

East Central College 1981/82-1982/83 Catalog

East Central College is a publicly supported, comprehensive community/junior college established to serve the residents of the Junior College District of East Central Missouri, including the major portion of Franklin County and smaller portions of Crawford, Gasconade, St. Charles, Warren, and Washington Counties.

East Central College is committed to a policy of non-discrimination on the basis of race, age, sex, religion, color, national origin, creed, handicap, marital or parental status, in admission, educational programs or activities and employment, as specified by federal and state laws and regulations. Inquiries may be addressed to: Dr. Donald D. Shook, President, East Central College.

The College is accredited by the North Central Association of Colleges and Schools.

East Central College
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Union, Missouri 63084
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Agriculture

Agr 133 **3 hours**

Animal Science I (Hg. 5402)

A study of the principles of animal production including animal products, anatomy and carcass evaluation, genetics, and reproduction.

Prerequisite: none

Agr 162 **2 hours**

Animal Science II (Hg. 5402)

A continuation of Agr 133 with the addition of topics on nutrition and animal diseases.

Prerequisite: none

Note: A reciprocity arrangement with the University of Missouri — Columbia allows for six additional hours to be selected from the following list of courses:

Agr 123 **3 hours**

Crop Science

(See Agriculture, p 80)

Agr 173 **3 hours**

Soil Science

(See Agriculture, p 80)

Agr 213 **3 hours**

Farm Management

(See Agriculture, p 80)

Agr 223 **3 hours**

Pasture & Forage Management

(See Agriculture, p 81)

Bio 203 **3 hours**

Genetics

(See Biology, p 58)

Anthropology

Ant 103 **3 hours**

Introduction to Cultural Anthropology (Hg. 2202)

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

Ant 113 **3 hours**

Introduction to Physical Anthropology and Archeology (Hg. 2202)

An introduction to the study of physical anthropology and archeology, with special emphasis on the connection between cultural and human development, human variability, major concepts in archeological analysis, and some practical experience in archeological method.

Prerequisite: none

Ant 271,2,3 **1-3 hours**

Directed Studies (Honors) in Anthropology (Hg. 2225)

Course content and hours arranged by instructor.

Prerequisite: consent of instructor

Art

Art 103 **3 hours**

Crafts (Hg. 1009)

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 interests. The course is especially well suited to teachers, parents, and other non-art majors who are interested in developing creative hobbies.

Prerequisite: none

Art 113 **3 hours**

Design I (Hg. 1002)

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

Art 114 **3 hours**

Design II (Hg. 1002)

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: Art 113 or consent of instructor

56/Transfer Courses

Art 123 3 hours

Art Appreciation I (Hg. 1003)

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

Art 124 3 hours

Art Appreciation II (Hg. 1003)

A survey of art history from 1900 to the present, with some studio applications. Selected art movements and techniques will be discussed.

Prerequisite: none

Art 133 3 hours

Introduction to Art (Hg. 1002)

An introduction to art through various media and techniques such as design, drawing, printmaking, color, shading, sculpture, and space relationship. Media used include ink, crayon, plaster, and watercolor. This is a survey course and not recommended for art majors.

Prerequisite: none

Art 143 3 hours

Drawing I (Hg. 1002)

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 seeing as well as familiarization with and control of drawing material. Introduction to perspective and light and dark shades; some texture and other methods will be used for creative drawings.

Prerequisite: Art 113 or consent of instructor

Art 144 3 hours

Drawing II (Hg. 1002)

A course in the drawing of the human figure in charcoal, crayon, ink, and other media. Representational, abstract, and non-objective drawings; 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: Art 143 or consent of instructor

Art 153 3 hours

Painting I (Hg. 1002)

An introduction to the material 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: Art 143, 144, or consent of instructor

Art 154 3 hours

Painting II (Hg. 1002)

A course in theory and practice of painting using oil and acrylics. Development of form through color and appropriate emphasis on texture. 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: Art 153

Art 203 3 hours

Watercolor I (Hg. 1002)

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

Prerequisite: Art 113 or consent of instructor

Art 204 3 hours

Watercolor II (Hg. 1002)

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

Prerequisite: Art 203 or consent of instructor

Art 213 3 hours

Printmaking I (Hg. 1009)

An introduction to printmaking. Lecture and laboratory exercises dealing 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: Art 133 or consent of instructor

Art 214 3 hours

Printmaking II (Hg. 1009)

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

Prerequisite: Art 133, 213, or consent of instructor

Art 223 3 hours

Photography I (Hg. 1011)

A non-major course dealing with the basics and principles of photography, primarily black and white, including the mechanical and visual aspect for beginning photographers. Darkroom skills of black and white film developing and printing are taught.

Prerequisite: none

Art 224 3 hours**Photography II** (Hg. 1011)

A non-major 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 his basic mechanical skills.

Prerequisite: Art 223 or consent of instructor

Art 233 3 hours**Ceramics I** (Hg. 1009)

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

Prerequisite: none

Art 234 3 hours**Ceramics II** (Hg. 1009)

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

Prerequisite: Art 233 or consent of instructor

Art 243 3 hours**Life Drawing** (Hg. 1002)

A study of line, shape, value, pattern, and movement as related to the human figure. Includes the study of the skeletal and muscular structure as related to drawing.

Prerequisite: Art 143, 144, or consent of instructor

Art 253 3 hours**Art for the Elementary Teacher**

(Hg. 0831)

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: Art 133 or consent of instructor

Art 263 3 hours**Sculpture I** (Hg. 1002)

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

Art 264 3 hours**Sculpture II** (Hg. 1002)

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.

Prerequisite: Art 263 or consent of instructor

Art 271 1 hour**Directed Studies (Honors) in Art**

(Hg. 1021)

The opportunity provides two alternatives. An exceptional art student may: (1) study or develop independently a specific prearranged topic or project within the field of art, (2) develop experience in procedures, processes, and actual presentations of gallery displays.

Prerequisite: consent of instructor

Biological Science

Bio 102 2 hours**Elements of Health Education**

(Hg. 0837)

A course in health education for teachers. Considers health as it relates to the child and the school.

Prerequisite: none

Bio 103 3 hours**Ecology of Wildlife and Man** (Hg. 0420)

The 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

Bio 112 2 hours**Medical Terminology** (Hg. 0401)

A course in biomedical terminology. The student learns to pronounce, spell, and interpret the meaning of word parts 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

Bio 113 3 hours**Introduction to Life Science** (Hg. 0401)

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 a survey of the diversity and classification of living organisms. This course is designed to meet the science requirement for occupational students. Not open to students in the transfer division except by written consent of the dean of academic affairs.

Prerequisite: none

Bio 115 5 hours**General Biology** (Hg. 0401)

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

Prerequisite: none

Bio 145 5 hours**General Zoology** (Hg. 0407)

A survey of the animal kingdom, animal structure, life processes, development, ecology, and the evolution of animals. Laboratory will include structure and taxonomic relationships as shown by dissection of representatives of the various animal groups. Three one-hour lecture recitation periods and two two-hour laboratory periods per week. This course should be taken by people majoring in the life sciences.

Prerequisite: none

Bio 155 5 hours**General Botany** (Hg. 0402)

An introduction to the plant kingdom, structure, physiology, life histories, economic importances, 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: Bio 115, 145, or consent of instructor

Bio 203 3 hours**Genetics** (Hg. 0422)

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

Prerequisite: Bio 115, 145, or 155

Bio 234 4 hours**Human Anatomy and Physiology I** (Hg. 0410)

Part one of a two-semester course where gross micro and macroscopic anatomy and the function of the respective structures are studied. The normal state is studied and the abnormal state is studied only to explain points in the normal state of the human body. The first semester includes integument, skeletal, muscular, and nervous systems. Two lectures and two two-hour laboratory periods per week.

Prerequisite: Bio 115 or 145. College courses in math and chemistry are useful.

Bio 235 5 hours**Human Anatomy and Physiology II** (Hg. 0410)

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: Bio 115 or 145. College courses in math and chemistry are useful.

Bio 245 5 hours**Comparative Anatomy** (Hg. 0412)

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: Bio 145 or consent of instructor

Bio 254 4 hours**Microbiology** (Hg. 0411)

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

Prerequisite: Bio 115, 145, or 155

Bio 265 5 hours**General Ecology** (Hg. 0420)

Involves the mathematical and descriptive principles of ecosystem structure, trophic dynamics, population regulation, and evolutionary ecology. Three lectures and two two-hour laboratory periods per week.

Prerequisite: Bio 115, 145, or 155

Bio 271,2,3 1-3 hours**Directed Studies (Honors) in Biology** (Hg. 0437)

A biology internship which provides two alternatives. A student may pursue: (1) investigation or study independently a specific prearranged topic within the field of biological science, or (2) assisting primarily in the laboratory or in lecture when peer groupings are being utilized.

Prerequisite: consent of instructor

Bio 272 2 hours**Practicum in Biology** (Hg. 0401)

Biology practicum provides two types of learning experiences: (1) assisting students in laboratory ses-

sions of life science courses, and (2) participating in a weekly biology topics seminar. One seminar period and four hours laboratory assisting per week.

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

Business

Accounting

Acc 113 3 hours

Accounting I (Hg. 5002)

A study of basic principles and procedures of business accounting, including debits and credits, journals and ledgers, accruals, deferrals, depreciation, determination, voucher system, payroll, the balance sheet, and income statements.

Prerequisite: High School Bookkeeping or Acc 103

Acc 123 3 hours

Accounting II (Hg. 5002)

A continuation of the study of accounting principles, including cash and investments, receivables, inventory, fixed assets, liabilities, manufacturing operations, partnerships, corporations, and the analysis of financial data concerning these items.

Prerequisite: Acc 113

Acc 133 3 hours

Intermediate Accounting I (Hg. 5002)

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, the balance sheet, and their related effect upon income measurement.

Prerequisite: Acc 123

Acc 143 3 hours

Intermediate Accounting II (Hg. 5002)

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, and their related effect upon income measurement. Various forms of financial statement analysis are also studied along with the opinions of the Accounting Principles Board.

Prerequisite: Acc 133 or consent of instructor

Acc 273 3 hours

Managerial Accounting (Hg. 5002)

A course designed to teach future managers ways to use, analyze, and interpret accounting data once it is

available to them. Emphasis is placed on the analysis of data rather than the collecting and recording function. An interdisciplinary approach is provided through the mix of topics involving economics, finance, mathematics, and statistics.

Prerequisite: Acc 113

Business Administration

Bus 103 3 hours

Introduction to Business (Hg. 5004)

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

Bus 113 3 hours

Principles of Marketing (Hg. 5004)

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

Bus 233 3 hours

Fundamentals of Management

(Hg. 5004)

An evaluation and comparison of private and public personnel practices and techniques of recruiting, selecting, transferring, promoting, classifying, and training workers.

Prerequisite: none

Bus 263 3 hours

Business Law (Hg. 5004)

A study of those areas of the law which affect most businesses: sales and credit, contracts, insurance, agency and employment, commercial paper, and personal property and bailments.

Prerequisite: none

Business Education

ScS 133 3 hours

Typewriting III (Hg. 5005)

A course stressing the development of accuracy and speed in typewritten work. Emphasis on high production standards and complex material for mailable copy

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under timed conditions. Individualized instruction.

Prerequisite: Students with no previous training in typewriting are required to take ScS 113 and ScS 123.

ScS 163 **3 hours**

Shorthand III (Hg. 5005)

A course with emphasis on development of shorthand speed. The course is specifically designed for students who have 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:* ScS 123 and the ability to pass an 80 wpm speed-take comfortably

Prerequisite or Corequisite: ScS 112

ScS 183 **3 hours**

Secretarial Machines (Hg. 5005)

Basic training in the operation and use of electronic calculators, duplication machines, typewriters with proportional spacing, and Mag Card and memory typewriters. Acquaints students with machine terminology, office problems, and work standards.

Prerequisite: ScS 113

ScS 203 **3 hours**

Introduction to Word Processing

(Hg. 5005)

A study of the principles and purposes of word processing in business and government offices, the language of word processing, and the equipment used and career paths in word processing.

Prerequisite: none

ScS 223 **3 hours**

Business Communications (Hg. 5005)

A study of communication needs in the office, both oral and written, with emphasis on inter-office communication, letters, and reports. Special attention is given to organization, mechanics, and the business vocabulary.

Prerequisite: Eng 123 and high school typing or ScS 113

Chemistry

Chm 105 **5 hours**

Introduction to Chemistry (Hg. 1905)

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: Mth 173 or consent of instructor

Chm 114 **4 hours**

Chemistry for the Health Sciences

(Hg. 5208)

The course 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 a two-hour laboratory per week.

Prerequisite: A course in high school chemistry with a grade of "C" or Chm 105 with a minimum grade of "C". A math placement score equivalent to enter College Algebra or the completion of Intermediate Algebra is also required.

Chm 115 **5 hours**

General Chemistry I (Hg. 1905)

The 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 MMPT and either Chm 105 or high school chemistry

Chm 125 **5 hours**

General Chemistry II (Hg. 1905)

A continuation of Chm 115, including the study of chemical equilibria, acid-base chemistry, complex ions, thermodynamics, oxidation-reduction reactions, and qualitative analysis. Three one-hour lecture and recitation periods and two two-hour laboratory periods per week.

Prerequisite: Chm 115

Chm 234,5 **4-5 hours**

Quantitative Analysis (Hg. 1909)

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: Chm 125

Chm 245 **5 hours**
Organic and Biological Chemistry
 (Hg. 1907)

A survey of major topics of organic and biological chemistry, including aliphatic and aromatic hydrocarbons, 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: Chm 105 or 115

Chm 255 **5 hours**
Organic Chemistry I (Hg. 1907)

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: Chm 125 or consent of instructor

Chm 265 **5 hours**
Organic Chemistry II (Hg. 1907)

A continuation of Chm 255, 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: Chm 255

Chm 271,2,3,4 **1-4 hours**
Directed Studies (Honors) in Chemistry
 (Hg. 1930)

The student enrolled for directed studies has two alternatives: (1) investigate a specific topic within the field of chemistry, (2) assist in the laboratory, stockroom, or with individualized instruction under the supervision of an instructor.

