

# East Central College



1999-2001 Catalog



**AC 2123, 2133** **3 hours**  
**Accounting Internship**

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

**AC 2131** **1 hour**  
**Individual Income Tax\***

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

\*Offered when demand is indicated.

**AC 2701-2705** **1-5 hours**  
**Independent Studies in Accounting**

A study of specific nature independently carried out by the student directly related to a particular department's area of exper-

tise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**AC 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991** **1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# HVAC, AIR CONDITIONING & REFRIGERATION TECHNOLOGY

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

**AI 1001** **1 hour**  
**Electrical Diagrams**

A course designed to familiarize the student with the various factors involved in electrical diagrams. The students will acquire a working knowledge of electrical circuits using schematic and pictorial diagrams. The schematics will include different loads and various switches utilizing electrical symbols. No prerequisite.

**AI 1012 (Lec), 1021 (lab)** **3 hours**  
**Theory of Refrigeration and Materials**

A study of the theory of refrigeration, along with the use and safety of refrigeration hand tools and commonly used materials. No prerequisite.

**AI 1022 (lec), 1031 (lab)** **3 hours**  
**Applied Electrical Fundamentals**

A course which starts with the basic fundamentals and processes of electrical wiring for refrigeration components and motors. After students acquire a working knowledge of electrical circuits, they apply this to laboratory tests on testing boards and refrigeration equipment.  
No prerequisite.

**AI 1032 (lec), 1041 (lab)** **3 hours**  
**Systems and Components**

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

Prerequisite: AI 1022 & 1031 or consent of instructor

**AI 1042 (lec), 1051 (lab)** **3 hours**  
**Refrigerants**

A study of various types of refrigerants and their characteristics, skills in handling refrigerants, pressure-temperature relationships, refrigerant oils, noncondensable gases, and their applications. No prerequisite.

**AI 1052 (lec), 1061 (lab)** **3 hours**  
**Domestic Refrigeration**

A study of application and knowledge of the fundamentals of refrigeration and electricity by means of troubleshooting and repairing domestic refrigerators and freezers. No prerequisite.

**AI 1062 (lec), 1071 (lab)** **3 hours**  
**Commercial Refrigeration**

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

Prerequisite: AI 1012, 1021, 1022, 1031, 1032, 1041, 1042, 1051, 1052, and 1061

**AI 1072 (lec), 1081 (lab) 3 hours**  
**Theory of Air Conditioning and Psychrometrics**

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

Prerequisite: AI 1012, 1021, 1022, 1031, 1032, 1041, 1042, 1051, 1052, and 1061

**AI 1082 2 hours**  
**Applied Air Distribution**

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

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

**AI 1092 (lec), 1102 (lab) 4 hours**  
**Air Conditioning Equipment and Installation**

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

Prerequisite: AI 1012, 1021, 1022, 1031, 1032, 1041, 1042, 1051, 1052, and 1061

**AI 1112 (lec), 1121 (lab) 3 hours**  
**Testing, Diagnosis, and Troubleshooting**

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

Prerequisite: AI 1012, 1021, 1022, 1031, 1032, 1041, 1042, 1051, 1052, and 1061

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

A course designed to provide a practical working knowledge and to develop skills required in the use of sheet metal in a residential duct system. After students become familiar with the tools and equipment and the set of safety standards used, they will apply this knowledge to practical application. This will include applying patterns, fabricating sheet metal, soldering, and drawing simple patterns. No prerequisite.

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

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

Prerequisite: AI 1123 or consent of instructor

**AI 1143 3 hours**  
**Heat Pump I**

An introductory course designed to cover the basic theory and applied application of the heat pump system. Students will gain a working knowledge and develop skills in the area of load calculations, (heat gain, heat loss) balance points of systems, installation and application, and methods of control of the equipment by different manufacturers. Servicing and troubleshooting the various heat pump systems will be dealt with. No prerequisite.

**AI 1153 3 hours**  
**Heat Pump II**

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

Prerequisite: AI 1143 or consent of instructor

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

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

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

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

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

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

**AI 1193 3 hours**  
**Introduction to Energy**

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

No prerequisite.

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

A study of solar energy and its uses for heating and cooling buildings, heating of domestic hot water, and heating of water for swimming pools. Active solar energy systems and passive solar energy systems will be investigated and dealt with. Students will gain knowledge, skills, and experience in locating, collecting, storing, and distributing solar energy. No prerequisite.

**AI 1203 3 hours**  
**Residential Electricity**

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. No prerequisite.

**AI 1213 3 hours**  
**Commercial Electricity**

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

Prerequisite: AI 1203 or consent of instructor

**AI 2701-2705** **1-5 hours**  
**Independent Studies in A/C and Refrigeration**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**AI 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991** **1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# ANTHROPOLOGY

**AN 1003** **3 hours**  
**Introduction to Cultural Anthropology**

An introductory course in cultural anthropology emphasizing the use of the cultural perspective in gaining understanding in the areas of social structure, political systems, economic systems, religious systems, and human communication. No prerequisite.

**AN 1103** **3 hours**  
**Intro. to Physical Anthropology and Archaeology**

An introduction to the study of physical anthropology and archaeology, with special emphasis on the connection between cultural and human development, human variability, major concepts in archaeological analysis, and some practical experience in archaeological method. No prerequisite.

**AN 2701-2705** **1-5 hours**  
**Ind. Studies in Anthropology**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**AN 2703** **3 hours**  
**Field Archaeology**

Field study course aiming to increase the student's knowledge and understanding of primitive man and his culture with special emphasis on field methods and an archaeological understanding of local pre-history. No prerequisite.

**AN 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# ART

**AR 1013** **3 hours**  
**Introduction to Art**

To introduce drawing techniques with perspective, shading, composition, eye-level, and design. Materials used include pencil, charcoal, ink, pastel, cray-pas, and mixed media. Recommend this class before taking drawing or painting. Does not satisfy humanities requirements. No prerequisite.

**AR 1103** **3 hours**  
**Design I**

A study of the basic elements of design, what they are, how they function individually, and how they relate to what is observed by the viewer. The application of elements is stimulated by a wide variety of projects stressing the development of ideas, and technical skills as related to the presentation of two-dimensional problems. No prerequisite.

**AR 1113** **3 hours**  
**Design II**

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

Prerequisite: AR 1103 or consent of instructor

**AR 1203** **3 hours**  
**Art Appreciation I**

A general survey of the artistic activities of man from prehistoric to modern times. Slides and video tapes are used in conjunction with the course. No prerequisite.



### **AR 1213** **Art Appreciation II** **3 hours**

A survey of art history from 1900 to the present, with some studio applications. Selected art movements and techniques will be discussed. No prerequisite.

### **AR 1223** **Art Appreciation** **3 hours**

An introduction to art through various media and techniques such as design, drawing, printmaking, color, shading, sculpture, and space relationship. Media used include ink, cray-pas, plaster, and acrylics. This is a survey course and not recommended for art majors. Slides and video tapes are used in conjunction with the course. No prerequisite.

### **AR 1303** **Drawing I** **3 hours**

An introduction to drawing as an approach to space and form through a variety of methods, both traditional and contemporary. Emphasis will be placed upon analytical perception as well as familiarization with and control of drawing material. Introduction to perspective and light and dark shades; some texture and other media will be used for creative drawings. No prerequisite.

### **AR 1313** **Drawing II** **3 hours**

A course in the drawing of the human figure in charcoal, crayon, ink, and other media. Included are representational, abstract, and non-objective drawing; space and volume relations, movement and direction of planes in space; development of visual units of design and their integration in the whole organization. No prerequisite.

### **AR 1403** **Painting I** **3 hours**

An introduction to the materials and techniques of oil and acrylic painting, intended to develop technical and expressive abilities. Forms, colors, line, texture, and organization of painting will be studied, plus practical application of framing techniques. No prerequisite.

### **AR 1413** **Painting II** **3 hours**

A course in the theory and practice of painting using oil and acrylics. Development of form through color and appropriate emphasis on texture is studied, along with objective appearance conditioned to meet the requirements of a controlled composition and aesthetic concept. While working with a variety of media, the student will be encouraged to emphasize individual expression. Prerequisite: AR 1403

### **AR 1423** **Painting III** **3 hours**

A continued application of principles of composition in the medium of opaque and watercolor materials. Emphasis on expression and refinement of personal techniques. Prerequisite: AR 1403, 1413, or consent of instructor

### **AR 1503** **Figure Drawing I** **3 hours**

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

### **AR 1513** **Figure Drawing II** **3 hours**

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

Prerequisite: AR 1503 or consent of instructor

### **AR 1523** **Figure Drawing III** **3 hours**

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

Prerequisite: AR 1503, 1513, or consent of instructor

### **AR 1603** **Graphic Design I** **3 hours**

Basic commercial art and print production will be emphasized. Applied layout, design, typography, traditional and computer-assisted production artwork with different mechanical techniques.

Prerequisite: background in art and instructor's consent

### **AR 1613** **Graphic Design II** **3 hours**

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

Prerequisite: AR 1603 or consent of instructor

### **AR 1703** **Art History I** **3 hours**

A historical study of art, tracing its development from prehistoric times to the eighteenth century. Emphasis is on the study of the growth and development of art forms and movements, leading to an understanding of the relationship of art to the historical periods. No prerequisite.

### **AR 1713** **Art History II** **3 hours**

An advanced art history course. Students will gain more experience in identification and study of 18th, 19th, and 20th century American and European artists and their works. No prerequisite.

### **AR 2003** **Watercolor I** **3 hours**

The study of watercolor painting with emphasis on color, composition, and pictorial expression with experimentation in varied methods of watercolor painting. Studies will include washes and brush control. No prerequisite.

### **AR 2013** **Watercolor II** **3 hours**

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

Prerequisite: AR 2003 or consent of instructor

### **AR 2043** **Watercolor III** **3 hours**

A continuation of the study of watercolor painting with emphasis



sis on personal creative structure, topics and problems, and contemporary painting.

Prerequisite: AR 2013 or instructor's consent

### **AR 2023 Art for Children** **3 hours**

A study of the types of art activities related to various groups in the elementary school, including experience with art materials used in the classroom. No prerequisite.

### **AR 2103 Printmaking I** **3 hours**

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

### **AR 2113 Printmaking II** **3 hours**

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

### **AR 2203 Photography I** **3 hours**

A 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, 35mm camera

### **AR 2213 Photography II** **3 hours**

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

Prerequisite: AR 2203 or consent of instructor, 35mm camera

### **AR 2303 Ceramics I** **3 hours**

An introduction to clay as a medium of expression using ancient and modern techniques of forming clay objects. Hand building, wheel throwing, and alternative forming methods will be introduced. Firing techniques including oxidation, reduction, raku, and primitive methods are taught. No prerequisite.

### **AR 2313 Ceramics II** **3 hours**

A continuation of Ceramics I approaching clay in a more personal way focusing on the development of an individual approach to the medium. Emphasizing aesthetics related to contemporary and historical trends in clay. Individual projects focusing on experimentation and research into clay body and glaze calculation techniques will be emphasized. Prerequisite: AR 2303 or consent of instructor.

### **AR 2323 Ceramics III** **3 hours**

A continuation of Ceramics II. Advanced studies designed to allow concentration on clay as a medium of individual expression. Emphasis is on individual research and production methods. Course of study will include preparation for scholastic continuation in ceramics. Prerequisite: AR 2313 or consent of instructor.

### **AR 2403 Sculpture I** **3 hours**

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. No prerequisite.

### **AR 2413 Sculpture II** **3 hours**

An examination and analysis of traditional and contemporary sculpture. Sculptural design as related to material and techniques such as clay, wood, stone, plaster, and metal are explored. Prerequisite: AR 2403 or consent of instructor

### **AR 2701-2705 Independent Studies in Art** **1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

### **AR 2711-2715 Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## **AUTO TECHNOLOGY**

### **AT 1001 Introduction to Auto Technology** **1 hour**

The first course in the degree plan sequence of courses for Auto Technology majors. Topics include the safe use of chemicals, hand tools, power tools, protective clothing and equipment, fore and shop safety including EPA and OSHA regulations. Also covered in this unit are shop operations, customer relations, repair orders, shop manuals, work habits, career opportunities

and duties of a technician. Intro to Auto Technology is a prerequisite to all other units. It is taught at the beginning of the fall semester only.

### **AT 1022 ASE Brakes** **2 hours**

Basic theory, operation, diagnosis and repair of drum, disc, hydraulics, power and ABS brake systems are taught in this unit. Prerequisite: Intro to Auto Technology



**AT 1043 ASE Suspension/Steering 3 hours**

Basic theory, operation, diagnosis and repair of steering systems, front suspension, rear suspension, tires and wheel alignment and balance are taught in this unit.

Prerequisite: Intro to Auto Technology

**AT 1065 ASE Manual Drive 1-5 hours**

Basic theory, operation, diagnosis and repair of clutches, manual transmission/transaxles, drive shafts, CV joints, differentials, and four wheel drive are taught in this unit.

Prerequisite: Intro to Auto Technology

**AT 1083 ASE Automatic Transmission/Transaxle 3 hours**

Basic theory, operation, diagnosis and repair of automatic transmissions, automatic transaxles and trans/transaxle service are taught in this unit.

Prerequisite: Intro to Auto Technology

**AT 1104 ASE Engine Repair 4 hours**

This unit includes instruction in basic theory, operation, diagnosis and repair of the complete automotive engine including rebuilding, engine lubrication, and cooling systems.

Prerequisite: Intro to Auto Technology

**AT 2036 ASE Electrical Systems 6 hours**

Basic theory, operation, diagnosis and repair of basic electrical circuits, batteries, starting systems, lighting systems, gauges, and accessories are taught in this unit.

Prerequisite: Intro to Auto Technology

**AT 2056 ASE Engine Performance 6 hours**

Basic theory, operation, diagnosis and repair of basic and electronic computerized ignition systems, basic and injected fuel systems, exhaust systems, emission systems, tune-up, and engine performance are taught in this unit.

Prerequisite: Intro to Auto Technology

**AT 2073 ASE Heating & Air Conditioning 3 hours**

Basic theory, operation, diagnosis and repair of the auto heating and air conditioning systems including freon recovery are taught in this unit.

Prerequisite: Intro to Auto Technology

**AT 2701-2705 Independent Studies in Auto Technology 1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**AT 2711-2715 Special Topics 1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# **BIOLOGICAL SCIENCE**

**BI 1003 Nutrition 3 hours**

A study of the essential nutrients and their value in various food groups, their functions in the body, and how to determine the food needs of the individual. No prerequisite.

**BI 1103 Ecology of Wildlife and Man 3 hours**

A study of principles of ecology as they apply to such problems as pollution and wildlife, park, urban, and resource management. Historical and political implications will be examined. Methods of coping with problems will be evaluated. Three hours lecture per week. No prerequisite.

**BI 1112 Medical Terminology 2 hours**

A course in biomedical terminology. The student learns to pronounce, spell, and interpret the meaning of word components and how they fit together in modern biomedical terminology. The student studies some 1,500 words and learns the basics for expanding his or her own biomedical vocabulary. Two hours lecture per week. No prerequisite.

**BI 1113 Medical Terminology I 3 hours**

An introduction to medical terminology focussing on the building and understanding of anatomical and pathological terms through identification and interpretation of roots, prefixes and suffixes. Students will pronounce, spell, define and interpret text on basic terms used in reporting on body systems, medical specialties, disease and procedural activities. The course will address basic medical terminology and abbreviations. No prerequisite.

**BI 1123 Medical Terminology II 3 hours**

An introduction to pharmacology, and diagnostic procedures. Emphasis will be placed on pharmacological terminology, and associating drugs with the conditions for which they are commonly prescribed. Interpretation of common laboratory and diagnostic tests will also be addressed.

Prerequisite: Medical Terminology I





### **BI 1202 Health** **2 hours**

A general course designed to develop proper attitudes and practices which will contribute to the fine art of living. Health problems which require community action are given consideration. The course is intended for education majors. A portion of this course is devoted to methods of teaching health. No prerequisite.

### **BI 1203 Introduction to Life Science** **3 hours**

A study of fundamental biological concepts, with emphasis on human biology. Topics include: the cell, the chemistry of life, the structure and function of human organ systems, genetics, ecology, and evolution. No prerequisite.

### **BI 1303 (lec), 1312 (lab) General Biology** **5 hours**

An introductory course involving fundamental biological principles of both plant and animal life. This course is designed to be used as a general education course and is not open to students with credit in botany or zoology or students planning to take an additional course in the biological sciences. Three hours of lecture and two two-hour laboratory periods per week. No prerequisite.

### **BI 1313 (lec), 1322 (lab) Introduction to Botany** **5 hours**

An introduction to the plant kingdom involving the study of the basic biological principles of plant life. Topics will include plant classification, evolution of species, life cycles and plant anatomy. Study begins at the molecular and cellular level and ends with study of the entire organism. Laboratory is designed to enhance classroom lecture. This involves microscopy of tissues, study of organs by dissection, germination of seeds, and biochemical experimentation for a greater understanding of complex processes like photosynthesis. No prerequisite.

### **BI 1323 (lec), 1332 (lab) Principles of Biology** **5 hours**

An introductory course concerned with the behavior of molecules, cells, organisms, and populations in an ecosystem-bound and evolving world. This course is intended for all biology related fields, pre-health, and allied health sciences, and agriculture related disciplines. This course is intended to be taught as a University level biology course. No prerequisite.

### **BI 1403 (lec), 1412 (lab) Invertebrate Zoology** **5 hours**

A study of the structure and function of invertebrates with special attention paid to the phylogenetic origins of taxonomic groups and the integration of their structural systems. Three one-hour lecture recitation periods and two two-hour laboratory period per week. This course is recommended for students majoring in the life sciences and related fields. Prerequisite: BI 1323 & BI 1332.

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

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

riods per week.

Prerequisite: BI 1323 & 1332, or consent of instructor

### **BI 1701 Introduction to Respiratory Therapy** **1 hour**

A course intended to introduce a prospective student to the Respiratory Care profession. Includes the study of topics, techniques, and issues that are a part of a respiratory therapist's daily job function. In addition to the classroom discussions and demonstrations, each student will spend a shift with a staff therapist as an observer. No prerequisite.

### **BI 1802 (lec), 1812 (lab) Introduction to Human Anatomy and Physiology** **4 hours**

A survey of the structure and function of the human body. The micro and macroscopic structure and the function of each system will be studied. The course is intended for students enrolled in an LPN program. The integument, skeletal, muscular, nervous, endocrine, circulatory, digestive, respiratory, urinary and reproductive system will be studied. Two lectures and two lab periods per week and the laboratory session will support the lecture activity. No prerequisite.

### **BI 1902 (lec), 1912 (lab) Introduction to Human Anatomy and Physiology** **4 hours**

A study of the function of the cell, nervous, skeletal, muscular, cardiovascular, immune, excretory, digestive, respiratory and reproductive system. The course is intended to compliment Intro to Human Anatomy & Physiology, and provide a complete view of normal body functions. The primary targets are students bridging from LPN to an RN program. Prerequisite: BI 1802 & 1812.

### **BI 2003 Genetics** **3 hours**

A study of the principles of heredity and biological evolution as applied to plants and animals. Prerequisite: BI 1303 & 1312, 1403 & 1411, 1503 & 1511, 1603 & 1612, or consent of instructor

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

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

Prerequisite: BI 1323 & 1332, CH 1203 & 1212, or CH 1303 & 1312, or consent of instructor  
College courses in math are useful.

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

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.

Prerequisites: BI 1323/1332, CH 1203/1212, or CH 1303/1312, or consent of instructor  
College courses in math are useful.



**BI 2302 (lec), 2303 (lab) 5 hours**  
**Vertebrate Morphology**

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

Prerequisite: BI 1323 & 1332, or consent of instructor.

**BI 2403 (lec), 2411 (lab) 4 hours**  
**Microbiology**

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

Prerequisite: BI 1323 & 1332, or consent of instructor.

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

A course which 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. This course involves one two-hour field trip per week.

Prerequisite: BI 1323 & 1332, or consent of instructor.

**BI 2603 3 hours**  
**Pathophysiology**

This course will give a basic introduction to body disfunction in disease. The vector, or cause of the disease and its impact on body function will be studied. Topics to be covered will include

etiology, epidemiology, vectors, and chronic disease as well a genetic anomalies will be addressed using a systemic approach.

