

# COURSE DESCRIPTIONS

## ACCOUNTING

### AC 0100-0103 **Workshop/Seminar** 0.5-3.0 hours

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

### AC 1003 **Financial Accounting I Lec** 3.0 hours

A study of basic principles and procedures of double-entry accounting for service and merchandising businesses. Includes the complete accounting cycle, special journals, deferrals, accruals, payroll, other current liabilities and an introduction to receivables and inventories. There will be some basic analysis of financial statements. Most problems will be solved using general ledger and spreadsheet software. Lab is required for all vocational accounting majors and recommended for all other students. Prerequisite/corequisite: CS1013 and keyboarding skills. Corequisite of AC 1011 is recommended.

### AC 1011 **Financial Accounting I Lab** 1.0 hours

A laboratory period for Financial Accounting I students to work on assignments under the supervision of an instructor, to reinforce accounting concepts and vocabulary, to complete examinations when necessary, and to study the results of the examinations. To be taken with Financial Accounting I. Prerequisite: None

### AC 1023 **Financial Accounting II Lec** 3.0 hours

A short review of the accounting cycle, additional study of receivables and inventories and a concentration on plant and intangible assets, concepts and principles, partnerships, and corporate accounting, which includes corporate statements, bond liabilities, investments and statement of cash flows. Also, accounting ethics and in-depth analysis of the financial statements are covered. Most problems will be solved using general ledger and spreadsheet software. Lab is required for all vocational accounting majors and recommended for all other students. Prerequisites/corequisite: AC1003, CS1013, and keyboarding skills. Corequisite of AC 1031 is recommended.

### AC 1031 **Financial Accounting II Lab** 1.0 hours

See course description for AC 1023 (Fin Acctg II Lec). Lab is required for vocational accounting majors and recommended for all other students. Prerequisite: None

### AC 1043 **Managerial Accounting** 3.0 hours

The content will include managerial concepts, job order and process cost systems, cost behavior and profit analysis, budgeting, variances, decentralized operations, differential analysis, product pricing, capital investment analysis and standards of ethical conduct for management accountants. Most problems will be solved using general ledger and spreadsheet software. Lab is required for all vocational accounting majors and recommended for all other students. Prerequisite: Grade of C or higher in AC1023. Corequisite of AC 1051 is recommended.

### AC 1051 **Managerial Accounting Lab** 1.0 hours

See course description for AC 1043 (Managerial Acctg). Lab is required for vocational accounting majors and recommended for all other students. Prerequisite: None

### AC 2013 **Computer Assisted Accounting** 3.0 hours

A study of accounting as it applies to computers. The course includes the building and use of spreadsheet templates to solve financial accounting problems and study "what if" situations and the use of a commercial general ledger package to process accounting information. Prerequisite: AC1043 or consent of instructor.

### AC 2021 **Accounting Practicum** 1.0 hours

A course designed to give students practical working experience through the complete accounting cycle. A computer is used. Prerequisite: AC1023

### AC 2031 **Accounting Practicum** 1.0 hours

A course designed to give students practical working experience through the complete accounting cycle. A computer is used. Prerequisite: AC 1023 and AC 2021

### AC 2043 **Intermediate Accounting I** 3.0 hours

A review of the concepts and principles underlying accounting and their application in the accounting process. Valuation procedures and problems are considered for each class of assets on the balance sheet along with their related effect upon income measurement. Prerequisite: AC1043

### AC 2053 **Tax Accounting** 3.0 hours

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

### AC 2063 **Intermediate Accounting II** 3.0 hours

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

### AC 2073 **Cost Accounting** 3.0 hours

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

### AC 2103 **Advanced Tax Accounting** 3.0 hours

A continuation of the study of federal income tax. Consideration will be given to the special treatment received by the various business entities, including a study of partnerships, corporations, estates, and trusts. Study will

focus on the impact of taxation on business planning and decision-making. Prerequisite: AC 2043 Offered when demand is indicated.

### AC 2123 **Accounting Internship** 3.0 hours

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 **Individual Income Tax** 1.0 hours

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 2133 **Accounting Internship** 3.0 hours

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 and AC 2123.

### AC 2701-2705 **Independent Study-Accounting** 1.0-5.0 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. Prerequisite: None

### AC 2711-2715 **Special Topics-Accounting** 1.0-5.0 hours

A study of 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. Prerequisite: None

## AIR CONDITIONING

### AI 0100-0103 **Workshop/Seminar** 0.5-3.0 hours

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

### AI 1001 **Electrical Diagrams** 1.0 hours

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

### AI 1012 **Theory of Refrigeration & Materials Lec** 2.0 hours

A study of the theory of refrigeration, along with the use and safety of refrigeration hand tools and commonly used materials. Prerequisite: None

### AI 1021 1.0 hours



### Theory of Refrigeration & Materials Lab

A study of the theory of refrigeration, along with the use and safety of refrigeration hand tools and commonly used materials.  
Prerequisite: None

### AI 1022 Applied Electrical Fundamentals Lec 2.0 hours

A course which starts with the basic fundamentals and processes of electrical wiring for refrigeration components and motors. After students acquire a working knowledge of electrical circuits, they apply this to laboratory tests on testing boards and refrigeration equipment. Prerequisite: None

### AI 1023 Applied Electrical Fundamentals 3.0 hours

A course which starts with the basic fundamentals and processes of electrical wiring for refrigeration components and motors. After students acquire a working knowledge of electrical circuits, they apply this to laboratory tests on testing boards and refrigeration equipment. Prerequisite: None

### AI 1031 Applied Electrical Fundamentals Lab 1.0 hours

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 board and refrigeration equipment. Prerequisite: None

### AI 1032 Systems & Components Lec 2.0 hours

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. Corequisite: AI 1041

### AI 1041 Systems & Components Lab 1.0 hours

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 Refrigerants Lec 2.0 hours

A study of various types of refrigerants and their characteristics, skills in handling refrigerants, pressure-temperature relationships, refrigerant oils, noncondensable gases, and their applications. Prerequisite: None

### AI 1051 Refrigerants Lab 1.0 hours

A study of various types of refrigerants and their characteristics, skills in handling refrigerants, pressure-temperature relationships, refrigerant oils, noncondensable gases, and their applications. Prerequisite: None

### AI 1052 Domestic Refrigeration Lec 2.0 hours

A study of application and knowledge of the fundamentals of refrigeration and electricity by means of troubleshooting and repairing domestic refrigerators and freezers.  
Prerequisite: None

### AI 1061 Domestic Refrigeration Lab 1.0 hours

A study of application and knowledge of the fundamentals of refrigeration and electricity by means of troubleshooting and repairing domestic refrigerators and freezers.  
Prerequisite: None

### AI 1062 Commercial Refrigeration Lec 2.0 hours

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 Corequisite: AI 1071

### AI 1071 Commercial Refrigeration Lab 1.0 hours

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 Theory of Air Conditioning & Psychrometrics Lec 2.0 hours

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 most comfortable for a specific situation.

Prerequisite: AI 1012, 1021, 1022, 1031, 1032, 1041, 1042, 1051, 1052, and 1061. Corequisite: AI 1081

### AI 1081 Theory of Air Conditioning & Psychrometrics Lab 1.0 hours

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 most comfortable for a specific situation.

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

### AI 1082 Applied Air Distribution 2.0 hours

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 Air Conditioning Equipment & Installation Lec 2.0 hours

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. Corequisite: AI 1102

### AI 1102 Air Conditioning Equipment & Installation Lab 2.0 hours

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 Testing, Diagnosis & Troubleshooting Lec 2.0 hours

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. Corequisite: AI 1121

### AI 1121 Testing, Diagnosis & Troubleshooting Lab 1.0 hours

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 3.0 hours

### Applied Sheet Metal I

A course designed to provide a practical working knowledge and to develop skills required in the use of sheet metal in a residential duct system. After students become familiar with the tools and equipment and the set of safety standards used, they will apply this knowledge to practical application. This will include applying patterns, fabricating sheet metal, soldering, and drawing simple patterns.  
Prerequisite: None

### AI 1133 Applied Sheet Metal II 3.0 hours

A course designed to provide a practical working knowledge and develop skills required in the use of sheet metal in a residential duct system. The breadth of this course is greater than Applied Sheet Metal I and allows for the in-depth application of plenums and duct work for heating and cooling systems in residential construction.  
Prerequisite: AI 1123 or consent of instructor

### AI 1143 Heat Pump I 3.0 hours

An introductory course designed to cover the basic theory and applied application of the heat pump system. Students will gain a working knowledge and develop skills in the area of load calculations, (heat gain, heat loss) balance points of systems, installation and application, and methods of control of the equipment by different manufacturers. Servicing and troubleshooting the various heat pump systems will be dealt with. Prerequisite: None

### AI 1153 Heat Pump II 3.0 hours

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 Oil Heat & Controls 3.0 hours

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 LP, Electric Heat & Controls 3.0 hours

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

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

### AI 1183 Solar Energy Systems 3.0 hours

A study of solar energy and its uses for heating and cooling buildings, heating of domestic hot water, and heating of water for swimming pools. Active solar energy systems and passive solar energy systems will be investigated and dealt with. Students will gain knowledge, skills, and experience in locating, collecting, storing, and distributing solar energy.  
Prerequisite: None

### AI 1193 Introduction to Energy 3.0 hours

An introductory course on energy and the problems related to energy. The students will have opportunities to explore and experiment with possible solutions to the energy crisis. Students will also explore career opportunities as to the job openings available in this new and emerging field, and learn good conservation techniques. Prerequisite: None

### AI 1203 Residential Electricity 3.0 hours

An introductory course stressing basic electrical theory and applied practical wiring for residential systems. Students will gain technical knowledge and develop skills required in

the areas of installation, maintenance, and diagnosis of problems. Prerequisite: None

**AI 1213 Commercial Electricity** **3.0 hours**  
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 area of installation, maintenance, and diagnosis of problems. Prerequisite: AI 1203 or consent of instructor.

**AI 2701-2705 Independent Study-Air Conditioning and Refrigeration** **1.0-5.0 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. Prerequisite: None

**AI 2711-2715 Special Topics-Air Conditioning** **1.0-5.0 hours**  
A student 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. Prerequisite: None

## ANTHROPOLOGY

**AN 1003 Introduction to Cultural Anthropology** **3.0 hours**  
An introductory course in cultural anthropology emphasizing the use of the cultural perspective in gaining understanding in the areas of social structure, political systems, economic systems, religious systems, and human communication. Prerequisite: None

**AN 1103 Introduction to Physical Anthropology & Archaeology** **3.0 hours**  
An introduction to the study of physical anthropology and archaeology, with special emphasis on the connection between cultural and human development, human variability, major concepts in archaeological analysis, and some practical experience in archaeological method. Prerequisite: None

**AN 2701-2705 Independent Study-Anthropology** **1.0-5.0 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. Prerequisite: None

**AN 2711-2715 Special Topics-Anthropology** **1.0-5.0 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. Prerequisite: None

## ART

**AR 1013 Introduction to Art** **3.0 hours**  
To introduce drawing techniques with perspective, shading, composition, eye-level, and design. Materials used include pencil, charcoal, ink, pastel, cry-pas, and mixed media. Recommend this class before taking drawing or painting. Does not satisfy humanities requirements. Prerequisite: None

**AR 1103 Design I** **3.0 hours**  
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 elements is stimulated by a wide variety of projects stressing the development of ideas, and technical skills as related to the presentation of two-dimensional problems. Prerequisite: None

**AR 1113 Design II** **3.0 hours**  
An exploration of basic elements and principles of design as related to three-dimensional problem solving. Emphasis is placed on spatial qualities of mass shape and volume. Prerequisite: AR 1103

**AR 1203 Art Appreciation** **3.0 hours**  
A general overview of man's artistic activities from prehistoric to modern times. The course is intended to stimulate the students' visual, cultural, and intellectual awareness. Lecture, slides, and videotapes are used as a means of instruction. Prerequisite: None

**AR 1303 Drawing I** **3.0 hours**  
A studio course in drawing. The student will be introduced to methods and techniques based on the elements and principles of design. The emphasis will be the development of observational and compositional skills, and a heightened sense of creativity. Prerequisite: none

**AR 1313 Drawing II** **3.0 hours**  
A continuation of Drawing I focusing on refinement of observational and compositional skills, and development of an individual approach to drawing problems. Prerequisite: AR 1303

**AR 1323 Drawing III** **3.0 hours**  
A continuation of Drawing II, concentrated practice in observational drawing. Emphasis will be placed on compositional skills necessary to create finished works of art with an individual style. Prerequisite: AR 1313

**AR 1333 Studio in Drawing** **3.0 hours**  
Independent study into the exploration of style and content through drawing, perhaps relating to other fields or processes such as painting and printmaking. Prerequisite: None

**AR 1403 Painting I** **3.0 hours**  
An introduction to the materials and techniques of oil painting intended to develop technical and expressive abilities. Development of compositional and observations skills will be stressed. Prerequisite: none

**AR 1413 Painting II** **3.0 hours**  
A continuation of Painting I, in which the student will further develop technical abilities in oil painting, stressing color and spatial relationships, and a refinement of observational skills. Deeper exploration into personal expression and painting as communications. Prerequisite: AR 1403

**AR 1423 Painting III** **3.0 hours**  
A continuation of Painting II, and advanced study into the medium of oil painting as a means of personal expression and visual communication. Prerequisite: AR 1413

**AR 1433 Studio in Painting** **3.0 hours**  
Independent study into the personal exploration of style through painting. More emphasis on narrative content than in lower levels. Prerequisite: AR 1423

**AR 1503 Figure Drawing I** **3.0 hours**  
An introduction to drawing from the human figure. An analysis of structure and how it relates to overall form. Emphasis on observational skills to achieve correct proportion, and sensitivity to the subtleties of the human figure. Prerequisite: None

**AR 1513 Figure Drawing II** **3.0 hours**  
A continuation of Figure Drawing I, drawing from the human figure. Refining observational and compositional skills through a more personal approach to the subject matter. Prerequisite: AR 1503

**AR 1523 Figure Drawing III** **3.0 hours**  
A continuation of Figure Drawing II, an ad-

vanced study in drawing the human figure. Emphasis will be on technical skill, individual expression and attempts to define one's style. Prerequisite: AR 1513

**AR 1533 Studio in Figure Drawing** **3.0 hours**  
Advanced study in drawing the human figure, with emphasis on exploration through the use of different media and definition of personal style. Prerequisite: AR 1523

**AR 1603 Fundamentals of Graphics I** **3.0 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 Fundamentals of Graphics II** **3.0 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** **3.0 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. Prerequisite: None

**AR 1713 Art History II** **3.0 hours**  
A historical study of art tracing the development of art from the 18th century through contemporary times. Emphasis is placed on individual artists and art movements. Prerequisite: None

**AR 1723 Commercial Illustration I** **3.0 hours**  
Explore the variety of drawing and painting methods and materials used by professional designers and illustrators. Refining will enhance creative expression of drawing and painting techniques and the investigation of various media. Students will be introduced to a variety of design and illustration techniques and procedures. Prerequisite: None

**AR 1733 Commercial Illustration II** **3.0 hours**  
A continuation of Commercial Illustration I. Emphasis is on gaining proficiency with media, developing the ability to create illustrations and produce them in print form. Prerequisite: AR 1723

**AR 2003 Watercolor I** **3.0 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. Prerequisite: None

**AR 2013 Watercolor II** **3.0 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 2023 Art for Children** **3.0 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. Prerequisite: None

**AR 2043 Watercolor III** **3.0 hours**  
A continuation of the study of watercolor painting with emphasis on personal creative



structure, topics and problems, and contemporary painting.  
Prerequisite: AR 2013 or consent of instructor.