Prerequisite: consent of instructor

Computer Science

CS 103 **3 hours**
Introduction to Computer Science
 (Hg. 5101)

An introductory course directed toward the student desiring basic knowledge and understanding of business data processing as well as toward students seeking a career in data processing. Emphasis is placed upon enhancing the student's knowledge, comprehension, and awareness of basic business

data processing theory, principles, and methodologies. The course also strives to develop fundamental EDP problem-solving skills in the student and to give students an elementary exposure to the process of computer programming using the BASIC language.
Prerequisite: none

CS 112, 113 **2-3 hours**
FORTRAN IV Programming (Hg. 5101)

A basic course in computer programming techniques and structure using the FORTRAN IV 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 and techniques of flowcharting and the features of the FORTRAN language.

Prerequisite: Mth 173 or consent of instructor

NOTE: The CS 112 version of this course is designed for students transferring to a 4-year college that requires only 2 credit hours in a FORTRAN programming course.

CS 123 **3 hours**
Computer Concepts (Hg. 5101)

An intermediate level computer science course which explains the relationships among computer systems, computer hardware concepts, operating system software concepts, and programming methodologies. Topics include: computer organization, data and storage structures, basic computer operations and machine language, basics of computer software, data management concepts, operating system software organization, and programming techniques.

Prerequisite: CS 103

CS 133 **3 hours**
Logical Methods (Hg. 5101)

A basic course in logical problem-solving methods employed on today's electronic data processing systems. Emphasis is placed on enhancing the student's knowledge, understanding, and awareness of fundamental business problem-solving concepts and on developing skills in applying these concepts to the problem solutions. Importance is also placed upon maintaining an overall structure and discipline in logical design. General topics covered are: problem definition, analysis, solution development, and verification using flow charts, pseudocode, and HIPO.

Corequisite or Prerequisite: CS 103

CS 143 3 hours
COBOL Programming I (Hg. 5101)

A beginning course in business computer programming techniques and structure using the language COBOL. Emphasis is placed upon expansion of the student's knowledge and understanding of logical problem-solving concepts and methodologies (i.e., structured design and structured COBOL programming), and in the application of these methods and concepts to the process of designing/composing COBOL programs. COBOL's tools and facilities are explored and applied to illustrate how this language aids one in implementing concepts/methods of structured design and structured programming.

Corequisite or Prerequisite: Cs 133

CS 163 3 hours
RPG Programming (Hg. 5101)

A beginning course in business programming using the problem-oriented language, Report Program Generator II. The capabilities and limitations of RPG 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 that have data derived from computer accessible files.

Prerequisite: CS 133 and prior experience with a procedure-oriented computer language

CS 193 3 hours
Computers and Society (Hg. 5101)

An interdisciplinary course which presents basic facts on computer technology and explores the social issues resulting from computer-based systems. The course emphasizes the development of the student's knowledge and understanding of the computer's capabilities and limitations and its social implications in today's modern society and the student's career field.

Prerequisite: none

CS 213 3 hours
Systems Development & Design I (Hg. 5101)

A course which studies basic approaches and techniques used in the design/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 123 and 133

CS 223 3 hours
COBOL Programming II (Hg. 5101)

An advanced course in the COBOL language, emphasizing completion of the student's knowledge, understanding, and skill-development in solving business problems in the language COBOL. Structured design/programming concepts/methods that are available in COBOL are stressed and implemented in program design/composition.

Prerequisite: CS 143

CS 233 3 hours
Assembly Language Programming (Hg. 5101)

A basic course in symbolic computer programming at the machine or lower level of detail. This course emphasizes the development of the student's abilities to recognize which types of problems demand detail solutions, and to analyze, flowchart, write, debug, and test assembly language programs that will execute these solutions on a typical fourth generation computer.

Prerequisite: CS 123, 133, and prior experience with a procedure-oriented computer language

CS 243 3 hours
Systems Development & Design II (Hg. 5101)

An advanced course in systems analysis, design, development, and implementation, featuring business d.p. systems of greater complexity and sophistication than those studied in CS 213. General topical areas include: advanced documentation/standards procedures, time/cost estimates for system development/operation, effective systems proposals, data base concepts, and management information systems.

Prerequisite: CS 213

CS 253 3 hours
Computer Operations (Hg. 5101)

A course designed to train students in the general methods of operating modern computer systems. Lectures will cover the topics of: Computer operation principles, computer system components, operating environments, data storage device characteristics, computer console functions, job scheduling/control/documentation, error-recovery procedures, and system and file back-up processes.

Corequisite or Prerequisite: CS 123 or consent of instructor

Economics

Ecn 213 3 hours Principles of Macroeconomics (Hg. 2204)

An introduction to the total level of economic activity — the rate of production, employment, income. Topics include unemployment, inflation, the banking system and monetary policy, government spending and fiscal policy, and international economics.

Prerequisite: none

Ecn 223 3 hours Principles of Microeconomics (Hg. 2204)

An introduction to how prices are determined. Topics include how prices are set in markets of varying degrees of competition; how income is distributed: wages, interest, profits, and rent; unions; non-market economies.

Prerequisite: none

Ecn 271,2,3,4 1-4 hours Directed Studies in Economics (Hg. 2225)

Course content and hours arranged by instructor.

Prerequisite: consent of instructor

Education

Ed 101 1 hour Career Decisions (Hg. 0801)

A course designed to assist students in self inventory, to help the student see and understand his interests, aspirations, needs, personal assets, and liabilities. Students will gain experience in exploring the world of work, finding information on jobs, and learning to use that information. Students will learn how to make decisions regarding themselves and their relationship to the world of work.

Prerequisite: none

Ed 112,3 2-3 hours Perspectives in Education (Hg. 0801)

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

Prerequisite: none

Ed 223 3 hours Educational Psychology (Hg. 0822)

A study of the theories and issues that relate both to learning and teaching as applied to the educational process. Designed to help the student gain an understanding of those processes that facilitate both student learning and instruction.

Prerequisite: Psy 113 or consent of instructor

Engineering

Egr 113 3 hours Engineering Drawing and Descriptive Geometry (Hg. 0901)

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

Egr 203 3 hours Engineering Mechanics—Statics (Hg. 0901)

A study of the application of the principles of mechanics to engineering problems of equilibrium. Topics include resultants, equilibrium, friction, trusses, center of gravity, and moment of inertia.

Prerequisite: Phy 215

Corequisite: Mth 225

Egr 233 3 hours Introduction to Circuit Theory (Hg. 0909)

An introduction to electrical circuits, electronic devices, nodal methods, steady state, and transient circuits. Resistors, capacitors, voltage sources, and current sources are included.

Prerequisites: Mth 215 and Phy 215

Corequisites: Mth 225 and Phy 225

Egr 271,2,3 1-3 hours Directed Studies in Engineering (Hg. 0935)

The student enrolled for directed studies will study a specific topic in engineering.

Prerequisite: consent of instructor

English

Eng 002 **2 hours** **Developmental Reading** (Hg. 1599)

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

Eng 102 **2 hours** **Speed Reading** (Hg. 1599)

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

Eng 105 **5 hours** **Developmental English** (Hg. 1599)

An individualized, self-paced course covering grammar and language usage, reading, vocabulary, spelling, and writing paragraphs. This course will fulfill the English requirement for the technical education student or will prepare an A.A. student to enter English 123.

Prerequisite: none

Eng 111 **1 hour** **Study Skills I—Systems of Study** (Hg. 1599)

A programmed course designed to orient the student to college, emphasizing such basic study skills as listening and note-taking, time-scheduling, preparing for and taking examinations, using the library, writing a term paper, and studying science and mathematics.

Prerequisite: none

Eng 112 **2 hours** **Reading Comprehension** (Hg. 1599)

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

Eng 121 **1 hour** **Study Skills II—Listening and Note-Taking** (Hg. 1599)

A programmed course which develops skills in listen-

ing and note-taking. The program presents a series of exercises which provide practice in listening to spoken information and in taking notes and answering questions on the material heard.

Prerequisite: none

Eng 122 **2 hours** **Spelling** (Hg. 1599)

A programmed course in spelling designed to review the basic spelling problems. The course reviews the basic phonics' rules and goes through 85 units dealing with specific areas of weaknesses in spelling.

Prerequisite: none

Eng 123 **3 hours** **English Composition I** (Hg. 1501)

A course dealing with the principles of composition, including rhetoric, grammar, and usage. The course emphasizes the development of ideas through the use of various rhetorical patterns.

Prerequisite: Demonstrated proficiency on the MCET or Eng 105

Eng 126 **3-6 hours** **English Composition (Honors)** (Hg. 1501)

An intensified composition course open only to students who demonstrate a high degree of proficiency in English, demonstrated by high school ranks, placement test scores, and writing samples. The student who earns a grade of "A" or "B" will receive six hours of credit in composition and will not be required to take Eng 133; however, the student will be required to take a literature course to fulfill the English requirement. (Any literature course taught at ECC is acceptable in fulfilling this requirement except Children's Literature.) While emphasis in this course is on the development of ideas through the use of various rhetorical patterns, as is the case in Eng 123, the student is required to write a research paper and a critical paper, and grading standards are higher in Honors than in Eng 123.

Prerequisite: Demonstrated high proficiency on the MCET and on a writing sample

Eng 131 **1 hour** **Study Skills III—Library Skills** (Hg. 1599)

A programmed course designed to introduce the student to the library, making it possible for him to use its resources effectively.

Prerequisite: none

Eng 133 **3 hours** **English Composition II** (Hg. 1501)

A second course in composition which provides

practice in writing longer units of exposition than does Eng 123, and includes the writing of a research paper and of a critical paper.

Prerequisite: Eng 123

Eng 143 3 hours
Technical Writing (Hg. 5303)

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: Eng 105 or 123

Eng 153 3 hours
Poetry (Hg. 1501)

A study of literature concentrating on the forms, techniques, and themes of poetry; emphasis is placed on analysis and interpretation.

Prerequisite: Eng 105, 123, or consent of instructor

Eng 163 3 hours
Fiction (Hg. 1501)

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 on the analysis of the short story.

Prerequisite: Eng 105 or 123

Eng 173 3 hours
Drama (Hg. 1501)

A study of the forms, techniques, and themes of drama through reading and discussing plays destined for the theater. Film and television drama may also be considered.

Prerequisite: Eng 105, 123, or consent of instructor

Eng 183 3 hours
Art of the Novel (Hg. 1503)

English and American novels, selected to give a fair sampling of 18th, 19th, and 20th century writers, are read, with emphasis placed on how to read the novel. The course is an introduction to the pleasures of the novel and not just a survey.

Prerequisite: Eng 105 or 123

Eng 193 3 hours
Children's Literature (Hg. 0802)

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: Eng 123

Eng 202 2 hours
Vocabulary (Hg. 1599)

A programmed course in vocabulary that teaches vocabulary by letting the student hear and see the words in use, thereby enabling him to improve his reading, writing, and speaking.

Prerequisite: none

Eng 203 3 hours
English Grammar (Hg. 1501)

A comprehensive study of the conventional and educated use of English.

Prerequisite: Eng 105, 123, or consent of instructor

Eng 213 3 hours
English Literature I (Hg. 1502)

A survey of English literature from the Anglo-Saxon period through the Age of Reason.

Prerequisite: Eng 123 and sophomore standing, or consent of instructor

Eng 223 3 hours
English Literature II (Hg. 1502)

A survey of English literature from the romantic period to the present.

Prerequisite: Eng 123 and sophomore standing, or consent of instructor

Eng 233 3 hours
American Literature I (Hg. 1502)

A survey of American literature from the colonial period up to the Civil War.

Prerequisite: Eng 123 and sophomore standing, or consent of instructor

Eng 243 3 hours
American Literature II (Hg. 1502)

A survey of American literature from the Civil War to the present.

Prerequisite: Eng 123 and sophomore standing, or consent of instructor

Eng 253 3 hours
Creative Writing (Hg. 1507)

A course in imaginative writing involving student production of poems, stories, and plays.

Prerequisite: Eng 123 or consent of instructor

Eng 263 3 hours
Literature of Fantasy (Hg. 1503)

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 pleas-

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ures particular to the genre.
Prerequisite: Eng 105 or 123

Eng 271,2,3,4 1-4 hours

Directed Studies in English (Hg. 1520)

An intensive study of some specific topic in English to be determined by the instructor and student.

Prerequisite: Consent of instructor and a grade point average of 3.00 or better in the department

Eng 283 3 hours

Literature of Science Fiction (Hg. 1503)

A study of the development of science fiction, especially in the twentieth 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: Eng 105 or 123

Eng 293 3 hours

Shakespeare on Stage (Hg. 1503)

Selected Shakespearian plays are studied in conjunction with KETC's telecasts of the plays. Spring semester only.

Prerequisite: Eng 105 or 123

Foreign Languages

French

Frn 115 5 hours

Elementary French I (Hg. 1102)

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

Prerequisite: none

Frn 125 5 hours

Elementary French II (Hg. 1102)

A continuation of French 115.

Prerequisite: Frn 115

Frn 213 3 hours

French Readings (Hg. 1102)

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

Prerequisite: Frn 115 or consent of instructor

Frn 271,2,3 1-3 hours

Directed Studies in French (Hg. 1126)

An intensive study of some specific topic in French to

be determined by instructor and student.

Prerequisite: consent of instructor

German

Grm 115 5 hours

Elementary German I (Hg. 1103)

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

Prerequisite: none

Grm 125 5 hours

Elementary German II (Hg. 1103)

A continuation of German 115.

Prerequisite: Grm 115

Grm 213 3 hours

German Readings (Hg. 1103)

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

Prerequisite: Grm 125 or consent of instructor

Grm 271,2,3 1-3 hours

Directed Studies in German (Hg. 1126)

An intensive study of some specific topic in German to be determined by instructor and student.

Prerequisite: consent of instructor

Spanish

Spn 115 5 hours

Elementary Spanish I (Hg. 1105)

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

Prerequisite: none

Spn 125 5 hours

Elementary Spanish II (Hg. 1105)

A continuation of Spanish 115.

Prerequisite: Spn 115

Spn 213 3 hours

Spanish Readings (Hg. 1105)

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

Prerequisite: Spn 125 or consent of instructor

Spn 222 2 hours**Spanish Composition** (Hg. 1105)

A review of Spanish grammar with practice in composition.

Prerequisite: Spn 125 or consent of instructor

Spn 271,2,3 1-3 hours**Directed Studies in Spanish** (Hg. 1126)

An intensive study of some specific topic in Spanish to be determined by instructor and student.

