm. Topics include: promotional activities, public relations, construction and evaluation of displays and promotional budgets.

Prerequisite: none

RT 2013 3 hours

Consumer Behavior

A study and analysis of consumer buying habits

and motives. Attention is given to the dominant position of the consumer in the marketing mechanism and his or her behavior in the marketplace. Recognition of motivation and the reactions of consumers and related business influences is also covered.

Prerequisite: RT 2023 or BU 1013

RT 2023 3 hours
Merchandising I (Starting Your Own Business)

An introduction to the principles of retailing. Emphasis is on the development, interpretation, and use of fundamental management and merchandising skills. Topics include: establishing a retail store, merchandise planning, salesmanship, display, promotion, advertising, personnel, finance, and control. Particular attention is given to problem-solving through use of common retailing problems chosen to raise some of the major issues confronting retailing and retailers today.

Prerequisite: none

RT 2033 3 hours
Merchandising II

A study of the problems inherent in merchandising including: buying, control, pricing for profit, planning sales, model stocks, and promotions. Arithmetic skills are stressed.

Prerequisite: RT 2013 and working knowledge of arithmetic

RT 2043, 2053 3 hours
Retailing Internship

An individualized program aimed at giving students an opportunity to balance their knowledge of a retail organization through experience in most functional areas of retail businesses.

Prerequisite: retailing major

RT 2661, 2672, 2683 1-3 hours
Independent Studies in Retailing

Course content will be arranged by the instructor to meet individual needs of the student. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

RT 2991 1 hour
Retailing Job Placement

A course designed to help retailing students in obtaining jobs suitable to their training and interests.

To be taken the last semester of study.

Small Engine Repair

SE 0100, 1, 2, 3 .5-3 hours
Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

SE 1015 5 hours
Small Engine Repair I (4-cycle engines)

A course designed to provide students with an introduction to small gasoline powered engines from both a theoretical and practical point of view. Both two-stroke cycle and four-stroke cycle small engines are studied in detail. Emphasis is placed upon procedures for repair and replacement of

engine parts and components. Small engine cooling, lubricating, electrical, and starting systems are studied. Engine overhaul and machine procedures are discussed in detail, and lab work includes the disassembly, measuring, and reassembly of engine components. Small engine tune-up is also covered. The course is offered for college credit and is open to vocational students who have need of small engine repair knowledge and skill as a part of another course of study, such as agriculture or horticulture, or who intend to seek employment in a small engine shop or intend to operate such a shop themselves.

Prerequisite: none

SE 1025 5 hours
Small Engine Repair II (2-cycle engines)

See description for SE 1015.

Prerequisite: none

Sociology

SO 1103 3 hours
General Sociology

An introductory course in the field of sociology with special emphasis on the scientific study of social relations, social organizations, social institutions, and social dynamics.

Prerequisite: none

SO 1203 3 hours
American Social Problems

A study of select problems, including consideration of proposed lines of action in dealing with them. Problem areas include population, the affluent society, poverty, urban renewal, delinquency and crime, automation, the aging, ethnic and racial relations, and the role of the United States in the relationship to the underdeveloped areas of the world.

Prerequisite: none

SO 2103 3 hours
Human Relations

An introduction to the applied principles of sociology and psychology as they relate to human interaction in small groups. Major emphasis is placed on analysis of the interaction process with a view toward additional understanding of individual and group behavior and the problems attendant to leadership.

Prerequisite: none

SO 2203 3 hours
Marriage and the Family

A study of the family, society, and the individual. The course includes background on American family patterns; premarital behavior; marriage and variations in family forms; and problems of the family today. Special emphasis is given to marriage and the family as a kind human relationship.

Prerequisite: consent of instructor

SO 2303 3 hours
Introduction to Social Work

A study of philosophy, historical development and perspectives of social work.

Prerequisite: SO 1103

SO 2701, 2, 3 1-3 hours

Independent Studies (Honors) in Sociology

Course content and hours arranged by instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

Teacher Aide (Assistant)

TA 0100, 1, 2, 3 .5-3 hours
Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

TA 2013 3 hours
Teacher Aide Seminar

A seminar designed to acquaint the prospective teacher aide with the responsibilities and requirements of the position and to discover how the teacher aide fits into the instructional team. The student prepares through the seminar to do an internship in one of the district schools. A college staff member moderates the seminar which serves to tie coursework and experience together.