**AR 2103 3.0 hours**  
**Printmaking I**

An introduction to the history, materials, and techniques of printmaking intended to develop technical and expressive abilities. Relief and Intaglio processes will be covered, as well as monotype. Other areas to be covered included executing an edition of prints, matting and framing for presentation. Prerequisite: none

**AR 2113 3.0 hours**  
**Printmaking II**

A continuation of Printmaking I with further study into the Intaglio process, and the introduction to Lithography. The student will have the option of working in the woodcut and monotype processes. Prerequisite: AR 2103

**AR 2123 3.0 hours**  
**Printmaking III**

A continuation of Printmaking II in which the student will choose two of the four printmaking processes to work in. Emphasis on increased technical skills and development of aesthetic imagery. Prerequisite: AR 2113

**AR 2133 3.0 hours**  
**Studio in Printmaking**

Independent intensive exploration into the process of choice. The student will create a "suite" of prints, working in a series. Prerequisite: AR 2123

**AR 2203 3.0 hours**  
**Photography I**

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 3.0 hours**  
**Photography II**

A course approaching photography primarily from the creative visual aspect. The course is meant to increase the photographer's awareness and sensitivity, and at the same time refine basic mechanical skills. Prerequisite: AR 2203 or consent of instructor, 35mm camera.

**AR 2223 3.0 hours**  
**Photography III**

A continuation of Photography II with advanced study in black and white photographic methods, composition, and dark room techniques. Prerequisite: AR 2213

**AR 2303 3.0 hours**  
**Ceramics I**

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. Prerequisite: None

**AR 2313 3.0 hours**  
**Ceramics II**

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 3.0 hours**  
**Ceramics III**

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 2333 3.0 hours**

**Studio in Ceramics**

A continuation of Ceramics III. A self directed learning experience for students. Emphasis is on continued individual research and production methods. Course of study will include preparation for scholastic continuation in ceramics. Prerequisite: AR 2323

**AR 2403 3.0 hours**  
**Sculpture I**

An introduction to sculpture stressing the elements of sculptural form. Various materials and construction methods used in the sculptural field of study are emphasized. Prerequisite: none

**AR 2413 3.0 hours**  
**Sculpture II**

A continuation of the study of the elements of sculptures stressing the creative use of materials and construction methods. Prerequisite: AR 2403

**AR 2701-2705 1.0-5.0 hours**  
**Independent Study-Art**

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. Prerequisite: None

**AR 2711-2715 1.0-5.0 hours**  
**Special Topics-Art**

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. Prerequisite: None

**AUTO TECHNOLOGY**

**AT 1001 1.0 hours**  
**Introduction to Auto Technology**

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 2.0 hours**  
**ASE Brakes**

Basic theory, operation, diagnosis and repair of drum, disc, hydraulics, power and ABS brake systems are taught in this unit. Prerequisite: AT 1001

**AT 1043 3.0 hours**  
**ASE Suspension/Steering**

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: AT 1001

**AT 1065 5.0 hours**  
**ASE Manual Drive**

Basic theory, operation, diagnosis and repair of clutches, manual transmissions/transaxles, drive shafts, CV joints, differentials, and four wheel drive are taught in this unit. Prerequisite: AT 1001

**AT 1083 3.0 hours**  
**ASE Auto Transmission/Transaxle**

Basic theory, operation, diagnosis and repair of automatic transmissions, automatic transaxles and trans/transaxle service are taught in this unit. Prerequisite: AT 1001

**AT 1104 4.0 hours**  
**ASE Engine Repair**

This unit includes instruction in basic theory, operation, diagnosis and repair of the complete automotive engine including rebuilding, engine lubrication, and cooling systems. Prerequisite: AT 1001

**AT 2036 6.0 hours**  
**ASE Electrical Systems**

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

Prerequisite: AT 1001

**AT 2056 6.0 hours**  
**ASE Engine Performance**

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: AT 1001

**AT 2073 3.0 hours**  
**ASE Heating & Air Conditioning**

Basic theory, operation, diagnosis and repair of the auto heating and air conditioning systems including freon recovery are taught in this unit. Prerequisite: AT 1001

**AT 2701-2705 1.0-5.0 hours**  
**Independent Study-Auto Technology**

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. Prerequisite: None

**AT 2711-2715 1.0-5.0 hours**  
**Special Topics-Auto Technology**

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. Prerequisite: None

**BIOLOGY**

**BI 1003 3.0 hours**  
**Nutrition**

A study of the essential nutrients and their value in various food groups, their functions in the body, and how to determine the food needs of the individual. Prerequisite: None

**BI 1103 3.0 hours**  
**Ecology of Wildlife & Man**

A study of principles of ecology as they apply to such problems as pollution and wildlife, park, urban, and resource management. Historical and political implications will be examined. Methods of coping with problems will be evaluated. Three hours lecture per week. Prerequisite: None

**BI 1112 2.0 hours**  
**Medical Terminology**

A course in biomedical terminology. The student learns to pronounce, spell, and interpret the meaning of word components and how they fit together in modern biomedical terminology. The student studies some 1,500 words and learns the basics for expanding his or her own biomedical vocabulary. Two hours lecture per week. Prerequisite: None

**BI 1113 3.0 hours**  
**Medical Terminology I**

An introduction to medical terminology focusing 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. Prerequisite: None

**BI 1123 3.0 hours**  
**Medical Terminology II**

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: BI 1113

**BI 1202 2.0 hours**  
**Health**

A general course designed to develop proper attitudes and practices which will contribute

to the fine art of living. Health problems which require community action are given consideration. The course is intended for the elementary education majors. A portion of this course is devoted to methods of teaching health.  
Prerequisite: None

**BI 1203** **3.0 hours**  
**Introduction to Life Science**

A study of fundamental biological concepts, with emphasis on human biology. Topics include: the cell, the chemistry of life, the structure and function of human organ systems, genetics, ecology, and evolution.  
Prerequisite: None

**BI 1303** **3.0 hours**  
**General Biology Lec**

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. Prerequisite: None

**BI 1312** **2.0 hours**  
**General Biology Lab**

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. Prerequisite: None

**BI 1313** **3.0 hours**  
**Introduction to Botany Lec**

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.  
Prerequisite: None

**BI 1322** **2.0 hours**  
**Introduction to Botany Lab**

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.  
Prerequisite: None

**BI 1323** **3.0 hours**  
**Principles of Biology Lec**

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.  
Prerequisite: None

**BI 1332** **2.0 hours**  
**Principles of Biology Lab**

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.  
Prerequisite: None

**BI 1403** **3.0 hours**  
**Invertebrate Zoology**

A study of the structure and function of invertebrates with special attention paid to the

phylogenetic origins of taxonomic groups and the integration of their structural systems. Three one-hour lecture recitation periods and two two-hour laboratory period per week. This course is recommended for students majoring in life sciences and related fields.  
Prerequisite: BI 1323 & BI 1332 Corequisite: BI 1412

**BI 1412** **2.0 hours**  
**Invertebrate Zoo Lab**

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** **3.0 hours**  
**General Botany Lec**

An introduction to the plant kingdom, structure, physiology, life histories, economics importance, and the evolution of plants. Laboratory will include experimentation and observation to verify and enhance classroom lecture and recitation. Three one-hour lecture recitation periods and two two-hour laboratory periods per week.  
Prerequisite: BI 1323 & BI 1332, or consent of instructor. Corequisite: BI 1612

**BI 1612** **2.0 hours**  
**General Botany Lab**

An introduction to the plant kingdom, structure, physiology, life histories, economic importance, and the evolution of plants. Laboratory will include experimentation and observation to verify and enhance classroom lecture and recitation. Three one-hour lecture recitation periods and two two-hour laboratory periods per week.  
Prerequisite: BI 1323 & 1332, or consent of instructor.

**BI 1701** **1.0 hours**  
**Introduction to Respiratory Therapy**

A course intended to introduce a prospective student the Respiratory Care profession. Includes the student of topics, techniques, and issues that are a part of the 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. Prerequisite: None

**BI 1802** **2.0 hours**  
**Introduction to Human Anatomy & Physiology Lec**

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, and the Emergency Medical Technician (EMT) 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. Prerequisite: None

**BI 1812** **2.0 hours**  
**Introduction to Human Anatomy & Physiology Lab**

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, and the Emergency Medical Technician (EMT) program. The integument, skeletal, muscular, nervous, endocrine, circulatory, digestive, respiratory, urinary and reproductive system will be studied. Two lectures and two labs per week and the laboratory session will support the lecture activity. Prerequisite: None

**BI 1902** **2.0 hours**  
**Introduction to Human Physiology Lec**

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 and 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 & BI 1812. Corequisite: BI 1912

**BI 1912** **2.0 hours**  
**Introduction to Human Physiology Lab**

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 2001** **1.0 hours**  
**Biology Science Lab**

This course emphasizes and addresses the Key Skills that are identified in "Core Competencies and Key Skills" for Missouri school (1991).  
Prerequisite: None

**BI 2003** **3.0 hours**  
**Genetics Lec**

A study of the principles of heredity and biological evolution as applied to plants and animals.  
Prerequisite: MT 1403, BI 1323 & BI 1332. Corequisite: BI 2012

**BI 2012** **2.0 hours**  
**Genetics Lab**

A study of the principles of heredity and biological evolution as applied to plants and animals.  
Prerequisite: MT 1403, BI 1323 & BI 1332.

**BI 2102** **2.0 hours**  
**Human Anatomy & Physiology I Lec**

Part one of a two-semester course where gross micro- and macro- scopic 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. Corequisite: BI 2112

**BI 2112** **2.0 hours**  
**Human Anatomy & Physiology I Lab**

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** **2.0 hours**  
**Human Anatomy & Physiology II Lec**

Part two of a two-semester study. Systems studied are digestive, respiratory, circulatory, and urogenital. Sequencing of courses I and II is not important. The student may take Human Anatomy and Physiology II first. Two lectures and three two-hour laboratory periods per week.  
Prerequisite: BI 1323 & 1332, CH 1203 and 1212, or CH 1303 and 1312, or consent of instructor. College courses in math are useful. Corequisite: Either BI 2203 or BI 2212

**BI 2203** **3.0 hours**  
**Human Anatomy & Physiology II Lab**

Part two of a two-semester study. Systems studied are digestive, respiratory, circulatory, and urogenital. Sequencing of courses I and II is not important. The student may take Human Anatomy and Physiology II first. Two lectures and three two-hour laboratory periods per week.  
Prerequisite: BI 1323 and 1332, CH 1203 & 1212 or CH 1303 and 1312, or consent of instructor. College courses in math are useful.

**BI 2212** **2.0 hours**  
**Human Anatomy & Physiology II Lab**

Part two of a two-semester study. Systems studied are digestive, respiratory, circulatory, and urogenital. Sequencing of courses I and II is not important. The student may



take Human Anatomy and Physiology II first. Two lectures and three two-hour laboratory periods per week.  
Prerequisite: BI 1323 & 1332, CH 1203 & 1212, or CH 1303 & 1312, or consent of instructor. College courses in math are useful.

**BI 2302 Vertebrate Morphology Lec** 2.0 hours  
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. Corequisite: BI 2303

**BI 2303 Vertebrate Morphology Lab** 3.0 hours  
A study of the comparative anatomy of vertebrate animals, including both embryological development and adult structure. Dissection includes a representative from each major vertebrate class. Includes classification of vertebrates, embryology, skeleton, muscles, coelom, digestive and respiratory systems, circulatory system, urogenital system, and nervous system. Two lectures and six hours laboratory per week.  
Prerequisite: BI 1323 & 1332 or consent of instructor.

**BI 2403 Microbiology Lec** 3.0 hours  
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. Corequisite: BI 2411

**BI 2411 Microbiology Lab** 1.0 hours  
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 General Ecology Lec** 3.0 hours  
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. Corequisite: BI 2512

**BI 2512 General Ecology Lab** 2.0 hours  
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 Pathophysiology** 3.0 hours  
This course will give a basic introduction to body dysfunction in disease. The vector, or cause of the disease and its impact on body function will be studied. Topics will be covered will include etiology, epidemiology, vectors, and chronic disease as well as genetic anomalies will be addressed using a systemic approach.  
Prerequisite: BI 2102 & 2112, or BI 2202 & 2203 or 2212.