Prerequisite: consent of instructor

Geography**Geg 113 3 hours****Geography of the New World** (Hg. 2206)

A regional study of North America, South America, and Australia, with emphasis on the natural resources, political conditions, economy, population, and cultural patterns of each area.

Prerequisite: none

Geg 123 3 hours**Geography of the Old World** (Hg. 2206)

A regional study of Europe, Africa, and Asia with emphasis on the natural resources, political conditions, economy, population, and cultural patterns of each area.

Prerequisite: none

Geology**Gel 113, 115 3 or 5 hours****Introduction to Physical Geology**

(Hg. 1914)

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 the laboratory study of common minerals and rocks will be included.

Prerequisite: none

History**His 123 3 hours****American History I** (Hg. 2205)

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. American History 123 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions. There is a departmental preference that a student plan to take a sequence of two courses to meet the social science requirement for the Associate of Arts degree.

Prerequisite: none

His 133 3 hours**American History II** (Hg. 2205)

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. There is a departmental preference that a student plan to take a sequence of two courses to meet the social science requirement for the Associate of Arts degree.

Prerequisite: none

His 213 3 hours**Foundations of World Civilization I**

(Europe to 1500) (Hg. 2205)

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 the humanities.

Prerequisite: none

His 223 3 hours**Foundations of World Civilization II**

(Europe since 1500) (Hg. 2205)

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 the humanities.

Prerequisite: none

His 233 3 hours**Foundations of World Civilization III**

(Latin America) (Hg. 2205)

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 the humanities.

Prerequisite: none

His 243 **3 hours**
Foundations of World Civilization IV
(Africa and Asia) (Hg. 2205)

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 the humanities.

Prerequisite: none

His 271 **1 hour**
Directed Studies (Honors) in History
 (Hg. 2225)

The student enrolled for directed studies has two alternatives: (1) investigate a specific topic within the field of history, (2) assist with tutorial history instruction under the supervision of an instructor.

Prerequisite: consent of instructor

His 275 **5 hours**
Heritage Studies (Hg. 2205)

These are foreign studies tours in varying duration which include both lectures and travel. The history, art, and architecture of each country visited is emphasized.

Prerequisite: none

Home Economics

HmE 113 **3 hours**
Nutrition (Hg. 1306)

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

Prerequisite: none

Horticulture

Hrt 123 **3 hours**
Environmental Horticulture (Hg. 5402)

A course with major emphasis on plant classification and identification. Trees and shrubs are special considerations; their practical landscape values are emphasized along with summer-winter identification. Other topics include introduction to the angiosperms and gymnosperms; their growth, development, and reproductive processes; and environmental factors of plant growth.

Prerequisite: none

Hrt 173 **3 hours**
Soils (Hg. 5402)

A study of interactions between water, air, organisms, and soil minerals important in consideration of land use management. Up-to-date studies of new soil mixes and plant nutrition and soil testing labs are included.

Prerequisite: none

Hrt 234 **3 hours**
Ornamental Woody Plants I (Hg. 5402)

A study of trees, shrubs, vines, and ground covers 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

Hrt 243 **3 hours**
Plant Propagation (Hg. 5402)

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. Pruning labs are included. Hormonal relationships and growth-promoting substances are explored.

Prerequisite: none

Hrt 254 **3 hours**
Landscape Design I (Hg. 5402)

A detailed study of the functional uses of ornamental plants. Landscape design is introduced with concern for design development, site analysis, lettering, and plant graphics. Principles of landscape design are applied to residential design problems.

Prerequisite: none

Hrt 264 **3 hours**
Ornamental Woody Plants II (Hg. 5402)

A continuation of the study of ornamental plant identification with emphasis on indoor tropicals and outdoor woody plants. Includes the study of turf grasses, diagnosis of pests and diseases, and the application of insecticides (including safety precautions which should be observed). Special segments are included on interior plantscaping, perennials, bulbs, and turf grasses.

Prerequisite: none

Hrt 273 **3 hours**
Floral Design (Hg. 5402)

A course which consists of lectures and laboratory sessions on the basics of floral design. Commercial interests are given special emphasis. Major design areas include principles of floral design, the corsage,

the bouquet, the dried arrangement, and party work. Business clinic sessions are included with views into the floral industry, display techniques, retailing, and care and handling of cut flowers.

Prerequisite: none

Hrt 283 3 hours

Herbaceous Plants (Hg. 5402)

A study of the major plant groups: annuals and perennials (home-garden-landscape), bulbs, and ground-covers. A major segment of the course pursues the increasingly-popular interior plantscaping where interior design skills are developed along with the cultural management of these tropical plants. The entire course seeks to develop identification and functional uses of herbaceous plants. Propagation and low-maintenance techniques round out the course.

Prerequisite: none

Hrt 284 3 hours

Landscape Design II (Hg. 5402)

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: none

Journalism

Jrn 103 3 hours

Introduction to Journalism (Hg. 0602)

Survey of journalism profession, including history and study of various news media. Main emphasis on journalistic principles, writing, editing and makeup, including work on *ECC Cornerstone*.

Prerequisite: none, typing skills recommended

Jrn 113 3 hours

Journalism Productions (Hg. 0602)

Production experience on *ECC Cornerstone* and *Horizon*. In-depth study and practical application of newswriting, editing, headline writing and makeup skills.

Prerequisite: Jrn 103, typing skills recommended

Jrn 281 1 hour

Journalism Practicum (Hg. 0602)

This course offers students an opportunity to do writing for and assist in the production of the *Cornerstone* and *Horizon*, under the instructor's guidance. It is designed for students who enjoy working on a campus

newspaper and yearbook but cannot take the 3 hour course.

Prerequisite: consent of instructor

Mathematics

Mth 101 1 hour

Metric System (Hg. 1701)

An introduction to the use of metric quantities, designed for the person not familiar with the metric system of measurements. Metric units of length, mass, volume, and temperature will be presented, along with hands-on practice at approximating these quantities. Conversion of unit quantities from customary English to metric units is included.

Prerequisite: none

Mth 103 3 hours

Developmental Mathematics I

(Hg. 1799)

An introductory course in arithmetic and algebra designed for any student scoring less than 35 on the Level I Math Placement Test. Developmental Mathematics 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, percentage, exponents, directed numbers, solving linear equations, and applications of arithmetic and algebra.

Prerequisite: none

Mth 113 3 hours

Developmental Mathematics II

(Hg. 1799)

A beginning course in arithmetic and algebra. Developmental Mathematics II consists of all twenty-two topics of the "Basic Mathematics" textbook and a final exam over the twenty-two topics. Credit for Developmental Mathematics 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 Developmental Math II may be achieved by making a passing score on the Developmental Math I final. Topics covered include exponents, solving linear equations, word problems, graphing, multiplying polynomials, factoring polynomials, fractions containing variables, radicals, and quadratic equations.

Prerequisite: A grade of "C" or better in Mth 103 or a satisfactory score on the Mth 103 final exam

Mth 133 **3 hours**
Math for the Elementary Teacher I
 (Hg. 1701)

This course is designed for students who are potential elementary teachers. Topics are presented in such a manner that they can be mastered by the student without previous training in set theory. 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, terminology of mathematics.

Prerequisite: Mth 103 or satisfactory score on MMPT

Mth 143 **3 hours**
Math for the Elementary Teacher II
 (Hg. 1701)

This course is 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 Mth 133, logic, number theory, decimals and real numbers, nonmetric metric geometry, metric geometry, statistics and probability.

Prerequisite: Mth 133 or consent of instructor

Mth 163 **3 hours**
Contemporary College Math (Hg. 1701)

A course designed to give the student an appreciation of mathematics and an understanding of the role of mathematics in today's society. Contemporary College Math will satisfy the math requirement at most four-year colleges but is not recommended for math or science majors. Topics covered include: history of mathematics, math in the humanities and social sciences, consumer math, logic, set theory, the computer, algebra, geometry, trigonometry, probability, statistics, linear programming, and calculus.

Prerequisite: Two years of high school algebra and a satisfactory score of 35 or above on the Level I Math Placement Test or Mth 113

Mth 173 **3 hours**
Intermediate Algebra (Hg. 1701)

A preparatory course covering the fundamental principles of algebra designed to prepare the student to take College Algebra and in the case of certain degrees to satisfy the mathematics requirement. 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: Mth 113 or satisfactory score on Level I Math Placement Test

Mth 182 **2 hours**
Trigonometry (Hg. 1701)

A study of trigonometric functions and their applications. Topics covered include the following: angles, length of arc, tables of trigonometric functions, interpolation, reference angles, graphic representation of trigonometric functions, law of cosines, law of sines, identities, trigonometric equations, inverse functions, complex numbers, logarithms, and polar coordinates.

Prerequisite: Mth 173

Prerequisite or Corequisite: Mth 183

Mth 183 **3 hours**
College Algebra (Hg. 1701)

A course designed to meet the needs of the student in a transfer program. Topics covered include the following: sets, exponents, theory of equations, inequalities, complex number system, systems of equations, permutations, combinations, probability, radicals, sequences, graphing, and statistics.

Prerequisite: Mth 173 or satisfactory score on the MMPT

Mth 185 **5 hours**
Pre-Calculus Mathematics (Hg. 1701)

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: Mth 173 or satisfactory score on the MMPT

Mth 195 **5 hours**
Analytic Geometry and Calculus I
 (Hg. 1701)

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, differentiation of algebraic functions, applications of the derivative, antiderivations, and the definite integral.

Prerequisite: Mth 183 and 182, 185, or a satisfactory score on the MMPT

Mth 204 4 hours**Finite Mathematics** (Hg. 1701)

An introduction to matrices, linear programming, probability, and mathematics of finance. Designed for non-physical science majors.

Prerequisite: Mth 183 or 185

Mth 213 3 hours**Statistics** (Hg. 1702)

An introductory course in statistics with an emphasis upon the collection and presentation of the following data: averages, dispersion, introduction to statistical inference, index numbers, time series, correlation, and linear regression.

Prerequisite: Mth 173

Mth 215 5 hours**Analytic Geometry and Calculus II**

(Hg. 1701)

A continuation of Mth 195 including the following topics: applications of the definite integral, logarithmic and exponential functions, trigonometric functions, techniques of integration, approximate integration, polar coordinates, conic sections, vectors, and parametric equations.

Prerequisite: Mth 195

Mth 225 5 hours**Analytic Geometry and Calculus III**

(Hg. 1701)

A continuation of Mth 215 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: Mth 215

Note: The Analytic Geometry and Calculus series is also available in three hour sections in the evening division as follows:

Mth 193 3 hours**Analytic Geometry & Calculus I****Mth 203 3 hours****Analytic Geometry & Calculus II****Mth 223 3 hours****Analytic Geometry & Calculus III****Mth 243 3 hours****Analytic Geometry & Calculus IV****Mth 253 3 hours****Analytic Geometry & Calculus V****Mth 233 3 hours****Differential Equations** (Hg. 1701)

The study of separable variables, homogeneous equations, exact equations, integrating factors, linear differential equations, Laplace transform, and applications.

Prerequisite: Mth 225

Mth 271,2,3,4 1-4 hours**Directed Studies (Honors) in****Mathematics** (Hg. 1713)

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.

Prerequisite: consent of instructor

Music**Mus 103 3 hours****Fundamentals of Music** (Hg. 1005)

A basic study of music, including notation, scales, intervals, chords, and rhythms; intended for the elementary education major and those not majoring in music. Summer offering intended as a pre-music theory survey.

Prerequisite: none

Mus 111, 211 1 hour**College Choir** (Hg. 1004)

A performance course open to all students, with consent of instructor, who have had previous chorus or choir experience. Credit will be given for participation each semester.

Prerequisite: none

Mus 111, 211 1 hour**College Concert Band** (Hg. 1004)

A performance course open to all students, with consent of instructor, who have had previous experience. Credit will be given for participation each semester.

Prerequisite: none

Mus 111, 211 1 hour**ECC Singers** (Hg. 1004)

A select singing ensemble which performs popular and religious music of all ages. Open to all students with the consent of the instructor.

Prerequisite: none

Mus 111, 211 1 hour**Stage Band** (Hg. 1004)

A studio band which prepares and presents concerts,

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while dealing primarily with music of the jazz idiom. Credit will be given for participation each semester. Open to all college students who are qualified instrumentalists by consent of the director.

Prerequisite: none

Mus 112, 222 2 hours

Applied Music (Hg. 1004)

Private lessons in the following areas: piano, voice, woodwind, and string instruments.

Prerequisite: none

Mus 113 3 hours

Music Appreciation (Hg. 1006)

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

Mus 115 5 hours

Music Theory I (Hg. 1004)

A beginning course in music theory, study of intervals, triads, four-part diatonic harmony, connection of triads, and their inversions. Sight singing, dictation, and elements of music; aural recognition of all diatonic intervals; melodic phrases; and rhythms. Includes two hours laboratory per week.

Prerequisite: none

Mus 123 3 hours

Music History I (Hg. 1006)

A chronological survey of the development of music in western civilization from the Greek period to the nineteenth century. Emphasis will be placed on the growth of musical form and style as illustrated in the musical masterpieces from the various phases of musical beauty and a consideration of the extra-musical factors bearing upon the works of major composers.

Prerequisite: none

Mus 125 5 hours

Music Theory II (Hg. 1004)

A second course in music theory, extending into areas of seventh chords and non-harmonic tones. Includes two hours laboratory per week.

Prerequisite: Mus 115

Mus 133 3 hours

Music History II (Hg. 1006)

A continuation of Music History I surveying the development of music in western civilization from the nineteenth century to the present.

Prerequisite: none

Mus 143

3 hours

Music Literature (Hg. 1006)

A study of music through aural and visual perception. Music studied will include examples of the major musical forms used by composers from the Middle Ages into the 20th Century. In addition to listening assignments covered in class, supplementary listening assignments will be made on a weekly basis.

Prerequisite: none

Mus 152

2 hours

Foreign Languages for Singing I

(Hg. 1004)

A course introducing the International Phonetics Alphabet and studying Italian and Latin diction. Emphasis is placed on oratorical rather than conversational pronunciation.

Prerequisite: none

Mus 162

2 hours

Foreign Languages for Singing II

(Hg. 1004)

A study of German and French diction. Emphasis is placed on oratorical rather than conversational pronunciation.