Prerequisite: none

TA 2021, 2032, 2043 1-3 hours
Teacher Aide Internship

A supervised work experience in an actual educational setting coordinated with the student's regular classroom to provide a realistic view of the varied duties of a teacher aide.

Prerequisite: consent of instructor

TA 2661, 2672, 2683 1-3 hours
Independent Studies in Teacher Aide

Course content will be arranged by the instructor to meet individual needs of the student. For each semester enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

TA 2991 1 hour
Teacher Aide Job Placement

A course designed to assist teacher aide students in obtaining jobs suitable to their training and interests.

To be taken the last semester of study.

Welding

WL 0100, 1, 2, 3 .5-3 hours
Workshop/Seminar

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.

Prerequisite: none

WL 1001 1 hour
Personal Welding

A course designed to introduce the student to his or her home welder and its related functions.

Prerequisite: none

WL 1015 5 hours
Welding I

An introduction to oxygen-acetylene brazing, cutting, and electric arc welding. The study of

safety in oxy-acetylene and electric arc welding is also included.

Prerequisite: none

WL 1025 5 hours

Welding II

A continuation of Welding I, stressing all-position shielded metal arc welding (SMAW).

Prerequisite: WL 1015

WL 1035 5 hours

Welding III

A course which stresses higher development of shielded metal arc welding (SMAW) in off-position, along with a study of joint design.

Prerequisite: WL 1015, 1025, 1055

WL 1045 5 hours

Welding IV

A course which stresses the development of skills in inert gas-arc welding, TIG and MIG welding machines, and inspection and testing.

Prerequisite: WL 1015, 1025, 1035, 1055

WL 1055 5 hours

Welder's Blueprint Reading

A course which includes the fundamentals of print reading, welding symbols, and related information on a blueprint in construction and various welding fields.

Prerequisite: none

WL 1065 5 hours

Introduction to Metallurgy and Properties of Materials

The study of physical metallurgy from a welding viewpoint. The course includes the study of

mechanical properties of ferrous and non-ferrous metals and the effects of the different welding procedures on metals.

Prerequisite: WL 1015, 1025, 1055

WL 1661, 1672, 1683 1-3 hours

Independent Studies in Welding

Course content and hours arranged by the instructor. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. May be repeated.

Prerequisite: consent of instructor

WL 2010 10 hours

Special Problems in Welding

The study of welding shop practice and the tools used in the welding job shop. As students become familiar with the tools and equipment, they apply this knowledge to practical applications.

Prerequisite: WL 1015, 1025, 1035, 1045, 1055, 1065

WL 2035 5 hours

Advanced MIG Welding

This course includes working instruction on the MIG welder using .030 and .035 diameter solid core wire and .045 flux core wire in all positions plus aluminum welding.

Prerequisite: WL 1015, 1025, 1035, 1045, 1055, 1065

WL 2045 5 hours

Advanced TIG Welding

The study and application of the TIG welding process on carbon steel, stainless steel, and alumi-

num in all positions.

Prerequisite: WL 1015, 1025, 1035, 1045, 1055, 1065

WL 2055 5 hours

Cored Wire Welding

This course includes working instruction on the MIG welder using .035 and .045 diameter cored wire in all positions.

Prerequisite: WL 1015, 1025, 1035, 1045, 1055, 1065

WL 2063 3 hours

Plasma Arc Welding

A course which stresses the development of skills in plasma arc welding of stainless steel and various other alloys in the vertical and flat position.

Prerequisite: completion of one-year Welding Certificate Program or consent of instructor

WL 2073 3 hours

Plasma Arc Cutting

A course which includes working instruction in the plasma arc cutting process on carbon steel, stainless steel, and aluminum.

Prerequisite: completion of one-year Welding Certificate Program or consent of instructor

WL 2991 1 hour

Welding Job Placement

A course designed to assist welding students in obtaining jobs suitable to their training and interests.

To be taken the last semester of study.