**BI 2701-2705 Independent Study-Biology** 1.0-5.0 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.

Prerequisite: None

**BI 2711-2715 Special Topics-Biology** 1.0-5.0 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.  
Prerequisite: None

**BI 2802 Practicum in Biology** 2.0 hours  
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 Alpine Biology** 3.0 hours  
This course involves the descriptive principles of ecosystem structure, trophic dynamics, population regulation, and evolutionary ecology as applied to life zones of the Rocky Mountains. The course is taught at Colorado State University's Pingree Park Campus.  
Prerequisite: None

**BUILDING CONSTRUCTION**

**BC 0100-0103 Workshop/Seminar** 0.5-3.0 hours  
Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**BC 1014 Blueprint Reading & Layout** 4.0 hours  
A course in reading and interpreting prints of the building, mechanical, and electrical trades. Includes preparation of a complete set of working drawings for a structure.  
Prerequisite: None

**BC 1024 Survey and Layout** 4.0 hours  
A study of the theory involving basic surveying equipment, Chaining, differential leveling, grade operations, layout of buildings and construction layouts. Prerequisite: None

**BC 1033 Concrete** 3.0 hours  
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. Prerequisite: None

**BC 1043 Carpentry** 3.0 hours  
A study of basic theory and application of building construction fundamentals. Offered evenings only. Prerequisite: None

**BC 1045 Carpentry** 5.0 hours  
A study of basic theory and application of building construction fundamentals including fabrication from architect's plans.  
Prerequisite: None

**BC 1055 Electricity** 5.0 hours  
A study of basic A.C. and D.C. circuits with emphasis in commercial and residential applications. Prerequisite: None

**BC 1064 Plumbing** 4.0 hours  
A study of basic theory involving materials, tools and calculations, drainage and disposal systems, fittings, fixtures, and layout of systems. Prerequisite: None

**BC 1073 Welding** 3.0 hours  
A study of fundamental processes involving oxyacetylene and electric arc welding.  
Prerequisite: None

**BC 1084 Commercial Carpentry** 4.0 hours  
Study of the basic theory and application of

commercial building construction fundamentals. Prerequisite: BC 1033

**BC 1093 Sheet Metal & Preventative Building Maintenance** 3.0 hours  
A study of basic building, mechanical, and electrical maintenance. Includes applying patterned fabrication of sheet metal, soldering, and drawing simple patterns.  
Prerequisite: None

**BC 1103 Energy Efficient Buildings** 3.0 hours  
A study of energy conservation practices used in new and existing structures.  
Prerequisite: None

**BC 1113 Residential Construction Procedures** 3.0 hours  
A course dealing with building construction fundamentals including concrete, carpentry, plumbing, and electricity.  
Prerequisite: BC 1045

**BC 1114 Residential Construction Procedures** 4.0 hours  
A course dealing with advanced building construction fundamentals including concrete, carpentry, plumbing, and electricity.  
Prerequisite: BC 1045

**BC 1123 Farm & Home Shop Construction** 3.0 hours  
A course designed to provide a working knowledge of construction and to develop many different shop skills and executing a project.  
Prerequisite: None

**BC 1133 Home Maintenance** 3.0 hours  
A study of basic theory and application in repairing, maintaining, and remodeling residential structures. Prerequisite: None

**BC 1143 Repair & Construction of Farm Machinery Buildings** 3.0 hours  
A study of basic theory and application of farm building construction and equipment repairs.  
Prerequisite: None

**BC 1153 Blueprint Reading/Architectural Drawing** 3.0 hours  
A course in reading, drawing, and interpreting prints of the mechanical and electrical trades. Students must prepare a complete set of working drawings for a structure.  
Prerequisite: None

**BC 2701-2705 Independent Study-Building Construction** 1.0-5.0 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.  
Prerequisite: None

**BC 2711-2715 Special Topics-Building Construction** 1.0-5.0 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.  
Prerequisite: None

**BUSINESS**

**BU 0100-0103 Workshop/Seminar** 0.5-3.0 hours  
Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**BU 1002 Principles of Banking** 2.0 hours  
This course touches on nearly every aspect of banking from the fundamentals of negotiable instruments to contemporary issues and developments within the industry.  
Prerequisite: None

**BU 1003** 3.0 hours

**Introduction to Business**  
A survey course designed to give the student a general knowledge of the modern business world and a better basis for choosing concentrated business offerings. Prerequisite: None

**BU 1012 Law & Banking Principles** **2.0 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. Prerequisite: None

**BU 1013 Principles of Marketing** **3.0 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. Prerequisite: None

**BU 1023 Salesmanship** **3.0 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. Prerequisite: None

**BU 1033 Principles of Advertising** **3.0 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. Prerequisite: None

**BU 1043 Principles of Finance** **3.0 hours**  
A broad introduction to the operations, mechanics, and structure of the financial system within the United States. Special emphasis is given to financial instruments, markets and institutions, the Federal Reserve System and monetary policy. The course stresses the impact of monetary policy on the economy and on the operation of financial institutions. The course is intended to be the first course in finance. Prerequisite: None

**BU 1053 Fundamentals of Management** **3.0 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. Prerequisite: None

**BU 1063 Business/Industry Management Internship** **3.0 hours**  
Actual work experience in a business or industry with periodic discussions of the problems involved in applying classroom principles to the job. Prerequisite: Enrollment in Business Management Program and consent of instructor.

**BU 1103 Elements of Human Resource Management** **3.0 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 skill of managers and supervisors in solving human problems and developing a skilled and motivated workforce. Prerequisite: None

**BU 1112 Consumer Lending** **2.0 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. Prerequisite: None

**BU 1113 Principles of Industrial Management** **3.0 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. Prerequisite: None

**BU 1122 Commercial Lending** **2.0 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. Prerequisite: None

**BU 1123 Analyzing Financial Statements** **3.0 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. Prerequisite: None

**BU 1193 Dynamics/Leadership** **3.0 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. Prerequisite: None

**BU 2012 Readings in Management** **2.0 hours**  
A study of selected readings in group dynamics, communications, decision-making theory, managerialism, and its economic justification. Prerequisite: BU 1053

**BU 2013 Survey Calculus** **3.0 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 2014 Survey Calculus** **4.0 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 2023 Business/Industry Management Internship** **3.0 hours**  
Actual work experience in a business or industry with periodic discussions of the problems involved in applying classroom principles to the job. Prerequisite: BU 1063 and enrollment in Business Management Program and consent of instructor.

**BU 2033 Legal Environment of Business** **3.0 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 system and procedure, regulatory law, environmental responsibility, consumer rights; law of torts, contracts and law sales, international dimensions of legal environment, anti-trust and employment implications. Prerequisite: None

**BU 2043 Business Simulation & Problem Solving** **3.0 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 Concept-Quality & Productivity** **3.0 hours**  
A course which introduces the concepts of quality and productivity, demonstrating that quality improvements enhance productivity and competitive position. Prerequisite: None

**BU 2073 Techniques to Improve Quality** **3.0 hours**  
A course which includes elements of a successful Quality Circle Program through a hands-on approach. Prerequisite: None

**BU 2083 Introduction to Total Quality Management** **3.0 hours**  
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. Prerequisite: BU 1053

**BU 2103 Basic Business Statistics** **3.0 hours**  
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 Money & Banking** **3.0 hours**  
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. Prerequisite: None

**BU 2123 Basic Investments** **3.0 hours**  
This course is an introduction to investment securities. The course will provide general knowledge of the securities markets and basic investment analysis. Prerequisite: None

**BU 2133 Inventory & Production Control** **3.0 hours**  
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. Prerequisite: None

**BU 2143 Small Business Management** **3.0 hours**  
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. Prerequisite: None

**BU 2153 Group Dynamics** **3.0 hours**  
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. Prerequisite: None

**BU 2203** **3.0 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: BU 1013, or consent of instructor.

**BU 2701-2705** **1.0-5.0 hours**  
**Independent Study-Business**

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.  
Prerequisite: None

**BU 2711-2715** **1.0-5.0 hours**  
**Special Topics-Business**

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.  
Prerequisite: None

## CHEMISTRY

**CH 1003** **3.0 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 0203 with a grade of "C" or better, or a math placement score equivalent to enter MT 1303.

**CH 1103** **3.0 hours**  
**Introduction to Chemistry Lec**

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. Corequisite: CH 1112

**CH 1112** **2.0 hours**  
**Introduction to Chemistry Lab**

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** **3.0 hours**  
**Chemistry for the Health Sciences Lec**

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 Corequisite: CH 1212

**CH 1212** **2.0 hours**  
**Chemistry for the Health Sciences Lab**

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** **3.0 hours**  
**General Chemistry I Lec**

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. Corequisite: CH 1312

**CH 1312** **2.0 hours**  
**General Chemistry I Lab**

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** **3.0 hours**  
**General Chemistry II Lec**

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. Corequisite: CH 1412

**CH 1412** **2.0 hours**  
**General Chemistry II Lab**

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** **2.0 hours**  
**Quantitative Analysis Lec**

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. Corequisite: CH 2112 or CH 2113

**CH 2112** **2.0 hours**  
**Quantitative Analysis Lab**

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 CH 1403, CH 1412, and MT 1403 or higher level math course.

**CH 2113** **3.0 hours**  
**Quantitative Analysis Lab**

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** **3.0 hours**  
**Organic Chemistry I Lec**

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. Corequisite: CH 2312

**CH 2312** **2.0 hours**  
**Organic Chemistry I Lab**

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** **3.0 hours**  
**Organic Chemistry II Lec**

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 Corequisite: CH 2412

**CH 2412** **2.0 hours**  
**Organic Chemistry II Lab**

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** **1.0-5.0 hours**  
**Independent Study-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. May be repeated. Prerequisite: None

**CH 2711-2715** **1.0-5.0 hours**  
**Special Topics-Chemistry**

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.  
Prerequisite: None

## COMMUNICATION, MEDIA AND THEATRE

**CT 1003** **3.0 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** **3.0 hours**  
**Interactive Lateral Thinking**

Course covers three areas of 10 lessons each in interactive thinking skills: breadth, organization, interaction, and action. Class work 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.  
Prerequisite: None

**CT 1023 3.0 hours**  
**Lateral Thinking II**  
Another "user-friendly" thinking course that emphasizes creative thinking skills: breadth, information and feeling, and creativity. Class work consists of group discussions covering: information, questions, ready mades, 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. Prerequisite: None

**CT 1103 3.0 hours**  
**Public Speaking**  
An introduction to the basic elements of public speaking. Assignments include the presentation of speeches, preparation of outlines, and the discussion of evaluation techniques. Prerequisite: None

**CT 1203 3.0 hours**  
**Oral Interpretation**  
A study in the basic techniques of oral interpretation. The recreation of literature is stressed through acquiring the skills and techniques necessary to convey the intellectual, emotional, and aesthetic values of literature to an audience. The course will include study in the oral interpretation of prose, drama, and poetry. Prerequisite: None

**CT 1303 3.0 hours**  
**Theatre Appreciation**  
An appreciation course designed to give a comprehensive introduction to theatre, including theatre history and contributions made by directors, actors, designers, technicians, and playwrights to modern dramatic productions. Prerequisite: None

**CT 1334 4.0 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. Prerequisite: None

**CT 1344 4.0 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 4.0 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 3.0 hours**  
**Beginning Acting**  
A course designed to introduce the student to the basics of acting. Prerequisite: None

**CT 1912 2.0 hours**  
**Stage Makeup**  
A course in materials and methods of application of makeup artistry for cosmetic and character effects on stage. Prerequisite: None

**CT 2002 2.0 hours**  
**Stagecraft**  
Study of fundamentals of properties and scenic construction, stressing terminology and practical production experience. Prerequisite: None

**CT 2012 2.0 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 2.0 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 2.0 hours**  
**Voice and Diction**  
A study of respiration, phonation, resonance, articulation, and diction for the stage. Prerequisite: None

**CT 2112 2.0 hours**  
**Advanced Voice & Diction**  
Development of a set of specific exercises tailored to achieve a constant performing level of clarity, enunciation, breathing, projection, and inflection in voice. Application of these principles will then be tested in the selections of reading from scripts to be performed before conservatory students. Prerequisite: CT 2102 or consent of instructor

**CT 2403 3.0 hours**  
**Acting I**  
An extensive study in the theories and techniques of acting. Prerequisite: None

**CT 2503 3.0 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 3.0 hours**  
**Forensics**  
A course in intercollegiate debate and speech competition. Prerequisite: consent of instructor

**CT 2613 3.0 hours**  
**Forensics**  
A course in intercollegiate debate and speech competition. Prerequisite: CT 2603 and consent of instructor

**CT 2623 3.0 hours**  
**Forensics**  
A course in intercollegiate debate and speech competition. Prerequisite: CT 2603, 2613 and consent of instructor

**CT 2633 3.0 hours**  
**Forensics**  
A course in intercollegiate debate and speech competition. Prerequisite: CT 2603, 2613, 2623 and consent of instructor.

**CT 2701-2705 1.0-5.0 hours**  
**Independent Study-Communication/Media/Theatre**  
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. Prerequisite: None

**CT 2711-2715 1.0-5.0 hours**  
**Special Topics-Communication/Media/Theatre**  
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. Prerequisite: None

**CT 2801-03 1.0-3.0 hours**  
**Communication/Media/Radio/TV/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 Children's Theatre**  
This course involves seven weeks of study, rehearsal and preparation for a performance that will tour East Central College District elementary schools during spring break. May be repeated. Prerequisite: None

**CT 2901-03 1.0-3.0 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 0100-0103 0.5-3.0 hours**  
**Workshop/Seminar**  
Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**CS 1001 1.0 hours**  
**Introduction to PC APPLE/Macintosh**  
An introductory course in personal computers to acquaint the student with the operations 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 3.0 hours**  
**Microcomputer Applications**  
A course designed to introduce the student to a variety of ways to use microcomputers. Spreadsheet processing, data base management, word processing, presentation software, and the operating system of a microcomputer will be the focus of the course. Pre/Corequisite: CS 1013. Keyboarding skills required. Prerequisite: None

**CS 1011 1.0 hours**  
**Introduction to PC/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 3.0 hours**  
**Introduction to Computers & Information Systems**  
The course is designed to give students the basic understanding of computer concepts and to introduce them to necessary information technology skills. Microcomputers are used to complete lab work in the course. Keyboarding skills recommended. Prerequisite/Corequisite: Keyboarding skills.