Prerequisite: Mus 152 or consent of instructor

Mus 203

3 hours

Music for Elementary Teachers

(Hg. 0832)

A course with an activities approach to classroom music for elementary teachers. The activities are approached through the ideas of Orff and Kodaly.

Prerequisite: Mus 103

Mus 215

5 hours

Music Theory III (Hg. 1004)

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

Prerequisite: Mus 125

Mus 225

5 hours

Music Theory IV (Hg. 1004)

A continuation of Mus 215 to more complex areas of chromatic, borrowed, and altered chords; and finally to the vigorous appearance of complex modern techniques. Includes two hours laboratory per week.

Prerequisite: Mus 215

Mus 271,2,3

1-3 hours

Directed Studies in Music (Hg. 1021)

The student enrolled for directed studies has three alternatives: (1) investigate a specific topic within the

field of music, (2) assist with tutorial music instruction under the supervision of an instructor, (3) accompany a choral group under the supervision of an instructor.
Prerequisite: consent of instructor

Philosophy

Phi 103 3 hours **Introduction to Philosophy** (Hg. 1509)

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

Phi 113 3 hours **Introduction to Logic** (Hg. 1509)

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

Phi 123 3 hours **History of Western Philosophy** (Hg. 1509)

A study of the historical development in the awareness and solutions to philosophic problems from the beginning of Western Philosophy to the present time. The course is based upon the teachings of the great philosophers, with emphasis upon their importance for us today.

Prerequisite: none

Phi 133 3 hours **Comparative World Religions** (Hg. 1509)

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

Phi 213 3 hours **Contemporary Ethical Problems** (Hg. 1509)

A survey course in philosophy, designed to be problem oriented, using the writings of the philosophers as a resource in understanding the issues raised by the

contemporary ethical problems.

Prerequisite: none

Phi 243 3 hours **Biblical Literature I: Old Testament** (Hg. 1510)

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

Prerequisite: none

Phi 253 3 hours **Biblical Literature II: New Testament** (Hg. 1510)

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

Phi 271,2,3 1-3 hours **Topics in Philosophy** (Hg. 1520)

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.

Prerequisite: consent of instructor

Physical Education

PE 101 1 hour **Coed Physical Activity** (Hg. 0835)

Various beginning and intermediate level physical activity courses may be selected from the following group. Each one-hour activity course meets the equivalent of two hours per week. Refer to the schedule of classes for courses offered in a particular semester.

Prerequisite: none

List of activity courses will be found on the next page.

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Adventure Education
Outdoor Skills
Archery
Basketball
Bowling
Canoeing
Dance
Fencing
Field Hockey
Flag Football
Golf
Gymnastics
Karate

Racquetball
Racquet Sports
Physical Fitness
Shooting
Skating
Stimnastics
Soccer
Softball
Tennis
Volleyball
Weight Training
Wrestling
Yoga

PE 101 **1 hour** **Adaptive Physical Activity** (Hg. 0835)

An individualized course designed to offer various physical activities to individuals with temporary or permanent physical disabilities or handicaps.

Prerequisite: none

PE 101 **1 hour** **Varsity Sports** (Hg. 0835)

A course in individual skills, team strategy, and conditioning that is involved with preparing a team or individual for intercollegiate competition. Includes competition in the following sports: basketball, softball, baseball, golf, tennis, and volleyball.

Prerequisite: Permission from coach of the sport involved

PE 102 **2 hours** **Officiating Sports** (Hg. 0835)

A course designed for physical education majors to teach them the techniques and rules of officiating football and basketball.

Prerequisite: none

PE 122 **2 hours** **History and Principles of P.E.**

(Hg. 0835)

A consideration of the principles of the basic theories of physical education. Course is designed for physical education majors and minors.

Prerequisite: none

PE 132 **2 hours** **Introduction to Recreation** (Hg. 0835)

An introductory look at the field of recreation. Includes study in the history, development, principles, and facilities for recreation. The course is designed for physical education and recreation majors and minors.

Prerequisite: none

PE 212 **2 hours**

P.E. for the Elementary Teacher

(Hg. 0835)

A course designed for physical education majors, for the learning of activities and games to be taught on the elementary level. The course involves eight weeks of practical teaching in the elementary grades.

Prerequisite: none

PE 222 **2 hours**

Care & Prevention of Athletic Injuries

(Hg. 0835)

A study of the treatment of wounds, shock, poisoning, fractures, unconsciousness, stoppage of breathing, and the care and prevention of athletic injuries.

Prerequisite: none — PE majors

PE 232 **2 hours**

Coaching Baseball (Hg. 0835)

Organization and management of a school baseball program to include individual techniques, team play, rules, and problems in coaching baseball.

Prerequisite: none

PE 242 **2 hours**

Coaching Basketball (Hg. 0835)

Organization and management of the secondary school basketball program. Systems of offense and defense in basketball. Study of rules, training schedule, discussion of problems arising during training and regular playing season.

Prerequisite: none

PE 271,2 **1-2 hours**

Directed Studies in Physical Education

(Hg. 0835)

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, (4) assisting with organization or administration of intramural sports.

Prerequisite: none

Physics

Phy 103, 5 **3 or 5 hours**

Physical Science (Hg. 1901)

A study of the basic concepts of matter and energy and their application in environmental and energy

issues in modern society. Recommended for non-science majors.

Prerequisite: none

Phy 115 5 hours
Introductory Physics (Hg. 1902)

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: Dft 163, Mth 173, or satisfactory score on MMPT

Phy 175 5 hours
College Physics I (Hg. 1902)

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

Prerequisite: Mth 182 and 183, 185, or equivalent

Phy 185 5 hours
College Physics II (Hg. 1902)

A continuation of Phy 175, including a study of electricity, magnetism, light, and atomic physics. Not recommended for math, physical science, or engineering students.

Prerequisite: Phy 175

Phy 215 5 hours
General Physics I (Hg. 1902)

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.

Corequisite: Mth 215

Phy 225 5 hours
General Physics II (Hg. 1902)

A study of electricity, magnetism, light, and modern physics. Three hours lecture and two two-hour laboratory periods per week.

Prerequisite: Phy 215

Corequisite or Prerequisite: Mth 225

Phy 271,2,3 1-3 hours
Directed Studies (Honors) in Physics
 (Hg. 1930)

The student enrolled for directed 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.

Prerequisite: consent of instructor

Political Science

PS 123 3 hours
American Government I: American National Government (Hg. 2207)

An introduction to the basic principles and structures of American government. Emphasis will be placed on the Federal System, constitutional development and interpretation, civil liberties, political parties, the executive, legislative, judicial branches, and Federal administrative agencies. PS 123 complies with the provisions of Section 170.011 Rs Mo. requiring the study of State and Federal Constitutions. There is a departmental preference that a student plan to take a sequence of two courses to meet the social science requirement for the Associate of Arts degree.

Prerequisite: none

PS 133 3 hours
American Government II: State and Local Government (Hg. 2207)

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, county, municipal, special district and school district governments will be considered. The political and administrative problems of metropolitan areas will be given special attention. There is a departmental preference that a student plan to take a sequence of two courses to meet the social science requirement for the Associate of Arts degree.

Prerequisite: none

PS 213 3 hours
International Relations (Hg. 2210)

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: PS 125 or consent of instructor

PS 271 1 hour
Directed Studies (Honors) in Political Science (Hg. 2225)

The student enrolled for directed studies has two alternatives: (1) investigate a specific topic in the field of political science, (2) assist with tutorial political science instruction under the supervision of an instructor.

Prerequisite: consent of instructor

Psychology

Psy 113 3 hours**General Psychology I** (Hg. 2001)

A study of behavior designed to present an account of the significant concepts and findings of contemporary psychology, and to provide a firm foundation for students who will take further courses in psychology or would like to study further on their own.

Prerequisite: none

Psy 123 3 hours**General Psychology II** (Hg. 2001)

A study of behavior designed to deal with basic issues and problems in psychology. This course will give the student a basic understanding of how psychologists go about studying behavior so that he/she can form some of his/her own tentative judgements.

Prerequisite: Psy 113

Psy 213 3 hours**Personal and Social Adjustment**

(Hg. 2001)

A study of the basic nature of human beings, with the problems that confront us today, and with our quest for answers. The course will attempt to extend the applications to the achievement of more effective behavior and personal growth in our changing world.

Prerequisite: Psy 113 or consent of instructor

Psy 223 3 hours**Educational Psychology** (Hg. 0822)

A study of the theories and issues that relate both to learning and teaching as applied to the educational process. The student will gain an understanding of those processes that facilitate both student learning and instruction.

Prerequisite: Psy 113 or consent of instructor

Psy 233 3 hours**Child Psychology** (Hg. 2001)

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: Psy 113 or consent of instructor

Psy 253 3 hours**Adolescent Psychology** (Hg. 2001)

A study of development from puberty to adulthood

emphasizing the critical issues involved in theorizing about adolescents, the biological changes, the various theories about adolescent development, the psychological and sociological effects that occur during adolescence, and the development of morality during the adolescent years.

Prerequisite: Psy 113 or consent of instructor

Psy 271,2,3 1-3 hours**Directed Studies in Psychology**

(Hg. 2020)

Course content and hours arranged by instructor.

Prerequisite: consent of instructor

Sociology

Soc 113 3 hours**General Sociology** (Hg. 2208)

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

Soc 123 3 hours**American Social Problems** (Hg. 2208)

A study of select social 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: Soc 113

Soc 213 3 hours**Human Relations** (Hg. 2208)

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: Psy 113, Soc 113 or consent of instructor

Soc 223 3 hours**Marriage and the Family** (Hg. 2208)

A study of the family, society, and the individual. Includes background to American family patterns; premarital behavior; marriage and variations in family forms; and problems of the family today.

Prerequisite: consent of instructor

Soc 271,2,3 **1-3 hours**
Directed Studies (Honors) in Sociology
 (Hg. 2225)
 Course content and hours arranged by instructor.
Prerequisite: consent of instructor

Speech

Spe 103 **3 hours**
Oral Communications (Hg. 1506)
 A fundamentals of speech course providing an introduction to the study of oral communication. The course is 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 communications skills.
Prerequisite: none

Spe 113 **3 hours**
Public Speaking (Hg. 1506)
 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

Spe 123 **3 hours**
Oral Interpretation (Hg. 1506)
 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

Spe 133 **3 hours**
Theatre Appreciation (Hg. 1007)
 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

Spe 143 **3 hours**
Beginning Acting (Hg. 1007)
 A course designed to introduce the student to the basics of acting.
Prerequisite: none

Spe 201 **1 hour**
Stage Make-up (Hg. 1007)
 Materials and methods of application of make-up ar-

tistry for cosmetic and character effects on stage.

Prerequisite: none

Spe 211 **1 hour**
Voice and Diction (Hg. 1007)
 Respiration, phonation, resonance, articulation, and diction for the stage.
Prerequisite: none

Spe 233 **3 hours**
Argumentation (Hg. 1506)
 Principles of analysis, evidence, reasoning, briefing, refutation, case construction, preparing and evaluating arguments. Practical experience with different types of debate.
Prerequisite: none

Spe 243 **3 hours**
Acting I (Hg. 1007)
 An extensive study in the theories and techniques of acting.
Prerequisite: none

Spe 253 **3 hours**
Acting II (Hg. 1007)
 An intensified study of characterization centering around the study of characters in production and the adaptation of acting techniques to various styles.
Prerequisite: Spe 243 or consent of instructor

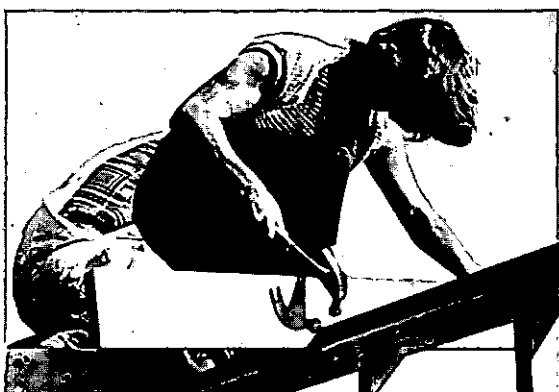
Spe 271,2,3 **1-3 hours**
Directed Studies in Communication or Theatre Arts (Hg. 1021)
 Independent study in the many and varied aspects of the theatre for the advanced student. This could include study in acting, directing, costuming, make-up, scene design and construction, stage lighting, dramatic theory, and history. Experimental research and studies of the theories of communication are also possible.
Prerequisite: consent of instructor

Spe 281,2,3 **1-3 hours**
Theatre Practicum (Hg. 1007)
 A course designed to give interested students the opportunity to work in a controlled theatrical environment. Provides experience and training in the theatre arts under the direct supervision of a theatre instructor.
Prerequisite: consent of instructor

Spe 291,2,3 **1-3 hours**
Acting Practicum (Hg. 1007)
 A course designed to give interested students the opportunity to work in a controlled theatrical environment. Provides experience and training in the art of acting under the direct supervision of a theatre instructor.
Prerequisite: consent of instructor

Occupational Courses

East Central provides occupationally related curricula in many different areas. Since this is a rapidly changing field of education, new curricula are added as the needs of the junior college area change.



Accounting

Acc 103 **3 hours** **Applied Accounting** (Hg. 5002)

A course 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

Acc 113 **3 hours** **Accounting I** (Hg. 5002)

A study of basic principles and procedures of business accounting, including debits and credits, journals and ledgers, accruals, deferrals, depreciation, determination, voucher system, payroll, the balance sheet, and income statements.

Prerequisite: High School Bookkeeping or Acc 103 or consent of instructor

Acc 114 **1 hour** **Accounting I Lab** (Hg. 5002)

A laboratory period for Accounting I students to work on assignments under the supervision of an instructor, to take examinations, and to study the results of the examinations. To be taken concurrently with Accounting I.

Prerequisite: none

Acc 123 **3 hours** **Accounting II** (Hg. 5002)

A continuation of the study of accounting principles, including cash and investments, receivables, inventory, fixed assets, liabilities, manufacturing operations, partnerships, corporations, and the analysis of financial data concerning these items.

Prerequisite: Acc 113

Acc 125 **1 hour** **Accounting II Lab** (Hg. 5002)

A laboratory period for Accounting II students to work on assignments under the supervision of an instructor, to take examinations, and to study the results of the examinations. To be taken concurrently with Accounting II.