Prerequisites: Human Anatomy and Physiology

**BI 2701-2705 1-5 hours**  
**Independent Studies (Honors) in Biology**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**BI 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**BI 2802 2 hours**  
**Practicum in Biology**

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

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

**BI 2903 3 hours**  
**Alpine Biology**

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

Prerequisite/Corequisite: none/GL 2703

# BUILDING CONSTRUCTION TECHNOLOGY

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

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

A course in reading and interpreting prints of the building, mechanical, and electrical trades. Includes preparation of a complete set of working drawings for a structure. No prerequisite.

**BC 1023 3 hours**  
**Surveying and Layout**

A study of the theory involving basic surveying equipment, chaining, differential leveling, grade operations, layout of buildings, and building construction layout. No prerequisite.

**BC 1033 3 hours**  
**Concrete**

A study of the basic theory and processes involving Portland cement, mixing cement, testing and design of concrete mixture, curing concrete, tools for placing and finishing concrete, and estimating. No prerequisite.

**BC 1043 3 hours**  
**Carpentry**

A study of basic theory and application of building construction fundamentals. Offered evenings only. No prerequisite.

**BC 1045 5 hours**  
**Carpentry**

A study of basic theory and application of building construction fundamentals including fabrication from architect's plans. No prerequisite.



**BC 1055** **Electricity** **5 hours**

A study of basic A.C. and D.C. circuits with emphasis in commercial and residential applications. No prerequisite.

**BC 1064** **Plumbing** **4 hours**

A study of basic theory involving materials tools and calculations, drainage and disposal systems, fittings, fixtures, and lay-out of systems. No prerequisite.

**BC 1073** **Welding** **3 hours**

A study of fundamental processes involving oxyacetylene and electric arc welding. No prerequisite.

**BC 1083** **Commercial Carpentry** **3 hours**

A study of basic theory and application of commercial building construction fundamentals. Prerequisite: BC 1033

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

A study of basic building, mechanical, and electrical maintenance. Includes applying patterned fabrication of sheet metal, soldering, and drawing simple patterns. No prerequisite.

**BC 1103** **Energy Efficient Buildings** **3 hours**

A study of energy conservation practices used in new and existing structures. No prerequisite.

**BC 1113** **Residential Construction Procedures** **3 hours**

A course dealing with building construction fundamentals including concrete, carpentry, plumbing, and electricity. Prerequisite: BC 1045

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

A course designed to provide a working knowledge of construction and to develop many different shop skills and executing a

project. No prerequisite.

**BC 1133** **Home Maintenance** **3 hours**

A study of basic theory and application in repairing, maintaining, and remodeling residential structures. No prerequisite.

**BC 1143** **Repair and Construction of Farm Machinery and Buildings** **3 hours**

A study of basic theory and application of farm building construction and equipment repairs. No prerequisite.

**BC 1153** **Blueprint Reading/Architectural Drawing** **3 hours**

A course in reading, drawing, and interpreting prints of the building, mechanical and electrical trades. Students must prepare a complete set of working drawings for a structure. No prerequisite.

**BC 2701-2705** **Independent Studies in Building Construction Technology** **1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**BC 2711-2715** **Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991** **Employment Skills** **1 hour**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

## BUSINESS

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

**BU 1002** **Principles of Banking** **2 hours**

This course touches on nearly every aspect of banking from the fundamentals of negotiable instruments to contemporary issues and developments within the industry. No prerequisite.

**BU 1003** **Introduction to Business** **3 hours**

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. No prerequisite.

**BU 1013** **Principles of Marketing** **3 hours**

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. No prerequisite.



### **BU 1023 Salesmanship** **3 hours**

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. No prerequisite.

### **BU 1033 Principles of Advertising** **3 hours**

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. No prerequisite.

### **BU 1043 Principles of Finance** **3 hours**

A broad introduction to the operation, mechanics, and structure of the financial system within the United States. Special emphasis is given to financial instruments, markets and institutions, the Federal Reserve System and monetary policy. The course stresses the impact of monetary policy on the economy and on the operation of financial institutions. The course is intended to be the first course in finance. No prerequisite.

### **BU 1053 Fundamentals of Management** **3 hours**

A study in the evaluation and comparison of private and public personnel practices and the techniques of recruiting, selecting, transferring, promoting, classifying, and training workers. No prerequisite.

### **BU 1063, 2023 Business Management/ Marketing Internship** **3 hours**

Actual work experience in a business or industry with periodic discussions of the problems involved in applying classroom principles to the job. Prerequisites: Enrollment in business management program and instructor's consent

### **BU 1012 Law and Banking Principles** **2 hours**

This course is designed to focus on the legal issues as related to the banking industry. The course will address the area of the law that bankers are commonly concerned with and special emphasis is placed on the Uniform Commercial Code.

### **BU 1103 Elements of Human Resource Management** **3 hours**

This course will examine the functions of a human resources department as well as the challenges and opportunities facing human resource managers. This course will explore the attitudes and necessary skills of managers and supervisors in solving human problems and developing a skilled and motivated workforce.

### **BU 1112 Consumer Lending** **2 hours**

This course provides a thorough presentation of the consumer credit function, from the evolution of consumer credit to the marketing of consumer loans. Students will participate in the actual consumer loan process through exercises in class.

### **BU 1113 Principles of Industrial Management** **3 hours**

This course is designed to study the basic relationship of business functions necessary for the success of a company engaged in a manufacturing environment. This includes the study of customer service; inventory control and manufacturing; and purchasing controls. This course will also be a preparation course for the Inventory Management Certification examination.

### **BU 1122 Commercial Lending** **2 hours**

This course will provide a conceptual framework from the study of commercial lending. The course will focus on how the commercial lending process is organized and how it contributes to the profitability of the bank.

### **BU 1123 Analyzing Financial Statements** **2 hours**

This course will teach students to analyze financial information in conjunction with making commercial loan credit decisions. The course will utilize various financial ratios and other decision making processes used by commercial bankers.

### **BU 1193 Dynamics of Leadership** **3 hours**

This course has as its central focus the development of leadership ability. The course provides a basic understanding of leadership and group dynamics theory, assists participants in developing a personal philosophy of leadership, and the awareness of the moral and ethical responsibilities of leadership. This course may not transfer. No prerequisite.

### **BU 2012 Readings in Management** **2 hours**

A study of selected readings in group dynamics, communications, decision-making theory, managerialism, and its economic justification.

Prerequisite: BU 1053

### **BU 2013, 4 Survey Calculus** **3-4 hours**

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

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

### **BU 2033 Legal Environment of Business** **3 hours**

A study of those areas of the law which affect most businesses. Topics include: emphasis on the perspective and systematic approach of the law to issues such as legal history, reasoning, court systems and procedures, regulatory law, environmental responsibility, consumer rights, law of torts, contracts and law of sales, international dimensions of legal environment, anti-trust and employment implications. No prerequisite.

### **BU 2043 Business Simulation and Problem Solving** **3 hours**

A computer-assisted course in which the student encounters and attempts to solve the problems common to business owners and managers. The student is able to participate in operating an enterprise, as well as managing inventories, financial resources, and personnel. In addition to operating an ongoing concern,

the student will also participate in a number of related business oriented decision-making situations, such as plant expansion, purchasing, and decision-making strategies.

Prerequisite: AC 1003, AC 1023 or BU 1043, or consent of instructor.

**BU 2063** **3 hours**  
**Concept of Quality and Productivity**

A course which introduces the concepts of quality and productivity, demonstrating that quality improvements enhance productivity and competitive position.

Prerequisite: none

**BU 2073** **3 hours**  
**Techniques to Improve Quality**

A course which includes elements of a successful Quality Circle Program through a hands-on approach. No prerequisite.

**BU 2083** **3 hours**  
**Introduction to Total Quality Management**

This course is a comprehensive in-depth introduction to total quality management techniques and requirements. This course uses a direct straightforward approach that incorporates theories and principles of total quality and applies these principles to real-world settings.

**BU 2103** **3 hours**  
**Basic Business Statistics**

An introductory course dealing with the methods of collecting, organizing, presenting, and analyzing data related to business. The course deals with measures of central tendency and dispersion, elementary probability and probability distributions, statistical estimation and hypothesis testing, and linear correlation.

Prerequisite: MT 1403, or 1505, or 2003, or 2004, or consent of instructor

**BU 2113** **3 hours**  
**Money & Banking**

As a banker, your stock is money. This course presents a fundamental treatment of how money functions in the U.S. and world economies. The course will include the concept of and illustration of a bank's role in the nation's payment mechanism. The course will also explain how various types of financial institutions operate, the workings of monetary and fiscal policies, and the functions and powers of the Federal Reserve.

**BU 2123** **3 hours**  
**Basic Investments**

This course is an introduction to investment securities. The course will provide general knowledge of the securities markets and basic investment analysis.

**BU 2133** **3 hours**  
**Inventory & Production Control**

This course is an application of management planning and control techniques related to the production process. Upon completion of this course, students will be able to apply important concepts and implement procedures for master planning, capacity planning, inventory management and control, and scheduling and control of operations. A simulation using MAPICS software will be used to provide practical experience in these topics.

**BU 2143** **3 hours**  
**Small Business Management**

This course is designed for those who may want to start and operate their own business, as well as those who are already business owners, but wish to strengthen their entrepreneurial and management skills through development of a small business plan. Upon completion of this course, students should be able to evaluate the opportunities and risks involved in the small business; apply the techniques involved in starting a new venture including the legal aspects and development of a business plan; and explain the techniques and principles of planning, organizing, directing, and controlling the operating venture.

**BU 2153** **3 hours**  
**Group Dynamics**

This course is a study of interactions in small groups. The study includes interpersonal sensitivity, communication, decision making, development of group structure and norms, and will explore their importance in the business organization.

**BU 2203** **3 hours**  
**Market Research**

Upon completion of this course, students should understand the role of marketing research, the stages of the research process, research degrees for collecting primary data, measurement concepts, sampling and fieldwork, and data analysis and interpretation. Students will conduct a marketing research project utilizing a computerized database. The emphasis of the course will be equally on (1) research techniques and technical skills involving research design, quantitative analytical methods, and software and (2) marketing analysis--with emphasis on cases, practical applications, and decision making in real world marketing contexts. Each student in a team format will conduct a research project. The research project will require a hands-on application of the principles and methods covered in the course. Prerequisite: BU1013, or consent of instructor.

**BU 2701-2705** **1-5 hours**  
**Independent Studies in Business Management**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**BU 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991** **1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# CHEMISTRY

## **CH 1003** **3 hours** **Introduction to Chemistry**

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

Prerequisite: MT 1013 with a grade of "C" or better, or a math placement score equivalent to enter MT 1303.

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

An introduction to the basic principles of chemistry, including inorganic, analytical, physical, and organic chemistry. Three hours of lecture and two two-hour laboratory periods per week. This course is designed for the student with no background in chemistry.

Prerequisite: MT 1303 with a grade of "C" or better, or a math placement score equivalent to enter MT 1403.

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

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

Prerequisite or Corequisite: MT 1303

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

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

Prerequisite or Corequisite: MT 1403 (or higher) or placement score to enter MT 1605 and either CH 1103 & 1112 or high school chemistry.

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

A continuation of CH 1303 & 1312, including the study of chemical equilibria, acid-base chemistry, complex ions, thermodynamics, oxidation-reduction reactions, nuclear chemistry, and qualitative analysis.

Three one-hour lecture periods and two two-hour laboratory periods per week, emphasizing quantitative techniques.

Prerequisite: Grades of "C" or better in CH 1303, CH 1312, and MT 1403 or higher level math course.

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

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: Grades of "C" or better in CH 1403, CH 1412, and MT 1403 or higher level math course

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

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

Prerequisite: CH 1403 & 1412 or consent of instructor

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

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

Prerequisite: CH 2303 & 2312

Prerequisite or Corequisite: CH 1403 & 1412

## **CH 2701-2705** **1-5 hours** **Independent Studies in Chemistry**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **CH 2711-2715** **1-5 hours** **Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.



# COMMUNICATION, MEDIA AND THEATRE

## CT 1003 3 hours Oral Communications

A fundamentals of speech course designed to develop student improvement in the critical understanding of ideas about communication as well as the critical issues of our time, and subsequently to improve individual communication skills. Intended to meet the DESE communications requirement for education majors. Prerequisite: none

## CT 1013 3 hours Interactive Lateral Thinking

Course covers three areas of 10 lessons each in interactive thinking skills: breadth, organization, interaction, and action. Classwork solely consists of group discussions in which students learn to apply skills toward solving a common problem. Skills focus on such skills as planning, prioritizing, alternatives, analyzing, focussing, examining both sides, evidence structure, being wrong: mistakes vs. prejudice, expand, contract, input, etc. Interaction concentrates upon communication through cooperation and negotiations between people focussed upon a common goal. No prerequisite.

## CT 1023 3 hours Creative Lateral Thinking

Another "user-friendly" thinking course that emphasizes creative thinking skills: breadth, information and feeling, and creativity. Classwork consists of group discussions covering: information, questions, ready made, yes, no, and po (provocative operation), stepping stone, random input, evaluation, etc. Creativity concentrates on methods to create new ideas and perspective. Group discussion and problem solving are the primary components in daily classwork. No prerequisite.

## CT 1103 3 hours Public Speaking

An introduction to the basic elements of public speaking. Assignments include the presentation of speeches, preparation of outlines, and the discussion of evaluation techniques. No prerequisite.

## CT 1203 3 hours Oral Interpretation

A study in the basic techniques of oral interpretation. The recreation of literature is stressed through acquiring the skills and techniques necessary to convey the intellectual, emotional, and aesthetic values of literature to an audience. The course will include study in the oral interpretation of prose, drama, and poetry. No prerequisite.

## CT 1303 3 hours Theatre Appreciation

An appreciation course designed to give a comprehensive introduction to theatre, including theatre history and contributions made by directors, actors, designers, technicians, and playwrights to modern dramatic productions. No prerequisite.

## CT 1334 4 hours American Sign Language I

This course offered for anyone interested in gaining a knowledge about deafness and the sign system used by the deaf. The students will learn: fingerspelling, approximately 500 words, reverse skills, history of sign language; and an understanding of deafness. No prerequisite.

## CT 1344 4 hours American Sign Language II

The student will become more proficient in fingerspelling; know the signs for 1,000 words; improve reverse skills; gain an understanding of different levels of deaf verbal language, and begin learning interpretation and translation. Prerequisite: CT 1334

## CT 1354 4 hours American Sign Language III

A continuation of training in sign language usage. Emphasis on increased ability in both receptive and expressive areas as well as the ability to move from one modality of sign language to another modality. Concentration on the mastery of Ameslan. Prerequisite: CT 1344 and consent of instructor

## CT 1403 3 hours Beginning Acting

A course introducing the student to basic acting. No prerequisite.

## CT 1703 3 hours Intro to Mass Communications

Through lectures, discussions and audiovisual presentations, the class will examine the history, organization, role, and current status of newspapers, magazines, broadcasting, film, cable, public relations advertising and corporate communications. No prerequisite.

## CT 1912 2 hours Stage Makeup

A course in materials and methods of application of makeup artistry for cosmetic and character effects on stage. No prerequisite.

## CT 2002 2 hours Stagecraft

Study of fundamentals or properties and scenic construction, stressing terminology and practical production experience. No prerequisite.

## CT 2012 2 hours Advanced Stagecraft

Study of applying principles learned in lighting, construction, or painting will be developed toward a student designed project. Each project will be documented and include at least one of the following: plot or plans; a limited number of elevations; a rendering and white model. Documentation will include how basic principles taught apply to design. Prerequisite: CT 2002, or consent of instructor.



**CT 2022 2 hours**  
**Advanced Stage Makeup**

A study in the principles and techniques of three-dimensional makeup. Exercises include preparation and application of beards, latex, putty, scarwax, and balding. Procedures and steps followed will be documented by each makeup artist.  
 Prerequisite: CT 1912, or consent of instructor

**CT 2102 2 hours**  
**Voice and Diction**

A study of respiration, phonation, resonance, articulation, and diction for the stage.  
 Prerequisite: none

**CT 2112 2 hours**  
**Advanced Voice and Diction**

Development of a set of specific exercises tailored to achieve a constant performing level of clarity, enunciation, breathing, projection, and inflection in voice. Application of these principles will then be tested in the selections of reading from scripts to be performed before conservatory students.  
 Prerequisite: CT 2102, or instructor's consent

**CT 2203 3 hours**  
**Advanced Public Speaking**

An in-depth study into the persuasive elements of communication including audience analysis and motivational techniques.  
 Prerequisite: CT 1103

**CT 2403 3 hours**  
**Acting I**

An extensive study in the theories and techniques of acting. No prerequisite.

**CT 2503 3 hours**  
**Acting II**

An intensified study of characterization centering around the study of characters in production and the adaptation of acting techniques to various characters in production and the adaptation of acting techniques to various styles.  
 Prerequisite: CT 2403 or consent of instructor

**CT 2603, 2613, 2623, 2633 3 hours**  
**Forensics**

A course in intercollegiate debate and speech competition. Prerequisite: consent of instructor

**CT 2701-2705 1-5 hours**  
**Independent Studies in Communication/Media/Theatre Arts**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**CT 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**CT 2801, 2, 3 1-3 hours**  
**Communication/Media/Radio/Television/Theatre Practicum**

A course designed to give interested students the opportunity to work in a controlled environment. The course provides experience and training in communications, media, radio, television, or theatre arts under the direct supervision of an instructor.  
 Prerequisite: consent of instructor

**CT 2803 3 hours**  
**Children's Theatre**

This course involves seven weeks of study, rehearsal and preparation for a performance that will tour East Central College District elementary schools during spring break. May be repeated. No prerequisite.

**CT 2901, 2, 3 1-3 hours**  
**Acting Practicum**

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

# COMPUTER INFORMATION SYSTEMS

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

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

**CS 1001 1 hour**  
**Introduction to Personal Computer/APPLE/Macintosh**

An introductory course in personal computers to acquaint the student with the operation of a microcomputer system. Word processing, spreadsheet processing, file management and simulation programs are used by the student to develop an appreciation

of the kinds of problems a computer can handle. All course activity is conducted in the micro-lab. Each student uses the microcomputer for approximately fifteen hours.  
 Prerequisite: Keyboarding skills recommended

**CS 1003 3 hours**  
**Microcomputer Applications**

A course designed to introduce the student to a variety of ways to use microcomputers in business. Spreadsheet processing, data base management, word processing, and the operating system of a microcomputer will be the focus of the course.  
 Prerequisite CS 1013 recommended.  
 Keyboarding skills required.



**CS 1011****1 hour****Intro to Personal Computers/IBM**

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

Prerequisite: Keyboarding recommended

**CS 1013****3 hours****Introduction to Computers and Information Systems**

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

Prerequisite/Corequisite: Keyboarding skills.

**CS 1021****1 hour****IBM DOS & Utility Programs**

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

Prerequisite: CS 0011 or consent of instructor. Keyboarding recommended.

**CS 1023****3 hours****Computer Fundamentals and Operations**

A course to familiarize students with the general hardware of modern computer systems and to explain the relationship between computer hardware concepts and operating system software organization. Topics include data and storage representations including binary arithmetic, Boolean algebra applications, operating system concepts, computer system components, device characteristics (including data base structure), and operations principles and documentation. AS/400 terminals are used to complete lab work.

Prerequisite: CS 1013 and/or previous programming experience

**CS 1031****1 hours****Microsoft Windows**

A course designed to introduce the student to the Microsoft Windows capabilities on the microcomputer system. Through lecture, demonstration, handouts, hands-on experiences the students will use Windows to communicate with the microcomputer by pointing at windows, menus, and icons. Topics covered will be: Navigating through Windows, Program Manager, File Manager, Print Manager, Transferring Data between applications, and Customizing Windows.

Prerequisites: CS 0011. Keyboarding required. Experience needed with microcomputers and application software.

**CS 1033****3 hours****Problem-Solving Techniques**

A basic course in logical problem-solving methods employed in today's computer systems. Emphasis is placed upon developing

the student's skills to logically apply the concepts to the problem solutions and maintaining an overall structure and discipline in logical design. General conceptual areas covered include: problem definition, problem analysis, solution development, and documentation.

Corequisite: CS 1013

**CS 1041****1 hour****Introduction to Spreadsheet**

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

Prerequisite: Keyboarding recommended

**CS 1051****1 hour****Advanced Spreadsheet**

A course designed for students familiar with the spreadsheet capabilities. Topics include managing data files, producing graphs, and developing simple macros.