**CS 1021 1.0 hours**  
**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 1011, or consent of instructor. Keyboarding recommended.

**CS 1031** **1.0 hours**  
**Microsoft Windows**

A course designed to introduce the student to 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. Prerequisite: CS 1011. Keyboarding required. Experience needed with microcomputers and application software.

**CS 1041** **1.0 hours**  
**Introduction to Excel MOUS**

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 1043** **3.0 hours**  
**Visual Basic (Microsoft)**

Students with no previous programming experience will learn how to plan and create their own interactive Windows applications using Visual Basic, an object-oriented/event-driven programming language. Students will learn how to write If...Then...Else, Select Case, Do...While, Do...Until, and For...Next statements, as well as how to create and manipulate sequential access files, random access files, and how to include multiple forms in a project. GUI (graphical user interface) design skills are emphasized, and advanced skills such as accessing information in a database and using OLE are taught. This course will help the student prepare for the Microsoft Certified Professional Exam: Microsoft Exam 70-165. Microsoft Official Curriculum will be used, along with other textbooks and support materials. If includes the following two course segments: MS Fundamentals of Microsoft Visual Basic and MS Programming with Microsoft Visual Basic. Prerequisite: CS 1013

**CS 1051** **1.0 hours**  
**Advanced Excel MOUS Expert**

A course designed for students familiar with the spreadsheet capabilities. Topics include managing data files, producing graphs, and developing simple macros. Prerequisite: CS 1041, or consent of instructor.

**CS 1054** **4.0 hours**  
**Visual Basic Microsoft**

This course covers programming Windows applications using Visual Basic. Topics include programming in a graphical user interface; coding variables, expressions, error handling routines, and calling functions; writing object- and event-oriented applications; working with data management and controls; and multiple document interface and class module programming. This course will help the student prepare for the Microsoft Certified Professional Exam. Prerequisites: CS 1003, CS 1013, and CS 1073 or consent of instructor.

**CS 1061** **1.0 hours**  
**Introduction to Access**

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 1011. Keyboarding recommended.

**CS 1063** **3.0 hours**  
**Microcomp Operations**

A course to familiarize students with the microcomputer hardware and operating system software. Topics include: the PC microproces-

sor and support chips, ROM software, ROM BIOS, Utility software and diagnostics, DOS and its functions, networking and data communications and peripheral coordination. Co/ Prerequisite: CS 1013, or consent of the instructor.

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

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 VBA. Advanced tasks include skills and techniques to design, develop, and implement production Web applications that use Access databases. This course will help the student prepare for the Microsoft Office Users Specialist Exam. Prerequisite: CS 1003, CS 1054, and CS 1073, or consent of instructor.

**CS 1071** **1.0 hours**  
**Advanced Access MOUS**

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 1061, or consent of instructor.

**CS 1073** **3.0 hours**  
**Internet Programming**

An introductory course in programming for Internet applications. The student will learn to design and implement programs that can be accessed from web browsers. It will include planning, creating, testing, improving, and publishing web-based applications. Prerequisite: Knowledge of keyboarding, CS 1013 and CS 1003, or consent of instructor.

**CS 1081** **1.0 hours**  
**PowerPoint MOUS**

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. Prerequisite: CS 1011, keyboarding required. Experienced needed with microcomputer and application software.

**CS 1083** **3.0 hours**  
**Java Programming**

A course in computer programming techniques and structures using the Java 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 Java programming language. Prerequisite: CS 1013, and one computer language or consent of instructor. Keyboarding skills recommended.

**CS 1091** **1.0 hours**  
**Introduction to Networks**

A course designed to introduce the student to the basic concepts of networks. Through lectures, demonstrations, handouts, and hands-on experiences the student will learn networking concepts, vocabulary, and applications. Topics covered will be: network concepts, configurations, installation and troubleshooting of networks (Lantastic, etc.). Prerequisite: CS 1013, keyboarding recommended. Experience needed with microcomputers and application software.

**CS 1113** **3.0 hours**  
**Unix/Linux**

A course designed to introduce the fundamentals of the UNIX operating system to the PC user. It includes basics of UNIX system concepts and approaches using Linux, a PC-compatible clone of UNIX. Prerequisite: CS 1013, CS 1003, CS 1063, or

consent of instructor.

**CS 1123** **3.0 hours**  
**Education Computers & Technology**

This course will provide students with the knowledge to incorporate computers and technology in the classroom. The student will be introduced to computer hardware, software selection, multimedia tools, and evaluation of educational software. The course will include basics in desktop operating system, word processing, spreadsheet, database, presentation graphics, and developing useful technology-supported learning activities. Prerequisite: None

**CS 1221** **1.5 hours**  
**Current Issues**

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. Suggested that this class be taken the semester before the Internship. Prerequisite: None

**CS 1223** **3.0 hours**  
**Word Microsoft**

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. Prerequisite: CS 1013, or consent of instructor.

**CS 1224** **4.0 hours**  
**Windows NT Microsoft**

A course designed to provide the student with a working knowledge of the concepts and fundamentals needed to administer a local area network using the Windows NT operating system. Topics covered will include planning, installing, configuring, optimizing and troubleshooting a Microsoft NT Server. This is an advanced course concentrating on one operating system environment. This course will help the student prepare for the Microsoft Certified Professional exam. Prerequisites: CS 1063 and CS 2153, or consent of instructor.

**CS 1233** **3.0 hours**  
**Operating Systems (Microsoft)**

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: Microsoft Windows 98. Microsoft Official Curriculum will be used, along with other textbooks and support materials. Prerequisite: None

**CS 1235** **5.0 hours**  
**Excel Microsoft**

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. Prerequisite: CS 1054, or consent of instructor.

**CS 1243** **3.0 hours**  
**Network Server (Microsoft NT)**

This course will help the student prepare for the Microsoft Certified Professional Exams:

Microsoft NT Server and Microsoft NT Workstation. Microsoft Official Curriculum will be used, along with other textbooks and support materials. Prerequisite: None

**CS 2003 3.0 hours  
Database Structure (Access MOUS)**

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.  
Prerequisite: CS 1043

**CS 2033 3.0 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.  
Prerequisite: CS 1023, 1033, and one computer language course

**CS 2073 3.0 hours  
Computer Information Systems Internship**

A supervised work experience in an information technology 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. Arranged seminars will be held to discuss work experiences.  
Prerequisite: enrollment in the Computer Information Systems Program and consent of the instructor.

**CS 2083 3.0 hours  
Computer Information Systems Internship**

A supervised work experience in an information technology 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. Arranged seminars will be held to discuss work experiences.  
Prerequisite: enrollment in the Computer Information Systems Program and consent of the instructor.

**CS 2093 3.0 hours  
C Programming**

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 inclusion, and structured programming techniques.  
Prerequisite: CS 1013, and one computer language.

**CS 2123 3.0 hours  
Pascal Programming**

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

functions and procedures, UCSD extensions to standard Pascal, and Turtle graphics.  
Prerequisite: CS 1033 or MT 1303 or consent of instructor. Keyboarding skills required.

**CS 2132 2.0 hours  
Hardware A+ Certification**

A course designed to prepare students for Hardware A+ Certification Exam. The student will review the concepts and procedures for configuring, installing and upgrading, performing diagnostics, repairing and doing preventive maintenance on microcomputers. The student will also review the concepts for DOS/Windows operating system. Co/ Prerequisites: CS 1063 and CS 2142, or consent of instructor.

**CS 2133 3.0 hours  
Support A+ Certification**

The student will learn techniques for working with and supporting end users. These techniques include: how to respond to requests from end users for hardware and software support, preparing a training session and developing a training manual. The student will also learn how to manage a support environment through the use of help desk software. The student will also prepare for the A+ Certification exam.  
Prerequisite: CS 1063; CS 1003 or consent of instructor.

**CS 2153 3.0 hours  
Network Essentials (Network+)**

A course designed to provide the student with the background necessary to understand networking information. 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.  
Prerequisite: None. CS 1063 is recommended.

**CS 2163 3.0 hours  
Web Server (Microsoft IIS)**

A course to familiarize the student with the skills needed to manage an Internet server. The goal of this course is to provide the skills necessary to install, configure, customize, optimize, network, integrate, and trouble shoot 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 system environment. Hardware and Networking knowledge is very helpful.  
Prerequisites: CS 2153 and CS 1063 are recommended.

**CS 2173 3.0 hours  
Advanced Network**

This course will provide students with the knowledge to administer local and enterprise-wide computer networks. Students will examine the interconnection of LANs into WANs. Students will explore the use of such technologies as fiber optics, wireless, microwave and satellite.  
Prerequisite: CS 2153 or consent of instructor.

**CS 2183 3.0 hours  
Enterprise Applications (E-Commerce)**

A course designed to develop enterprise applications using the latest technologies. Students must have experience in Visual Basic programming and database development. It includes web application development, database application development, component programming, and E-commerce application development.  
Prerequisite: CS 1043, CS 2003, or consent of instructor. Also recommend completion of CS 1243 and CS 2163.

**CS 2701-2705 1.0-5.0 hours  
Independent Study-Computer Information Systems**

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.  
Prerequisite: None

**CS 2711-2715 1.0-5.0 hours  
Special Topics-Computer Information Systems**

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.  
Prerequisite: None

**CRIMINAL JUSTICE**

**CJ 0100-0103 0.5-3.0 hours  
Workshop/Seminar**

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

**CJ 1013 3.0 hours  
Introduction to Criminal Justice**

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

**CJ 1023 3.0 hours  
Criminal Law & Procedures**

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

**CJ 1033 3.0 hours  
Rules of Criminal Evidence**

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

**CJ 1043 3.0 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 3.0 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 3.0 hours  
Criminal Investigation I**

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

**CJ 2033 3.0 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 3.0 hours  
Police Patrol & 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 3.0 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 ideas, 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 3.0 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 3.0 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 2083 3.0 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: CJ 2073, or consent of instructor.

**CJ 2701-2705 1.0-5.0 hours**

**Independent Study-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.  
Prerequisite: None

**CJ 2711-2715 1.0-5.0 hours**

**Special Topics-Criminal Justice**  
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.  
Prerequisite: None

## DENTAL ASSISTING

**DA 0100-0103 0.5-3.0 hours**

**Workshop/Seminar**  
Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**DA 1001 1.0 hours**

**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 the history, use, and functions of dental equipment. Personal oral hygiene will also be taught.  
Prerequisite: admission to Dental Assisting Program.

**DA 1104 4.0 hours**

**General & Dental Anatomy & 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 1204 4.0 hours**

**Dental Materials I**  
A study of the science of dental materials, their

composition, structures and properties, uses in dentistry and manipulations techniques. Topics include gypsums, some impression materials, cements and bases, and restorative materials. Activities include taking alginate impressions, wax bites, and model trimming.  
Prerequisite: admission to Dental Assisting Program

**DA 1302 2.0 hours**

**Sterilization & 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 4.0 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 1504 4.0 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, bi-sectioning, paralleling, edentulous and child radiographs and occlusal. Practice in processing and mounting.  
Prerequisite: admission to Dental Assisting Program

**DA 1602 2.0 hours**

**Emergency in Dental Office & Pharmacology**  
A study of drugs 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 3.0 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 4.0 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, construction 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 4.0 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 2003 3.0 hours**

**Dental Office Procedures & Career Management**  
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 1.0 hours**

**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 5.0 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 Dental Assisting Program

**DA 2701-2705 1.0-5.0 hours**

**Independent Study-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.  
Prerequisite: None

**DA 2711-2715 1.0-5.0 hours**

**Special Topics-Dental Assisting**  
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.  
Prerequisite: None

**DA 2811 1.0 hours**

**Expanded Functions in Orthodontics**  
Functions for dental assistants in Orthodontics which require special training beyond that of the basic knowledge and skills for chairside dental assisting. Special training and mastery is required by the Missouri Dental Board of the State of Missouri before these functions may be performed. This course will include preliminary bending of arch wires, placement and cementation of orthodontic brackets and/or bands, removal of orthodontic bands and brackets, and minor palliative care of orthodontic emergencies. This course may be taken by dental assistants as well as dental assisting students. Dental Assisting students must have completed the regular dental assisting program through DA 2305 Clinical Practice II before this course can be taken. Dental Assistants must be currently certified or have successfully taken the Missouri Basic Skills Exam.  
Prerequisite: None

**DA 2821 1.0 hours**

**Expanded Functions in Periodontics**  
Functions for dental assistants in Periodontics which require special training beyond that of the basic knowledge and skills for chairside dental assisting. Special training and mastery is required by the Missouri Dental Board of the State of Missouri before these functions may be performed. This course will contain key terms, indications, contraindications and techniques for coronal polishing using the air polisher. It will also contain key terms and techniques for placement of periodontal and sedative dressings. This course may be taken by dental assistants as well as dental assisting students. Dental assisting students must have completed the regular dental assisting program through DA 2305 Clinical Practice II. Current dental assistants must have proof of current certification from DANB or the Missouri Basic Skills Exam. Prerequisite: None

**DA 2831 1.0 hours**

**Expanded Functions in Prosthodontics**  
Functions for dental assistants in prosthodontics which require special training beyond that of the basic knowledge and skills for chairside dental assisting. Special training and mastery is required by the Missouri Dental Board of the

State of Missouri before these functions may be performed. This course will include sizing stainless steel crowns, placing retraction cord in preparation for fixed prosthodontic impressions, final cementation of any permanent appliance of prosthesis, making impressions for the fabrication of fixed prosthesis, making impressions of the prosthesis, extra-oral adjustment of fixed prosthesis and extra-oral adjustment of removable prosthesis during and after insertion. This course may be taken by dental assistants as well as dental assisting students. Dental Assisting students must have completed the regular dental assisting program through DA 2305 Clinical Practice II before this course can be taken. Dental Assistants must be currently certified or have successfully taken the Missouri Basic Skills Exam. Prerequisite: None