Prerequisite: Acc 113

Acc 231, 2 **1-2 hours** **Accounting Practicum** (Hg. 5002)

A course designed to give students practical working experience through the complete accounting cycle by the use of practice sets.

Prerequisite: Acc 113

Acc 234 **3 hours** **Intermediate Accounting I** (Hg. 5002)

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: Acc 123

Acc 243 **3 hours** **Tax Accounting** (Hg. 5002)

A comprehensive study of the federal tax structure and the application of the principles involved to specific individual and business tax problems.

Prerequisite: Acc 123 or consent of instructor

Acc 244 **3 hours** **Intermediate Accounting II** (Hg. 5002)

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. Various forms of financial statement analysis are also studied along with the opinions of the Accounting Principles Board.

Prerequisite: Acc 234 or consent of instructor

Acc 253 **3 hours** **Cost Accounting** (Hg. 5002)

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.

Prerequisite: Acc 123 or consent of instructor

Acc 263 **3 hours** **Payroll Accounting** (Hg. 5002)

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: none

Acc 273 3 hours
Managerial Accounting (Hg. 5002)

A course designed to teach future managers ways to use, analyze, and interpret accounting data once it is available to them. Emphasis is placed on the analysis of data rather than the collecting and recording function. An interdisciplinary approach is provided through the mix of topics involving economics, finance, mathematics, and statistics.

Prerequisite: Accounting I

Acc 283 3 hours
Public School Accounting (Hg. 5002)

A course designed to help employees and prospective employees of Missouri schools understand the new Missouri schools accounting system. This course includes an introduction to double entry accounting, the development of an accrual system, explanations of encumbrances, changing from the old system to the new system, and a study of the reports to be developed for school boards and the State Department of Education.

Prerequisite: none

Acc 291 1 hour
Accounting Placement (Hg. 5002)

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

Prerequisite: consent of instructor

Acc 293 3 hours
Accounting Internship (Hg. 5002)

Supervised work experience (at least eight hours per week) in an actual accounting position situation. Supervision will be by accounting personnel in business or industry with coordination of the work-experience to classroom instruction by the instructor.

Prerequisite: consent of instructor

Agribusiness

Agr 103 1 hour
Introduction to Agricultural Occupations (Hg. 5402)

An introduction to the many fields of Agribusiness including the opportunities for employment. Emphasis is also placed on desirable characteristics of employees.

Prerequisite: none

Agr 123 3 hours
Crop Science (Hg. 5402)

A study of crop and soil sciences, the principles of

agronomy, and the production and utilization of major crops.

Prerequisite: none

Agr 133 3 hours
Animal Science I (Hg. 5402)

A study of the principles of animal production including animal products, anatomy and carcass evaluation, genetics, and reproduction.

Prerequisite: none

Agr 143 3 hours
Principles of Agriculture Economics (Hg. 5402)

A study of the principles of production, supply, and demand as applied to economic problems of agriculture and related industries. Also includes emphasis on decisions in management, marketing, foreign trade, and policy for economic growth.

Prerequisite: none

Agr 153 3 hours
Marketing Farm Commodities (Hg. 5402)

A study of the perishable products that create problems for processors, retailers, and farmers; and the efficiency system and business operations necessary for farm products.

Prerequisite: none

Agr 158 8 hours
Occupational Internship (Hg. 5402)

Assignment to work in an agriculture related business for an eight-week period to develop experience skills. Students will meet in class session for one hour on alternating weeks to discuss problems and beneficial experiences.

Prerequisite: Agr 103

Agr 163 2 hours
Animal Science II (Hg. 5402)

A continuation of Agr 133 with the addition of topics on nutrition and animal diseases.

Prerequisite: none

Agr 173 3 hours
Soil Science (Hg. 5402)

A study of interactions between water, air, organisms, and soil minerals important in consideration of land-use management. Up-to-date studies of plant nutrition and soil testing labs are also included.

Prerequisite: Chm 115

Agr 213 3 hours
Farm Management (Hg. 5402)

A study of the economic and management principles

in operating agricultural businesses. Attention is given to problems of labor, management, mechanization, rental arrangements, contract farming, and credit financing.

Prerequisite: none

Agr 223 3 hours
Pasture and Forage Management
 (Hg. 5402)

A study of the principles of production for native and improved pastures and the usefulness of pastures as forage for livestock. Good math background desirable.

Prerequisite: none

Agr 233 3 hours
Animal Feeds and Nutrition (Hg. 5402)

A study of feed composition and utilization, ration formulation, feed evaluation and identification, and practical problems.

Prerequisite: Chm 245

Agr 242 2 hours
Dairy and Poultry Production (Hg. 5402)

A course designed to give information on the industry, breeding, feeding, housing, care, and management of dairy and poultry animals. Suitable for persons anticipating employment in dairy or poultry production or related fields.

Prerequisite: none

Agr 253 3 hours
Agricultural Pesticides and Chemicals
 (Hg. 5402)

A study of the uses and application of agricultural chemicals, insecticides, fungicides, herbicides, nematocides, rodenticides, and others.

Prerequisite: none

Agr 263 3 hours
Entomology (Hg. 5402)

An introduction to the study of insects with emphasis on species important to man and general principles of integrated insect control.

Prerequisite: none

Agr 273 3 hours
Farm Water Management (Hg. 5402)

Water management practices in maintaining soil productivity, farm surveying, design, and layout of ponds and pond dams.

Prerequisite: Mth 183

Agr 283 3 hours
Beef, Sheep, and Swine Production
 (Hg. 5402)

A study of the principles of breeding, feeding, housing care, and management of beef, sheep, and swine livestock enterprises. Considerable time is spent on disease protection and health care.

Prerequisite: none

Agr 291 1 hour
Agricultural Placement (Hg. 5402)

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

Prerequisite: none

Air Conditioning and Refrigeration Technology

AR 103 3 hours
Basic Electricity I (Hg. 5317)

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

AR 113 3 hours
Theory of Refrigeration and Materials
 (Hg. 5317)

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

Prerequisite: none

AR 123 3 hours
Applied Electrical Fundamentals
 (Hg. 5317)

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

Prerequisite: none

AR 133 3 hours
Systems and Components (Hg. 5317)

A study of the theory, construction, and applications of the basic components of refrigeration systems.

Prerequisite: none

AR 136 3 hours**Basic Electricity II (Hg. 5317)**

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: AR 103 or consent of instructor

AR 143 3 hours**Refrigerants (Hg. 5317)**

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

Prerequisite: none

AR 153 3 hours**Domestic Refrigeration (Hg. 5317)**

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

AR 163 3 hours**Commercial Refrigeration (Hg. 5317)**

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: AR 113, 123, 133, 143, and 153

AR 173 3 hours**Theory of Air Conditioning and Psychrometrics (Hg. 5317)**

A study of 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: AR 113, 123, 133, 143, and 153

AR 182 2 hours**Applied Air Distribution (Hg. 5317)**

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

Prerequisite: AR 113, 123, 133, 143, and 153

AR 194 4 hours**Air Conditioning Equipment and Installation (Hg. 5317)**

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-service technician relationships are discussed.

Prerequisite: AR 113, 123, 133, 143, and 153

AR 203 3 hours**Testing, Diagnosis, and Trouble-Shooting (Hg. 5317)**

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 trouble-shooting equipment.

Prerequisite: AR 113, 123, 133, 143, and 153

AR 213 3 hours**Applied Sheet Metal I (Hg. 5317)**

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

Prerequisite: none

AR 223 3 hours**Applied Sheet Metal II (Hg. 5317)**

A course designed to provide a practical working knowledge and develop skills required in the use of sheet metal in residential duct systems. 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: AR 213 or consent of instructor

AR 233 3 hours**Heat Pump I (Hg. 5317)**

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 trouble shooting the various heat pump systems will be dealt with.

Prerequisite: none

AR 243 3 hours**Oil Heat and Controls (Hg. 5317)**

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 trouble shooting.

Prerequisite: Completion of Air Conditioning and Refrigeration program or consent of instructor

AR 253 3 hours**Heat Pump II (Hg. 5317)**

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

Prerequisite: AR 233 or consent of instructor

AR 263 3 hours**LP, Electric Heat, and Controls**

(Hg. 5317)

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 trouble shooting.

Prerequisite: Completion of Air Conditioning and Refrigeration program or consent of instructor

AR 291 1 hour**Air Conditioning and Refrigeration Technology Placement (Hg. 5317)**

A course designed to assist air conditioning and refrigeration students in obtaining jobs suitable to their training and interests.

Prerequisite: none

Automotive Technology

AT 111 12 hours**Automotive Engines and Engine Systems (Hg. 5306)**

A study of the automotive internal combustion engine and its support systems. This semester length course covers component design and function, diagnosis and repair of basic engine features plus fuel, battery, ignition, starter, emission control systems, and tune up. This is done in the classroom and shop surroundings using proper repair and testing techniques as suggested by American and import automotive manufacturers. Special emphasis will be placed on

hands-on repair such as removal, repair, and replacement of most of these items.

Prerequisite: none

AT 112 12 hours**Automotive Chassis Systems**

(Hg. 5306)

A comprehensive study of standard and automatic transmissions, brake systems, drivelines and differentials, steering and suspension, and automotive air conditioning. This semester length course covers component design and function, diagnosis and repair of these systems in a classroom and shop atmosphere. The student will diagnose and repair many of these systems using proper techniques and tools as suggested by American and import automotive manufacturers. Special emphasis will be placed on providing practical experience by using operational vehicles when possible.

Prerequisite: none

AT 113 5 hours**Electrical Systems (Hg. 5306)**

An advanced study of automobile electrical systems. Beginning with a comprehensive study of direct-current theory, the module directs itself to application of the theory, the understanding of the automobile starting, charging, and ignition systems. Lab and shop work concentrates on trouble-shooting and repair of auto electrical systems and components.

Prerequisite: none

AT 122 2 hours**Fuel Systems (Hg. 5306)**

A detailed study of the principles and theory of carburetion and fuel systems of the modern automobile. Includes shopwork on overhauling, servicing, and adjustment of fuel system components. Special emphasis is placed on recent changes in fuel system design, manufacture, and servicing due to federal and state air pollution legislation.

Prerequisite: none

AT 131 1 hour**Tune-Up (Hg. 5306)**

A detailed study of the relationships between the carburetion system, ignition system, and the mechanical parts of the engine. Shop work includes the use of the Marquette analyzer.

Prerequisite: AT 113 and 122

AT 132 2 hours**Exhaust Systems and Emission Control**

(Hg. 5306)

A study of automotive exhaust systems, and the

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various atmospheric pollution control systems installed on today's cars. Includes diagnosis, testing, and repair of automotive emission control systems, as well as use of the infrared exhaust gas analyzer.

Prerequisite: none

AT 162 **2 hours** **Steering and Suspension Systems** (Hg. 5306)

A comprehensive study of coil and leaf-spring type suspension systems and the various configurations of each. Steering and shock absorber designs are also covered, along with the diagnosis and repair of common steering and suspension components.

Prerequisite: none

AT 172 **2 hours** **Brake Systems** (Hg. 5306)

A study of hydraulic brake systems, both power-assisted and non-power assisted. Both disc and drum brake systems are covered in detail, along with brake repair procedures. Shop work includes brake servicing and replacement procedures, disc and drum reconditioning, and service to hydraulic master and wheel cylinder assemblies.

Prerequisite: none

AT 182 **2 hours** **Automatic Transmissions** (Hg. 5306)

A detailed study of the theory, operation, and repair of automatic transmissions. Begins with a complete study of planetary gear trains and their operation, hydraulic theory as applied to fluid couplings, and clutch theory and operation. Shop work concentrates on removal, disassembly, overhaul, and replacement of automatic transmission assemblies. Special emphasis is placed on diagnosis of automatic transmission problems.

Prerequisite: none

AT 191 **2 hours** **Standard Transmissions** (Hg. 5306)

A study of three- and four-speed standard transmissions including clutches and clutch designs. Shop work concentrates on clutch replacement, shift linkage design and adjustments, and transmissions disassembly and repair procedures. The theory of gear design and ratios is studied in detail.

Prerequisite: none

AT 201 **2 hours** **Drivelines and Differentials** (Hg. 5306)

A study of the transmission of power from the transmission to the wheels of the modern vehicle. Shop work concentrates on drive shaft service, adjustment

and replacement of differential bearings and parts (including limited slip differentials), and diagnosis of vibration and axle noise problems.

Prerequisite: none

AT 211 **1 hour** **Air Conditioning** (Hg. 5306)

A study of refrigeration and cooling theory, with concentration on the diagnosis and repair of common automotive air conditioning problems. Shop work includes the checking and charging of air conditioning systems, as well as leak-detection procedures and correction of common compressor problems.

Prerequisite: none

AT 233 **3 hours** **Engines** (Hg. 5306)

A detailed study of the gasoline-powered internal-combustion engine. Emphasis is placed on procedures for repair and replacement of engine parts and components, engine cooling systems, and valve train assemblies. Engine overhaul and machine procedures are discussed in detail, and shop work includes the disassembly, measuring, and reassembly of engine components.

Prerequisite: AT 113 and 122

AT 291 **1 hour** **Automotive Technology Placement** (Hg. 5306)

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

Prerequisite: none

Banking and Finance

BF 103 **3 hours** **Principles of Bank Operations** (Hg. 5003)

A descriptive orientation of bank operations including the various bank functions and an elementary description of their operation. An overview of the banking field.

Prerequisite: none

BF 153 **3 hours** **Bank Management** (Hg. 5003)

A study of the principles of bank management and applications of these principles to practical problems. Case studies in bank management. Gives both new and experienced bankers a working knowledge of the principles of banking.

Prerequisite: none

BF 163**3 hours****Law and Banking** (Hg. 5003)

An introduction to basic American law, presenting the rules of law which underlie banking. Topics include jurisprudence, the court system and civil procedures, contracts, quasi-contracts, property, torts and crimes, agencies, partnerships, corporations, sales of personal property, commercial paper, bank deposits and collections, documents of title, and secured transactions. Emphasis is on the Uniform Commercial Code.

Prerequisite: none

BF 203**3 hours****Credit Administration** (Hg. 5003)

A study of methods of credit investigation and analysis, credit techniques, and specific credit problems relating to both regular and unusual types of loans. Directed to the executive level and includes factors influencing credit policy.