Prerequisite: CS 0021 or consent of instructor

**CS 1053****3 hours****RPG Programming**

A beginning course in business programming using the problem-oriented language, Report Program Generator III/RPG 400. The capabilities and limitations of RPG 400 and the structure and design of this report writer will be examined. The preparation and integration of languages' specification forms and its sundry features will be studied and applied to the solution of various business reporting requirements. AS/400 terminals are used to complete course work.

Prerequisite: CS 1013, and CS 1033, keyboarding skills.

**CS 1054****4 hours****Visual Basic Microsoft**

This course covers programming Windows applications using Visual Basic. Topics include programming in a graphical user interface, writing event-oriented applications, working with projects, file handling controls, multiple document interface (MDI), object types, control variables, arrays, error handling routines, dynamic data exchange (DDE), object linking and embedding (OLE), and using data controls to interact with databases. This course will help the student prepare for the Microsoft Certified Professional Exam.

**CS 1061****1 hour****Introduction to Database**

A course designed to teach the use of a data base program. The development of specifications for files and records, sorting, retrieving records and updating records will be the main topics. Beginning programming techniques will also be taught. The course will use microcomputers.

Prerequisite: CS 0011. Keyboarding recommended

**CS 1063****3 hours****Microcomputer Operations**

A course to familiarize students with the microcomputer hardware and operating system software. Topics include the PC microprocessor and support chips, ROM software, ROM BIOS, Utility software and diagnostics, DOS and its functions, net-

working terminology and PC LAN considerations, and peripheral coordination.

Prerequisite: CS 1013, or consent of the instructor.

### **CS 1064 Access Microsoft 4.5 hours**

A course to learn how to plan, create, and maintain Access databases. The course includes retrieving information by creating queries, developing professional looking reports, create customized forms, and work with macros and Access Basic. Advanced tasks include creating input masks, importing data, creating parameter queries, linking multiple tables, creating custom forms and reports, creating macros, switchboards, custom menus, and create Access Basic functions and event procedures. This course will help the student prepare for the Microsoft Certified Professional Exam. Its prerequisite is CS 1054 Visual Basic Microsoft or consent of the instructor.

### **CS 1071 Advanced Database 1 hour**

This course is designed for individuals who are familiar with the basic commands of a database either through experience or a database course. Through discussion, demonstration and extensive hands-on use, the student will learn how to develop programs, how to create special input and output screens, and how to solve complex problems in a database software. Prerequisite: CS 0061 or consent of instructor.

### **CS 1081 Presentation Software (Microsoft Powerpoint) 1 hour**

A course designed to introduce the student to presentation software capabilities on the microcomputer system. Through lecture, demonstration, handouts, and hands-on experiences, the student will use presentation software as a tool to create computer presentations. Topics covered will be: Fundamentals of Presentation Software, How to Build a Presentation, and Explore the Capabilities of Presentation Software/Graphics. Prerequisites: CS 0011, keyboarding required. Experience needed with microcomputer and application software.

### **CS 1091 Introduction to Networks 1 hours**

A course designed to introduce the student to the basic concepts of networks. Through lecture, demonstrations, handouts, and hands-on experiences the students will learn networking concepts, vocabulary, and applications. Topics covered will be: network concepts, configurations, installation and trouble shooting of networks (Lantastic, etc.)

Prerequisite: CS 1013, keyboarding recommended. Experience needed with microcomputers and application software.

### **CS 1221 Microsoft Windows Programming Standards 1.5 hours**

A course to familiarize the student with key architectural constructs of the Windows operating system and explain how constructs are related; explain the differences between the user interface design guidelines of the Microsoft Windows operating systems; define key architectural constructs of OLE and explain how those constructs are related; and define key architectural constructs of Windows Open Services Architecture (WOSA) including Open Database Connectivity (ODBC), Messaging API (MAPI), and Telephony API (TAPI). This course will help the student prepare for the Microsoft Certified Professional Exam. Prerequisite: CS 1003 or instructor's consent

### **CS 1223 Word Microsoft 3 hours**

This course familiarizes the student with the skills needed to manage word processing documents. Creating, editing, formatting, page setup, printing, tables, outlines, columns, styles, templates, merging, sorting, graphics, and Word Basic will be covered. This course will help the student prepare for the Microsoft Certified Professional Exam.

### **CS 1224 Windows NT Microsoft 4 hours**

A course to familiarize the student with the skills needed to manage a network using Windows NT operating system. The goal of this course is to provide the skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot Windows NT. This course will help the student prepare for the Microsoft Certified Professional exam. This is an advanced course concentrating on one operating system environment. Hardware and Networking knowledge is very helpful. CS 2153 Networking Essentials Microsoft and CS 1063 Microcomputer Operations are recommended.

### **CS 1233 Operating System Microsoft 3 hours**

A course to familiarize students with the workstation operating system software. Topics include the commands and procedures to interact and control your workstation's operating system environment and peripheral coordination. Students will gain the knowledge and skills needed to install, configure, customize, optimize, maintain, and troubleshoot the workstation operating system. This course will help the student prepare for the Microsoft Certified Professional Exam.

### **CS 1235 Excel Microsoft 5 hours**

This course familiarizes the student with planning, building, testing, and documenting Excel worksheets. The student learns the many features of Excel from basic spreadsheet design and creation through formulas, charts, Solver, PivotTables, multiple worksheets, what-if analysis, and application development with macros and Visual Basic. This course will help the student prepare for the Microsoft Certified Professional exam.

### **CS 2003 Database Structures 3 hours**

Database structure definition and creation as well as development on microcomputers and minicomputers will be the major topics. Software to create, update and extract data from databases on minicomputers and microcomputers will be investigated.

Prerequisite: CS 1023, CS 1053, CS 2033 or consent of instructor.

### **CS 2013 COBOL Programming 3 hours**

A course in computer programming techniques and structure using the COBOL language, emphasizing programming concepts and methodologies (i.e., structured design and structured COBOL programming). It also stresses development of the student's skills in applying these methods and concepts during the process of designing and coding COBOL programs. The tools and facilities of the language are also explored and utilized. Topics include structured design and programming; basic and special features of the COBOL language, including sequential disk files, sorting, tables and arrays, and report writing. AS/400 termi-



nals or PC Compilers are used to complete lab work.  
Prerequisite: CS 1013 & CS 1033, CS 1053. Keyboarding skills.

### **CS 2033** **3 hours** **Systems Development & Design**

Basic approaches and techniques used in the analysis, design, and development of integrated business information systems. Typical business information problems will be examined via case studies. Topics covered are general systems theory; management organization and systems; system functions/concepts; survey initiation and fact gathering; charting; systems analysis/design/implementation; evaluation and review; and feasibility studies.

### **CS 2073, 2083** **3 hours** **Computer Information Systems Internship\***

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

\*To be taken last semester of study.

### **CS 2093** **3 hours** **C Programming (Visual C++)**

A course in computer programming techniques and structure using the C language, emphasizing programming concepts and methodologies. It is recommended for those who already have some programming experience. Learn to design, code, compile, and execute your own programs in the C programming language. Topics include variable types, various input techniques, formatting output, conditionals, setting up loops, case structures, arrays, functions, symbolic constants, preprocessor macros, file inclusions, and structured programming techniques.

Prerequisite: CS 1013, and one computer language recommended.

### **CS 2133** **3 hours** **Hardware A+ Certification**

A course designed to provide the student with the background necessary to configure, install, and upgrade microcomputers, perform diagnostics, repair and perform preventive maintenance. The student will be given simulation lab exercises and demonstrations to provide hands-on experience. This course will help the student prepare for the A+ Certification Exam.

### **CS 2142** **2 hours** **Application Support**

The student will learn techniques for transitioning to new and upgraded software. Hands-on experience with software pack-

ages including applications and support software to troubleshoot errors.

### **CS 2153** **3 hours** **Networking Essentials Microsoft**

A course designed to provide the student with the background necessary to understand the local area networking information on workstations and networking. It provides the student with a general introduction for a foundation in current networking technology for local area networks, wide area networks, and the Internet. The student will be given simulation lab exercises and demonstrations to provide hands-on experience. This course will help the student prepare for the Microsoft Certified Professional Exam.

### **CS 2164** **4 hours** **Internet Microsoft**

A course to familiarize the student with the skills needed to manage an Internet server. The goal of the course is to provide the skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot an Internet environment. This course will help the student prepare for the Microsoft Certified Professional Exam. This is an advanced course concentrating on an Internet operating environment. Computer hardware and networking knowledge is very helpful.

### **CS 2701-2705** **1-5 hours** **Independent Studies in C.I.S.**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

### **CS 2711-2715** **1-5 hours** **Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

### **ED 2991** **1 hour** **Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

## **CRIMINAL JUSTICE**

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

### **CJ 1013** **3 hours** **Introduction to Criminal Justice**

An introduction to the criminal justice system in America. This course stresses the interrelatedness of the three components: police, courts, and corrections. Included is a study of current

national problems within the system with an examination of proposed changes. The course provides historical and philosophical insights into the system of criminal justice. No prerequisite.

**CJ 1023 3 hours**  
**Criminal Law and Procedures**

A study of criminal, common, and statutory law within the context of enforcement. Study includes substantive criminal law, its development, interpretation, and administration with emphasis on the criminal law and procedures in the state of Missouri.

Offered evenings only. No prerequisite.

**CJ 1033 3 hours**  
**Rules of Criminal Evidence**

A study of basic rules of evidence applicable to criminal and other related police duties. Emphasis is placed on the question of admissibility of evidence and the practical application of procedural and substantive constitutional guarantees.

Offered evenings only. No prerequisite.

**CJ 1043 3 hours**  
**Juvenile Procedures**

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

Offered evenings only.

Prerequisite: CJ 1013

**CJ 2013 3 hours**  
**Introduction to Corrections**

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

Offered evenings only.

Prerequisite: CJ 1013

**CJ 2023 3 hours**  
**Criminal Investigation I**

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

**CJ 2033 3 hours**  
**Criminal Investigation II**

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

**CJ 2043 3 hours**  
**Police Patrol and Services**

A study of the foundations of police operations, providing patrol coverage and called-for services, the principle of conspicuous presence as a means of crime prevention, and preservation of the peace.

Offered evenings only. Prerequisite: CJ 1013

**CJ 2053 3 hours**  
**Police Supervision & Administration**

A study of the organization and administration of various police systems. The specialized characteristics of individual police organizations and police personnel, the relationship of police to other public agencies, and the control and responsibility of police departments. The most popular and prevalent ideals, principles, and assumptions pertaining to police administration are presented utilizing a multi-disciplinary orientation to analyze these concepts.

Offered evenings only.

Prerequisite: nine credits in criminal justice

**CJ 2063 3 hours**  
**Street Survival**

A fundamental course in officer survival. Topics covered will include arrest techniques, felony car stops, officer-violator confrontations, and officer protection.

Prerequisite: CJ 1013 or consent of instructor

**CJ 2073, 2083 3 hours**  
**Criminal Justice Practicum**

A supervised work experience in three to four criminal justice settings. Work periods will be arranged. Students will write a brief report on their experiences at each criminal justice setting.

Prerequisite: consent of instructor

**CJ 2701-2705 1-5 hours**  
**Independent Studies in Criminal Justice**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**CJ 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991 1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# DENTAL ASSISTING

Open Entry/Open Exit Program—Self Paced

Note: Courses must be taken in order as listed below or by approval of instructor.

## **DA 1001** **1 hour** **Introduction to Dental Assisting**

Descriptions and explanations of the competency based program, how it works, the forms used, and the program policies. Also an introduction to the profession of dentistry including dental terminology, use, and functions of dental equipment. Personal oral hygiene will also be taught.

Prerequisite: admission to Dental Assisting Program.

## **DA 1104** **4 hours** **General and Dental Anatomy and Physiology**

A study of head and neck anatomy, oral embryology and histology, and tooth morphology. Also included is the study of gross anatomy of body systems and organization comprising normal human anatomy and physiology, as well as disorders and pathologies. Emphasis on the relationship of the whole body as related to dentistry.

Prerequisite: admission to Dental Assisting Program

## **DA 1302** **2 hours** **Sterilization and Disinfection**

Discusses the infectious disease process, including HIV, HBV and STD's. Provides information about essential infection control practices, including immunization, hand washing, and personal protective equipment. Also provided is detailed information on sterilization, disinfecting methods and OSHA Standards.

Prerequisite: admission to Dental Assisting Program

## **DA 1404** **4 hours** **Chairside Assisting I**

An introduction to the functions of a chairside assistant in common operative procedures such as amalgam and composite restorations including instrument exchange, oral evacuation, anesthetic techniques, isolation techniques and charting. Special emphasis will be placed on preventive dentistry, nutrition, and patient education.

Prerequisite: admission to Dental Assisting Program

## **DA 1204** **4 hours** **Dental Materials I**

A study of the science of dental materials, their composition, structures and properties, uses in dentistry and manipulation techniques. Topics include gypsums, some impression materials, cements and bases, and restorative materials. Activities include taking alginate impressions, wax bites, pouring models, and model trimming.

Prerequisite: admission to Dental Assisting Program.

## **DA 1504** **4 hours** **Dental Radiology**

An introduction of radiographic procedures, basic terms and nomenclature, theory of production and effects of x-radiation, instruction in dental radiographic health and safety according to OSHA, theory and instruction on darkroom and darkroom chemistry, theory of techniques and practice in exposing bitewings,

bisecting, paralleling, edentulous and child radiographs and occlusal. Practice in processing and mounting.

Prerequisite: admission to Dental Assisting Program

## **DA 1602** **2 hours** **Emergencies in the Dental Office and Pharmacology**

A study of drugs used in the Dental Office and their effects. Emphasis is placed on recognition of emergencies which may occur and how to handle the situation.

Prerequisite: admission to Dental Assisting Program

## **DA 1703** **3 hours** **Clinical Practice I**

Provides the student with actual work experience in a dental office. It provides the student the opportunity to perfect chairside and laboratory skills in the dental environment, and to work with other dental professionals.

Prerequisite: admission to Dental Assisting Program

## **DA 1804** **4 hours** **Dental Materials II**

A continued study of the science of dental materials to include impression materials, waxes, metals, and abrasives and polishing agents. Activities include articulating models, constructing custom trays, fabricating and seating a temporary crown, cleaning and repairing dentures, and constructing bite rims and bite blocks. Prerequisite: admission to Dental Assisting Program

## **DA 1904** **4 hours** **Chairside Assisting II**

The concepts taught in Chairside Assisting I will be applied to the specialty areas of dentistry, including theories of orthodontics, periodontics, endodontics, pedodontics, and oral surgery, prosthodontics and oral pathology.

Prerequisite: admission to Dental Assisting Program

## **DA 2002** **2 hours** **Dental Office Procedures**

A study of the principles of business management for the dental office including appointment control, record keeping, recall systems, fee maintenance, insurance forms, inventory control, telephone communication skills and types of dental office procedures performed on a computer.

Prerequisite: admission to Dental Assisting Program

## **DA 2101** **1 hour** **Psychology/Communications in the Dental Office**

Discusses some of the psychological factors which affect the dental patient's behavior. Also discussed are problems facing the dental health team members including topics such as stress, team building and problem solving skills.

Prerequisite: admission to Dental Assisting Program

## **DA 2305** **5 hours** **Clinical Practice II**

Provide the student with the opportunity to perfect chairside and laboratory skills and to perform expanded functions in a



dental office. The student may also receive experience in a specialty office, i.e., orthodontics or oral surgery.  
Prerequisite: admission to D.A. Program

**DA 2701-2705 1-5 hours  
Independent Studies in Dental Assisting**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**DA 2711-2715 1-5 hours  
Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

**ED 2991 1 hour  
Dental Assisting Placement**

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

To be taken last semester of study.

Prerequisite: admission to Dental Assisting Program

NOTE: For information on expanded functions, contact ECC's Dental Assisting Department.

# DRAFTING AND DESIGN TECHNOLOGY

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

**DF 1001 1 hour  
Blueprint Reading**

A course designed to give the student a working knowledge of standard drawing conventions and dimensioning practices. Areas covered include drafting and blueprint reading procedures, notes and title block information, and machining specifications. No prerequisite.

**DF 1012 (lec), 1021 (lab) 3 hours  
Engineering Drawing**

A course designed to give the student a working knowledge of fundamental drawing practices and the geometric relationship of points, lines, and planes in space. Areas covered include the techniques of lettering, sketching, drawing of mechanical parts, sectional and auxiliary views, conventional drafting practices, and an introduction to computer aided drafting. No prerequisite.

**DF 1022 (lec), 1031 (lab) 3 hours  
Descriptive Geometry**

A study of the graphic analysis and solution of typical three-dimensional space problems through the application of the principles of multi-view projections. Fundamental problems are related to points, lines, planes, intersections, and development of plane and curved surfaces, revolutions, and vector geometry. Prerequisite or Corequisite: DF 1012, 1021

**DF 1032 (lec), 1041 (lab) 3 hours  
Principles of Power**

A study of the principles of hydraulics and pneumatics fundamental to fluid power design. Other topics include principles of

mechanical and electrical powered systems and power system schematics.

Corequisite: DF 1043 or consent of instructor

**DF 1043 3 hours  
Technical Computations I**

A study of the treatment of measured data, significant figures, applications in geometry, basic algebra, and linear equations. No prerequisite.

**DF 1055 5 hours  
Materials and Processes**

A survey of current engineering materials and the various processes used to shape them. Materials studied include a review of ferrous and nonferrous metals, plastics, rubbers, composites, woods, 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. Adaptation of these processes through the use of computers, etc., are also discussed.

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

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

Prerequisite: DF 1012, 1021

**DF 1083 3 hours  
Technical Computations II**

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

Prerequisite: DF 1043

**DF 2013  
Machine Design**

**3 hours**

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 drawings are produced using the drawing board and the computer aided drafting system.

Prerequisite: DF 1063

**DF 2023  
Tool and Die Design**

**3 hours**

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

Prerequisite: DF 1063

**DF 2033 (lec), 2042 (lab)  
Technical Physics**

**5 hours**

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

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

**DF 2053  
Statics and Strength of Materials**

**3 hours**

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

Prerequisite: DF 1083 or consent of instructor

**DF 2063  
Technical Writing**

**3 hours**

An introduction to the practical aspects of preparing reports. The emphasis is on the techniques of collecting and presenting scientific data by means of formal and informal reports. Also included are other elements of communication concerning science and industry.

Prerequisite: EN 1223

**DF 2073 (lec), 2082 (lab)  
Architectural Drawing**

**5 hours**

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

Prerequisite: DF 1012, 1021

**DF 2092 (lec), 2101 (lab)  
Civil Drawing**

**3 hours**

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

Prerequisite: DF 1012, 1021

**DF 2102 (lec), 2111 (lab)  
Structural Drawing**

**3 hours**

A course which concentrates on detailing and delineating the structural systems encountered in architectural and civil construction. Systems included are those structures based on wood, steel, and concrete components. Prerequisite: DF 1012, 1021 and 2053

**DF 2122 (lec), 2131 (lab)  
Technical Illustration**

**3 hours**

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

Prerequisite: DF 1012, 1021

**DF 2132  
Modern Drafting Techniques**

**2 hours**

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

Prerequisite: DF 1012, 1021

**DF 2143  
Introduction to CAD Applications I**

**3 hours**

A course designed to acquaint the student with the basic fundamentals of computer aided drafting. Problems and solutions include construction of basic drawings, saving drawings, using a file system, modification of existing drawings, and plotting drawings using the computer plotter.

Prerequisite: DF 1012, 1021, 1022 and 1031 or consent of instructor

**DF 2153  
CAD Applications II**

**3 hours**

A course designed to acquaint the student with advanced applications of computer aided drafting. Projects and solutions include the production of working drawings and three dimensional drawings.

Prerequisite: DF 2143

**DF 2701-2705  
Independent Studies in Drafting and Design**

**1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**DF 2711-2715  
Special Topics**

**1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991  
Employment Skills**

**1 hour**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# ECONOMICS

## **EC 2103** **Principles of Macroeconomics** **3 hours**

An introduction to the total level of economic activity—the rate of production and income. Topics include inflation, unemployment, government spending and fiscal policy, incomes policy, the banking system and monetary policy, and international economics. No prerequisite.

## **EC 2203** **Principles of Microeconomics** **3 hours**

An introduction to how prices are determined. Topics include how prices are set in markets of varying degrees of competition; how income is determined: wages and salaries, rent, interest, and profits; unions; environmental problems; wealth and poverty in the United States of America; and non-market economic systems. No prerequisite.