**DA 2841** **1.0 hours**  
**Expanded Functions in Restoratives**  
 Functions for dental assistants in Restorative which require special training beyond that of the basic knowledge and skills for chairside dental assisting. Special training and mastery is required by the Missouri Dental Board of the State of Missouri before these functions may be performed. This course will include key terms and composition for amalgam allow, and techniques for placing and carving amalgam restorations. It will also contain key terms and techniques for placing single surface composite resin restorations and placing sedative fillings. This course may be taken by dental assistants as well as dental assisting students. Dental Assisting students must have completed the regular dental assisting program through DA 2305 Clinical Practice II. Current dental assistants must have proof of current certification from DANB or the Missouri Basic Skills Exam. Prerequisite: None

## DRAFTING AND DESIGN

**DF 0100-0103** **0.5-3.0 hours**  
**Workshop/Seminar**  
 Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**DF 1001** **1.0 hours**  
**Blueprint Reading**  
 A course designed to give the student a working knowledge of standard drawing conventions and dimensioning practices. Areas covered include drafting and blueprint reading procedures, notes and title block information, and machining specifications. Prerequisite: None

**DF 1012** **2.0 hours**  
**Engineering Drawing Lec**  
 A course designed to give the student a working knowledge of fundamental drawing practices and the geometric relationship of points, lines, and planes in space. Areas covered include the techniques of lettering, sketching, drawing of mechanical parts, sectional and auxiliary views, conventional drafting practices, and an introduction to computer aided drafting. Prerequisite: None

**DF 1021** **1.0 hours**  
**Engineering Drawing Lab**  
 A course designed to give the student a working knowledge of fundamental drawing practices and the geometric relationship of points, lines, and planes in space. Areas covered include the techniques of lettering, sketching, drawing of mechanical parts, sectional and auxiliary views, conventional drafting practices, and an introduction to computer aided drafting. Prerequisite: None

**DF 1022** **2.0 hours**  
**Descriptive Geometry Lec**  
 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. Corequisite: DF 1031

**DF 1031** **1.0 hours**  
**Descriptive Geometry Lab**

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** **2.0 hours**  
**Principles of Power Lec**  
 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. Corequisite: DF 1041 Prerequisite: None

**DF 1041** **1.0 hours**  
**Principles of Power Lab**  
 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 Prerequisite: None

**DF 1043** **3.0 hours**  
**Technical Computations I**  
 A study of the treatment of measured data, significant figures, applications in geometry, basic algebra, and linear equations. Prerequisite: None

**DF 1053** **3.0 hours**  
**Materials & 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., is also discussed. Prerequisite: None

**DF 1055** **5.0 hours**  
**Materials & Processes**  
 A survey of current engineering materials and the various processes used to shape them. Materials studied include a review of ferrous and nonferrous metals, plastics, rubbers, and ceramics. Emphasis is placed on the advantages and limitations of the various casting, forging, machining, grinding, forming, molding, welding, heat treating, and powder metallurgy processes used to shape materials. Adaptation of these processes through the use of computers, etc., is also discussed. Prerequisite: None

**DF 1063** **3.0 hours**  
**Machine Drawing Lec**  
 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. Corequisite: DF 1072

**DF 1072** **2.0 hours**  
**Machine Drawing Lab**  
 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** **3.0 hours**  
**Technical Computations II**  
 A study of numerical trigonometry of the right angle, analytic trigonometry, oblique triangles, functions and graphs, logarithms, and application of numerical trigonometry and vectors. Prerequisite: DF 1043

**DF 2013** **3.0 hours**  
**Machine Design**  
 A course designed to bring together in practical applications the skill and knowledge developed in courses covering mechanics and drafting. Instruction provided permits logical organization of facts for economical solution of

machine design problems. Emphasis is placed on standardization, the use of drawings are produced using the drawing board and the computer aided drafting system. Prerequisite: DF 1063 & 1072.

**DF 2023** **3.0 hours**  
**Tool & Die Design**  
 A course designed to give the student a fundamental knowledge of the design of tools and fixtures used in manufacturing. Projects include design and drawing of jigs, fixtures, and blanking dies utilizing conventional drafting practices and computer aided drafting. Mass production methods are discussed so that this knowledge may be applied to the practical work of tool design. Prerequisite: DF 1063 & 1072

**DF 2033** **3.0 hours**  
**Technical Physics**  
 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: either DF 1083, MT 1303, or satisfactory score on the MMPT. Corequisite: DF 2042

**DF 2042** **2.0 hours**  
**Technical Physics Lab**  
 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: either DF 1083, MT 1303, or satisfactory score on the MMPT.

**DF 2053** **3.0 hours**  
**Statics & Strength of Materials**  
 A study of statics and strength of materials as applied to structures, beam theory, beam design, and theory of column formulas. The course includes study of stress and strain experienced by machine parts and structural members. Emphasis is placed on applications and problem solving. Prerequisite: DF 1083 or consent of instructor

**DF 2063** **3.0 hours**  
**Technical Writing**  
 Introduction to the practical aspects of preparing reports. Emphasis is on the techniques of collecting and presenting scientific data by means of formal and informal reports. Also included are other elements of communication concerning science and industry. Prerequisite: EN 1223

**DF 2073** **3.0 hours**  
**Architectural Drawing Lec**  
 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 Corequisite: DF 2082

**DF 2082** **2.0 hours**  
**Architectural Drawing Lab**  
 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** **2.0 hours**  
**Civil Drawing Lec**  
 A course encompassing the methods and conventions of the civil engineering field in 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 Corequisite: DF 2101

**DF 2101** **1.0 hours**  
**Civil Drawing Lab**  
 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** **3.0 hours**  
**Structural Drawing Lec**

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 Corequisite: DF 2111

**DF 2111** **1.0 hours**  
**Structural Drawing Lab**

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 & 2053

**DF 2122** **2.0 hours**  
**Technical Illustration Lec**

A course to develop the understanding and skill 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 Corequisite: DF 2131

**DF 2131** **1.0 hours**  
**Technical Illustration Lab**

A course to develop the understanding and skills to produce technical illustrations in the many forms required by industry. Includes an intensive student 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** **2.0 hours**  
**Modern Drafting Techniques**

An exploratory course which has major emphasis on photography, film processing, model building, and their industrial applications. Students participate in the development of projects utilizing the latest available industrial techniques. Prerequisite: DF 1012 & 1021

**DF 2143** **3.0 hours**  
**Introduction to CAD Applications I**

A course designed to acquaint the student with the basic fundamentals of computer aided drafting. Problems and solutions include construction of basic drawings, saving drawings, using a file system, modification of existing drawings, and plotting drawings using the computer plotter.  
Prerequisite: DF 1012, 1021, 1022 & 1031, or consent of instructor.

**DF 2153** **3.0 hours**  
**CAD Applications II**

A course designed to acquaint the student with advanced applications of computer aided drafting. Projects and solutions include the production of working drawings and three dimensional drawings. Prerequisite: DF 2143

**DF 2701-2705** **1.0-5.0 hours**  
**Independent Study-Drafting & Design**

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.  
Prerequisite: None

**DF 2711-2715** **1.0-5.0 hours**  
**Special Topics-Drafting**

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.  
Prerequisite: None

## ECONOMICS

**EC 2103** **3.0 hours**  
**Principles of Macroeconomics**

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

**EC 2203** **3.0 hours**  
**Principles of Microeconomics**

An introduction to how prices are determined. Topics include how prices are set in markets of varying degrees of competition; how income is determined: wages and salaries, rent, interest, and profits; unions; environmental problems; wealth and poverty in the United States of America; and non-market economic systems.  
Prerequisite: None

**EC 2701-2705** **1.0-5.0 hours**  
**Independent Study-Economics**

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.  
Prerequisite: None

**EC 2711-2715** **1.0-5.0 hours**  
**Special Topics-Economics**

A study of 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.  
Prerequisite: None

## 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.

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** **1.0 hours**  
**Returning Learners Orientation**

This class is designed exclusively for adults planning to pursue a 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 mornings 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

**ED 1001** **1.0 hours**  
**Orientation for Student Success**

A required orientation to the College for all degree and certificate 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 or more college credits from another college or university with a 2.0 GPA.) Prerequisite: None

**ED 1003** **3.0 hours**  
**Exploring the Field of Education**

This course is an introduction to teacher education. Students will explore teaching as a profession and career. A review of the different teaching certifications along with the steps to achieving a degree in education are covered in this course. This course consists of one 50-minute class session for 8 weeks at an assigned time. Students will participate in 9 hours of observation at local public school classrooms in addition to their class sessions.

Prerequisite: None

**ED 1011** **1.0 hours**  
**Career Planning**

A course designed to involve students in a complete computer-based career information and 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. Prerequisite: None

**ED 1012** **2.0 hours**  
**Career Planning**

A course designed to involve students in a complete computer-based career information and 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. Prerequisite: None

**ED 1013** **3.0 hours**  
**Foundations of Education**

This course is designed to develop a multi-dimensional perspective on the American Public Education System. It examines historical, philosophical, sociological, legal, and political factors, which have influenced and continue to influence American educational practices. The examination of teaching as a career, particularly the major provision of recent legislation addressing educational reforms is a major area of emphasis. Observations and practical experiences provide first-hand introduction to these specific areas. Prerequisite: None

**ED 1031** **1.0 hours**  
**Field Experience**

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

**ED 1032** **2.0 hours**  
**Field Experience**

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

**ED 1043** **3.0 hours**  
**Introduction to Teaching & Assessment**

This course is 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. Observations and practical experiences provide first-hand introduction to teaching. This course consists of two 75 minute class sessions each week at the assigned class time. Students will participate in the Junior Achievement Program in local public school classrooms for 12 hours in addition to their class sessions.  
Prerequisite: ED 1003

**ED 1053** **3.0 hours**  
**Introduction to Early Care & Education**

An introduction to the profession of early care and education including historical foundations and familiarity with a broad range of current programs and trends. Students will examine the qualities and skills necessary for working with young children and receive an overview of appropriate curriculum. Students will learn to observe and record the behavior, the teacher, and the environment of young children. Stu-

dents will learn strategies to work effectively with families to meet the needs of the child. This course will provide 40 hours of training for a CDA. Prerequisite: None

**ED 1153** **3.0 hours**  
**Child Health, Nutrition & Safety**  
 Study of health and nutritional needs of children birth to eight years old. Topics include health assessment, first aid, safety, basic nutrition, nutrition education, meals and snacks for children. Involves application to children care and education settings. This course will provide 40 hours of training for a CDA. Prerequisite: None

**ED 1253** **3.0 hours**  
**Early Childhood Growth & Development**  
 Study of the human development from conception to age six. Covers physical, social, emotional and intellectual development with emphasis on interrelationship of growth and behavior of young children as well as the development of an intelligent philosophy of adult-child relationships. This course will provide 40 hours of training for a CDA. Prerequisite: None

**ED 2211** **1.0 hours**  
**Preservice Portfolio**  
 This course is the teacher education mid-preparation benchmark exit course. Students will refine reflective skills and develop their own philosophy of education. Students will complete a 2-year preservice teacher portfolio and take the C-Base. This course consists of one 50-minute class session each week at the assigned class time. Prerequisite: Student is scheduled to graduate at the end of semester.

**ED 2701-2705** **1.0-5.0 hours**  
**Independent Study-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. Prerequisite: None

**ED 2711-2715** **1.0-5.0 hours**  
**Special Topics-Education**  
 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. Prerequisite: None

**ED 2991** **1.0 hours**  
**Career Management**  
 This course is designed to provide students with the basic skills to manage their careers effectively. Topics covered include self assessment, conducting a job search; interviewing techniques; employment, correspondence, networking and research; acquiring web based skills; and resume and portfolio development for job search and career advancement. The course is required for all vocational degrees and certificates, should be taken the last or next to last semester prior to graduation, and is coordinated through the Career Services Office. Prerequisite: None

**AR 2023** **3.0 hours**  
**Art for Children**  
 A study of the types of art activities related to various groups in the elementary school, including experience with art materials used in the classroom. Prerequisite: None

**EN 2033** **3.0 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

**MU 2043** **3.0 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** **3.0 hours**  
**Physical Education for Children**  
 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. Prerequisite: None

## ELECTRONICS

**EL 0100-0103** **0.5-3.0 hours**  
**Workshop/Seminar**  
 Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**EL 1003** **3.0 hours**  
**Direct Current Circuits Lec**  
 A study of direct current circuit operations. Passive electronic devices are analyzed as to their physical and electrical properties. Interpretation of fundamental schematic symbols is developed. Prerequisite: None

**EL 1011** **1.0 hours**  
**Direct Current Circuits Lab**  
 A study of direct current circuit operations. Passive electronic devices are analyzed as to their physical and electrical properties. Interpretation of fundamental schematic symbols is developed. Prerequisite: None

**EL 1023** **3.0 hours**  
**Alternating Current Circuit Lec**  
 A study of alternating current and reactive components. Fundamental theory of alternating electrical and magnetic fields are developed and applied to dynamic circuit configurations. Interpretation of associated schematic diagrams is advanced. Prerequisite: None

**EL 1031** **1.0 hours**  
**Alternating Current Circuit Lab**  
 A study of alternating current and reactive components. Fundamental theory of alternating electrical and magnetic fields are developed and applied to dynamic circuit configurations. Interpretation of associated schematic diagrams is advanced. Prerequisite: None

**EL 1046** **6.0 hours**  
**Fundamentals of Semiconductors Lec**  
 A study of the semiconductor devices and associated circuitry with modern applications. Operational theories of diodes, bipolar junction transistors, four layer devices, voltage regulator and operational amplifier integrated circuits in addition to optoelectronic devices are made known. Circuit applications include basic analog amplifiers, oscillators, timers, pulse circuits and power supplies. Prerequisite: EL 1003, 1011, 1023 & 1031 Corequisite: EL 1052

**EL 1052** **2.0 hours**  
**Fundamentals of Semiconductors Lab**  
 A study of the semiconductor devices and associated circuitry with modern applications. Operational theories of diodes, bipolar junction transistors, four layer devices, voltage regulator and operational amplifier integrated circuits in addition to 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** **3.0 hours**  
**Advanced Circuit Analysis**  
 This course provides an advanced study of analog circuit theory. Active filters, OP-Amp frequency response, R.F. amplifiers, thyristor circuit applications and Opto-Electronic principles are studied. Circuit formulations

developed are incorporated into systems configurations to introduce the student to a comprehensive analysis of large circuits. Prerequisite: EL 1046 & 1052

**EL 1103** **3.0 hours**  
**Basic Electronics**  
 A study of the principles of direct and alternating current, motors and generators, and an introduction to semiconductor devices. Soldering and desoldering, operation of test equipment, and laboratory experimentation are included. Prerequisite: None

**EL 1112** **2.0 hours**  
**Industrial Control I Lec**  
 A study of basic D.C. and A.C. electricity and its application in the industrial environment. Electrical safety, D.C. and A.C. generation, transmission, and installation, along with D.C./A.C. motor theory will be covered. Prerequisite: None

**EL 1122** **2.0 hours**  
**Industrial Control I Lab**  
 A study of basic D.C. and A.C. electricity and its application in the industrial environment. Electrical safety, D.C. and A.C. generation, transmission, and installation, along with D.C./A.C. motor theory will be covered. Prerequisite: None

**EL 1123** **3.0 hours**  
**Technical Computer Applications**  
 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, data base and word processing software for technical objectives will be covered. Prerequisite: None

**EL 1133** **3.0 hours**  
**Computer Network Architecture**  
 A study of the major Local Area Networks in current use. Data transmissions methods and protocols are analyzed. Interface circuitry and major hardware components of peer and client server LANs are detailed. Prerequisite: None

**EL 1143** **3.0 hours**  
**R.F. Electronic Communications**  
 This course presents information about the circuits and building blocks of communications systems. Fundamental A.M., F.M., and single sideband transmitters and receivers are analyzed. Principles of waveguides, antennas, and microwave devices are discussed. Digital communication systems, radar systems and television broadcast standards are studied. Prerequisite: EL 1046 & 1052, or consent of instructor.