Prerequisite: none

BF 213**3 hours****Home Mortgage Lending** (Hg. 5003)

A study of the picture of the mortgage market, the acquisition of a mortgage portfolio, mortgage plans and procedures, mortgage loan processing and servicing, and the obligations of the mortgage loan officer.

Prerequisite: none

BF 223**3 hours****Money and Banking** (Hg. 5003)

A study of the practical aspects of money and banking with emphasis of the basic money theory, economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy; balance of payments, and foreign exchange, showing their repercussions on the banking industry in affecting yield curves and construction of portfolios.

Prerequisite: none

BF 233**3 hours****Installment Credit** (Hg. 5003)

A study of the techniques of installment lending. Emphasis on establishing credit, servicing a loan, collecting amounts due, and checking information. Scrutinizes each phase of the installment operation to be certain that most efficient methods are employed. Other topics studied include inventory financing, special loan programs, business development and advertising, and the public relations aspects of installment lending.

Prerequisite: none

BF 243**3 hours****Agriculture Finance** (Hg. 5003)

A study of the rapid growth of the off-farm agribusiness sectors (the suppliers of farm inputs.) Emphasizes the general principles associated with the evaluation of management and the use of capital, rather than the examination of land and labor resources, which are more closely related to production. An understanding of agriculture finance should help the banker in satisfying the credit needs of modern agriculture.

Prerequisite: none

BF 291**1 hour****Banking and Finance Placement**

(Hg. 5003)

A course designed to assist banking/finance students in obtaining jobs suitable to their training and interests.

Prerequisite: none

Building Construction Technology

BCT 113**3 hours****Concrete** (Hg. 5317)

A study of the basic theory and processes involving Portland cement, mixing cement, testing and design of concrete mixtures, curing concrete, tools for placing and finishing concrete, and estimating.

Prerequisite: none

BCT 114**4 hours****Blueprint Reading and Layout**

(Hg. 5317)

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

Prerequisite: none

BCT 115**3 hours****Home Maintenance** (Hg. 5317)

A study of basic theory and application of repair, maintenance, and remodeling of residential structures.

Prerequisite: none

BCT 116**3 hours****Repair and Construction of Farm****Machinery and Buildings** (Hg. 5317)

A study of basic theory and application of farm build-

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ing construction and equipment repairs.

Prerequisite: none

BCT 123 3 hours

Surveying and Layout (Hg. 5317)

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

Prerequisite: none

BCT 124 3 hours

Blueprint Reading/Architectural Drawing (Hg. 5317)

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

Prerequisite: none

BCT 125 5 hours

Carpentry (Hg. 5317)

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

Prerequisite: none

BCT 135 5 hours

Electricity (Hg. 5317)

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

Prerequisite: none

BCT 136 3 hours

Basic Electricity I (Hg. 5317)

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

BCT 137 3 hours

Basic Electricity II (Hg. 5317)

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: BCT 136 or consent of instructor

BCT 144 4 hours

Plumbing (Hg. 5317)

A study of basic theory involving materials, tools and

calculations, drainage and disposal systems, fittings, fixtures, and layout of systems.

Prerequisite: none

BCT 153 3 hours

Welding (Hg. 5317)

A study of basic theory and processes involving oxyacetylene and electric arc welding.

Prerequisite: none

BCT 163 3 hours

Preventive Building Maintenance (Hg. 5317)

A study of basic building, mechanical, and electrical maintenance.

Prerequisite: none

BCT 164 3 hours

Sheetmetal and Preventive Building Maintenance (Hg. 5317)

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

Prerequisite: none

BCT 213 3 hours

Residential Construction Procedures (Hg. 5317)

A study of basic theory and application of building construction fundamentals including concrete, carpentry, plumbing, and electricity.

Prerequisite: none

BCT 271 1 hour

Directed Studies (Hg. 5317)

Course content and hours arranged by instructor.

Prerequisite: consent of instructor

BCT 291 1 hour

Building Construction Technology Placement (Hg. 5317)

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

Prerequisite: none

Business Mid-Management

BuM 103 3 hours

Introduction to Business (Hg. 5004)

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

BuM 113 3 hours

Principles of Marketing (Hg. 5004)

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

BuM 123 3 hours

Salesmanship (Hg. 5004)

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

BuM 133 3 hours

Advertising and Display (Hg. 5004)

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

BuM 143 3 hours

Principles of Finance (Hg. 5004)

A study of how the business firm gets and uses funds it needs to carry on its operation. Topics include financing with bonds, financing working capital requirements, businesses and banks, business failures, and reorganization.

Prerequisite: none

BuM 203 3 hours

Family Law (Hg. 5004)

A survey course with objectives of familiarizing the student with the basic concepts of law. 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

BuM 233 3 hours

Fundamentals of Management

(Hg. 5004)

An evaluation and comparison of private and public personnel practices and the techniques of recruiting, selecting, transferring, promoting, classifying, and training workers.

Prerequisite: none

BuM 241 1 hour

Display Project (Hg. 5004)

A study of the types and the role of visual merchandising in the retail store including creation, color, and principles of design, and the incorporating of actual experience in preparing retail displays.

Prerequisite: none

BuM 263 3 hours

Business Law (Hg. 5004)

A study of those areas of the law which affect most businesses: sales and credit, contracts, insurance, agency and employment, commercial paper, personal property, and bailments.

Prerequisite: none

BuM 271, 2, 3, 4 1-4 hours

Directed Studies (Hg. 5004)

Course content and hours arranged by instructor.

Prerequisite: consent of instructor

BuM 281, 2, 3 1-3 hours

Internship (Hg. 5004)

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 mid-management program and consent of instructor

BuM 291 1 hour

Business Mid-Management Placement

(Hg. 5004)

A course designed to assist business mid-management students in obtaining jobs suitable to their training and interests.

Prerequisite: none

Criminal Justice

CJ 103 3 hours

Introduction to Criminal Justice

(Hg. 5505)

An introduction to the criminal justice system in

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America. Stresses the inter-relatedness of the three components — police, courts, and corrections. Includes 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.

Prerequisite: none

CJ 113 **3 hours**

Criminal Law and Procedures

(Hg. 5505)

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.

Prerequisite: none

CJ 123 **3 hours**

Rules of Criminal Evidence (Hg. 5505)

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.

Prerequisite: CJ 103

CJ 133 **3 hours**

Police Patrol and Services (Hg. 5505)

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.

Prerequisite: CJ 103 and 133

CJ 203 **3 hours**

Introduction to Corrections (Hg. 5505)

A study which 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. Includes a description of various treatment modalities and philosophies.

Prerequisite: CJ 103

CJ 213 **3 hours**

Juvenile Procedures (Hg. 5505)

A study of the organization, functions, and jurisdiction of juvenile agencies; the detention of juveniles; and the processing of neglected children. Study includes the intent, application, and procedures of the Missouri Juvenile Code: juvenile case disposition, crime prevention methods, and diversion programs.

Prerequisite: CJ 103

CJ 223 **3 hours**

Criminal Investigation I (Hg. 5505)

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.

Prerequisite: CJ 113 and 123

CJ 233 **3 hours**

Police Administration (Hg. 5505)

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.

Prerequisite: nine credits in criminal justice

CJ 243 **3 hours**

Criminal Investigation II (Hg. 5505)

A study of the recognition, collection, identification, preservation, transportation, and development of criminal evidence. Includes narrative police report writing and the preparation of cases for prosecution.

Prerequisite: CJ 223

Data Processing

DP 103 **3 hours**

Introduction to Data Processing

(Hg. 5101)

An introductory course directed toward the student desiring basic knowledge and understanding of business data processing as well as toward students seeking a career in data processing. Emphasis is placed upon enhancing the student's knowledge, comprehension, and awareness of basic business data processing theory, principles, and methodologies. The course also strives to develop fundamental EDP problem-solving skills in the student and to give students an elementary exposure to the process of computer programming using the BASIC language.

Prerequisite: none

DP 112 or 113 **2 or 3 hours**

FORTAN IV Programming (Hg. 5101)

A basic course in computer programming techniques and structure using the FORTAN IV 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 and techniques of flowcharting and the features of the FORTRAN language.

Prerequisite: Mth 173 or consent of instructor

Note: The DP 112 version of this course is designed for students transferring to a 4-year college that requires only 2 credit hours in a FORTRAN Programming course.

DP 123 3 hours

Computer Concepts (Hg. 5101)

An intermediate level data processing course which explains the relationships among computer systems, computer hardware concepts, operating system software concepts, and programming methodologies. Topics include: computer organization, data and storage structures, basic computer operations and machine language, basics of computer software, data management concepts, operating system software organization, and programming techniques.

Prerequisite: DP 103

DP 133 3 hours

Logical Methods (Hg. 5101)

A basic course in logical problem-solving methods employed on today's electronic data processing systems. Emphasis is placed on enhancing the student's knowledge, understanding, and awareness of fundamental business problem-solving concepts and on developing their skills in applying these concepts to the problem solutions. Importance is also placed upon maintaining an overall structure and discipline in logical design. General topics covered are: problem definition, analysis, solution development, and verification using flow charts, pseudocode, and HIPO.

Corequisite: DP 103

DP 143 3 hours

COBOL Programming I (Hg. 5101)

A beginning course in business computer programming techniques and structure using the language COBOL. Emphasis is placed upon expansion of the student's knowledge and understanding of logical problem-solving concepts and methodologies (i.e., structured design and structured COBOL programming), and in the application of these methods and concepts to the process of designing/composing COBOL programs. COBOL's tools and facilities are explored and applied in order to illustrate how this language aids one in implementing con-

cepts/methods of structured design and structured programming.

Corequisite: DP 133

DP 193 3 hours

Computers and Society (Hg. 5101)

An interdisciplinary course which presents basic facts on computer technology and which explores the social issues resulting from computer-based systems. The course emphasizes the development of the student's knowledge and understanding of the computer's capabilities and limitations and its social implications in today's modern society and toward the student's career field.

Prerequisite: none

DP 213 3 hours

Systems Development & Design I

(Hg. 5101)

A course which studies basic approaches and techniques used in the design/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: DP 123, DP 133

DP 223 3 hours

COBOL Programming II (Hg. 5101)

An advanced course in the COBOL language, emphasizing completion of the student's knowledge, understanding, and skill-development in solving business problems in the language COBOL. Structured design/programming concepts/methods that are available in COBOL are stressed and implemented in program design/composition.

Prerequisite: DP 143

DP 233 3 hours

Assembly Language Programming

(Hg. 5101)

A basic course in symbolic computer programming at the machine or lower level of detail. This course emphasizes the development of the student's abilities to recognize which types of problems demand detail solutions, and to analyze, flowchart, write, debug, and test assembly language programs that will execute these solutions on a typical fourth generation computer.

Prerequisite: DP 123, DP 133, and prior experience with a procedure-oriented computer language

DP 243 3 hours**Systems Development & Design II**

(Hg. 5101)

An advanced course in systems analysis, design, development, and implementation, featuring business d.p. systems of greater complexity and sophistication than those studied in DP 213. General topical areas include: advanced documentation/standards procedures, time/cost estimates for system development/operation, effective systems proposal, data base concepts, and management information systems.

Prerequisite: DP 213

DP 253 3 hours**Computer Operations** (Hg. 5101)

A course designed to train students in the general methods of operating modern computer systems. Lectures will cover the topics of: computer operation principles, computer system components, operating environments, data storage device characteristics, computer console functions, job scheduling/control/documentation, error-recovery procedures, system, and file back-up processes.

Corequisite: DP 123 and consent of instructor

DP 263 3 hours**RPG Programming** (Hg. 5101)

A beginning course in business programming using the problem-oriented language, Report Program Generator II. The capabilities and limitations of RPG 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 that have data derived from computer accessible files.

Prerequisite: DP 133 and prior experience with a procedure-oriented computer language

DP 291 1 hour**Data Processing Placement** (Hg. 5101)

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

Prerequisite: none

Dental Assisting

DA 124 4 hours**Dental Materials I** (Hg. 5202)

An introduction to lab procedures, identification of equipment and instruments, manipulation of dental materials used in the dental office, and the instruction

in composition of materials and related subjects. Activities include pouring stone and plaster models; manipulation of amalgam composite; trimming models; boxing impressions; manipulation of rubber base, silicone and alginate; impression materials; and manipulation of different types of cements and bases.

Corequisite: DA 164

DA 134 5 hours**Chairside Assisting I** (Hg. 5202)

An introduction to the profession of dentistry. Includes the use and care of dental equipment, functions of a chairside assistant, common operative procedures, and preventive dentistry techniques. Activities include operating and cleaning dental equipment, performing four-handed sit-down instrument exchange, operating evacuator and air-syringe, operating an autoclave and preparing instruments for sterilization, taking alginate impressions for study models, placing topical anesthetic onto mucosa, handling of anesthetic syringes, charting procedures on a dental chart, giving P.O.H. instructions for home care, giving a fluoride treatment, 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.

Corequisite: DA 164

DA 144 4 hours**Dental Materials II** (Hg. 5202)

An emphasis on waxes, resins, and metals. Activities include taking wax bites, mounting models on an articulator, constructing custom-made trays, constructing base plate and bite rims, and repairing a broken denture.

Prerequisite: DA 124

DA 164 4 hours**Dental Science I** (Hg. 5202)

A study of head and neck anatomy, oral embryology and histology, tooth morphology, nutrition, and dental office emergencies. Activities include carving teeth in wax, taking blood pressures, demonstration of ambu-bag and oxygen unit, handling of syringes and medications for I.V. and I.M. injections, C.P.R. training on manikins, conducting a dietary analysis and diet evaluation, performing and evaluating caries susceptibility tests (e.g. synder, lingual c), and performing a plaque index evaluation.

Prerequisite: Admission into the dental assisting program

DA 165 2 hours**Dental Science II** (Hg. 5202)

A study of oral pathology, microbiology, and pharma-

ology. Activities include identification of common disorders.

Prerequisite: DA 164

DA 204 4 hours

Dental Radiology (Hg. 5202)

An introduction to radiographic procedures, basic terms and nomenclature, theory of x-radiation, bi-section and paralleling techniques, occlusal exposures, exposing and processing techniques, and mounting and evaluation of exposed radiographs. Activities include the same.

Corequisite: DA 164

DA 205 3 hours

Anatomy and Physiology (Hg. 5202)

A study of microscopic and macroscopic structure and function of the systems of the body and their physiology.