## **EC 2701-2705** **Independent Studies in Economics** **1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **EC 2711-2715** **Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# EDUCATION

**Note to Education majors:** East Central College has established a preprofessional Education program committed to providing a general studies curriculum integrated with course work in preprofessional education. The preprofessional education program of study is designed to provide the necessary background for further professional studies and allow the student to validate education as a career choice.

The Missouri State Department of Elementary and Secondary Education has evaluated and approved seven courses that can be taught in a preprofessional education program at the community college and transferred to approved four-year programs. The seven courses are: AR 2023 Art for Children; ED 1031, 1032 Field Experience; EN 2033 Literature for Children; MU 2043 Music for Children; PE 2053 Physical Education for Children; PY 2203 Child Psychology; and PY 2503 Adolescent Psychology.

Education majors will take the appropriate general education courses and may select education courses and introductory courses that are appropriate for their major field or area of specialization.

## **ED 0001** **Returning Learners Orientation** **1 hour**

This class is designed exclusively for adults planning to pursue a certificate or degree at East Central College. Its purpose is to acquaint them with the programs and services available at the college. The course meets for four consecutive days for a total of 16 hours. Sessions are held in April, June, and November. Topics that are covered include career exploration, time and stress management, assertiveness training, ECC program information, financial assistance sources, self-concept building, values clarification, and interest assessment, as well as math and English assessment.

Prerequisite: None - not intended for recent high school graduates.

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

A required orientation to the College for all degree seeking students entering ECC for the first time. Students attend an orientation session prior to the start of classes in their first semester of attendance at ECC. Additional assignments are completed during the semester. (This requirement is waived for students

with 12 or more college credits from another college or university with a 2.0 GPA.) No prerequisite.

## **ED 1011, 1012** **Career Planning** **1-2 hours**

A course designed to involve students in a complete computer-based planning system which has been designed to meet the career and educational planning needs of students; help students identify their interests, abilities, experiences, and work-related values and to understand the relationship of these self-variables to the complex world of work. They may also access large databases which contain up-to-date information about occupations and educational opportunities. No prerequisite.

## **ED 1031, 2,** **Field Experience** **1-2 hours** **(Elementary or Secondary Ed)**

Supervised field experience in an actual classroom setting. The student is required to attend a minimum of 42 hours (per credit hour) observing in the classroom. Additional requirements include a journal which summarizes the observation experience, attendance at scheduled meetings on campus, and other assign-



ments to be determined by the instructor.  
Prerequisite: consent of education advisor

**ED 1043** **3 hours**  
**Introduction to Classroom Teaching**

An introduction to the profession of teaching. Students will explore the role of a teacher through lectures, class discussions, readings, projects and observations in the school environment. This is one of the first courses taken by students who are considering a career in teaching at the elementary, middle, or secondary school and will help them determine whether education is an appropriate field for them. Students will participate in a minimum of 42 hours of observation in local public school classrooms.

**ED 2701-2705** **1-5 hours**  
**Independent Studies in Education**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**ED 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991** **1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, resume development, interviewing skills, networking, employment correspondence, completing applications, obtaining references, understanding employer expectations, conducting employer follow-up contacts. Students will develop a career portfolio for use in job search. This course is coordinated through the Career Services Office and is required for all vocational degrees and certificates.

**AR 2023** **3 hours**  
**Art for Children**

A study of the types of art activities related to various age groups in the elementary school, including experience with art materials used in the classroom. No prerequisite.

**BI 1202** **2 hours**  
**Health**

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

lems which require community action are given consideration. The course is intended for the elementary education major and those not majoring in biology. No prerequisite.

**EN 2033** **3 hours**  
**Literature for Children**

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

Prerequisite: EN 1223

**MU 2043** **3 hours**  
**Music for Children**

Students will be introduced to methods of classroom music with units in music reading, performing skills, music education approaches for K-6, and peer-teaching. Recommended for early childhood and elementary education majors.

Prerequisite: Music Appreciation (recommended)

**PE 2053** **3 hours**  
**Physical Education for Children**

This course will introduce the student to a children's physical education program that is designed for every child and to prepare them to guide learning experiences that are positive and appropriate for all levels of skill. Students will learn the values, purpose and outcomes of quality physical education. Through a study of teaching styles and management methods, students will be introduced to the tools they will need to teach movement concepts, skill themes, fitness, games, gymnastics and dance.

Prerequisite: none

**PY 2203** **3 hours**  
**Child Psychology**

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

Prerequisite: PY 1103 or consent of instructor

**PY 2503** **3 hours**  
**Adolescent Psychology**

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

Prerequisite: PY 1103 or consent of instructor

## ELECTRONICS

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

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

A study of direct current circuit operations. Passive electronic devices are analyzed as to their physical and electrical properties. Interpretation of fundamental schematic symbols is developed. No prerequisite.

Corequisite: EL 1023, 1031



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

**4 hours**

A study of alternating current and reactive components. Fundamental theory of alternating electrical and magnetic fields are developed and applied to dynamic circuit configurations. Interpretation of associated schematic diagrams is advanced. No prerequisite.

Corequisite: EL 1003, 1011

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

**8 hours**

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

Prerequisite: EL 1003, 1011, 1023, 1031

### **EL 1063** **Advanced Circuit Analysis**

**3 hours**

This course provides an advanced study of analog circuit theory. Active filters, Op-Amp frequency response, R.F. amplifiers, Thyristor circuit applications and Opto-Electronic principles are studied. Circuit formulations developed are incorporated into systems configurations to introduce the student to a comprehensive analysis of large circuits.

Prerequisite: EL 1046

### **EL 1103** **Basic Electronics**

**3 hours**

A study of the principles of direct and alternating current, motors and generators, and an introduction to semiconductor devices. Soldering and desoldering, operation of test equipment, and laboratory experimentation are included. No prerequisite.

### **EL 1112 (lec), 1122 (lab)** **Industrial Control I (Industrial Electricity)**

**4 hours**

A study of basic D.C. and A.C. electricity and its application in the industrial environment. Electrical safety, D.C. and A.C. generation, transmission, and installation, along with D.C./A.C. motor theory will be covered. No prerequisite.

### **EL 1123** **Technical Computer Applications**

**3 hours**

A software applications course to prepare those with a technical interest in the use of packages such as Electronics Workbench. Other uses of standard applications such as spreadsheet, database and word processing software for technical objectives will be covered.

### **EL 1133** **Computer Network Architecture**

**3 hours**

A study of the major Local Area Networks in current use. Data transmission methods and protocols are analyzed. Interface circuitry and major hardware components of peer to peer and client server LAN's are detailed.

### **EL 1143** **R.F. Electronic Communications**

**3 hours**

This course presents information about the circuits and building blocks of communications systems. Fundamental A.M., F.M., and single sideband transmitters and receivers are analyzed.

Principles of waveguides, antennas, and microwave devices are discussed. Digital communication systems, radar systems and television broadcast standards are studied.

Prerequisite: EL 1046 and 1052 or consent of instructor

### **EL1153** **Introduction to Statistical Process Control**

**3 hours**

A study of distribution patterns in industrial manufacturing processes that impact quality assurance. Normal distributions and dispersions are contrasted to anomalies that may occur. Grouped and ungrouped frequency distributions are demonstrated from results of various nondestructive testing such as ultrasound and magnetic particle testing.

### **EL 1163** **Introduction to CNC Milling**

**3 hours**

An introductory course in Computer Numerical Control Milling. The tasks of setting up, operating, and programming machining and turning centers are demonstrated. Computer Assisted programming of CNC machines is covered. The integration of CNC machines in a Flexible Manufacturing System is emphasized.

### **EL 1222 (lec), 1232 (lab)** **Industrial Control II (Solid State Control Circuits)**

**4 hours**

A thorough and comprehensive study of modern electronic solid state circuit components with applications in industrial controls. The course provides an initial review of basic electronics, followed by a study of semiconductor theory. Analysis is made of rectifiers and power supplies, bipolar transistors and transistor biasing, and solid state sensors and transducers. The student is provided examples of industrial control circuits that make use of these electronic devices.

Prerequisite: EL 1103, EL 1112 or EL 1023

### **EL 1332 (lec), 1342 (lab)** **Industrial Control III (Digital Control Circuits)**

**4 hours**

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

Prerequisite: consent of instructor or EL 1222

### **EL 1463 (lec), 1472 (lab)** **Industrial Control IV (Intelligent Machines)**

**5 hours**

An advanced study of microprocessor controlled machine operations. A view is presented of the sensory activities, movement and interactive information exchange involved in intelligent machine communication. Advanced vision and tactile sensor systems are discussed. The course concludes with an overview of computer-aided manufacturing, computer-aided design, and other flexible manufacturing systems. Prerequisite: EL 1332, EL 2054 or consent of instructor

### **EL 2054 (lec), 2061 (lab)** **Introduction to Digital Circuits**

**5 hours**

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

Prerequisite: EL 1046, 1052 or consent of instructor

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

A study of sensors and transducers as related to industrial control applications. The student is introduced to industrial ladder diagrams with an overview of Robotics fundamentals. Emphasis is placed on current applications of these devices in industrial systems. Prerequisite: EL 1046, 1052

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

A study of general microprocessor theory and operation. Topics include numbering systems, architecture, assembly language programming, I/O interfacing, and troubleshooting methods. Prerequisite: EL 2054, 2061, or consent of instructor

**EL 2093 3 hours**  
**Introduction to Computer Integrated Manufacturing (CIM)**

An introductory course in Computer Integrated Manufacturing technology. The three major components of CIM, namely: 1) (CAD) Computer Assisted Design, 2) (LAN/MAP) Local Area Networks/Manufacturing Automation Protocol and 3) Robots and (AI) Artificial Intelligence are discussed. The course is itself an integration of the use of computers to plan, implement and manage the manufacturing process. Basic concepts of materials processing are introduced.

Prerequisite or corequisite: EN 1223 or EN 1403, or DF 2063

**EL 2102 (lec), 2111 (lab) 3 hours**  
**Advanced Microprocessors**

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

Prerequisite: EL 2084, 2091, or consent of instructor

**EL 2123, 2133 3 hours**  
**Electronics Internship**

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

**EL 2145 5 hours**  
**Advanced Manufacturing Processes**

This course is a study of new manufacturing technology that has resulted from the introduction of automation and computer integration in the production process. The basic concepts of machining, casting, forming assembly, joining and fastening are presented in light of how they have been modified by automation and computer aided integration technology. Numerical controlled machines, LASER manufacturing applications and Programmable Logic Controllers are discussed. Prerequisite: EL 2054, CS 1003 or consent of instructor

**EL 2221 (lec.), 2222 (lab) 3 hours**  
**Electronic Systems Troubleshooting**

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

Prerequisite: EL 2084 and EL 1046

**EL 2701-2705 1-5 hours**  
**Independent Studies in Electronics**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**EL 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991 1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# EMERGENCY MEDICAL TECHNOLOGY

All courses marked with an asterisk (\*) must be taken in the same academic year.

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

**EM 1013 3 hours**  
**First Responder**

This course provides emergency medical training at a basic level. A variety of skills are covered including basic life support, pa-

tient assessment, splinting and bandaging. Clinical is not required. Upon completion, the student will be eligible to sit for the National Registry certification exam for First Responders.

**EM 1014 4 hours**  
**Emergency Medical Technician Refresher**

A course which provides review in the emergency care of the sick and injured. It is designed to prepare the student for licensure as an EMT. It includes both didactic and practical



# ENGINEERING

## **EG 1103** **Engineering Drawing and Descriptive Geometry** **3 hours**

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

## **EG 2003** **Engineering Mechanics-Statics** **3 hours**

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

Prerequisite: PH 2103, 2112

Prerequisite or Corequisite: MT 2205

## **EG 2103** **Engineering Mechanics Dynamics** **3 hours**

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

## **EG 2202 (lec), 2211 (lab)** **C++ Programming for Engineers** **3 hours**

Basic programming techniques and programming structure, debugging and verification of programs, data representation, and computer solution of problems using C++. The programs will be based on concepts and problems relevant to engineers and scientists. Introductory concepts in program design, software engineering, and numerical analysis will be used to enhance understanding of the programming development process. Prerequisites: MT 1402 and MT 1403 or MT 1505 or consent of instructor.

## **EG 2303** **Introduction to Circuit Theory** **3 hours**

An introduction to electrical circuits, electronic devices, nodal methods, steady state, and transient circuits. Resistors, capaci-

tors, voltage sources, and current sources are included.

Prerequisite: MT 2105 and PH 2103 & 2112

Prerequisite or Corequisite: MT 2205 and PH 2203 & 2212

## **EG 2403** **Circuit Theory II** **3 hours**

An analysis of steady state AC circuits, phasor notation, polyphase circuits, complex frequency, frequency response and magnetically coupled circuits. Prerequisites: EG 2303 with a grade of C or better.

## **EG 2503** **Data Structures** **3 hours**

A continuation of the development of structured programming concepts and their use in program development. Stacks, queues, linked list, arrays, trees, sorting and searching will be taught together with their use in implementations of a number of algorithms. Prerequisite: EG 2202, EG 2211 or consent of instructor.

## **EG 2603** **Thermodynamics** **3 hours**

Energy transformations and the relation of energy to the status of matter. Fundamental laws, concepts, and modes of analysis which underlie all applications of energy conversion in engineering. Prerequisites: EG 2202, EG 2211, MT 2205, PH 2103, PH 2112 or consent of instructor.

## **EG 2701-2705** **Independent Studies in Engineering** **1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **EG 2711-2715** **Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# ENGLISH

## **EN 0103** **Developmental Reading** **3 hours**

A non-credit developmental course in reading designed for students who need to improve their reading skills before beginning college level courses. The course stresses the improvement of reading comprehension skills, the development of vocabulary, and the improvement of reading rates. Not intended for transfer. Prerequisite: None

## **EN 0123** **Developmental English** **3 hours**

A non-credit developmental course in grammar for students who need to improve their grammar skills before attempting college level courses. The course reviews the basic grammar of the English sentence and addresses basic writing problems. Grammar, usage, and punctuation are further reinforced in several sentence-combining exercises and in a simply-constructed basic paragraph. Not intended for transfer. No prerequisite.

**EN 0141 Study Skills 1 hour**

A course designed to help students make the most of the college experience by introducing them to some of the ideas and skills that have been proved to work for successful students. Content can be adjusted to meet the needs of any group but covers such topics as time management, note taking, reading, test taking, memorizing, critical thinking, health, finances, and college resources available. No prerequisite.

**EN 0202 Reading Comprehension 2 hours**

A course in reading comprehension, including such skills as recalling specific facts, making an inference, drawing a conclusion, isolating details, finding the main idea, making a judgment, understanding literary terms, and recognizing tone. The course also stresses vocabulary improvement and flexible reading rates.

Prerequisite: Grade Equivalent of 8.0 or 23rd percentile on the Nelson-Denny Reading Test

**EN 0222 Spelling 2 hours**

A course designed to review basic spelling rules and to practice applying these rules to selected words. For students whose spelling skills are weak or a student preparing to teach or to serve as an aide in the elementary school.

**EN 1213 English Grammar**

A multimedia college grammar course using a programmed text coupled with either lecture or individualized instruction and designed to concentrate on those grammar skills that students need to know in order to write well. The course incorporates sentence combining exercises and paragraph writing in order to make the study of grammar, usage, and punctuation meaningful. Prerequisite: A grade of C or better in EN 1003 or a satisfactory score on the Asset Exam.

**EN 1223 English Composition I 3 hours**

A course dealing with the principles of written composition, including rhetoric and usage. The course emphasizes the development of ideas through the use of various rhetorical patterns. Prerequisite: demonstrated proficiency on placement test or C grade or better in EN 1213

**EN 1233 English Composition I (Honors) 3 hours**

An intensified composition course open only to students who exhibit a high degree of proficiency in English. The student will be required to take EN 1233, EN 1343 and a literature course to fulfill the English requirement. (Any literature course taught at ECC is acceptable in fulfilling this requirement except EN 2033.) While emphasis in this course is on the development of ideas through the use of various rhetorical patterns, as is the case in EN 1223, the student is required to write a research paper and critical papers on literature. Grading standards are higher in Honors than in EN 1223.

Prerequisite: demonstrated high proficiency on placement test and/or a writing sample

**EN 1301 Library Skills 1 hour**

A programmed course designed to introduce students to the library, making it possible for them to use its resources effectively. No prerequisite.

**EN 1333 English Composition II 3 hours**

A second course in composition which provides practice in writing longer units of exposition than does EN 1223 and includes the writing of a research paper and analytical papers.

Prerequisite: A "C" grade or better in EN 1223

**EN 1343 English Composition II (Honors) 3 hours**

A second intensified composition course open only to students who have completed EN 1233 with grades of A or B. Prerequisite: EN 1233

**EN 1403 Technical Writing 3 hours**

An introduction to the practical aspects of preparing reports. The emphasis is on the techniques of collecting and presenting scientific data by means of formal and informal reports. Also included are other elements of communication concerning science and industry.

Prerequisite: EN 1223

**EN 1413 World Literature I 3 hours**

The first of two courses designed to strengthen students' skills in the discussion of literary classics and in their writing about great literature.

Prerequisite: Consent of instructor.

**EN 1423 World Literature II 3 hours**

The second of two courses designed to strengthen students' skills in the discussion of literary classics and in their writing about great literature. Prerequisite: World Literature I or consent of instructor

**EN 1503 Poetry 3 hours**

A study of literature concentrating on the forms, techniques, and themes of poetry. Emphasis is placed upon analysis and interpretation. No prerequisite.

**EN 1603 Fiction 3 hours**

A study of literature concentrating on the short story. No prerequisite.

**EN 1703 Drama As Literature 3 hours**

A study of the forms, techniques, and themes of drama through the reading and discussion of plays destined for the theatre. Film and television drama may also be considered. No prerequisite.

**EN 1803 Art of the Novel 3 hours**

A course in which English and American novels selected to give a fair sampling of 18th, 19th, and 20th century writers are read



with emphasis placed upon how to read the novel. The course is an introduction to the pleasures of the novel, not just a survey. No prerequisite.

**EN 1903** **3 hours**  
**Classical Mythology**

A study of the ancient mythology and religion of the Greeks and others as shown in literature past and present. No prerequisite.

**EN 2033** **3 hours**  
**Literature for Children**

A study of literature written for children from preschool to sixth grade. The course is designed to acquaint the student with the best forms of literature for children and to develop standards of judgment in the selection of reading materials for children. Recommended for elementary education majors.  
Prerequisite: EN 1223

**EN 2102** **2 hours**  
**Speed Reading**

A course in reading improvement which stresses speed while heeding the importance of comprehension, interpretation, critical thinking, including vocabulary improvement. Students read with pacing devices, using a computer program that emphasizes tachistoscopic exercises, and using timed-reading materials. Students should be able to double their reading speeds in one semester.

Prerequisite: 35th percentile or better in both speed and comprehension on the Nelson-Denny Reading Test.

**EN 2103** **3 hours**  
**Survey of British Literature: Beginnings to 1784**

A survey of English literature from the Anglo-Saxon Period through the Age of Reason.  
Prerequisite or corequisite: EN 1223 or consent of instructor

**EN 2113** **3 hours**  
**Survey of British Literature: Romanticism to the Present**

A survey of English literature from the Romantic Period to the present.  
Prerequisite or corequisite: EN 1223 or consent of instructor

**EN 2203** **3 hours**  
**Survey of American Literature: Colonial Period to 1865**

A survey of American literature from the Colonial period to the Civil War.  
Prerequisite or corequisite: EN 1223 or consent of instructor

**EN 2213** **3 hours**  
**Survey of American Literature: 1865-Present**

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

Prerequisite/corequisite: EN 1223 or instructor's consent

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

A study of selected readings in Mexican/American writings, particularly drama, prose, poetry, and essay. All readings are in English. No prerequisite.

**EN 2313** **3 hours**  
**Creative Writing**

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

Prerequisite: EN 1223 or consent of instructor

**EN 2403** **3 hours**  
**Literature of Fantasy**

A study of the development of fantasy as a literary form, with emphasis on J.R.R. Tolkien. The course aims at defining fantasy in a basic way, and then showing, through an analysis of the works, the pleasures particular to the genre.  
No prerequisite.