**EL 1153** **3.0 hours**  
**Introduction to Statistical Process Control**  
 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. Prerequisite: None

**EL 1163** **3.0 hours**  
**Introduction to CNC Milling**  
 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. Prerequisite: None

**EL 1222** **2.0 hours**  
**Industrial Control II Lec**  
 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, 1112, 1122, 1024, & 1031. Corequisite: EL 1232

**EL 1232 2.0 hours**  
**Industrial Control II Lab**

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 proved examples of industrial control circuits that make use of these electronic devices.

Prerequisite: EL 1103, 1112, 1122, 1023 & 1031.

**EL 1332 2.0 hours**  
**Industrial Control III Lec**

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: EL 1222 & 1232, or consent of instructor. Corequisite: EL 1342

**EL 1342 2.0 hours**  
**Industrial Control III Lab**

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: EL 1222 & 1232, or consent of instructor.

**EL 1463 3.0 hours**  
**Industrial Control IV Lec**

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 communications. 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, 1342, 2054 & 2061, or consent of instructor. Corequisite: EL 1472

**EL 1472 2.0 hours**  
**Industrial Control IV Lab**

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, 1342, 2054, & 2061, or consent of instructor.

**EL 2054 4.0 hours**  
**Introduction to Digital Circuits Lec**

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. Corequisite: EL 2061

**EL 2061 1.0 hours**  
**Introduction to Digital Circuits Lab**

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 2.0 hours**  
**Snsrs&Transdcers Lec**

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. Corequisite: EL 2081

**EL 2081 1.0 hours**  
**Sensors & Transducers Lab**

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 4.0 hours**  
**Introduction to Microprocessors Lec**

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. Corequisite: EL 2091

**EL 2091 1.0 hours**  
**Introduction to Microprocessors Lab**

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 3.0 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 2.0 hours**  
**Advanced Microprocessors Lec**

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. Corequisite: EL 2111

**EL 2111 1.0 hours**  
**Advanced Microprocessors Lab**

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 3.0 hours**  
**Electronics Internship**

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

Prerequisite: electronics major and consent of instructor

**EL 2133 3.0 hours**  
**Electronics Internship**

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

Prerequisite: electronics major and consent of instructor

**EL 2145 5.0 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 1.0 hours**  
**Electronic Systems Troubleshooting Lec**

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, 2091, 1046 & 1052. Corequisite: EL 2222

**EL 2222 2.0 hours**  
**Electronic Systems Troubleshooting Lab**

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, 2091, 1046 & 1052.

**EL 2701-2705 1.0-5.0 hours**  
**Independent Study-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.

Prerequisite: None

**EL 2711-2715 1.0-5.0 hours**  
**Special Topics-Electronics**

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.

Prerequisite: None

## EMERGENCY MEDICAL TECHNOLOGY

All courses marked with an asterisk (\*) must be taken in sequence.

**EM 0100-0103 0.5-3.0 hours**  
**Workshop/Seminar**

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

**EM 1010 0.5 hours**  
**Pediatric Trauma Symposium**

This one-day symposium is designed to enhance existing knowledge and skill in the care of the pediatric trauma victim. This class is presented for all levels of prehospital and hospital healthcare providers. Speakers will include local pediatric healthcare experts.

Prerequisite: None

**EM 1011 0.5 hours**  
**Basic Life Support for Healthcare Providers**

This 8 hours course is designed to educate the professional rescuer or healthcare provider in techniques of Basic Life Support to include one- and two-man CPR in the adult patient, CPR for children and infants, pediatric safety, as well as relief of Foreign Body Airway Obstruction in all age groups. Course also covers use of barrier devices in rescue breathing and use of the Automated External Defibrillator. Upon completion, an American Heart Association BLS card will be issued.

Prerequisite: None

**EM 1013 3.0 hours**  
**First Responder**

This course provides emergency medical training at a basic level. A variety of skills are covered including Basic Life Support, patient 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.  
Prerequisite: None

**EM 1014** **4.0 hours**  
**Emergency Medical Technician Refresher**

A course which provides review in the emergency care of the sick and injured. It is designed to prepare the student for relicensure as an EMT. It includes both didactic and practical review. Upon successful completion of the course, the student is qualified to retake the Missouri State Licensure Examination. The course is held in conjunction with EM 1027. May be repeated. Offered evenings only.  
Prerequisite: A currently licensed EMT having previously passed the Missouri State Licensure Examination within the last three years.

**EM 1020** **0.5 hours**  
**PHTLS Refresher**

This 8 hour course is designed to refresh and update the prehospital care professional in theories and techniques of management of the trauma victim. Participants should be experienced prehospital or emergency care providers. Renewal is recommended every 3 years. A NAEMT PHTLS Provider certificate will be issued on successful completion.  
Prerequisite: current PHTLS Provider status

**EM 1021** **1.0 hours**  
**Basic Life Support Instructor**

This 16 hour course meets the American Heart Association requirements for qualification as a CPR Instructor. Teaching-learning theory as well as AHA standards and guidelines will be discussed. Students will have opportunities to practice skills learned. Course is taught in two 8-hour days. Students are required to pass skills and written examinations over both provider and instructor information, and must teach first monitored CPR class within 90 days to receive AHA BLS instructor card.  
Prerequisite: None

**EM 1029** **9.0 hours**  
**Emergency Medical Technician**

A course which provides training in the emergency care of the sick and injured. The course includes didactic, practical, and off-campus experiences. Those completing the course are eligible to take the National Registry examination to become registered and licensed as an EMT. Students must be 18 by the last day of the class.  
Prerequisite: BLS for healthcare providers.

**EM 1031** **1.0 hours**  
**Advanced Cardiac Life Support (ACLS)**

This 16 hour course is designed to educate the advanced level healthcare provider in the theory and techniques of managing the critically ill adult cardiovascular emergencies will be taught. Upon successful completion, an American Heart Association ACLS Provider card will be issued. Students must be advanced level practitioners or enrolled in a course of study leading to appropriate licensure.  
Prerequisite: current BLS for Healthcare Providers Card.

**EM 1036** **6.0 hours**  
**Introduction to Paramedic Technician**

This course is designed as a preparatory course for any student who will be enrolling in an upcoming paramedic class, or any EMT wishing to enhance current skills. The student will receive instruction in math, science, pathophysiology, assessment, documentation, and additional emergency medical training which will enhance existing job skills and provide a sound knowledge base for entrance into the paramedic training program. This course includes 100 hour ambulance clinical component to be completed outside of the classroom.  
Prerequisite: Current Missouri EMT License.

**EM 1040** **0.5 hours**  
**Advanced Cardiac Life Support (ACLS) Refresher**

This 8 hour course is designed to refresh and update skills and knowledge regarding the management of the critically ill cardiovascular patient. Course should be repeated every 2 years, according to American Heart Association standards. An AHA ACLS Provider card

will be issued on successful completion.  
Prerequisite: current BLS for Healthcare Providers and ACLS Provider card

**\*EM 1112** **12.0 hours**  
**Paramedic I**

A course which provides education in emergency care and advanced life support techniques for the sick and injured. Course includes didactic, skills laboratory, and practical experiences. Topics this semester include: health & wellness, pathophysiology, general pharmacology, legal issues, bioethics, airway management and advanced assessment. Offered fall semester, evenings only.  
Prerequisites: EM 1036, BI 1802, BI 1812, high school diploma or GED, BLS for Healthcare Providers, two letters of recommendation, demonstration of English and math competencies, and successful completion of pretest. Application to program and pretesting must be completed by June 15 prior to first class.

**EM 1144** **4.0 hours**  
**Paramedic Refresher**

A course designed to meet one-third of the requirements for relicensure as a paramedic. Content covers the core requirements for paramedic continuing education as described by the National Registry of EMTs. Didactic and practical experiences will be provided. May be repeated. Internet-based course is available. This class may also be taken for re-entry requirements or preparation for repeat of initial licensure examinations.  
Prerequisite: Must be a currently licensed EMS provider at any level or previously licensed paramedic.

**EM 1152** **2.0 hours**  
**Paramedic Refresher Clinical**

Opportunities are provided for paramedics to enhance practical skills through supervised hospital and/or EMS agency clinical experiences. May be repeated.  
Prerequisite or Corequisite: EM 1144

**EM 1153** **3.0 hours**  
**EMS Educator Workshop**

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 students are illustrated. Practice is provided in the use and development of lesson plans, visual aids, evaluations, internet content, and other teaching devices. Each student's application of teaching procedure is critically discussed and evaluated. Prerequisite: None

**\*EM 1212** **12.0 hours**  
**Paramedic II**

A course which provides education in emergency care and advanced life support techniques for the sick and injured. Second course in a series which prepares the student for competent practice as an entry-level paramedic. Course includes didactic skills laboratory, and practical experiences. Topics this semester include: cardiology, pulmonology, neurology, endocrinology, toxicology, and trauma assessment and treatment. Offered spring semester, evenings only.  
Prerequisites: Em 1112 in the preceding semester Corequisite: EM 1222, EM 1031, EM 1020

**\*EM 1222** **2.0 hours**  
**Paramedic II Clinical**

Opportunities are provided for students to apply knowledge and skills learned in the classroom. Students will work with approved clinical preceptors in hospital and clinical settings.  
Prerequisites: EM 1112 in the preceding semester. Corequisite: EM 1212

**\*EM 1304** **4.0 hours**  
**Paramedic III Lec**

A course which provides education in emergency care and advanced life support techniques for the sick and injured. Third course in a series which prepares the student for competent practice as an entry-level paramedic. Course includes didactic, skills laboratory, and practical experiences. Topics this semester includes: OB/GYN/Neonatal, pediatrics, geriatrics, psychiatry, assessment-based management, and ALS scene management. Offered summer session, evenings only.

Prerequisites: EM 1112, EM 1212, EM1222  
Corequisite: EM 1312.

**\*EM 1312** **2.0 hours**  
**Paramedic III Clinical**

Opportunities are provided for students to apply knowledge and skills learned in the classroom. Students will work with experienced field preceptors in the prehospital setting to perform patient assessment and hone clinical skills.  
Prerequisites: EM 1112, EM 1212, EM 1222  
Corequisite: EM 1304

**\*EM 1323** **3.0 hours**  
**Paramedic IVA-Field Management**

A course which provides education in emergency care and advanced life support techniques for the sick and injured. Fourth course in a series which prepares the student for competent practice as an entry-level paramedic. Course includes seminar-based meetings in preparation for National Registry Examinations, career management, and continuing opportunities to apply knowledge and skills in the clinical and field settings. On successful completion of all four semesters and field internship, student will be eligible to take the National Registry Examination to become registered and licensed as a paramedic. Offered fall semester only.  
Prerequisites: EM 1112, EM 1212, EM 1222, EM 1304, EM 1312 Corequisite: EM 1333

**\*EM 1333** **3.0 hours**  
**Paramedic IVB-Field Internship/Evaluation**

The final course in the paramedic curriculum, the internship is the summative evaluation of the student's didactic, practical, clinical and field experiences. Students will manage 50 prehospital responses while being evaluated by an experienced preceptor at an approved EMS agency.  
Prerequisites: EM 1112, EM 1212, EM 1222, EM 1304, EM 1312 Corequisite: EM 1323

**EM 1705** **5.0 hours**  
**Independent Study-EMT-P Review**

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

**EM 1710** **10.0 hours**  
**Independent Study-EMT-P Review**

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

**EM 2701-2705** **1.0-5.0 hours**  
**Independent Study-Emergency Medical Technology**

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.  
Prerequisite: None

**EM 2711-2715** **1.0-5.0 hours**  
**Special Topics-Emergency Medical Technology**

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.  
Prerequisite: None

**ENGINEERING**

**EG 1101** **1.0 hours**  
**Introduction to Programming on Unix**

This course will provide students with an understanding of the Unix operating system, and an introduction to basic programming skills.  
Prerequisite: None



**EG 1103** **3.0 hours**  
**Engineering Drawing & Descriptive Geometry**  
 A study of the graphic analysis and solution of typical three-dimensional space problems through the application of the principles of multiview projections. Fundamental problems are related to points, lines, planes, intersections, and developments of plane and curved surfaces, revolutions and vector geometry.  
 Prerequisite: None

**EG 2003** **3.0 hours**  
**Engineering Mechanics-Statics**  
 A study of the application of the principles of mechanics to engineering problems of equilibrium. Topics include resultant, equilibrium, friction, trusses, center of gravity and moment of inertia.  
 Prerequisite: PH 2103, 2112 Prerequisite or Corequisite: MT 2205

**EG 2103** **3.0 hours**  
**Engineering Mechanics-Dynamics**  
 A study of application of the principles of mechanics to engineering problems of motion and acceleration. Topics include plane motion, force, mass, and acceleration: work and energy, and impulse and momentum.  
 Prerequisite: EG 2003

**EG 2203** **3.0 hours**  
**C++ Programming for Engineers**  
 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 1403 and MT 1413 or MT 1505 or consent of instructor.