Prerequisite: none

DA 213 5 hours

Chairside Assisting II (Hg. 5202)

The concepts taught in Chairside Assisting I will be applied to the specialty areas of dentistry including theories of ortho, perio, endo, oral surgery, and pedo. Activities include setting-up armamentarium for basic procedures in each of the specialty areas in prerequisite order.

Prerequisite: DA 134

DA 242 3 hours

Clinical Practice I (Hg. 5202)

Eight hours per week assisting dental students at the Washington University School of Dentistry with rotation in the specialty areas.

Corequisite: DA 164

DA 252 2 hours

Dental Office Procedures (Hg. 5202)

A study of the principles of business management for the dental office including appointment control, filing, insurance forms, and supply inventory.

Prerequisite: DA 213

DA 275 5 hours

Clinical Practice II (Hg. 5202)

Assisting in dental offices on a rotational basis. Student is to gain proficiency in chairside skills and front office procedures.

Prerequisite: DA 242

DA 291 1 hour

Dental Assisting Placement (Hg. 5202)

A course designed to assist dental assisting students

in obtaining jobs suitable to their training and interests.

Prerequisite: none

Drafting and Design Technology

Dft 101 1 hour

Blueprint Reading (Hg. 5303)

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

Dft 113 3 hours

Engineering Drawing (Hg. 5303)

A course designed to give the student a working knowledge of fundamental drawing practices and the geometric relationships of points, lines, and planes in space. Areas covered include the techniques of lettering, sketching, instrumental drawing of mechanical parts, sectional and auxiliary views, and conventional drafting practices.

Prerequisite: none

Dft 115 5 hours

Technical Physics (Hg. 5303)

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

Prerequisite: Either Dft 163, Mth 173, or satisfactory score on the MMPT

Dft 123 3 hours

Descriptive Geometry (Hg. 5303)

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 or Corequisite: Dft 113

Dft 133, 5 3-5 hours

Architectural Drawing (Hg. 5303)

An introduction to the fundamental principles of residential design, including instruction on materials and methods of construction, design standards, and room arrangements. Emphasis is given to the development of complete residential plans.

Prerequisite: Dft 113

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Dft 143 3 hours

Technical Writing (Hg. 5303)

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 communication concerning science and industry.

Prerequisite: Eng 105, 123, or consent of instructor

Dft 145 5 hours

Machine Drawing (Hg. 5303)

A course dealing with problem solving situations involving the development of drawings of castings, forgings, machinings, and sheet metal layout. Methods of making working and assembly drawings are included, providing depth in the area of machine drawing. Dimensioning will be of primary importance.

Prerequisite: Dft 113

Dft 152 2 hours

Modern Drafting Techniques (Hg. 5303)

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: Dft 113

Dft 153 3 hours

Technical Computations I (Hg. 5303)

A study of the treatment of measured data, significant figures, applications in geometry, basic algebra, and linear equations.

Prerequisite: none

Dft 163 3 hours

Technical Computations II (Hg. 5303)

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: Dft 153

Dft 165 5 hours

Materials and Processes (Hg. 5303)

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

Dft 173 3 hours

Principles of Power (Hg. 5303)

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: Dft 153 or consent of instructor

Dft 203 3 hours

Technical Illustration (Hg. 5303)

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, dimetric, oblique, and perspective drawing, and the methods and media used in creating illustrations.

Prerequisite: Dft 113

Dft 233 3 hours

Civil Drawing (Hg. 5303)

A course encompassing the methods and conventions of engineering graphics as they are practiced in 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.

Prerequisite: Dft 113

Dft 243 3 hours

Machine Design (Hg. 5303)

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.

Prerequisite: Dft 145

Dft 253 3 hours

Statics and Strength of Materials

(Hg. 5303)

A study of statics and strength of materials as applied to structures, beam theory, beam design, and theory of column formulae. Includes study of stress and strain experienced by machine parts and structural members. Emphasis is placed on applications and problem solving.

Prerequisite: Dft 163 or consent of instructor

Dft 263 3 hours

Tool and Die Design (Hg. 5303)

A combination of lectures, classroom discussions, and actual drawing board work coordinated to give

the student knowledge necessary to design the less complicated tools used in modern manufacturing. The work consists of laying out simple jigs, fixtures, cutting tools, gauges, and dies. Mass production methods are discussed so that this knowledge may be applied in the practical work of tool designing.

Prerequisite: Dft 145

Dft 271 1 hour
Directed Studies in Drafting and Design
 (Hg. 5303)

An investigation in depth of a specific industrial problem or actual experience in related office practices.
Prerequisite: consent of instructor

Dft 273 3 hours
Structural Drawing (Hg. 5303)

A course which concentrates on detailing and delineating the structural systems encountered in architectural and civil construction. Systems included are those based on materials including wood, steel, and concrete components. Shop drawings and erection drawing are covered.

Prerequisite: Dft 113 and 253

Dft 291 1 hour
Drafting and Design Technology
Placement (Hg. 5303)

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

Prerequisite: none

Emergency Medical Technician

EMT 101 2 hours
Emergency Medical Technician
Refresher (Hg. 5201)

A course which provides review training in the care of emergency cases of the sick and injured. It is designed to include both didactic and practical review. Upon successful completion of the course, each student can be re-certified as an E.M.T. by retaking the Missouri State Licensure Examination. The course meets for forty clock hours.

Prerequisites: 18 years of age or older. A currently certified E.M.T. having previously passed the Missouri State Licensure Examination within the last three years.

EMT 104 4 hours
81-Hour Emergency Medical Technician
Training (Hg. 5201)

A course which provides training in emergency cases of the sick and injured. The course fulfills the requirements of Senate Bill No. 57. Those completing the course will be eligible for the Missouri State Licensure Examination and/or the National Registry Examination to become registered E.M.T. personnel.

Prerequisite: 18 years of age

EMT 116 25 hours
566-Hour Emergency Medical
Technician-Paramedic Training
 (Hg. 5201)

A course which provides advanced training in emergency care and advanced life support techniques for the sick and injured.

Prerequisite: Currently registered as 81-Hour E.M.T., one year ambulance experience or medical experience, one recommendation from the ambulance supervisor or a licensed physician, a passing score on the prescribed pre-test, completion of the Missouri Math Placement Test, and acceptance into the program. Exceptions to the above by the consent of the course medical director only.

Fire Technology

FT 103 3 hours
Introduction to Fire Science (Hg. 5507)

An introduction to fire problems history, evaluation and survey of fire protection characteristics and behavior of fire, chemistry of fire, building construction, extinguishing agents, and hazardous materials.

Prerequisite: none

FT 113 3 hours
Basic Fire Protection and Alarm
Systems (Hg. 5507)

A study of modern fire protection including water supply and distribution systems, fire department organization, 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.

Prerequisite: none

FT 123 3 hours
General Building Construction
 (Hg. 5507)

A study of basic fundamentals of building plan layouts

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including the conventional representations, symbols and abbreviations for building materials, methods of showing floor plans, elevations, sections, and dimensions.

Prerequisite: none

FT 133 **4 hours** **Fire Service Hydraulics and Equipment** (Hg. 5507)

A study of the mechanics of liquids, particularly as pertains to water flow, hydrants, pumps, standpipes, hoses, nozzles, sprinkler systems, and other facets of liquid mechanics as it is adapted to fire fighting practices.

Prerequisite: none; mathematics and physics advisable

FT 153 **3 hours** **Fire Department Organization and Supervision** (Hg. 5507)

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.

Prerequisite: none

FT 163 **3 hours** **Teaching Techniques for Fire Department Personnel** (Hg. 5507)

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 the fire department personnel is 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.

Prerequisite: none

FT 223 **3 hours** **Codes and Ordinances** (Hg. 5507)

A detailed study of national, state, and local ordinances applicable to the fire service and electrical, plumbing, and building codes.

Prerequisite: none

FT 233 **3 hours** **Fire Department Reports** (Hg. 5507)

A study of firehouse recordkeeping of routine and emergency activities, investigative reports, personnel, supplies and equipment, and the records and reports



of incidents and casualties as required by the National Fire Protection Control Act and the State of Missouri.

Prerequisite: none

FT 243 **3 hours** **Hazardous Materials** (Hg. 5507)

A second semester of the review of basic fundamentals of chemistry used in fire science with emphasis on less common special hazards. Topics covered include nuclear reactions, ionization, radiation detection equipment, peacetime uses of radioactive materials, and control of resulting hazards.

Prerequisite: none

FT 253 **3 hours** **Inspection and Fire Prevention** (Hg. 5507)

Inspection surveying and mapping procedures associated with the organization and function of fire prevention. Opportunity is provided to make at least one complete inspection and report on an operation industry.

Prerequisite: none

FT 263 3 hours**Fire Investigation (Hg. 5507)**

A study of methods 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 and types of arson fires, court testimony, reports, and records.

Prerequisite: none

FT 273 4 hours**Fire Fighting Tactics and Strategy**

(Hg. 5507)

Instruction in the fundamental strategy and methods of attack employed for various fire problems. Includes principles of fire fighting as applied to small and large scale fire problems and problems that are complex or unique in nature.

Prerequisite: none

FT 283 3 hours**Rescue Practices and First Aid**

(Hg. 5507)

A study of life saving practices pertaining to the fire company and fire department personnel. Includes the study of manual artificial respiration, inhalators, resuscitators, inspecting, cleaning and sterilizing equipment, and transportation of the injured.

Prerequisite: none

FT 291 1 hour**Fire Technology Placement (Hg. 5507)**

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

Prerequisite: none

Home Economics

HE 113 3 hours**Nutrition (Hg. 5405)**

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

Prerequisite: none

HE 123 3 hours**Consumer Education (Hg. 5405)**

A study of the management of resources, consumer information, and decision making relative to selection and utilization of goods and services.

Prerequisite: none

Horticulture

Hrt 123 3 hours**Environmental Horticulture (Hg. 5402)**

A course with major emphasis on plant classification and identification. Trees and shrubs are special considerations; their practical landscape values are emphasized along with summer-winter identification. Other topics include introduction to the angiosperms and gymnosperms; their growth, development, and reproductive processes; and environmental factors of plant growth.

Prerequisite: none

Hrt 135 5 hours**Horticulture Botany (Hg. 5402)**

An introduction to the plant kingdom, structure, physiology, and economic crop importances. Laboratory includes 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: none

Hrt 173 3 hours**Soil Science (Hg. 5402)**

A study of interactions between water, air, organisms, and soil minerals important in consideration of land use management. Up-to-date studies of new soil mixes and plant nutrition and soil testing labs are included.

Prerequisite: none

Hrt 233 3 hours**Greenhouse and Nursery Management**

(Hg. 5402)

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.

Prerequisite: none

Hrt 234 3 hours**Ornamental Woody Plants I (Hg. 5402)**

A study of trees, shrubs, vines, and ground covers 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

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Hrt 243 3 hours

Plant Propagation (Hg. 5402)

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. Pruning labs are included. Hormonal relationships and growth-promoting substances are explored.

Prerequisite: none

Hrt 254 3 hours

Landscape Design I (Hg. 5402)

A detailed study of the functional uses of ornamental plants. Landscape design is introduced with concern for design development, site analysis, lettering, and plan graphics. Principles of landscape design are applied to residential design problems.

Prerequisite: none

Hrt 264 3 hours

Ornamental Woody Plants II (Hg. 5402)

A continuation of ornamental plant identification with emphasis on indoor tropicals and outdoor woody plants. Includes the study of turf grasses, diagnosis of pests and diseases, and the application of insecticides (including safety precautions which should be observed). Special segments are included on interior plantscaping, perennials, bulbs, and turf grasses.

Prerequisite: none

Hrt 273 3 hours

Floral Design (Hg. 5402)

A course which consists of lectures and laboratory sessions on the basics of floral design. Commercial interests are given special emphasis. Major design areas include principles of floral design, the corsage, the bouquet, the dried arrangement, and party work. Business clinic sessions are included with views into the floral industry, display techniques, retailing, and care and handling of cut flowers.

Prerequisite: none

Hrt 283 3 hours

Herbaceous Plants (Hg. 5402)

A study of the major plant groups: annuals and perennials (home-garden landscape), bulbs, and ground-covers. A major segment of the course pursues the increasingly popular interior plantscaping where interior design skills are developed along with cultural management of these tropical plants. The entire course seeks to develop identification and functional uses of herbaceous plants. Propagation and low-maintenance techniques round out the course.

Prerequisite: none

Hrt 284 3 hours

Landscape Design II (Hg. 5402)

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: none

Hrt 291 1 hour

Horticulture Placement (Hg. 5402)

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

Prerequisite: Sophomore level

Hrt 293 3 hours

Internship (Hg. 5402)

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

Nursing — Associate Degree

Nur 116 6 hours

Fundamentals of Nursing (Hg. 5209)

A course designed to introduce the student to the nature of man and his response to illness. Abdellah's 21 Nursing Problems (condensed) 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 regimens. Normal nutrition and pharmacology are introduced. Pediatrics is integrated. General hospitals and/or extended care facilities are used for clinical observation and practice. Four hours lecture and eight hours practicum per week.

Prerequisite: Admission to program

Corequisites: Anatomy and Physiology I; Chemistry for Health Sciences

Placement: Fall semester, first year

Nur 119 9 hours

Nursing of Adults and Children I

(Hg. 5209)

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 client's total needs and preparation of more comprehensive nursing care plans. General hospitals and other health care and community agencies are utilized for observation and practice. Five hours lecture and sixteen hours practicum per week.

Prerequisites: Fundamentals of Nursing; Anatomy and Physiology I Chemistry for Health Sciences

Corequisites: Anatomy and Physiology II; Microbiology

Placement: Spring semester, first year

Nur 125 5 hours **Mental Health Nursing (Hg. 5209)**

A course designed to increase the student's understanding of the psychological component of man. Communication skills are taught and practiced 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 and intervention. Psychiatric facilities are used for observation and practice. Four hours lecture and fifteen hours practicum per week.

Prerequisites: Fundamentals of Nursing; Nursing of Adults and Children I; Anatomy and Physiology I, II; Chemistry for Health Sciences; Microbiology; General Psychology

Corequisites: Growth and Development

Placement: Summer semester, first year

Course completed in eight-week session

Nur 214 4 hours **Nursing of Adults and Children II (Hg. 5209)**

A course designed to introduce the student to the care of adults and children who have alterations in their ability to maintain their regulatory, immunosuppressive, and mobility functions as well as fluid and electrolyte balance. Assessment skills are broadened to include principles of growth and development. The student is able to plan, deliver, and evaluate comprehensive nursing care for a group of patients. Client teaching is emphasized. General hospitals and community agencies are used for observation and practice. Four hours lecture and sixteen hours practicum per week.