**EN 2503** **3 hours**  
**Literature of Science Fiction**

A study of the development of science fiction, especially in the 20th century. The emphasis is on reading the works themselves, for themselves, but an attempt is made to show the development of the form toward literary maturity. No prerequisite.

**EN 2603** **3 hours**  
**Shakespeare on Stage**

Selected Shakespearean plays are studied in conjunction with video tapes of the plays. No prerequisite.

**EN 2701-2705** **1-5 hours**  
**Independent Studies in English**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**EN 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## FIRE TECHNOLOGY

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

**FT 1013** **3 hours**  
**Basic Fire Protection and Alarm Systems**

A study of modern fire protection including water supply and distribution systems, housing of equipment and personnel, private fire protection methods, chemical extinguishers, building



construction, and a study of the various types of fixed and portable fire detection and alarm systems. Written documentation included as applicable.

Offered evenings only. No prerequisite.

## **FT 1015** **Firefighter I** **5-6 hours**

A course designed to help fire service officials in providing training to recruit firefighters. The course places emphasis on these skills and related information necessary to develop and recruit firefighters as a usable member of the firefighting team. The standards outlined for the firefighter in NFPA Standard 1001-1987 were used in the development of this package. The course is divided into 18 subject areas as required by NFPA 1001.

Offered evenings only. Prerequisite: none

\*If state certified, this course not required.

## **FT 1023** **General Building Construction** **3 hours**

A study of the fundamentals of building construction and materials related to fire protection. Includes building plan layouts, conventional representations, symbols and abbreviations for building materials, methods of showing floor plans, elevations, sections, and dimensions. Offered evenings only. No prerequisite.

## **FT 1025** **Firefighter II** **3 hours**

This course is designed to train the student to Level II as outlined in the Standard for Fire Fighters Professional Qualifications, NFPA 1001-1987 Chapter 4. Subjects include fire behavior, portable extinguishers, water supplies, ropes, self-contained breathing apparatus, ladders, ventilation, forcible entry, hose, nozzles, appliances, fire streams, rescue, sprinkler systems, inspections, first aid, salvage, and overhaul. Prerequisite: FT 1015

## **FT 1034** **Fire Service Hydraulics and Equipment** **4 hours**

This course is designed to acquaint fire fighters, pump operators, and engineers with the following: characteristics of water flow, friction loss, engine pressure, multiple lines, unequal layouts, pump and pumpers, and field equations. Written documentation included as applicable. Offered evenings only. Prerequisite: mathematics and physics advisable.

## **FT 1043** **Fire Department Organization and Supervision** **3 hours**

Instruction in management and administration for the fire service including the functions of management, planning, organizing, directing, controlling, the management cycle, motivation, behavioral science, executive development, educational development, and labor relations. Written documentation included as applicable. Offered evenings only. No prerequisite.

## **FT 1063** **Codes and Ordinances** **3 hours**

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

Prerequisite: FT 1023 recommended

## **EM 1153** **Teaching Techniques for EMS/Fire Personnel** **3 hours**

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

Offered evenings only on an as needed basis. No prerequisite.

## **FT 2023** **Hazardous Materials** **3 hours**

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

Offered evenings only.

Prerequisite: FT 1003 recommended

## **FT 2033** **Inspection and Fire Prevention** **3 hours**

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

Prerequisite: FT 1063 recommended

## **FT 2043** **Fire Investigation** **3 hours**

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

## **FT 2063** **Rescue Techniques** **3 hours**

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

## **FT 2064** **Fire Officer I** **4 hours**

Fire Officer I studies the requirements, responsibilities, and skills required to become an effective company officer. The course is subdivided into five sections consisting of: fitting into the organization, handling interpersonal relationships, managing individual performance, managing pre-incident and fire ground procedures, and administration safety, health and legal guidelines. State certification exam will be given at the completion of this course.

Prerequisite: Fire Instructor I

## **FT 2074** **Fire Officer II** **4 hours**

Fire Officer II is a continuance in the development of the company fire officer. This course will give the student an advanced





look at the duties and responsibilities of a company officer. This class will assist the firefighter in becoming a company officer while it will develop and sharpen the skills of the current company officer. This class is for state certification. The state exam will be given at the conclusion of the course. Prerequisite: FT 2064 Fire Officer I, Fire Instructor I (may be obtained within one year of course completion to receive State certification).

**FT 2701-2705** **1-5 hours**  
**Independent Studies in Fire Technology**

A study of specific nature independently carried out by the student directly related to a particular department's area of exper-

tise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**FT 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## FOREIGN LANGUAGE

### FRENCH

**FR 1104** **4 hours**  
**Elementary French I**

A multimedia course that combines video, audio and print materials (Pierre Capretz's French in Action) to "immerse" students in authentic, unsimplified French and to train them to use it in the context of actual communication. The introductory sequence emphasizes the development of listening and speaking skills, self-expression, and cultural insight. No prerequisite.

**FR 1204** **4 hours**  
**Elementary French II**

A continuation of FR 1104.

Prerequisite: FR 1104 or two years high school French

**FR 2104** **4 hours**  
**Intermediate French I**

A multimedia course that combines video, audio and print materials (Pierre Capretz's French in Action) to "immerse" students in authentic, unsimplified French and to train them to use it in the context of actual communication. The intermediate sequence emphasizes the development of reading and compositional skills. Prerequisite: FR 1204 or four years in high school

**FR 2204** **4 hours**  
**Intermediate French II**

A continuation of FR 2104. Prerequisite: FR 2104

**FR 2701-2705** **1-5 hours**  
**Independent Studies in French**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**FR 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

### GERMAN

**GR 1104** **4 hours**  
**Elementary German I**

An introductory German course stressing basic language skills: listening, comprehension, speaking, reading and composition. Additional audio-lingual laboratory practice. No prerequisite.

**GR 1204** **4 hours**  
**Elementary German II**

A continuation of GR 1104.

Prerequisite: GR 1104 or 2 yrs. high school German

**GR 2114** **4 hours**  
**Intermediate German I**

An intermediate course in German stressing language skills. Review of grammar and additional vocabulary will strengthen the knowledge of German. It will be an introduction to literature, art, music, history, and culture.

**GR 2124** **4 hours**  
**Intermediate German II**

A course designed to continue the study of the German language and culture at the intermediate level. It encourages the understanding of both differences and similarities among cultures and reinforces all four skills of language learning: comprehension, writing, speaking, and reading.

Prerequisites: German 1104, 1204, 2114 (Intermediate Level I), or 4 years of high school German or consent of instructor.

**GR 2701-2705** **1-5 hours**  
**Independent Studies in German**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**GR 2711-2715** **1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.



## SPANISH

### SP 1104 4 hours

#### Elementary Spanish I

An introduction to the essential grammatical structures, vocabulary and pronunciation of Spanish. Emphasis upon the development of pivotal skills: listening comprehension, speaking, reading, and writing. Acquisition of cultural awareness. Course conducted in Spanish as far as practicable.

Prerequisite: none

### SP 1204 4 hours

#### Elementary Spanish II

A continuation of SP 1104 that completes the introduction to essential structures and further develops pivotal communication skills. Course conducted in Spanish as far as practicable.

Prerequisite: SP 1104, its equivalent, or 2 to 3 high school units, or consent of instructor.

### SP 2114 4 hours

#### Intermediate Spanish I

An intermediate course that systematically reviews basic grammar and introduces complex structures; incorporates reading of authentic text—both cultural and literary; and refines conversation and listening comprehension skills.

Prerequisite: SP1204; its equivalent or four (4) high school units or consent of instructor.

### SP 2124 4 hours

#### Intermediate Spanish II

An intermediate course which continues basic grammar review and introduces complex structures; incorporates reading of au-

thentic texts—both cultural and literary; and refines conversation and listening comprehension skills. Prerequisite: SP 2114

### SP 2204 4 hours

#### Spanish Readings/Peninsula

This course is designed to cover selected works of "Generation of 98". A study of selected prose in the form of drama and "novela" with emphasis directed to the understanding of the philosophy of Spanish writers of the time.

Prerequisite: SP 1204 or consent of instructor

### SP 2303 3 hours

#### Mexican/American Literature

A study of selected readings in Mexican/American writings particularly drama, prose, poetry, and essay. All readings are in English. No prerequisite.

### SP 2701-2705 1-5 hours

#### Independent Studies in Spanish

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

### SP 2711-2715 1-5 hours

#### Special Topics

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## GEOGRAPHY

### GE 1003 3 hours

#### World Geography

An introductory study of the basic geographic and cultural regions of the world, including North and South America, Europe, Africa, and Asia with emphasis on the natural resources, political conditions, economy, population, religions, and cultural patterns of each area. A special unit on Missouri geography is included. No prerequisite.

### GE 2701-2705 1-5 hours

#### Independent Studies in Geography

A study of specific nature independently carried out by the student directly related to a particular department's area of exper-

tise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

### GE 2711-2715 1-5 hours

#### Special Topics

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## GEOLOGY

### GL 1103 (lec), 1112 (lab) 3 or 5 hours

#### Introduction to Physical Geology

An introductory course in physical geology in which materials of the earth's crust, structures, and geologic features of the sur-

face are studied. Field trips and laboratory study of common minerals and rocks will be included.

Prerequisite: none

**GL 2703** **Alpine Geology** **3 hours**

A course which studies the geological structures and features of the Rocky Mountains. The course is taught at Colorado State University's Pingree Park Campus. No prerequisite. Corequisite: BI 2903

**GL 2701-2705** **Independent Studies in Geology** **1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of exper-

tise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**GL 2711-2715** **Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## GRAPHIC DESIGN

**GD 2103** **Digital Imaging** **3 hours**

An introduction to the concepts, processes, and hardware which are fundamental in creating, editing, and displaying electronic images. Students will produce a variety of projects using image editing, blending, photo realism, animation, color separation, and file conversion techniques. Prerequisite: OF 1213, GD 2203 or consent of instructor

**GD 2123** **Commercial Illustration I** **3 hours**

Explore the variety of drawing- and computer-based methods and material used by professional graphic designers and illustrators. Creative expression is enhanced by refining drawing and painting techniques and investigating various media. Students will also use a variety of computer-based imaging and publication design, design, illustration techniques.

**GD 2133** **Commercial Illustration II** **3 hours**

This course introduces computer-generated 3D renderings of objects using lighting, shadows, reflections and backgrounds to achieve photo realistic images. Prerequisite: GD 2123

**GD 2143** **Principles of Production** **3 hours**

This course provides study of print production mechanics and techniques including keylining, page formatting, and camera ready art preparation. Emphasis is placed on offset printing preparation, paper characteristics, inks, darkroom procedures and bindery. It focuses on industry related assignments.

**GD 2303** **Web-based Design & Publishing I** **3 hours**

Explore innovative uses of communicating through the Internet. Learn basic concepts and strategies in hypertext, multimedia, web page design, and usability monitoring/testing. Gain hands-on experience in planning, creating, testing, improving, and publishing web-based project that involves integration of text, computer graphics, scanned images, animation, and sound. Prerequisite: OF 1101.

**GD 2304** **Multimedia Presentation Design I** **4 hours**

This course introduces multimedia design issues in presentation, organization, orientation, user control versus system con-

trol, coordinating several media, and transitions between video and audio delivery. Students put their authoring skills and ideas to work in the planning, design, and creation of a large multimedia presentation. Prerequisite: OF 1101 or consent of instructor.

**GD 2324** **Multimedia Presentation Design II** **4 hours**

This advanced course will cover various concepts in multimedia including nodes, links, anchors, typed nodes and links, storage and retrieval problems, multimedia servers, multimedia presentation and graphical user interface issues, creation and maintenance issues, and change control problems. Students will work as a team to produce a presentation that demonstrates each of the multimedia concepts. Prerequisite: GD 2304.

**GD 2403** **Digital Video Techniques** **3 hours**

This course covers advanced techniques and applications in computer-based imaging and digital video design. Students are provided the opportunity to develop skills in producing digital video using animation, computer graphics, and a variety of special computer applications for visual enhancement and special effects.

**GD 2413** **Developing Interactive Multimedia** **3 hours**

This course covers advanced concept of multimedia, the issues in designing interactive multimedia to function effectively with users, the performance and speed issues related to multimedia, and how to implement interactive multimedia application. Prerequisite: GD 2304.

**GD 2701-2705** **Independent Studies in Graphic Design** **1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**GD 2711-2715** **Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# HISTORY

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

A survey of the cultural, economic, political, and social forces and events which have shaped the United States from the Age of Discovery through Reconstruction. U.S. History 1103 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions. No prerequisite.

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

A survey of the cultural, economic, political, and social forces and events which have shaped the United States from Reconstruction to the present. U.S. History 1203 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions. No prerequisite.

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

Organized study of selected topics in American History. No prerequisite.

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

A course on aspects of Missouri and the Central Mississippi River Valley region history from the French Colonial era through the present and focusing on social, cultural and political developments. (Field trips will be required.) No prerequisite.

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

An interdisciplinary study of the development of Western culture from prehistoric man through the Protestant Reformation, with special emphasis on social, economic, intellectual, religious, and political institutions. The course fulfills a humanities requirement. No prerequisite.

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

An interdisciplinary study of the development of Western institutions from the Protestant Reformation to the present, with special emphasis on economic, intellectual, social, political, and religious movements. The course fulfills a humanities requirement. No prerequisite.

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

An interdisciplinary topical study of the social, economic, political, cultural, and intellectual conditions of modern Latin America from 1800 to the present. The course is designed for students of history and others who desire an elective course in humanities. No prerequisite.

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

An interdisciplinary study of Africa and Asia from 1800 including studies of the politics, culture, and people of both recent

and contemporary Africa, China, Japan, India, and other selected nations of Asia. The course is designed for students of history and others who desire an elective course in humanities. No prerequisite.

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

Organized study of selected topics in world civilization. No prerequisite.

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

An interdisciplinary topical study of Japan from prehistoric times to the present including studies of the geography, politics, cultural and intellectual conditions. Also includes a study of Japanese business methods and organizations. The course is designed for students of history and for others such as business students who desire an in-depth study of a non-European culture. Counts as an elective course in the humanities. No prerequisite.

## **HI 2613 3 hours** **East Asian Civilization to 1800 (China and Japan) VII**

East Asian Civilization I is designed as a survey of the history and civilization of East Asia, especially China and Japan, until 1800. Special emphasis will be placed on geography, economics, politics, culture, and religious movements. This course will fulfill a humanities requirement. No prerequisite.

## **HI 2623 3 hours** **East Asian Civilization Since 1800 (China and Japan) VIII**

East Asian Civilization II is designed as a survey of the history and civilization of East Asia, especially China and Japan, from 1800. Special emphasis will be placed on geography, economics, politics, culture, and religious movements. This course will fulfill a humanities requirement. No prerequisite.

## **HI 2701-2705 1-5 hours** **Independent Studies (Honors) in History**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **HI 2711-2715 1-5 hours** **Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

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

The course involves focused studies of varying duration which include both lectures and historical site tours. History and culture are the primary emphasis. This course may be repeated. No prerequisite.

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

A study of the major events of world history from the end of the Second World War to the present. Topics include social and economic change, diplomacy and political change, the emergence of the Superpowers, the Cold War, the end of colonialism, and discussions of third world areas of Asia, Africa, and Latin America both in terms of domestic conflicts and as arenas for superpower conflict. No prerequisite.

# HORTICULTURE

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

**HR 1013 (lec) 1012 (lab)****5 hours****Introduction to Horticulture**

An introductory course covering the many varied occupational areas of horticulture. Students will be given extensive exposure to each area in order to better determine which area of horticulture they want to pursue vocationally. The biological aspects of plant life and the environmental factors which affect plant growth will be covered as well. For the laboratory course, students will spend one hour each week outside of class working in an assigned greenhouse area and a garden area. The three hour per week lab will be spent doing supplemental activities that will enhance the lecture topics. Offered fall semester only. No prerequisite.

**HR 1033****3 hours****Plant Propagation**

An introduction to the common methods of commercial plant reproduction including seeds, cuttings, layering, grafting, and division. The course makes use of the greenhouse propagation facilities.

Offered spring semester only

Prerequisite: HR 1012, HR 1013

**HR 1043****3 hours****Greenhouse and Nursery Management**

A course with a greenhouse field/lab approach. Modern growing structures are studied. Greenhouse design and construction will be explored. Current practices in environmental control in greenhouses and other plant growing structures will be discussed. Students will work in the campus greenhouses raising a bedding plant crop. The business management aspect of owning or managing a greenhouse, nursery, or gardening center business will be discussed. This course offered the first eight weeks of spring semester only.

Prerequisite: HR 1012, 1013, 1033, 2053, and 2093

**HR 1103****3 hours****Horticulture Math**

A course in horticultural applications of mathematics. The study will include treatment of measured data, applications of geometry and basic algebra. Daily problem assignments will include word problems taken from actual horticultural situations. This

course will fulfill the math requirement for horticulture A.A.S. majors. Not intended for transfers

Offered fall semester only. No prerequisite.

**HR 1703, 1803****3 hours****Floral Design Internship I, II**

A course designed to give the student actual working experience in a floral shop. Emphasis is on preparation for full-time employment.

Prerequisite: HR 2033

Corequisite: Floral Design

**HR 2003****3 hours****Landscape Maintenance**

A course designed to tie together the skills and knowledge acquired in soils, nursery management, and woody plants as related to the management of commercial and large residential grounds. Labs covering maintenance skills will be incorporated. This course offered the first eight weeks of spring semester only.

Prerequisite: HR 1012, HR 1013, HR 1033, HR 2053

**HR 2013****3 hours****Woody Plants I**

A study of trees with regard to their identification, culture, growth habits, and landscape values. Major emphasis is given to the development of a functional use concept in planting design.

Offered fall semester only. No prerequisite.

**HR 2023****3 hours****Landscape Design I**

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

Prerequisite: HR 2013 & 2063

**HR 2033****3 hours****Floral Design I**

A course which includes student involvement in wholesale-retail management activities. Segments of the course include floriculture, with floral design and retail flower shop management. This practical course earmarks a trend toward a broadening approach to commercial horticulture.

Offered fall semester only. No prerequisite.

This course gives students who are planning a career in food service management or hotel/travel an overview of the industry today. The course is designed to help students understand the

roles played by the various components in the hospitality industry and thus to help students to decide which of the many facets of the industry would best suit them. No prerequisite.

**HM 1013 3 hours**  
**Customer Service**

This course explores the various successful techniques involved in establishing effective communications and functional relationships with the customer. No prerequisite.

**HM 2003 3 hours**  
**Quantity Food Production I**

Survey of basic cooking skills and kitchen procedures. Methods of hot food preparation, soups, stocks, sauces, standardized recipes, recipe conversion, costing. Class consists of lecture and kitchen lab work. No prerequisite.

**HM 2013 3 hours**  
**Safety and Sanitation**

The study of the causes of food borne illness and actions to prevent illness by proper food protection and personal hygiene of employees. Review of laws for consumer protection and standards for employee working conditions. Methodology of dishwashing systems for best sanitation results and utilization of materials and personnel. Survey of most common accidents in the industry and procedures for prevention of accidents through the development of a safety program. No prerequisite.

**HM 2033,2053 3 hours**  
**Hospitality Management Internship**

Actual work experience in the restaurant, hotel or travel industry. Job placement is dependent upon the student's interest and availability of participating hospitality institutions. Supervision on the job will be led by a designated management member of the hospitality industry. Coordination and documentation of the work experience to classroom instruction will be done by the instructor. A minimum of 9 hours per week for a total of 144 clock hours are required.

Prerequisite: Completion of two semesters in Hospitality Program.

**HM 2043 3 hours**  
**Quantity Food Production II**

Continuation of HM 2003. Topics to be covered include baking (breads, cakes, pastries), cold food preparation, garde-manger work, breakfast cooking, and banquet service. Students are required to plan and serve a year-end banquet.

Prerequisite: HM 2003

**HM 2063 3 hours**  
**Restaurant Management**

This course includes the basic principles of analysis of food management problems, job analysis methods, selection, control, and supervision of personnel, facilities, layout, labor and food costs control, purchasing, legal problems, furniture and decor for clubs, restaurants and related institutions. No prerequisite.

**HM 2073 3 hours**  
**Destination World Geography**

Destination World Geography is a course which presents the world's principal geographic areas from a touristic perspective. Destinations receive a detailed treatment concerning modes of transportation, cultural patterns, lodging options, climate, typical visitor profiles and attractions. No prerequisite.