**EG 2211** **1.0 hours**  
**C++ Programming for Engineers Lab**  
 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.  
 Prerequisite: MT 1403 and MT 1413 or MT 1505, or consent of instructor.

**EG 2303** **3.0 hours**  
**Introduction to Circuit Theory**  
 An introduction to electrical circuits, electronic devices, nodal methods, steady state, and transient circuits. Resistors, capacitors, voltage sources, and current courses are included.  
 Prerequisite: MT 2105 and PH 2103 & 2112 Prerequisite or Corequisite: MT 2205 and PH 2203 & 2212

**EG 2403** **3.0 hours**  
**Circuit Theory II**  
 An analysis of steady state AC circuits, phasornotation, polyphase circuits, complex frequency and frequency response, magnetically coupled circuits.  
 Prerequisite: EG 2303 with a grade of C or better.

**EG 2503** **3.0 hours**  
**Data Structures**  
 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 & 2211, or consent of instructor.

**EG 2603** **3.0 hours**  
**Thermodynamics**  
 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.  
 Prerequisite: EG 2202 & 2211, MT 2205, PH 2103 & 2112 or consent of instructor.

**EG 2701-2705** **1.0-5.0 hours**  
**Independent Study-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.  
 Prerequisite: None

**EG 2711-2715** **1.0-5.0 hours**  
**Special Topics-Engineering**  
 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.  
 Prerequisite: None

**ENGLISH**

**EN 0103** **3.0 hours**  
**Developmental Reading**  
 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 0133** **3.0 hours**  
**Introduction to Writing**  
 A developmental writing course for students who need to improve their writing skills before attempting a college-level composition course. The course is designed to improve students' skills in basic grammar, usage, and punctuation and to give students practice in applying these skills in personal writing and in short units of expository prose. Not intended for transfer or degree credit.  
 Prerequisite or Corequisite: EN 0103 Developmental Reading or EN 0202 Reading Comprehension, depending on reading placement test scores. This prerequisite or corequisite will be waived for students scoring at a satisfactory level on a reading placement test.

**EN 0141** **1.0 hours**  
**Study Skills**  
 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.  
 Prerequisite: None

**EN 0202** **2.0 hours**  
**Reading Comprehension**  
 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: A satisfactory score (at least ninth-grade level) on a reading placement test.

**EN 0222** **2.0 hours**  
**Spelling**  
 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.  
 Prerequisite: None

**EN 1213** **3.0 hours**  
**English Grammar**  
 A multi-media 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 0133 or a satisfactory score on the Asset Exam and

Writing Sample.

**EN 1223** **3.0 hours**  
**English Composition I**  
 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 writing placement test (Writing Sample score of 4 or above) or a grade of 'C' or better in EN 0133 Introduction to Writing.

**EN 1233** **3.0 hours**  
**English Composition I (Honors)**  
 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 in 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** **1.0 hours**  
**Library Research Skills**  
 A programmed course designed to introduce students to the library making it possible for them to use its resources effectively. The course is taught over the Internet.  
 Prerequisite: None

**EN 1333** **3.0 hours**  
**English Composition II**  
 A second course in composition which provides practice in writing longer units of exposition than does EN 1223, and includes the writing of a research paper and analytical papers.  
 Prerequisite: A 'C' grade or better in EN 1223.

**EN 1343** **3.0 hours**  
**English Composition II (Honors)**  
 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** **3.0 hours**  
**Technical Writing**  
 An introduction to the practical aspects of preparing reports. The emphasis is on the techniques of collecting and presenting scientific data by means of formal and informal reports. Also included are other elements of communication concerning science and industry.  
 Prerequisite: EN 1223

**EN 1413** **3.0 hours**  
**World Literature I**  
 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** **3.0 hours**  
**World Literature II**  
 The second of two courses designed to strengthen students' skills in the discussion of literary classics and in their writing about great literature.  
 Prerequisite: EN 1413 or consent of instructor.

**EN 1503** **3.0 hours**  
**Poetry**  
 A study of literature concentrating on the forms, techniques, and themes of poetry. Emphasis is placed upon analysis and interpretation. Prerequisite: None

**EN 1603** **3.0 hours**  
**Fiction**  
 A study of literature concentrating on the short story. Prerequisite: None

**EN 1703** **3.0 hours**  
**Drama As Literature**  
 A study of the forms, techniques, and themes of drama through reading and discussing plays

destined for the theatre. Film and television drama may also be considered.  
Prerequisite: None

**EN 1803 3.0 hours**  
**Art of the Novel**  
A course in which English and American novels, selected to give a fair sampling of 18th, 19th, and 20th century writers, are read with emphasis placed upon how to read the novel. The course is an introduction to the pleasure of the novel and not just a survey.  
Prerequisite: None

**EN 1903 3.0 hours**  
**Classical Mythology**  
A study of the ancient mythology and religion of the Greeks and others shown in literature past and present. Prerequisite: None

**EN 2033 3.0 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 2.0 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 3.0 hours**  
**Survey of British Literature: Beginning-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 3.0 hours**  
**Survey of British Literature: Romanticism-Present**  
A survey of English literature from the romantic period to the present.  
Prerequisite or Corequisite: EN 1223 or consent of instructor.

**EN 2203 3.0 hours**  
**Survey of American Literature: Colonial Period-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 3.0 hours**  
**Survey of American Literature: 1865-Present**  
A survey of American literature from the Civil War to the present.  
Prerequisite or Corequisite: EN 1223 or consent of instructor.

**EN 2303 3.0 hours**  
**Latino/Latina Literature**  
A study of selected readings from Latino/Latina authors writings, particularly drama, prose, poetry, and essay. All readings are in English. Prerequisite: None

**EN 2313 3.0 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 3.0 hours**  
**Literature of Fantasy**  
A study of the development of fantasy as a literary form, with emphasis on J.R.R. Tolkien. The course aims at defining fantasy in a basic way, and then showing, through an analysis of the works, the pleasures particular to the genre. Prerequisite: None

**EN 2503 3.0 hours**  
**Literature of Sci Fiction**  
A study of the development of science fiction, especially in the 20th century. The emphasis is on reading the works themselves, for themselves, but an attempt is made to show the development of the form toward literary maturity. Prerequisite: None

**EN 2603 3.0 hours**  
**Shakespeare on Stage**  
Selected Shakespearean plays are studied in conjunction with video tapes of the plays. Spring semester only. Prerequisite: None

**EN 2701-2705 1.0-5.0 hours**  
**Independent Study-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.  
Prerequisite: None

**EN 2711-2715 1.0-5.0 hours**  
**Special Topics-English**  
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.  
Prerequisite: None

## FIRE TECHNOLOGY

**FT 0100-0103 0.5-3.0 hours**  
**Workshop/Seminar**  
Introductory level course designed to upgrade or develop specific skills relative to current or anticipate employment. Prerequisite: None

**FT 1013 3.0 hours**  
**Basic Fire Protection & Alarm Systems**  
A study of modern fire protection including water supply and distribution systems, housing of equipment and personnel, private fire protection methods, chemical extinguishers, building construction, and a study of the various types of fixed and portable fire detection and alarm systems. Written documentation included as applicable. Offered evenings only.  
Prerequisite: None

**FT 1015 5.0 hours**  
**Firefighter I**  
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 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

**FT 1023 3.0 hours**  
**General Building Construction**  
A study of fundamentals of building construction and materials related to fire protection. Includes building plan layouts, conventional representations, symbols and abbreviations for building materials, methods of showing floor plans, elevations, sections, and dimensions. Offered evenings only. Prerequisite: None

**FT 1025 5.0 hours**  
**Firefighter II**  
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 4.0 hours**  
**Fire Service Hydraulics & Equipment**  
This course is designed to acquaint firefighters, pump operators, and engineers with the following: characteristics of water flow, friction loss, engine pressure, multiple lines, unequal

layouts, pump and pumpers, and field equations. Written documentation included as applicable. Offered evenings only  
Prerequisite: mathematics and physics advisable

**FT 1043 3.0 hours**  
**Fire Department Organization & Supervision**  
Instruction in management and administration for the fire service including the functions of management, planning, organizing, directing, controlling, the management cycle, motivation, behavioral science, executive development, educational development, and labor relations. Written documentation included as applicable. Offered evenings only.  
Prerequisite: None

**FT 1063 3.0 hours**  
**Codes & Ordinances**  
This course is designed to acquaint students with necessary procedures to properly enforce national, state, and local ordinances related to fire protection. Includes building and electrical codes. Offered evenings only.  
Prerequisite: FT 1023 recommended

**FT 1154 4.0 hours**  
**Fire Service Instructor I&II**  
A study of the knowledge and skills necessary to be a fire service instructor. This course is broken into two separate sections: Instructor I & II. In the first portion of the course instructional techniques will be discussed and developed. In the second portion of the course the student will learn how to develop a lesson plan and evaluate students through exams. At the conclusion of this course students will be able to take the state certification exams for Fire Service Instructor I and II.  
Prerequisite: FT 1025

**FT 2023 3.0 hours**  
**Hazardous Materials**  
Content will provide students with basic information concerning the properties of hazardous materials and the methods that are most appropriate for handling the various kinds of accidents that can occur with these substances. Offered evenings only.  
Prerequisite: FT 1003 recommended

**FT 2033 3.0 hours**  
**Inspection & Fire Prevention**  
This course is designed to introduce students to various inspection practices which include surveying and mapping procedures associated with the organization and functions of fire prevention. Also includes areas of legal responsibilities and fire hazard characteristics. Opportunity is provided to make at least one complete inspection and report on an operation industry. Written documentation included as applicable. Offered evenings only.  
Prerequisite: FT 1063 recommended

**FT 2044 4.0 hours**  
**Fire Investigation**  
This course is designed to introduce students to methods of determining point of origin, path of fire travel, and fire causes. Topics include motives and methods of fire setting, recognizing and preserving evidence, arson laws, types of arson fires, court testimony, reports, and records. Prerequisite: None

**FT 2063 3.0 hours**  
**Rescue Techniques**  
A course designed to provide technical knowledge and practical skills necessary to perform emergency rescue procedures. Content will include: auto extrication, water and ice rescue, rope rescue, cave rescue, trenching incidents, search and rescue, electrical emergencies, and proper use and care of equipment.  
Prerequisite: None

**FT 2064 4.0 hours**  
**Fire Officer I**  
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 2701-2705 1.0-5.0 hours**  
**Independent Study-Fire Technology**

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.  
 Prerequisite: None

**FT 2711-2715 1.0-5.0 hours**  
**Special Topics-Fire Technology**

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.  
 Prerequisite: None

**FOREIGN LANGUAGE**

**FRENCH**

**FR 1104 4.0 hours**  
**Elementary French I**

A multi-media 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.  
 Prerequisite: None

**FR 1204 4.0 hours**  
**Elementary French II**

A continuation of FR 1104.  
 Prerequisite: FR 1104 or 2 years high school French

**FR 2104 4.0 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 content 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 4.0 hours**  
**Intermediate French II**

A continuation of FR 2104.  
 Prerequisite: FR 2104.

**FR 2701-2705 1.0-5.0 hours**  
**Independent Study-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.  
 Prerequisite: None

**FR 2711-2715 1.0-5.0 hours**  
**Special Topics-French**

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.  
 Prerequisite: None

**GERMAN**

**GR 1104 4.0 hours**  
**Elementary German I**

An introductory German course stressing basic language skills: listening, comprehension, speaking, reading and composition. Additional audio-lingual laboratory practice.  
 Prerequisite: None

**GR 1204 4.0 hours**  
**Elementary German II**

A continuation of GR 1104.  
 Prerequisite: GR 1104 or 2 years high school German

**GR 2114 4.0 hours**  
**Intermediate German I**

An intermediate course in German stressing language skills. Review of grammar and ad-

ditional vocabulary will strengthen the knowledge of German. It will be an introduction to literature, art, music, history, and culture.  
 Prerequisite: GR 1104 and GR 1204, or 4 years of high school German, or permission of the instructor.

**GR 2124 4.0 hours**  
**Intermediate German II**

A course designed to continue the student 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 1.0-5.0 hours**  
**Independent Study-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.  
 Prerequisite: None

**GR 2711-2715 1.0-5.0 hours**  
**Special Topics-German**

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.  
 Prerequisite: None

**SPANISH**

**SP 1104 4.0 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 4.0 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 or 3 high school units, or permission of the instructor.

**SP 2114 4.0 hours**  
**Intermediate Spanish I**

An intermediate course that systematically reviews basic grammar and introduces complex structures; incorporates reading of authentic texts—both cultural and literary; and refines conversation and listening comprehension skills.  
 Prerequisite: SP 1204; its equivalent or 4 high school units or permission of the instructor.