Prerequisites: Fundamentals of Nursing; Nursing of Adults and Children I; Mental Health Nursing; Anatomy and Physiology I, II; Chemistry for Health Sciences; Microbiology; Growth and Development

Placement: Fall semester, second year
Course completed in eight-week session

Nur 215 5 hours **Maternal and Newborn Nursing (Hg. 5209)**

A course designed to introduce the student to family-centered care of mothers and newborn during the maternity cycle. Focus is on the normal maternity cycle, prevention of complications, and the growth and development of the child from conception through the newborn period. Client teaching is included with emphasis on nutrition and newborn care. Physician's offices and general hospitals are utilized for observation and practice. Five hours lecture and sixteen hours practicum per week.

Prerequisites: Fundamentals of Nursing; Nursing of Adults and Children I; Mental Health Nursing; Anatomy and Physiology I, II; Chemistry for Health Sciences; Microbiology

Placement: Fall semester, second year

Course completed in eight-week session

Nur 216 10 hours **Nursing of Adults and Children III (Hg. 5209)**

A course designed to give the student an opportunity to apply previously learned scientific and nursing knowledge to more complex nursing care situations, including critical care. Nursing process skills are now applied in a spontaneous informal manner. Various nursing management systems are studied and the student is given an opportunity to direct and evaluate nursing care given by others. General hospitals are utilized for practice. Four hours lecture and twenty-four hours practicum per week.

Prerequisites: Fundamentals of Nursing; Nursing of Adults and Children I, II; Mental Health Nursing; Maternal and Newborn Nursing; Anatomy and Physiology I, II; Chemistry for Health Sciences; Microbiology

Corequisites: Nursing Trends

Placement: Spring semester, second year

Nur 221 1 hour **Nursing Trends (Hg. 5209)**

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

Prerequisites: Fundamentals of Nursing; Nursing of Adults and Children I, II; Mental Health Nursing; Maternal and Newborn Nursing; Anatomy and Physiology I, II; Chemistry for Health Sciences; Microbiology

Corequisite: Nursing of Adults and Children III

Placement: Spring semester, second year

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Nur 291 1 hour

Nursing Placement (Hg. 5209)

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

Prerequisite: none

Police Academy

PA 118 9 hours

Basic Law Enforcement Seminar

(Hg. 5505)

A comprehensive study of all aspects of law enforcement including: human relations, constitutional and Missouri criminal law, police traffic functions and accident investigation, report writing, firearms training, self-defense and arrest techniques, basic first aid, and criminal investigations. The course is designed for the new, inexperienced police officer. The curriculum is approved and certified by the Missouri Department of Public Safety regarding mandated minimum training for Missouri peace officers.

Prerequisite: consent of instructor

PA 218 10 hours

Advanced Law Enforcement Seminar

(Hg. 5505)

A course designed for the experienced law enforcement officer. The course is a comprehensive study of numerous speciality areas of police investigations and techniques including: evidence technician, drugs and narcotics, bombing and arsons, investigations of homicide, sex offenses, robberies, assaults, advanced first aid, firearms training, officer survival, surveillance, and police officer stress.

Prerequisite: consent of instructor

Real Estate

RE 113 3 hours

Principles of Real Estate (Salesman's Class) (Hg. 5001)

The study of the nature of real estate and its ownership, titles, legal descriptions, contracts, leases, taxation, and values.

Prerequisite: none

RE 123 3 hours

Real Estate Finance (Hg. 5001)

A course in the economics of financing real property, legal considerations, sources of mortgage money and

other funds, mortgage terms, and appraisals for financing purposes.

Prerequisite: RE 113

RE 233 3 hours

Real Estate Law (Hg. 5001)

A study of land descriptions, titles, deeds, sales escrow, insurance, ownership, wills, liens, mortgages, loans and closings, foreclosures, building regulations, zoning, taxes, and landlord-tenant relationship.

Prerequisite: RE 113

RE 243 3 hours

Real Estate Appraisals (Hg. 5001)

An introduction to real estate appraisals. Includes 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.

Prerequisite: RE 113

RE 253, 4 3-4 hours

Real Estate Internship (Hg. 5001)

Intern training to supplement classwork for practical experience in a chosen field. Faculty supervised jobs chosen for their educational value. Students are paid by their employers (15 to 20 hours per week) for 3 or 4 credits. If suitable jobs are not available, students will work on special projects.

Prerequisite: RE 113 and BuM 113

RE 263 3 hours

Real Estate Investments (Hg. 5001)

A study of the methods of evaluating investment opportunities in real estate.

Prerequisite: RE 113

RE 273 3 hours

Real Property Management (Hg. 5001)

A course in investment planning, market analysis, cost and income projections, budgeting, rental collection, insurance, maintenance and repair, and control systems.

Prerequisite: RE 113

RE 283 3 hours

Real Estate Brokerage (Hg. 5001)

A study of the brokerage function. Includes the role of the Broker, organization and management of the office, selection of office personnel, recruiting and training of sales personnel, sales promotion, budgeting, records, and record systems. This course also includes advanced real estate concepts.

Prerequisite: RE 113

RE 291 1 hour**Real Estate Placement (Hg. 5001)**

A course designed to help real estate students in obtaining jobs suitable to their training and interests.

Prerequisite: none

Retailing**Ret 113 3 hours****Introduction to Retailing (Hg. 5004)**

A study of methods used in determining retail store organization and operation including: location and layout, retail buying techniques, human relations, employee supervision, pricing, and merchandising.

Prerequisite: none

Ret 123 3 hours**Merchandise Information (Hg. 5004)**

A study of what items are made of, what they will do, and how to care for both apparel and home furnishings are questions covered in this course. How fashion has evolved over time is examined to discover influences on today's merchandise.

Prerequisite: none

Ret 133 3 hours**Retail Supervision (Hg. 5004)**

The examination of leadership methods that lead to consumer satisfaction, healthy profit, and job employment is the purpose of this course. Authoritarian versus participatory leadership points of view are contrasted.

Prerequisite: Retailing 113 or consent of instructor

Ret 143 3 hours**Consumer Behavior (Hg. 5004)**

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 behavior in the marketplace. Recognition of motivations and reactions of consumers and related business influences is also covered.

Prerequisite: none

Ret 153 3 hours**Retail Merchandising (Hg. 5004)**

A study of the problems inherent in merchandising including: systems pertaining to merchandising including buying, control, pricing for profit, planning sales, stock, and promotions. Arithmetic skills will be stressed.

Prerequisite: Ret 113 and working knowledge of arithmetic

Ret 163 3 hours**Store Practicum and Seminar I through III (Hg. 5004)**

An individualized program aimed at giving the student an opportunity to balance his knowledge of a retail organization though experience in most functional areas of the business. Students must have or be willing to seek part-time employment in a retail firm. Assistance is available in locating a retailing job.

Prerequisite: none

Ret 191 1 hour**Retailing Placement (Hg. 5004)**

A course designed to help retailing students in obtaining jobs suitable to their training and interests.

Prerequisite: none

Secretarial Science**ScS 103 3 hours****Business Mathematics (Hg. 5005)**

A course in commercial and financial applications of basic arithmetic and algebraic processes. Intended for students in office, business, and other A.A.S. degree programs. Individualized instruction.

Prerequisite: none

ScS 112 2 hours**Business Writing Skills (Hg. 5005)**

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. Emphasis will also be placed upon proofreading and building a larger vocabulary to enhance written as well as oral communication.

Prerequisite: none

ScS 113 3 hours**Typewriting I (Hg. 5005)**

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

Prerequisite: none

ScS 123 3 hours**Typewriting II (Hg. 5005)**

A course in further development of typewriting skills, with special attention given to improving accuracy and increasing speed. Great emphasis in producing mailable copy on tables, letters, business forms, and

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rough draft manuscripts under timed conditions. Individualized instruction.

Prerequisite: ScS 113 or speed of at least 40 wpm for five minutes with a maximum of five errors.

ScS 133 **3 hours** **Typewriting III** (Hg. 5005)

A continuation of ScS 123 with further development of accuracy and speed in typewritten work. Emphasis on higher production standards and more complex material for mailable copy under timed conditions. Individualized instruction.

Prerequisite: ScS 123

ScS 142 **2 hours** **Machine Transcription** (Hg. 5005)

A course designed to provide training to develop a high degree of 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 judgement, and decision making as applied to business letters, memorandums, and reports. Mag Card and memory typewriters are used to teach word processing techniques.

Prerequisite: ScS 112 and 113

Prerequisite or Corequisite: ScS 183 or consent of instructor

ScS 143 **3 hours** **Shorthand I** (Hg. 5005)

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: ScS 112 and 113

ScS 153 **3 hours** **Shorthand II** (Hg. 5005)

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, also suited for the student who wants to REVIEW Gregg Shorthand theory. Individualized instruction.

Prerequisite: ScS 143 or consent of instructor

Prerequisite or Corequisite: ScS 112

ScS 163 **3 hours** **Shorthand III** (Hg. 5005)

A course with emphasis on continued development of shorthand speed. The course is specifically designed for students who have 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: ScS 123 and the ability to pass an 80 wpm speed-take comfortably

Prerequisite or Corequisite: ScS 112

ScS 183 **3 hours** **Secretarial Machines** (Hg. 5005)

Basic training in the operation and use of electronic calculators, duplication machines, typewriter with proportional spacing, and Mag Card and memory typewriters. Acquaints students with machine terminology, office problems, and work standards.

Prerequisite: ScS 113

ScS 192 **2 hours** **Filing and Records Management** (Hg. 5005)

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 suppliers, retention and disposition of records, and administrative duties.

Prerequisite or Corequisite: ScS 113

ScS 203 **3 hours** **Introduction to Word Processing** (Hg. 5005)

A study of the principles and purposes of word processing in business and government offices, the language of word processing, and the equipment used and career paths in word processing.

Prerequisite: none

ScS 213 **3 hours** **Secretarial Procedures** (Hg. 5005)

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: ScS 113

ScS 223 **3 hours** **Business Communications** (Hg. 5005)

A study of communication needs in the office, both oral and written, with emphasis on inter-office communication, letters, and reports. Special attention is given to organization, mechanics, and the business vocabulary.

Prerequisite: Either Eng 123 or 105, or ScS 112 plus ScS 123

ScS 233 3 hours**Legal Typewriting (Hg. 5005)**

A course specializing in the typing of a wide range of legal documents and correspondence into mailable form. Mag Card and memory typewriters will also be used. Individualized instruction.

Prerequisite: ScS 123 or consent of instructor

ScS 243 3 hours**Legal Secretarial Procedures (Hg. 5005)**

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: ScS 133

Prerequisite or Corequisite: ScS 233 and ScS 273 or work experience in a legal office

ScS 252 2 hours**Legal Terminology and Research (Hg. 5005)**

A survey of American legal terminology and legal research techniques with special reference to the needs of the legal secretary. Includes a survey of the Missouri and Federal Court Systems.

Prerequisite: none

ScS 253 5 hours**Word Processing Services I (Hg. 5005)**

A modern word processing office environment will be provided in which students will use automatic typewriters (word processors) to input and to revise projects by adding, manipulating, or deleting words in order to produce "mailable" copy. Students will learn organizing, logical thinking, and using standard formats in producing documents.

Prerequisite: 45 w.p.m. typing speed and ScS 183

Corequisite: ScS 112 and ScS 142

ScS 263 5 hours**Word Processing Services II (Hg. 5005)**

A continuation of Word Processing Services I. The course provides a modern office environment in which word processing concepts are effectively utilized and where students function in job roles. Job entry-level word processing position skills are developed. Students will be given opportunities for processing real information and data and will concentrate on problem solving activities in which they analyze and plan better ways of completing a task.

Prerequisite: ScS 253

ScS 271 1 hour**Directed Studies-Shorthand (Hg. 5005)**

Continued development of speed and accuracy in writing shorthand and improvement in transcription of mailable copy.

Prerequisite: ScS 143

ScS 273 3 hours**Shorthand IV (Hg. 5005)**

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

Prerequisite: ScS 153 or 163 and ScS 123

Prerequisite or Corequisite: ScS 112

ScS 283 3 hours**Legal Shorthand (Hg. 5005)**

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: ScS 273 or consent of instructor

ScS 291 1 hour**Secretarial Science Placement (Hg. 5005)**

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

Prerequisite: none

ScS 296 6 hours**Internship and Seminar (Hg. 5005)**

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 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 secretarial science program and consent of instructor

Small Engine Repair

SE 105 5 hours**Small Engine Repair (Hg. 5306)**

A course designed to provide students an introduction

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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 on 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 shop 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

Teacher Aide

TA 213 3 hours

Teacher Aid Seminar (Hg. 5503)

A seminar providing the opportunity for teacher aide students to discuss the field of teacher aide work, and to share the experiences and problems they have encountered in their role as teacher aide interns. Moderated by a college staff member, the seminar serves as the vehicle to tie coursework and experience together in a relevant manner.

Prerequisite: Sophomore standing

TA 271, 2, 3 1-3 hours

Teacher Aide Internship (Hg. 5503)

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

Prerequisite: consent of instructor

TA 291 1 hour

Teacher Aide Placement (Hg. 5503)

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

Prerequisite: none

Wastewater Treatment

WWT 103 3 hours

Basic Wastewater Treatment (Hg. 5408)

An entry level water and wastewater training course to familiarize operators with the various types of facilities and their method of operation.

Prerequisite: none

WWT 113 2 hours

Basic Wastewater Laboratory

Procedures I (Hg. 5408)

A course designed to train wastewater operators in selected wastewater testing parameters, basic laboratory skills, and wastewater analysis techniques.

Prerequisite: none

WWT 123 4 hours

Advanced Wastewater Treatment

(Hg. 5408)

A course designed to train wastewater operators to become proficient to sit for the most advanced level license issued by the state of Missouri.

Prerequisite: WWT 113

WWT 133 2 hours

Basic Wastewater Laboratory

Procedures II (Hg. 5408)

A second-level course designed to train wastewater operators in selected wastewater testing parameters, Level II of basic laboratory skills, and wastewater analysis techniques.

Prerequisite: WWT 113