**HM 2083 3 hours**  
**Travel and Tourism**

This course is designed to give Hospitality majors an overview of the industry as well as an understanding of the interaction between different segments which make up this industry. Emphasis is placed upon a knowledge of segment function and terminology. No prerequisite.

**HM 2093 3 hours**  
**Hotel and Resort Operations Management**

This course acquaints the student with the operation of a resort/hotel or motel to include front office procedures in registering, accounting for and checking out guests, promotional and sales practices, housekeeping, purchasing, storage and an overall look at how each department relates to the others within the organizational chart. No prerequisite.

**HM 2103 3 hours**  
**Airline Reservations and Ticketing**

This course provides an understanding of industry automation with emphasis on computer skills, and covers the concepts and skills required to interpret and modify availability; sell air space; create and change Passenger Name Records (PNRs), client profiles, and seat assignments; access fares; modify and price itineraries; issue tickets and boarding passes; handle hotel reservations, car rentals and tours.

Prerequisite/Corequisite: HM 2083 or instructor's permission, keyboarding skills

**HM 2113 3 hours**  
**Convention Sales and Group Planning**

This course focuses on a comprehensive survey of convention, exposition, and meeting industry. Topics include but are not limited to trade shows and expositions, meeting planners, convention management, visitors' bureaus, exhibit design, transportation, and destination management. No prerequisite.

**HM 2123 3 hours**  
**Food and Beverage Management**

The student will acquire the fundamentals involved in purchasing food and beverages in quantity. The course emphasizes standardizing, grading, estimating, selecting, receiving, and storing foods and beverages, as well as the practical application in writing specifications and in developing purchasing techniques. No prerequisite.

**HM 2701-2705 1-5 hours**  
**Independent Studies in Hospitality**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**HM 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991 1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review

include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# INDUSTRIAL ENGINEERING

## **IIE 1112 (lec), 1121 (lab) 3 hours** **Industrial Power Systems**

A study of electrical, hydraulic and pneumatic industrial power systems. The principles of mechanical and electrical powered machines are studied. Power system schematics are introduced.

## **IE 1113 3 hours** **Introduction to HVAC**

A study of the fundamental concepts of heating, air conditioning, and air distribution systems. The student will learn to use systematic analysis procedures to diagnose system malfunctions.

## **IE 1123 3 hours** **Industrial Computer Applications**

A software applications course to prepare those with a technical interest in the use of packages in Industrial Engineering Technology. Other uses of standard applications such as spreadsheet, database and word processing software for technical objectives will be covered.

## **IE 2103 3 hours** **Introduction to Manufacturing Processes**

This course is a study of basic industrial systems which will cover hydraulic, pneumatic, mechanical (bearings, gearing, belt drives, chain and sprockets coupling, clutches and brakes), electrical controls (relay logic, PLC's and variable frequency drive). The course will also cover measuring equipment, blue print reading, material flow, and equipment up keep.

## **IE 2113 3 hours** **Maintenance Practices**

A study of basic industrial maintenance and repair techniques. Inspection, lubrication, disassembly, reassembly and calibration of complex hydraulic, pneumatic and electrical systems are presented. Preventive maintenance procedures are discussed.

## **IE 2163 3 hours** **Introduction to CNC Mill and Lathe**

An introductory course in computer Numerical Control Machining. The tasks of setting up, operating, and programming

machining and turning centers are demonstrated. Computer Assisted programming of CNC machines is covered. The integration of CNC machines in a Flexible Manufacturing System is emphasized.

## **IE 2173 3 hours** **Industrial Systems Troubleshooting**

Integrated systems troubleshooting procedures are demonstrated. Methods to determine root cause of system malfunction with the use of modern diagnostic equipment are covered. The integrated industrial system is defined as one incorporating mechanical, hydraulic, pneumatic and electrical systems and monitored by a microprocessor-based controller.

## **IE 2701-2705 1-5 hours** **Independent Studies in Industrial Engineering**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **IE 2711-2715 1-5 hours** **Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## **ED 2991 1 hour** **Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# JOURNALISM

## **JR 1003 3 hours** **Newswriting**

Introduction to the fundamentals of newswriting. Emphasis is placed upon journalistic principles, writing, editing and design, including work on official student publications. Prerequisite: none, typing skills recommended.

## **JR 1103 3 hours** **Journalism Productions**

An in-depth study and practical application of newswriting, editing, headline writing, and design skills. The course includes production experience on official student publications. May be repeated. Prerequisite: JR 1003. Typing skills recommended



**JR 2701-2705** 1-5 hours  
**Independent Studies in Journalism**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**JR 2711-2715** 1-5 hours  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**JR 2801, 3** 3 hours  
**Journalism Practicum**

A course which offers students an opportunity to do writing for and assist in the production of official student publications under the instructor's guidance. It is designed for students who enjoy working on a campus newspaper or yearbook. May be repeated.

Prerequisite: consent of instructor

# MATHEMATICS

**MT 0103** 3 hours  
**Pre-Algebra**

Pre-Algebra is an entry level course for students in preparation for the Introductory/Intermediate algebra sequence. Students will gain a background in arithmetic and algebra topics through various presentation styles and group work. Topics to be covered include: fractions, decimals, percents, the real number system, solving linear equations, various applications in problem solving, the coordinate system, basic graphing and an introduction to polynomials. Placement in Pre-Algebra is determined by a student's score on the college's placement test (ASSET) and/or their mathematical background. When successfully completed (grade C or better), the course satisfies the college's prerequisite for introductory Algebra.

**MT 0105** 5 hours  
**Pre-/Introductory Algebra**

Pre-/Introductory Algebra is a five-credit course combining the study of Pre-Algebra and introductory Algebra. The course is an entry level course for students in preparation for Intermediate Algebra. Students will gain a background in arithmetic and basic algebra topics and their applications, including the application of technology. Topics to be covered include: fractions, decimals, percents, the real number system, solving linear equations, various applications in problem solving, the coordinate system, basic graphing and an introduction to polynomials, domain, function notation and rational expressions. Many of these topics will be further developed in subsequent courses. Placement in Pre-/Introductory Algebra is determined by a student's score on the college's placement test (ASSET) and/or their mathematical background and the recommendation of the mathematics department. When successfully completed (grade C or better), the course satisfies the college's prerequisite for Intermediate Algebra.

**MT 0203** 3 hours  
**Introductory Algebra**

Introductory algebra is the first course in a two-course algebra sequence designed to prepare students for coursework in college level mathematics. Students will be introduced to basic algebra topics and the application of technology to those topics. Topics covered include: solving equations and inequalities, exponents, linear relations, the coordinate plane, modeling data, polynomials, domain, function notation and rational expressions. Many of these topics will further develop in subsequent courses. When successfully completed (grade C or better), the course sat-

isfies the college's prerequisite for Intermediate Algebra. Prerequisite: Satisfactory math placement score or a grade of "C" or better in MT 0103 Pre-Algebra.

\*Not intended for transfer

**MT 0205** 5 hours  
**Introductory/Intermediate Algebra**

Intro/Intermediate Algebra is a five credit-hour course designed to prepare students for coursework in college level mathematics. Student will be introduced to various algebra topics, their applications and the application of technology to those topics. The various topics to be covered include: solving equations and inequalities, exponents, linear relations, the coordinate plane, modeling data, polynomials, domain, function notation and rational expressions. Many of these topics will further develop in subsequent courses. Students entering Intro/Intermediate Algebra should have knowledge of numeric skills and basic algebra topics (as evidenced by an appropriate placement test score) or have successfully completed, with a grade of B or better, a course in Pre-Algebra and the recommendation of the mathematics department. When successfully completed (grade C or better), the course satisfies the college's prerequisite for college mathematics and/or college algebra or any other college level mathematics course at a similar level.

**MT 1011** 1 hour  
**Medication Calculations for Allied Health**

This course is primarily designed to provide the student enrolled in an Allied Health program with a review of basic mathematics as well as methods of medication dosage calculations using metric, apothecary, and household measures. Specific intravenous (IV) flow rates and pediatric formulas are also presented. No prerequisite.

\*Not intended for transfer. Enrollment limited to students enrolled in EM1112 EMT-Paramedic or NR 1014 Fundamentals of Nursing.

**MT 1213** 3 hours  
**Electronics Algebra-Trigonometry**

Electronics Algebra-Trigonometry is designed to introduce the electronic students to solving first and second degree equations and using trigonometry to solve right triangle and vector problems. Other topics covered include powers of 10 units and dimensions, algebraic fractions, graphs, exponents, radicals, and logarithms. Prerequisite: high school algebra or instructor's consent. \*Not intended for transfer.



### **MT 1243 Electronics Calculus** **3 hours**

Electronics Calculus is designed to introduce the electronic students to the concept of the rate of change as used in the Engineering field. The student will be introduced to the elementary concepts of limits, maxima and minima. The study of implicit and explicit functions will be investigated using differential calculus. Some basic concepts of integrating functions and summing an increment over a set of limits will be covered.

Prerequisite: A grade of "C" or better in MT 1213 Electronics Algebra-Trigonometry or consent of instructor. \*Not intended for transfer.

### **MT 1303 Intermediate Algebra** **3 hours**

Intermediate Algebra is the second course in a two-course sequence designed to prepare students for additional coursework in mathematics. In addition, students will develop skills in the use and application of technology to the study of mathematics. When successfully completed (grade C or better), the course satisfies the college's prerequisite for College Mathematics and/or College Algebra or any other college level mathematics course at a similar level.

Prerequisite: Satisfactory math placement score or a grade of "C" or better in MT 0203 Introductory Algebra, or MT 0105 Pre-Introductory Algebra. \*Not intended for transfer.

### **MT 1313 Real Number System** **3 hours**

Real Number System is intended for elementary education majors and is designed to familiarize potential elementary school teachers with the various mathematics topics taught in an elementary school environment. Topics covered will include: sets, logic, number theory, the development of the set of real numbers and real number operations, number bases and various algorithms. Prerequisite: A grade of "C" or better in MT 1303 Intermediate Algebra or satisfactory score on the math placement test.

### **MT 1323 College Mathematics** **3 hours**

College Mathematics is designed to satisfy the mathematics requirement for students in programs not requiring College Algebra. Topics covered include: complex numbers, exponents, polynomials, rational expressions, radicals, solving equations and inequalities, graphic equations and inequalities, permutations and combinations, probability, statistics, and theory of equations. Prerequisite: Satisfactory math placement score or a grade of "C" or better in MT 1303 Intermediate Algebra.

### **MT 1333 Metric and Non-Metric Geometry** **3 hours**

Metric and Non-Metric Geometry is designed to familiarize potential elementary school teachers with the various mathematics topics taught in an elementary school environment. Topics covered will include logic, number theory, theory of plane geometry, statistics and probability.

Prerequisite: A grade of "C" or better in MT 1313 Real Number System, or consent of instructor.

### **MT 1403 College Algebra** **3 hours**

College Algebra is designed to meet the needs of the student planning to enroll in additional mathematics courses numbered 1600 or above or wishing to satisfy the general education re-

quirement. Topics covered in MT 1403 include: complex numbers, logs and exponents, polynomials, rational expressions, radicals, solving equations and inequalities, graphing equations and the binomial theorem. The use of the graphing calculator and its application to the topics of College Algebra will be emphasized. Prerequisite: Satisfactory math placement score or a grade of "C" or better in MT 1303 Intermediate Algebra.

### **MT 1413 Trigonometry** **3 hours**

Trigonometry is intended for students planning to enroll in additional mathematics courses numbered 1600 or above. Topics covered in MT 1413 include: angles, trigonometric functions, law of sines and law of cosines, identities, the solutions to trigonometric equations, inverse trig functions and complex numbers. In addition, students will explore applications of the trigonometric functions on the graphic calculator. Prerequisite: Satisfactory math placement score or grade "C" or better in MT 1403 College Algebra.

### **MT 1505 Pre-Calculus Mathematics** **5 hours**

Pre-Calculus Mathematics is designed to meet the needs of the student planning to enroll in mathematics courses numbered 1600 or above. MT 1505 is a unified study of College Algebra and Trigonometry, with particular emphasis given to the preparation of the student for the study of the Calculus. Topics covered include: sets, complex numbers, logs and exponents, polynomials, rational expressions, radicals, solving equations and inequalities, graphing equations and inequalities, matrices and determinants, permutations and combinations, theory of equations, the binomial theorem and the study of the trigonometric functions. The use of a graphing calculator and its application to the topics of Precalculus will be discussed.

Prerequisite: Satisfactory math placement score or a grade of "B" or better in MT 1303 Intermediate Algebra.

### **MT 1605 Analytic Geometry and Calculus I** **5 hours**

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

Prerequisite: Satisfactory math placement score or a grade of "C" or better in either MT 1505 Pre-Calculus Mathematics or both MT 1403 College Algebra and MT 1413 Trigonometry.

### **MT 2003, 4 Finite Mathematics** **3-4 hours**

Finite Mathematics is designed to be an introduction to linear math and its applications, matrix algebra and its applications, linear programming, probability and decision making applications. Prerequisite: A grade of "C" or better in either MT 1403 College Algebra or MT 1505 Pre-Calculus Mathematics, or consent of instructor.

### **MT 2013, 4 Survey Calculus** **3-4 hours**

Survey Calculus is an introductory study of the techniques of differential and integral calculus. The focus of the course will be on functions and the applications of the calculus to the life,



social and managerial sciences, with particular emphasis on business applications. Trigonometry is not used. Prerequisite: A grade of "C" or better in MT 1403 College Algebra, or MT 1505 Pre-Calculus Mathematics.

**MT 2103** **Statistics** **3 hours**

Statistics is an introductory course which studies the proper methods of collecting data, organizing, describing, and presenting data, and drawing conclusions from data. Prerequisite: A grade of "C" or better in MT 1403 College Algebra, or consent of instructor.

**MT 2105** **Analytic Geometry and Calculus II** **5 hours**

A continuation of MT 1605 including the following topics: applications of the definite integral, logarithmic and exponential functions, trigonometric functions, techniques of integration, approximate integration, polar coordinates, conic section, vectors, and parametric equations. Prerequisite: A grade of "C" or better in MT 1605

**MT 2205** **Analytic Geometry and Calculus III** **5 hours**

A continuation of MT 2105 including the following topics: hyperbolic functions, indeterminate forms, improper integrals, vectors in three-dimensional space, solid analytic geometry, differ-

ential calculus of functions of several variables, multiple integration, and infinite series.

Prerequisite: A grade of "C" or better in MT 2105

**MT 2303** **Differential Equations** **3 hours**

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

Prerequisite: A grade of "C" or better in MT 2205

**MT 2701-2705** **Independent Studies (Honors) in Mathematics** **1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**MT 2711-2715** **Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## MUSIC

**MU 0341** **Applied Piano-Secondary (Level 0)** **1 hour**

Private lessons in piano. Enrollment restricted to pre-college level students. May be repeated.

Prerequisite: consent of instructor

**MU 0401** **Applied Organ (Level 0)** **1 hour**

Private lessons in pipe organ. Enrollment restricted to pre-college level students with consent of the instructor. May be repeated. No prerequisite.

**MU 1003** **Fundamentals of Music** **3 hours**

A basic study of music, including notation, scales, intervals, chords, and rhythms; intended to provide basic music reading, and writing. Open to all students. No prerequisite.

**MU 1021, 1061, 2021, 2031** **East Central Choral Association** **1 hour**

A performance course open, with consent of the instructor, to all students and community members who have had previous choral experience. No prerequisite.

**MU 1041, 1071, 2041, 2061** **ECC Community Orchestra** **1 hour**

A performance course open, with consent of the instructor, to all students and community members who have had previous instrumental experience. No prerequisite.

**MU 1051, 2051** **College Wind Ensemble** **2 hour**

A performance course open, with the consent of the instructor, to all students and community members, who have had previous instrumental experience. No prerequisite.

**MU 1101, 1121, 2101, 2141** **ECC Singers** **2 hour**

A wide variety of styles from traditional choral concert music to choreographed popular music. Open through audition to all students with previous musical experience. No prerequisite.

**MU 1111, 1131, 2111, 2131** **Jazz Band** **2 hour**

A studio band which prepares and presents concerts, while dealing primarily with music of the jazz idiom. Open by the consent of the director to all college students who are qualified instrumentalists. No prerequisite.

**MU 1201** **Applied Voice (Level 0)** **1 hour**

Pre-college level private lessons in voice. Enrollment open to pre-college age students and college non-music majors. May be repeated.

Prerequisite: consent of instructor

**MU 1211** **Voice Class (Level I)** **1 hour**

A group lesson experience for the beginning voice student. Required of all first semester voice students. Open to all students. No prerequisite.



### **MU 1221, 2201, 2221** 1 hour **Applied Voice (Levels II, III, IV)**

Private lessons in voice. Enrollment restricted to advanced voice students. Proper placement will be determined by the instructor.

Prerequisite: completion of previous level

### **MU 1301, 1311, 1321, 1331** 1 hour **Applied Piano-Beginning**

A group lesson experience for the beginning piano student. Open to all students regardless of major.

Prerequisite: none for Piano Class I; completion of previous level for Piano Class II, III, IV

### **MU 1341, 1351, 1361, 1371** 1 hour **Applied Piano-Secondary (Levels I, II, III, IV)**

Private lessons in piano. Open to all students with some previous piano training, with consent of the instructor. Proper placement will be determined by the instructor.

Prerequisite: MU 1331 or equivalent

### **MU 1401, 1411, 2401, 2411** 1 hour **Applied Organ (Levels I, II, III, IV)**

Private lessons in organ. Open to any college student, with consent of instructor. Proper placement will be determined by the instructor.

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

### **MU 1501, 1511, 2501, 2511** 1 hour **Applied Instrument (Levels I, II, III, IV)**

Private lessons in string, woodwind, brass, percussion, or guitar. Open to any college student, with consent of instructor. Proper placement will be determined by the instructor.

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

### **MU 1603** 3 hours **Music Appreciation**

A historical survey of the development of music, intended to provide a background for the understanding and application of music. Recommended for non-music majors.

No prerequisite.

### **MU 1613 (written), 1621 (aural)** 4 hours **Music Theory I**

A beginning course in music theory, study of intervals, triads, four-part diatonic harmony, connection of triads, embellishing tones, and inversions. Sight singing, aural recognition of all diatonic intervals, melodic phrases, and rhythms are studied. Includes two hours aural theory per week.

No prerequisite.

### **MU 1623** 3 hours **Music Appreciation-Honors**

A historical survey of the development of music through the study of compositions. Works studied will include examples of the major musical forms used by composers from the Middle Ages into the 20th century. In addition to class work, supplementary projects will acquaint the student with resources for more in-depth study.

Recommended for non-music majors with a strong music background.

### **MU 1703 (written), 1711 (aural)** 4 hours **Music Theory II**

A second course in music theory, extending into areas of seventh chords, secondary functions, modulations, and form. Includes two hours aural theory per week.

Prerequisite: MU 1613 & 1621

### **MU 1803** 3 hours **Music Literature**

A study of music through aural perception and analysis. Music studied will include examples of the major musical forms used by composers from the Middle Ages into the 20th century. In addition to class work, supplementary projects will acquaint the student with preliminary music research sources and written presentation of analysis.

Prerequisite: MU 1613 & 1621, 1703 & 1711, and 2103 & 2121

### **MU 1903** 3 hours **Popular Music**

A survey of the historical and stylistic development of jazz, rock, folk, and country music, as well as musical theatre. Special attention will be given to listening and research assignments. No prerequisite.

### **MU 2043** 3 hours **Music for Children**

Students will be introduced to methods of classroom music with units in music reading, performing skills, music education approaches for K-6, and peer-teaching. Recommended for early childhood and elementary education majors. Prerequisite: Music Appreciation (recommended)

### **MU 2103 (written), 2121 (aural)** 3 hours **Music Theory III**

A third course in music theory. A study of chromatic harmony including borrowed and altered chords, mode mixture, and additional forms. Two hours aural theory per week.

Prerequisite: MU 1703 & 1711

### **MU 2203 (written), 2211 (aural)** 3 hours **Music Theory IV**

A continuation of MU 2103 & 2121 to more complex areas of chromatic harmony and analytical techniques for major trends in 20th century composition.

Prerequisite: MU 2103 & 2121

### **MU 2301, 2311, 2321, 2331** 1 hour **Applied Piano (Levels I, II, III, IV)**

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

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

### **MU 2701-2705** 1-5 hours **Independent Studies in Music**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.



### **MU 2711-2715 Special Topics**

**1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# **NURSING— ASSOCIATE DEGREE**

### **NR 0100, 1, 2, 3 Workshop/Seminar**

**.5-3 hours**

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

### **NR 1014                      4.5 hours Union campus 4.0 hours Rolla campus Fundamentals of Nursing Lecture**

A course designed to introduce the student to the nature of man and his response to illness. Abdellah's Nursing Problems are used to show the human as a whole as well as various alterations that may occur as a result of illness. The primary focus is to develop a high degree of skill in performing commonly prescribed therapeutic and nursing regimes. Normal nutrition and pharmacology are introduced. Pediatrics is integrated. Four hours lecture per week.

Prerequisite: MT 1303 or higher, BI 1303 & 1312, CH 1203, 1212 or CH 1303 & 1312, admission to program.

Corequisite: NR 1022; BI 2102, 2112; PY 1103; history/government elective; MT 1011 (optional)

Placement: fall semester, first year

### **NR 1022                      2.5 hours Fundamentals of Nursing Lab**

Opportunities are provided for students to perform skills and apply knowledge acquired in NR 1014. Includes initial practice sessions in the college laboratory and clinical experience in community health care facilities. Eight hours practicum per week. Prerequisite: MT 1303 or higher, BI 1303 & 1312, CH 1203, 1212 or CH 1303, 1312, admission to program.

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

Placement: fall semester, first year

### **NR 1035                      5 hours Nursing of Adults and Children I Lecture**

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

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

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

Placement: spring semester, first year

### **NR 1045                      5 hours Nursing of Adults and Children I Lab**

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

Sixteen hour practicum per week

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

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

Placement: spring semester, first year

### **NR 1052                      2 hours Mental Health Nursing Lecture**

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

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

Corequisite: NR 1063; PR 2103, PE elective

Placement: summer session, first year

### **NR 1063                      3 hours Mental Health Nursing Lab**

Mental health facilities and the college laboratory are utilized for students to utilize communication skills and apply knowledge acquired in NR 1052. Fifteen hours practicum per week. Prerequisite: NR 1014, 1022, 1035, 1045; BI 2102, 2112, 2202, 2203; PY 1103, 2403

Corequisite: NR 1052, NR 2012

Placement: summer session, first year

Course completed in eight-week session.

### **NR 2012                      2.0 hours Union campus 2.5 hours Rolla campus Maternal, Neonatal and Women's Health Nursing**

A course designed to provide the student with basic knowledge of quality women's health care. This includes the reproductive process, care & management of maternal health and the infant for the first 30 days of life. Teaching client self-care and moni-

toring, preventive care and management of high risk situations included.

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

Corequisite: NR 1063, 2022, 2032, 2042, 2991; BI 2402, 2412; EN 1223

Placement: fall semester, second year

Completed in eight-week session.

### **NR 2022 2.5 hours** **Maternal, Neonatal and Women's Health Nursing**

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

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

Corequisite: NR 2012, 2032, 2042, 2991; BI 2402, 2412; EN 1223-  
Placement: fall semester, second year

### **NR 2032 2 hours** **Nursing of Adults and Children II Lecture**

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

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

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

Placement: fall semester, second year

Completed in eight-week session.

### **NR 2042 2.5 hours** **Nursing of Adults and Children II Lab**

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

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

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

Placement: fall semester, second year

### **NR 2045 5 hours** **Nursing of Adults and Children III Lecture**

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

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

1103, 2403; PR 2103

Corequisite: NR 2055, 2991; EN 1333

Placement: spring semester, second year

### **NR 2055 5 hours** **Nursing of Adults and Children III Lab**

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

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

Corequisite: NR 2045, 2991; EN 1333

Placement: spring semester, second year

### **NR 2701-2705 1-5 hours** **Independent Studies in Nursing**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

### **NR 2711-2715 1-5 hours** **Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

### **NR 2991 1 hour** **Nursing Trends/Employment Skills**

A study of selected topics related to the development of nursing practice and education; current issues; trends; ethical and legal aspects; professional organizations/eight weeks. This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations.

One hour discussion per week/eight weeks.

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

Corequisite: NR 2045, 2055; EN 1333

Placement: spring semester, second year

### **MT 1011 1 hour** **Medication Calculations for Allied Health**

This course is primarily designed to provide the student enrolled in an Allied Health program with a review of basic mathematics as well as methods of medication dosage calculations using metric, apothecary, and household measures. Specific intravenous (IV) flow rates and pediatric formulas are also presented.

Prerequisites: None

\*Not intended for transfer. Enrollment limited to students enrolled in EM1112 EMT-Paramedic or NR 1014 Fundamentals of Nursing.

\*Students must be 19 years of age or older in order to be eligible to take the RN license exam (RN-NCLEX).



# OFFICE CAREERS

## OF 0100, 1, 2, 3 Workshop/Seminar

.5-3 hours

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

## OF 1011 Keyboarding

1 hour

Designed for the student who has not typed before. Includes beginning instruction on the keyboard and numbers only using a microcomputer. No prerequisite.

## OF 1013 Keyboarding/Formatting

3 hours

A study of the keyboard and techniques of touch typewriting, development of basic skills, and the arrangement of typewritten material. Individualized instruction using microcomputer. No prerequisite.

## OF 1021 Keyboard Skillbuilding I (Non-Majors)

1 hour

A course to increase speed and accuracy on the computer keyboard. Designed for students not presently enrolled in a typewriting class. The students will be guided by the software after a diagnosis is made of the student's keyboarding ability based on his/her speed and accuracy. Drill work will be scored immediately by the software. Prerequisite: keyboarding skills

## OF 1023 Document Production

3 hours

A course in further development of typewriting skills, with special attention given to improving accuracy and increasing speed. Major emphasis is given to producing mailable copy on tables, correspondence, and rough draft reports under timed conditions. Individualized instruction using microcomputer. Prerequisite: OF 1013 or speed of at least 40 wpm for five minutes with a maximum of three errors.

## OF 1031 Keyboard Skillbuilding II (Non-Majors)

1 hour

A continuation of Keyboard Skillbuilding I for further speed and accuracy development on the computer keyboard. Designed for students not presently enrolled in a typewriting class. The student will be guided by the software after a diagnosis is made of the student's keyboarding ability based on his/her speed and accuracy. Drill work will be scored immediately by the software.

Prerequisite: keyboarding skills

## OF 1033 Advanced Document Production

3 hours

A course based on Integrated projects and in-basket exercises. Emphasis is placed upon decision making, setting priorities and high production standards. Business document composition skills will also be refined. Skillbuilding software is included. Individualized instruction using microcomputer.

Prerequisite: OF 1023

## OF 1043 Shorthand Theory (Speedwriting or Gregg)

3 hours

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

Prerequisite or Corequisite: OF 1013

## OF 1053 Shorthand Speed Development (Speedwriting or Gregg)

3 hours

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

Prerequisite: OF 1013, 1043 or consent of instructor

## OF 1061 The Medical Manager

1 hour

Introduces the student to the best-selling commercial medical office software program. This software familiarizes the student with computerized account management and trains the student to perform the duties necessary to manage a medical office electronically. Designed for those in health care or others interested in medical office management software.

## OF 1071 Microsoft Works/IBM

1 hour

Instructions for the computer-experienced student with the integrated features of Microsoft Works. Topics include the features of word processing, database, and spreadsheet documents; and additional experience utilizing macros and merges, copying between files, using the spell-checker, and activating the calculator.

Prerequisite: Keyboarding skills

## OF 1073 Shorthand Transcription (Speedwriting or Gregg)

3 hours

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

Prerequisite: OF 1053 and OF 1023

## OF 1081 Microsoft Word for IBM PC

1 hour

Instructs the student in the basic and advanced editing features of the popular word processing program, Microsoft Word, on the IBM personal computer. Topics include create, edit, format, print, save, spelling corrections, and mail merge.

Prerequisite: Keyboarding skills

Offered when demand is indicated.



### OF 1083 3 hours Business Writing Skills

Business Writing Skills is a course in the improvement of basic language skills needed in a business environment through the study of grammar, punctuation, capitalization, spelling, sentence construction, tone and style. Emphasis will be placed in improving written communication by writing sentences, paragraphs, and various business messages. Oral communications will be improved through class work.

Prerequisite: none

### OF 1093 3 hours Filing and Records Management

A study of ARMA 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, micro-records and automated records, retention and disposition of records, and administrative duties. A unit will be included on managing files with database software on the microcomputer.

Prerequisite or Corequisite: OF 1013

### OF 1101 1 hour The Internet

This course is designed to introduce students who want to know how to use Internet in a productive and satisfying way to access services, resources, and information, and to communicate electronically with others. The focus is in learning how to use the Internet in a step-by-step manner.

### OF 1111 1 hour Web Page Design

This course introduces the basics of HTML and JAVA, good web page design, and how a markup language works. Learn the basic HTML document elements.

### OF 1113 3 hours Office Procedures

A study of office skills and knowledge applicable to office professionals. Special attention is given to human relations, organization and maintenance of an office, work efficiency, setting priorities, and employment standards.

Prerequisite: OF 1013

### OF 1133 3 hours Machine Transcription

A course designed to develop proficiency in machine transcription. Through study and supervised practice on transcribing equipment, both keyboarding and transcribing skills are merged and further ability developed in proofreading, editing, spelling, punctuation, grammar, word usage, good judgment, and decision-making as applied to business letters, memorandums, tables, and reports. Individualized instruction using microcomputer.

Prerequisite: OF 1083 and OF 1013

Prerequisite or Corequisite: OF 1023

### OF 1143 3 hours Business Communications

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

Prerequisite: Either EN 1223 or 1003, or OF 1083

### OF 1173 3 hours Word Processing

Instructs the student in the features of word processing software. Topics covered include create, edit, format, print, and save documents while using the spelling dictionary, multi-page report, graphics, mail merge, macros, and table format features. Pre- or co-requisite: Keyboarding skills.

### OF 1183 3 hours Introduction to Medical Transcription

The beginning lessons introduces the student to the transcription process and equipment. Students then learn to transcribe various medical reports. These include history and physical, operative record, pathology report, radiology report, consultation report and discharge summary.

Prerequisite: OF 1013 and BI 1112/1113

### OF 1213 3 hours Desktop Publishing

Instruction in major features used in desktop publishing. Students will produce professional quality fonts and images, learn editing, page layout, and graphic techniques of desktop publishing.

Prerequisite: previous word processing experience preferred

### OF 2013 3 hours Business Mathematics

A course in business and financial applications of mathematics such as discounts, markups, interest, installment buying and credit cards, payroll, depreciation, taxes, etc. Intended for students in office, business, and other A.A.S. degree programs. No prerequisite.

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

Supervised work experience in an actual situation putting to use the skills and related knowledge learned in previous courses. Supervision on the job will be led by office personnel. Coordination of work experience to classroom learning will be done by the instructor. Time will be arranged. A 50-minute seminar will be held each week to discuss work experiences of interns and the latest trends in office equipment and techniques gathered through assigned readings in current publications.

Prerequisite: Enrollment in the Office Careers program and consent of instructor

### OF 2043 3 hours Legal Document Production

This is a course designed for legal secretarial majors. It includes creating legal documents using specialized software. Legal terminology is studied. Skillbuilding software is used. Individualized instruction.

Prerequisite: OF 1023 or consent of instructor

### OF 2053 3 hours Legal Shorthand (Speedwriting or Gregg)

A course specializing in the dictation and transcription of various legal documents and correspondence into mailable form. Legal terminology will be emphasized. Individualized instruction using microcomputers.

Prerequisite: OF 1073 or consent of instructor

### OF 2063 3 hours Legal Office Procedures

A course specializing in the organization, functions, and duties



in a legal office. Special attention is given to office and client financial records, law office files, litigation, and preparing court and non-court documents.

Prerequisite: OF 1013

**OF 2073 3 hours**  
**Medical Office Procedures**

A self-paced course specializing in the organization, functions, and duties in a medical office. Special attention is given to patient records, financial responsibilities, coding, and professional activities. Computer software will be used to learn these procedures. Preparation of health insurance forms will be stressed using the computer. Individualized instruction.

Prerequisites: OF 1023, 1083, and BI 1112/BI 1113

**OF 2083 3 hours**  
**Medical Transcription**

A specialized course in medical terminology transcription for students who are proficient in keyboarding and medical terminology, and who have a working knowledge of transcription equipment. Individualized instruction using micro-computers.

Prerequisites: OF 1023, 1083, 1183 and BI 1112/BI 1113

**OF 2093 3 hours**  
**Legal Transcription**

This course is designed to prepare students for activities performed by a transcriptionist in a law firm or other legal setting. Special attention will be given to legal terminology, legal procedures, grammar, punctuation, number expression, word division, word choice and spelling so that legal documents can be prepared accurately and efficiently.

Prerequisites: OF 1023, OF 1083

**OF 2103 3 hours**  
**Office Microcomputer Applications**

Students will have hands-on microcomputer experience in every class. Topics include learning Microsoft Windows capabilities, spreadsheet software capabilities, database software capabilities, DOS commands and the computer 10-key pad. Prerequisite: keyboarding skills

**OF 2113 3 hours**  
**Office Simulation & Decision Making Using Microcomputers**

The simulation gives students an opportunity to work for different departments in a company. Students will use microcomputer application software to generate, manipulate, and ana-

lyze data; to solve information management problems; and to present this data to help management solve business problems.

Prerequisites: OF 1173 and OF 2103

**OF 2123 3 hours**  
**Office Management**

Office Management includes a study of management principles and practices as they relate to office administration with emphasis on human resources—supervision, salary, and benefits. Additional topics include managing of the work environment, planning, organizing, and controlling administrative office operations, managing office technology, examining individual, small group, and superior/subordinate work relationships.

Prerequisite: OF 2113 or consent of the instructor

**OF 2183 3 hours**  
**Advanced Medical Transcription**

An advanced course in medical transcription for students who are proficient in the medical transcription process. Students will transcribe medical reports from twelve specialty areas. Students will select and use appropriate general and specialty reference materials and edit medical reports to conform with AAMT style guidelines. Individualized instruction.

Prerequisites: BI 1113, OF 1183, OF 2083, OF 1023, OF 1083

**OF 2701-2705 1-5 hours**  
**Independent Studies in Office Careers**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**OF 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991 1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

## PHILOSOPHY & RELIGION

**PR 1003 3 hours**  
**Introduction to Philosophy**

A course which introduces the student to some of the major areas of philosophic inquiry concerning human experiences and the nature of the reality through the reading and discussion of representative selections from contemporary and classical writings. No prerequisite.

**PR 1103 3 hours**  
**Introduction to Logic**

A study of techniques for distinguishing between adequate and inadequate arguments. The course will introduce several techniques that may be used to evaluate arguments. Primary emphasis will be on learning to use the techniques of propositional and monadic predicate calculi in evaluation arguments. No prerequisite.

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

A study of the historical development in the awareness and solutions to western philosophic problems from modern time to the present. The course is based upon the teachings of the great philosophers, with emphasis upon their importance for us today. No prerequisite.

**PR 1303** **Living World Religions** **3 hours**

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. No prerequisite.

**PR 2103** **Contemporary Ethical Problems** **3 hours**

A course concerned with moral action—deciding whether acts are good or bad, right or wrong. It begins with a study of why people act the way they do and considers different approaches to moral conduct. Discussions center on such modern problems as mercy killing, abortion, capital punishment, and sexual, medical, and business ethics. No prerequisite.

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

A critical-historical survey of the Old Testament as literature. Emphasis is placed upon the different modern approaches to Biblical understanding and criticism, especially as it applies to the Exodus Event in the history of Israel through the Division of the Kingdom. The course is designed to help the student appreciate the Bible as great literature from a critical point of view. No prerequisite.

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

A critical-historical survey of the Old Testament as literature. Emphasis is placed upon the different modern approaches to Biblical writings after the Division of the Kingdom until the end of the Old Testament period. The course is designed to help the student appreciate the Bible as great literature from a critical point of view. No prerequisite.

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

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. No prerequisite.

**PR 2701-2705** **Independent Studies in Philosophy/Religion** **1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**PR 2711-2715** **Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# PHYSICAL EDUCATION

**PE 1002** **Fitness for Life** **2 hours**

A basic introduction to life-style habits that promote the awareness and development of a fit and healthy life. Class will be divided into classroom as well as activities. This two hour course fulfills the P.E. requirement. No prerequisite.

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

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

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

**PE 1031, 1041, 2031, 2041** **Aqua Aerobics** **1 hour**

Introduction to various aquatic fitness formats. Circuit, Interval, Shallow and Deep Water formats will be utilized to effect a cardiovascular training and conditioning response. Water shoes are strongly recommended for the student. Prerequisite: none for PE 1031, completion of previous level for 1041, 2031, and 2041 or consent of instructor.

**PE 1051, 1061** **Archery** **1 hour**

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

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

**PE 1081** **Intro to Fitness Center/Aerobic Circuit Training** **1 hour**

A course designed to introduce the student to an exercise program which combines Aerobic Training with the benefits of Circuit Weight Training. Providing a sound effective workout for all major muscle groups. No prerequisite.

**PE 1091** **Backpacking** **1 hour**

Introduction to backpacking as a lifetime recreational activity. Instruction in techniques, safety, equipment, trip planning and map and compass skills. Field trips are required. No prerequisite.



**PE 1121, 1131** 1 hour  
**Basketball**

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

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

**PE 1161, 1171** 1 hour  
**Bowling**

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

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

**PE 1181** 1 hour  
**Intermediate Fitness Center**

A course designed to provide an opportunity for students to continue to participate in an individualized program of exercise. In addition to aerobic circuit training, students will be instructed in use of equipment designed to improve cardiorespiratory fitness.

Prerequisite: PE 1081

**PE 1201** 1 hour  
**Canoeing**

Introduction to river canoeing as a lifetime recreational activity. Instruction in safety, canoeing techniques, trip planning, equipment and map and compass skills. Field trips are required. No prerequisite.

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

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

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

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

Instruction in the steps, positions, formations and dance patterns of square dancing and international and American folk dancing. No prerequisite.

**PE 1281** 1 hour  
**Advanced Fitness Center**

A course designed to develop an individual program of exercise based on the concepts and guidelines for each component of fitness: Muscle strength and endurance, flexibility, body composition, and cardiorespiratory endurance. Students will select the exercise programs and establish goals for the components they wish to improve.

Prerequisite: PE 1081 & 1181

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

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

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

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

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

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

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

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

Prerequisite: none for 1381, completion of previous level for 1391, 2381 and 2391 or consent of instructor

**PE 1421** 1 hour  
**Racquet Sports**

Introduction to the fundamental skills, strategies and rules of racquet sports. Includes table tennis, badminton, and pickleball. No prerequisite.

**PE 1451** 1 hour  
**Racquetball**

Introduction to the fundamental skills, strategies and rules of racquetball. No prerequisite.

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

Introduction to the physical skills and strategies used in self-defense along with lectures on prevention of physical attack. No prerequisite.

**PE 1502** 2 hours  
**Personal Health and Wellness**

Emphasis is placed on relating course content to life-style to foster a better understanding of the major health issues today. Current issues include, but are not limited to: emotional health, chemical use and abuse, human sexuality, major diseases, physical fitness, nutrition, aging, death and dying.

**PE 1521, 1531** 1 hour  
**Skiing**

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

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

**PE 1561, 1571** 1 hour  
**Soccer**

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

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

**PE 1601, 1611** 1 hour  
**Softball**

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

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

**PE 1641, 1651  
Tennis**
**1 hour**

Instruction in the fundamental skills, strategies and rules of tennis. May be taken at the beginning or intermediate level. No prerequisite.

**PE 1671, 1681  
Volleyball**
**1 hour**

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

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

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

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

Prerequisite: none for 1711, completion of previous level for 1721, 2711, and 2721 or consent of instructor

**PE 1791, 1801, 2791, 2801  
Varsity Baseball**
**1 hour**

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

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

**PE 1831, 1841, 2831, 2841  
Varsity Basketball**
**1 hour**

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

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

**PE 1871, 1881, 2871, 2881  
Varsity Soccer**
**1 hour**

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

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

**PE 1911, 1921, 2911, 2921  
Varsity Softball**
**1 hour**

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

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

**PE 1951, 1961, 2951, 2961  
Varsity Volleyball**
**1 hour**

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

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

**PE 1402  
Introduction to Physical Education**
**2 hours**

An introductory professional course for the physical education major and minor, designed to provide the opportunity to explore the history, scope, values and philosophy of physical education, professional responsibilities and career opportunities. No prerequisite.

**PE 2053  
Physical Education for Children**
**3 hours**

A course designed to give the elementary education and physical education major knowledge and understanding of physical education and to prepare them to guide learning experiences in the gym, the classroom or on the playground. Students will be presented with information concerning the values and goals of physical education, teaching styles and management methods, and the variety of activities that make up the content of a physical education program.

**PE 2202  
Care and Prevention of Athletic Injuries**
**2 hours**

A study of the treatment of wounds, shock, poisoning, fractures, unconsciousness, stoppage of breathing, and the care and prevention of athletic injuries. Designed for physical education majors. No prerequisite.

**PE 2302  
Coaching Baseball**
**2 hours**

A physical education major course in organization and management of a competitive baseball program to include individual techniques, team play, rules and problems with coaching baseball. Includes "little league" applications. No prerequisite.

**PE 2402  
Coaching Basketball**
**2 hours**

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

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

**PE 2502  
Coaching Volleyball**
**2 hours**

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

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

**PE 2701-2705  
Independent Studies in Physical Education**
**1-5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**PE 2711-2715  
Special Topics**
**1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.



# PHYSICS

## **PH 1003 3 hours** **Physical Science I**

An introductory course in cosmology. Topics of study include the development of scientific methods, including astronomy, as well as various aspects of the organization and evolution of the universe. Studies include earth and our own solar system, stars, and the universe as a whole. The origin and future of life on earth, and the possibilities for extraterrestrial life are examined in view of the forces shaping the universe. Recommended for non-science majors. No prerequisite.

## **PH 1023 (lec), 1032 (lab) 5 hours** **Physical Science III**

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

Prerequisite: MT 1303 with a grade of "C" or better, or a math placement score equivalent to enter MT 1403, or consent of the instructor

## **PH 1103 (lec), 1112 (lab) 5 hours** **Introductory Physics**

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

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

## **PH 1703 (lec), 1712 (lab) 5 hours** **College Physics I**

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

Prerequisite: MT 1402 and 1403, 1505, or equivalent

## **PH 1803 (lec), 1812 (lab) 5 hours** **College Physics II**

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

Prerequisite: PH 1703 & 1712

## **PH 2103 (lec), 2112 (lab) 5 hours** **General Physics I**

A study of the mechanics of solids, liquids, and gases, and of heat and sound. A course intended for the student who plans to major in mathematics, the physical sciences, or engineering. Three hours lecture and two two-hour laboratory periods per week.

Prerequisite or Corequisite: MT 2105

## **PH 2203 (lec), 2212 (lab) 5 hours** **General Physics II**

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

Prerequisite: PH 2103 & 2112

Prerequisite or Corequisite: MT 2205

## **PH 2701-2705 1-5 hours** **Independent Studies in Physics**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **PH 2711-2715 1-5 hours** **Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# POLITICAL SCIENCE

## **PS 1103 3 hours** **Introduction to Political Science**

A course which introduces the student to the theory and content of politics. Basic concepts and approaches to the study of political activity are discussed. PS 1103 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions. No prerequisite.

## **PS 1203 3 hours** **U.S. Government I: National & State**

An introduction to the basic principles and structures of American national, state, and local governments. Emphasis will be placed upon the federal system; constitutional development and interpretation; civil liberties; political parties; the executive, legislative, judicial branches; and federal administrative agencies.

PS 1203 complies with the provisions of Section 170.011 Rs Mo. requiring the study of state and federal constitutions. No prerequisite.

## **PS 1303 3 hours** **U.S. State & Local Government**

An introduction to the basic principles and structures of American, state, and local government with emphasis on Missouri. State government structure and politics, state-local relationships will be considered as will county, municipal, special district and school district governments. The political and administrative problems of metropolitan areas will be given special attention. Meets Missouri component of Section 170.011 Rs Mo. requiring the study of state and federal constitutions. No prerequisite.



**PS 2103 3 hours**  
**International Relations**

A study of the major factors underlying international relations: climate and geography, national concepts and institutions, and the development of foreign policy. Today's problems of developing nations, East vs. West, and nuclear potentials are considered. No prerequisite.

**PS 2203 3 hours**  
**Introduction to Public Administration**

A study of the analysis of concepts and functions of administrative organizations. Included is a study of internal dynamics of governmental agencies: management, supervision, financial control, personnel supervision, and democratic accountability. No prerequisite.

**PS 2701-2705 1-5 hours**  
**Independent Studies (Honors) in Political Science**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**PS 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# PRECISION MACHINING

**MA 1161 (lec), 1162 (lab) 3 hours**  
**Introduction to Computer Numerical Control**

An introductory course in Computer Numerical Control Machining. Task of setting up, operating and programming and turning centers are demonstrated. Computer assisted programming of CNC machines is covered. The integration of CNC machines in a Flexible Manufacturing System is emphasized. Prerequisite: Advanced Machine Tool II or machine tool experience.

**MA 1211 (lec), 1212 (lab) 3 hours**  
**Machine Tool I**

A course that studies beginning concepts in machining. Starting with shop safety, bench work, measuring tools, band saws, drill presses, horizontal mills, engine lathes, and basic cutting tools. Projects are made using processes and machines in the shop. No prerequisite.

**MA 1221 (lec), 1222 (lab) 3 hours**  
**Machine Tool II**

A course that studies basic machine shop math, basic computer numerical control, blue print reading, and shop theory. Projects are made using processes and machines in the shop. Prerequisite: Machine Tool I

**MA 1231 (lec), 1232 (lab) 3 hours**  
**Advanced Machine Tool I**

A course that studies advanced shop math, basic CAD/CAM, machinist reference books, advanced machining processes on mills and lathes, and grinding techniques. Projects are made using processes and machines in the shop. Prerequisite: Machine Tool II

**MA 1241 (lec), 1242 (lab) 3 hours**  
**Advanced Machine Tool II**

A course that studies basic metallurgy, jigs and fixtures, advanced tooling, advanced blue print reading, and non-traditional machining practices. Prerequisite Advanced Machine Tool I

**MA 1411 1 hour**  
**Mold Making Terminology**

A course designed to give the student a consistent and concise

set of commonly used terms for referring to molds, related components and mold manufacturing, including illustrations and common reference material for the mold industry.

**MA 1512 2 hours**  
**CAD/CAM**  
**Fundamentals I for Mold Makers**

A course designed to introduce current CAD design methodologies used for mold design and CAM mold manufacturing methods used for CNC machine technology.

**MA 1612 (lec), 1613 (lab) 5 hours**  
**Mold Making Fundamentals I**

A course designed to introduce mold making techniques using current machine tools and support equipment, includes hand tools, and manual fabrication of molds.

**MA 2211 (lec), 2212 (lab) 3 hours**  
**Measurement and Inspection**

A study of measuring tools used in the production process, surface plate set up techniques, comparator usage, sine plates, surface testers, and coordinate measuring machines.

**MA 2221 (lec), 2222 (lab) 3 hours**  
**Advanced Machining and Processes**

Advanced course work in CNC, EDM Electronic Discharge Machining, Honing, Roller burnishing, forming, mold making, production machining, and laser machining. Prerequisite: Advanced Machine Tool II.

**MA 2313 3 hours**  
**Metallurgy**

The study of materials such as plastics, composites, ceramics, carbon steels, tool steels, cast irons, aluminums, brasses, bronzes, and stainless steels. And the study of coatings, corrosion, alloying, and heat treating. Prerequisite: Advanced Machine Tool II.

**MA 2321 (lec), 2322 (lab) 3 hours**  
**Advanced CNC Machining**

Applications of using CAD into CAM to the CNC machining process. Prerequisites: Advanced Machine Tool II, Computer-Aided Drafting, Intro. to CNC, and CAM

**MA 2411 (lec), 2412 (lab) 3 hours**  
**Geometric Dimensional Tolerance & Stat Process Control**

The application of geometric dimensional tolerance and statistical process control in the precision machining process. Prerequisites: Engineering Drawing and Advanced Machine Tool II.

**MA 2513 3 hours**  
**Computer-Aided Manufacturing (CAM)**

Instruction in the use of CAM software like MASTER CAM, SMART CAM, EZ FEATURE MILL, and SPECTRA CAM as it applies to the machining process. Prerequisites: Advanced Machine Tool II, Computer-Aided Drafting, and Intro. to CNC.

**MA 2701-2705 1-5 hours**  
**Independent Studies in Precision Machining**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**MA 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991 1 hour**  
**Employment Skills**

Instruction in employment techniques and career planning.

## PSYCHOLOGY

**PY 1103 3 hours**  
**General Psychology**

A course designed to provide the student with a broad, general introduction to the field of psychology. It is a study of behavior designed to present an account of the significant concepts and findings of contemporary psychology. The course should provide a clear description of the bodies of knowledge in the core areas of psychology. No prerequisite.

**PY 1203 3 hours**  
**Research Methods**

This course is about research methods in the behavioral sciences. Throughout the course emphasis is on getting each student involved in doing research as a problem-solving activity. The course will examine the characteristics of a scientific approach to the study of behavior and mental processes, and the general types of research questions that concern behavioral scientists. The course will emphasize research methodology rather than statistical concepts, statistical tests, or psychological content areas.

Prerequisite: PY 1103 or consent of instructor

**PY 2103 3 hours**  
**Personal and Social Adjustment**

A study of the everyday task of coping with ourselves, our environment, and the people we encounter. Emphasis will be placed on coping with problems, obstacles, and depressions.

Prerequisite: PY 1103 or consent of instructor

**PY 2203 3 hours**  
**Child Psychology**

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

Prerequisite: PY 1103 or consent of instructor

**PY 2503 3 hours**  
**Adolescent Psychology**

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

Prerequisite: PY 1103 or consent of instructor

**PY 2701-2705 1-5 hours**  
**Independent Studies in Psychology**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**PY 2703 3 hours**  
**Family Services Practicum**

This practicum is designed to give selected Social and Behavioral Science students practical experience with the Missouri Department of Social Services. Selected students will work under the direct supervision of the county director of the Missouri Department of Social Services; Division of Family Services. Students can expect a wide variety of exposure to child abuse/neglect investigations; foster care, preventive services and community involvement.

Prerequisite: PY 1003 and consent of instructor.

**PY 2703 3 hours**  
**Child Care Practicum**

This practicum is designed to give selected students practical experience in the area of child care. Each student will work directly with a professional in the field of child care.

Prerequisite: PY 1003 AND consent of instructor.

**PY 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**PY 2803 3 hours**  
**Child Abuse Practicum**

A course designed to give selected behavioral science students the opportunity to gain practical experience in the treatment of child abuse. Those students selected for this course will work in a treatment program under the direct supervision of a therapist.

Prerequisite: PY 1103 and consent of instructor

**PY 2823 3 hours**  
**Mental Health Practicum**

This practicum will give selected Social and Behavioral Science students practical experience in the mental health field. Each student will be involved in a Community Psychiatric Rehabilitation Center located in Washington, MO. The CPRC includes residential services, a transitional employment program, psychosocial rehabilitation services and community support services.

Prerequisite: PY 1103 and consent of instructor

**PY 2833 3 hours**  
**Probation and Parole Practicum**

This practicum is designed to give selected Social and Behavioral students practical experience with individuals who are on probation and/or parole with the Missouri Department of Human Resources. Selected students will work under the direct supervision of a Probation and Parole Officer with the state of Missouri.

Prerequisite: PY 1103 and consent of instructor

**PY 2843 3 hours**  
**Special Education Practicum**

This practicum is designed to give selected students the opportunity to gain practical experience with persons with developmental disabilities. Each student will work directly with the Franklin County Board for the Handicapped and the different programs offered to persons with developmental disabilities.

Prerequisite: PY 1103 and consent of instructor

**PY 2853 3 hours**  
**IS Crisis Intervention Practicum**

This practicum is designed to give selected students practical experience in the area of crisis intervention. Each student will work directly with Phoenix Place, Inc. This facility aids individuals who may be homeless, from a dysfunctional family situation, and/or in need of assistance in coping with a stressful situation.

Prerequisite: PY 1103 AND consent of instructor.

# REAL ESTATE

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

Introductory level course designed to upgrade or develop specific skills relative to professional continuing education or anticipated employment. No prerequisite.

**RE 0103 3 hours**  
**Broker's Class**

A course designed for the practicing real estate professional. This 48 clock-hour course covers license law, ethics, math and finance, ownership, brokerage considerations, valuations, taxes, and economics. The course prepares the student for the Missouri Real Estate Brokerage Exam.

**RE 1014 4 hours**  
**Principles of Real Estate (Salesman's Class)**

The study of the nature of real estate and its ownership, titles, legal descriptions, contracts, leases, taxation, and values. A total of 60 clock hours is required. The purpose of this class is to prepare students to pass the Missouri Real Estate Salesperson licensing examination.

Prerequisite: none

**RE 2023 3 hours**  
**Real Estate Appraisals**

An introduction to real estate appraisals, the study of the nature of real property, property values, general and local trends, site evaluation, building cost estimates, depreciation, and estimates on remodeling and modernization. Certification by the Independent Fee Appraisers Association may be necessary before employment. Offered evenings only. No prerequisite.

**RE 2701-2705 1-5 hours**  
**Independent Studies in Real Estate**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**RE 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.





# RETAILING

All retailing courses are currently inactive.

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

## **RT 2003** 3 hours **Display Project**

A study of visual and promotional merchandising activities that are vital to the success of a retail firm. Topics include promotional activities, public relations, construction and evaluation of displays and promotional budgets. No prerequisite.

## **RT 2013** 3 hours **Consumer Behavior**

A study and analysis of consumer buying habits and motives. Attention is given to the dominant position of the consumer in the marketing mechanism and his or her behavior in the marketplace. Recognition of motivation and the reactions of consumers and related business influences is also covered. No prerequisite.

## **RT 2023** 3 hours **Merchandising I - Starting Your Own Business**

An introduction to the principles of retailing. Emphasis is on the development, interpretation, and use of fundamental management and merchandising skills. Topics include: establishing a retail store, merchandise planning, salesmanship, display, promotion, advertising, personnel, finance, and control. Particular attention is given to problem-solving through use of common retailing problems chosen to raise some of the major issues confronting retailing and retailers today. No prerequisite.

## **RT 2033** 3 hours **Merchandising II**

A study of the problems inherent in merchandising including: buying, control, pricing for profit, planning sales, model stocks, and promotions. Arithmetic skills are stressed. No prerequisite.

## **RT 2043, 2053** 3 hours **Retailing Internship**

An individualized program aimed at giving students an opportunity to balance their knowledge of a retail organization through experience in most functional areas of retail businesses. Prerequisite: retailing major

## **RT 2701-2705** 1-5 hours **Independent Studies in Retailing**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **RE 2711-2715** 1-5 hours **Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

## **ED 2991** 1 hour **Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.

# SMALL ENGINE REPAIR

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

## **SE 1015** 5 hours **Small Engine and Garden Equipment Repair (2 cycle)**

A course designed to provide students with an introduction to small gasoline powered engines from both a theoretical and practical point of view. Emphasis is placed upon procedures for repair and replacement of engine parts and components. Small engine cooling, lubricating, electrical, and starting systems are studied. Engine overhaul and machine procedures are discussed in detail, and lab work includes the disassembly, measuring, and reassembly of engine components. Small engine tune-up is also covered. No prerequisite.

## **SE 1025** 5 hours **Small Engine and Garden Equipment Repair II (4 cycle)**

See description for SE 1015. No prerequisite.

## **SE 2701-2705** 1-5 hours **Independent Studies in Small Engine Repair**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **SE 2711-2715** 1-5 hours **Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# SOCIOLOGY

## **SO 1103** **General Sociology** **3 hours**

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. No prerequisite.

## **SO 1203** **American Social Problems** **3 hours**

A study of selected 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. No prerequisite.

## **SO 2103** **Human Relations** **3 hours**

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. No prerequisite.

## **SO 2203** **Marriage and the Family** **3 hours**

A study of the family, society, and the individual. The course includes background on American family patterns; premarital behavior; marriage and variations in family forms; and problems of the family today. Special emphasis is given to marriage and the family as a kind of human relationship.

## **SO 2303** **Introduction to Social Work** **3 hours**

A study of philosophy, historical development and perspectives of social work.

Prerequisite: SO 1103

## **SO 2701-2705** **Independent Studies (Honors) in Sociology** **5 hours**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

## **SO 2711-2715** **Special Topics** **1-5 hours**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

# WELDING

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

Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. No prerequisite.

## **WL 1001** **Personal Welding** **1 hour**

A course designed to introduce the student to his or her home welder and its related functions. No prerequisite.

## **WL 1011, (lec), 1013 (lab)** **Introduction to Welding** **4 hours**

An introduction to oxygen-acetylene brazing, cutting, and electric arc welding. The study of safety in oxyacetylene and electric arc welding is also included. No prerequisite.

## **WL 1021 (lec), 1023 (lab)** **Welding II — All Position SMAW** **4 hours**

A continuation of Welding I, stressing all-position shielded metal arc welding (SMAW). The study of the weldability of metals, joint design, filler metal selection, plasma arc cutting and carbon arc gauging is also included.  
Prerequisite: WL 1011, 1013

## **WL 1031 (lec), 1033 (lab)** **Welding III** **4 hours**

A course which stresses the development of skills in SMAW of groove welds in the 1G, 2G, 3G, 4G, and 5G positions; the study of welding codes and standards and testing and inspecting of welds will also be covered. Prerequisite: WL 1011, 1013, 1021, 1023 or consent of instructor

## **WL 1041 (lec), 1044 (lab)** **Welding IV - GMAW** **5 hours**

A course which stresses the development of skills in the GMAW of fillet and groove welds in the flat, horizontal, vertical and overhead positions. GMAW and FCAW equipment, setup and operation and shielding gasses are among the topics to be discussed.

Prerequisite: WL 1011, 1013, 1021, 1023, 1031, 1033 or consent of instructor

## **WL 1053** **Welding VI - Blueprint Reading** **3 hours**

A course which includes the fundamentals of print reading, welding symbols, and related information on a blueprint in construction and various welding fields. No prerequisite.



**WL 1661, 1672, 1683 1-3 hours**  
**Welding X - Independent Studies in Welding**

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

Prerequisite: consent of instructor

**WL 2011 (lec), 2014 (lab) 5 hours**  
**Welding V - GTAW**

A course which stresses the development of skills in the GTAW of fillet and groove welds in the flat, horizontal, vertical and overhead positions. GTAW equipment, setup and operation, shielding gasses and automation and robotics are among the topics to be discussed.

Prerequisite: WL 1011, 1013, 1021, 1023, 1031, 1033, 1041, 1044, or consent of instructor

**WL 2021 (lec), 2024 (lab) 5 hours**  
**Welding VII - Pipe Welding**

A course which stresses the development of pipe welding skills in the 2G, 5G, and 6G positions. Making templates and using them on pipe joints and saddles is also included.

Prerequisite: WL 1011, 1013, 1021, 1023, 1031, 1033, 1041, 1044, 2011, 2014 or consent of instructor

**WL 2031 1 hours**  
**Welding VIII - Advanced Graduate Projects**

Under the supervision of the instructor the student will build a project which will require the knowledge and skills from all previous welding courses. The student will also be required to write a research paper. Prerequisite: WL 1011, 1013, 1021, 1023, 1031, 1033, 1041, 1044, 2011, 2014, 2021, 2024 and have completed English requirements for degree

**WL 2065 5 hours**  
**Welding XI - Welding Technology Internship**

A course designed for on-the-job-training at local welding shops to provide the student with opportunities to use competencies developed in the classroom and laboratory. Emphasis is on preparation for full-time employment.

Prerequisites: WL 1011, 1013, 1021, 1023, 1031, 1033, 1041, 1044, 1053, 2011, 2014, 2021, 2024

**WL 2701-2705 1-5 hours**  
**Independent Studies in Welding**

A study of specific nature independently carried out by the student directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week.

**WL 2711-2715 1-5 hours**  
**Special Topics**

A study of a specific nature directly related to a particular department's area of expertise. Typically, this will cover new material not currently available at ECC. May be repeated.

**ED 2991 1 hour**  
**Employment Skills**

This course is designed to provide students with the basic skills necessary to conduct a self-directed job search. Areas of review include self-assessment, employer research, application, references, resumes, interviewing, follow-up and employer expectations. This course is coordinated through the Career Services Office.