**SP 2124 4.0 hours**  
**Intermediate Spanish II**

An intermediate course which continues basic grammar review and introduces complex structures; incorporates reading of authentic texts—both cultural and literary; and refines conversation and listening comprehension skills.  
 Prerequisite: SP 2114

**SP 2204 4.0 hours**  
**Spanish Readings/Penninsular**

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 3.0 hours**  
**Mexican/American Literature**

A study of selected readings in Mexican/American writings particularly drama, prose, poetry, and essay. All readings are in English.  
 Prerequisite: None

**SP 2701-2705 1.0-5.0 hours**  
**Independent Study-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.  
 Prerequisite: None

**SP 2711-2715 1.0-5.0 hours**  
**Special Topics-Spanish**

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.  
 Prerequisite: None

**GEOGRAPHY**

**GE 1003 3.0 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.  
 Prerequisite: None

**GE 2701-2705 1.0-5.0 hours**  
**Independent Study-Geography**

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.  
 Prerequisite: None

**GE 2711-2715 1.0-5.0 hours**  
**Special Topics-Geography**

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.  
 Prerequisite: None

**GEOLOGY**

**GL 1103 3.0 hours**  
**Introduction to Physical Geology Lec**

An introductory course in physical geology in which materials of the earth's crust, structures, and geologic features of the surface are studied. Field trips and laboratory study of common minerals and rocks will be included.  
 Prerequisite: None

**GL 1112 2.0 hours**  
**Introduction to Physical Geology Lab**

An introductory course in physical geology in which materials of the earth's crust, structures, and geologic features of the surface are studied. Field trips and laboratory study of common minerals and rocks will be included.  
 Prerequisite: None

**GL 2701-2705 1.0-5.0 hours**  
**Independent Study-Geology**

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.  
 Prerequisite: None

**GL 2711-2715 1.0-5.0 hours**  
**Special Topics-Geology**

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.  
 Prerequisite: None

**GRAPHIC DESIGN**

**GD 1003 3.0 hours**  
**Fundamentals of Multimedia**

This course covers the basic concepts of the Multimedia Design industry. This course will give students hands-on exposure to all

the industry standard software and hardware used in the field of multimedia. Students will explore Digital Illustration, Digital Photography and Imaging, Digital Video Web Page Design, Interactive Media, Audio Editing and 3D Modeling and Animation. If you are new to the ever-growing industry of multimedia design, this is a perfect place to start  
Prerequisite: none

**GD 2001 1.0 hours**  
**Digital Media Acquisition**

This course is designed to give students hands on experience in acquiring digital media such as Digital Video, Digital Photographs, and Digital Audio. Students will be working with hardware such as Digital Cameras, Flat Bed Scanners, Slide and Negative Scanners, Digital VCRs, and Mac Based Digital Audio equipment. Students will also be introduced to leading industry standard software.  
Prerequisite: none

**GD 2103 3.0 hours**  
**Digital Imaging I**

This class offers an introduction to the concepts, processes, and hardware and software which are fundamental in creating, editing, and displaying electronic images. Basic and intermediate skills will be taught using Adobe PhotoShop. Student will also be exploring color separation, optimizing images for the Web, animated GIF construction and preparation of image for both print and electric output.  
Prerequisite: none

**GD 2113 3.0 hours**  
**Digital Imaging II**

This course will present to students more sophisticated studio techniques in digital imaging, intermediate/advance working skills using Adobe PhotoShop, introduction to the uses of third party filtering systems, as well as building a breathtaking digital portfolio.  
Prerequisite: GD 2103

**GD 2123 3.0 hours**  
**Digital Illustration I**

This course offers an introduction to the industry standard tools used to create graphical designs and text used in both the print and electronic based commercial media. Students will gain beginning/intermediate skills using Adobe Illustrator-the leading vector based illustration tool. Students will be gaining hands on experience with digital drawing tablets and multi-electronic output will also be addressed.  
Prerequisite: none

**GD 2133 3.0 hours**  
**Digital Illustration II**

A continuation of Digital Illustration I - Students will be taking their skills in Adobe Illustrator to the intermediate/ advanced levels. An emphasis on layout, design, color schemes, page composition and typography will be applied. Students will explore creative combinations of vector and raster based images. The class will wrap up with "how to build a breathtaking digital portfolio." Prerequisite: GD 2123

**GD 2143 3.0 hours**  
**Principles of Production**

This course provides a hands-on study of print production mechanics and techniques. Emphasis is placed on offset printing preparation, paper characteristics, inks, darkroom procedures and bindery. Prerequisite: None

**GD 2303 3.0 hours**  
**Web Based Design & Publishing I**

This course introduces students to the world of web page design. Starting at ground zero, a quick introduction to how the web works is then followed by how a web page or site is developed. Students will explore basic HTML script writing then go on to learn how to utilize industry standard WYSIWYG HTML programs such as Adobe GoLive. Students will build a web site containing static images rollover animations, animated GIFs, digital audio and digital video clips. Navigation and information design will also be emphasized.  
Prerequisite: None

**GD 2304 4.0 hours**  
**Multimedia Production I**

This course creates for students a "real life"

production work situation. Students will be dealing with real "clients" and fulfilling responsibilities as account executive, production manager, graphic artist, multimedia author as well as other essential job titles. They will deal with issues like budgets, deadlines, hardware/software troubleshooting, time management, prioritization, and marketing.  
Prerequisite: GD 1003, AR 1103, GD 2103, GD 2123, Of 1213

**GD 2313 3.0 hours**  
**Web Based Design & Publishing II**

A continuation of GD 2303, this course takes students to an intermediate/advanced level of web page design. Students will be covering DHTML and JAVA programming. An emphasis will be placed on animation and audio for the web using Macromedia FLASH.  
Prerequisite: GD 2303

**GD 2324 4.0 hours**  
**Multimedia Production II**

A continuation of Multimedia Production I - this course creates for students a "real life" production work situation. Students will be dealing with real "clients" and fulfilling responsibilities as account executive, production manager, graphic artist, multimedia author as well as other essential job titles. They will deal with issues like budgets, deadlines, hardware/software troubleshooting, time management, prioritization, and marketing.  
Prerequisite: GD 2304

**GD 2403 3.0 hours**  
**Digital Video Techniques I**

This course introduces students to the technology used to create and edit digital video. Students will gain hands on experience shooting and editing video footage using both digital and analog video cameras. Editing will be done using Adobe Premiere on a Macintosh G3 DV workstation. Edited video will be output to a Digital VCR. Audio edition will also be addressed. Prerequisite: None

**GD 2414 4.0 hours**  
**Developing Interactive Multimedia I**

This course introduces students to the concepts of interactive media design, the ergonomics of interface design, and the essential flow of information design. Students will be gaining beginning/intermediate working skills with the industry standard software for interactive media design-Macromedia Director. Students will also learn how to effectively map out an interactive project using storyboards and flowcharts. Basic 2D animation will be explored a well. Prerequisite: none

**GD 2424 4.0 hours**  
**Developing Interactive Multimedia II**

A continuation of Developing Interactive Multimedia I - this class takes students to the intermediate/advanced levels of working with Macromedia Director. More emphasis will be placed on project content and usability. Optimization of Director based projects for delivery on the web using Shockware will also be covered. Students will be urged to explore the possibility of building an interactive CD-ROM/ Web based resume. Prerequisite: GD 2414

**GD 2433 3.0 hours**  
**Digital Video Techniques II**

A continuation of Digital Video Techniques I - this course will emphasize content and production quality as well as optimization for delivery over the Internet. Integration and animation of 2D graphics, photographs and 3D objects will also be explored. Students will be using Adobe Premier as well as Adobe AfterEffects to accomplish high quality digital video projects. Prerequisite: GD 2403

**GD 2443 3.0 hours**  
**Navigation & Script Writing**

This course is designed to introduce students to the concepts of information design, intuitive interface design and functional script writing.  
Prerequisite: GD 1003, GD 2414, and GD 2424

**GD 2453 3.0 hours**  
**Project Management & Planning**

This course is designed to give students the tools for planning and managing larger multimedia projects.  
Prerequisite: GD 1003, GD 2414, and GD 2424, or permission of instructor.

**GD 2454 4.0 hours**

**Multimedia Production III**

A continuation of Multimedia Production II - this course creates for students a "real life" production situation. Students will be dealing with real "clients" and fulfilling responsibilities as an account executive, production manager, graphic arts, multimedia author as well as other essential job titles. They will deal with issues like budgets, deadlines, hardware/software troubleshooting, time management, prioritization, and marketing.  
Prerequisite: GD 2304 and GD 2324

**GD 2701-2705 1.0-5.0 hours**  
**Independent Study-Graphic Design**

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.  
Prerequisite: None

**GD 2711-2715 1.0-5.0 hours**  
**Special Topics-Graphic Design**

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.  
Prerequisite: None

## HISTORY

**HI 1103 3.0 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 RSMo. requiring the study of state and federal constitutions. Prerequisite: None

**HI 1203 3.0 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 RSMo. requiring the study of state and federal constitutions. Prerequisite: None

**HI 1303 3.0 hours**  
**U.S. History (Special Focus)**

Organized study of selected topics in American History. Prerequisite: None

**HI 1403 3.0 hours**  
**Missouri & Mississippi Valley History**

A course on aspects of Missouri and Central Mississippi River Valley region history from the French Colonial era through the present and focusing on social, cultural and political developments. (Field trips may be required.) Prerequisite: None

**HI 2103 3.0 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. Prerequisite: None

**HI 2203 3.0 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. Prerequisite: None

**HI 2303 3.0 hours**  
**Foundations of World Civilization III**

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



and others who desire an elective course in humanities.  
Prerequisite: None

**HI 2403 3.0 hours**  
**Foundations of World Civilization IV**  
Africa and Asia. An interdisciplinary study of Africa and Asia from 1800 including studies of the politics, culture, and people of both recent and contemporary Africa, China, Japan, India, and other selected nations of Asia. The course is designed for students of history and others who desire an elective course in humanities.  
Prerequisite: None

**HI 2503 3.0 hours**  
**Foundations of World Civilization V**  
(Special Focus) Organized study of selected topics in world civilization. Prerequisite: None

**HI 2603 3.0 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 humanities. Prerequisite: None

**HI 2613 3.0 hours**  
**Foundations of World Civilization VII-East Asia to 1800**  
China and Japan East Asian Civilization to 1800 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.  
Prerequisite: None

**HI 2623 3.0 hours**  
**Foundations of World Civilization VIII-East Asia Since 1800**  
China and Japan. East Asian Civilization Since 1800 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.  
Prerequisite: None

**HI 2701-2705 1.0-5.0 hours**  
**Independent Study-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.  
Prerequisite: None

**HI 2711-2715 1.0-5.0 hours**  
**Special Topics-History**  
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.  
Prerequisite: None

**HI 2802 3.0 hours**  
**Heritage Studies Lec**  
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. Prerequisite: None

**HI 2803 3.0 hours**  
**Heritage Studies Tour**  
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. Prerequisite: None

**HI 2903 3.0 hours**  
**World History 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 their

world areas of Asia, Africa, and Latin America both in terms of domestic conflicts and as arenas for superpower conflict.  
Prerequisite: None

## HORTICULTURE

**HR 0100-0103 0.5-3.0 hours**  
**Workshop/Seminar**  
Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**HR 1012 2.0 hours**  
**Introduction to Horticulture Lab**  
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 environmental factors which affect plan 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.  
Prerequisite: None

**HR 1013 3.0 hours**  
**Introduction to Horticulture Lec**  
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.  
Prerequisite: None

**HR 1033 3.0 hours**  
**Plant Propagation**  
An introduction to the common methods of commercial plant reproduction including seeds, cuttings, layering, drafting, and division. The course makes use of the greenhouse propagation facilities. Offered spring semester only.  
Prerequisite: HR 1012 and HR 1013

**HR 1043 3.0 hours**  
**Greenhouse & Nursery Management**  
A course with a greenhouse field/lab approach. Modern grown 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.  
Prerequisite: HR 1012, 1013, 1033, 2053, and 2093.

**HR 1053 3.0 hours**  
**Horticulture/Nursery Management Internship**  
A supervised work experience (at least six hours per week) in an actual greenhouse and/or nursery situation coordinated with the student's regular class work to provide a realistic view of the duties of a greenhouse/nursery worker. Offered every semester.  
Prerequisite: consent of instructor and sophomore standing

**HR 1103 3.0 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 work problems taken from actual horticultural situations. This course will fulfill the math requirement for horticulture AAS majors. Not intended for transfers. Offered fall semester only. Prerequisite: None

**HR 1703 3.0 hours**

**Floral Design Internship I**  
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 1803 3.0 hours**  
**Floral Design Internship II**  
A course designed to give the student actual working experience in a floral shop. Emphasis is on preparation of full-time employment.  
Prerequisite: HR 2033 Corequisite: Floral Design

**HR 2003 3.0 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.  
Prerequisite: HR 1012, HR 1013, HR 1033, HR 2053

**HR 2013 3.0 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.  
Prerequisite: None

**HR 2023 3.0 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 and 2063

**HR 2033 3.0 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.  
Prerequisite: None

**HR 2043 3.0 hours**  
**Landscape Design II**  
A study in landscape plan, landscape surfaces, plant materials, construction and maintenance, and implementation of landscape plans. The process of design is given particular emphasis. Offered spring semester only.  
Prerequisite: HR 2023

**HR 2053 3.0 hours**  
**Soil Science**  
A study of interactions between water, air, organisms, and soil minerals important in plant growth and land use. The course includes up-to-date studies of new soil mixes and plant nutrition. Field observations and soil testing labs complete the course. Offered fall semester only.  
Prerequisite: None

**HR 2063 3.0 hours**  
**Woody Plants II**  
A study of shrubs, vines, and ground covers with regard to their identification, culture, growth habits, and landscape value. Special concern is given to the cultural aspects of proper planting in functional landscape design. Offered spring semester only.  
Prerequisite: None

**HR 2073 3.0 hours**  
**Plants for Interior Design**  
This course pursues the increasingly popular interior landscaping where interior design skills are developed along with cultural management of these house plants. The course stresses identification and functional uses of house plants. Offered fall semester only.  
Prerequisite: None

**HR 2083 3.0 hours**  
**Floral Design II**

A continuation of Floral Design I. Professional practices will be stressed. Offered spring semester only. Prerequisite: HR 2033

**HR 2093 3.0 hours**  
**Herbaceous Landscape Plants**

A study of the major plant groups: annuals, perennials, bulbs, herbs and wildflowers grown in the landscape garden. Identification, growth habits, and functional uses will be stressed. To introduce the horticulture major and the special interest student to the most common garden flowers used in the St. Louis area. The main goal of this class is to help the student gain factual knowledge. Secondary goals are to help the student develop a sense of personal responsibility and a skill in expressing themselves orally. Offered spring semester only. Prerequisite: None

**HR 2103 3.0 hours**  
**Fruit & Vegetable Production**

This course introduces the student to management of fruit and vegetable production. Topics of discussion will include selection of fruit, nut, vegetable and herb cultivars, cultural practices of crop production, and harvesting and marketing. Offered fall semester only. Prerequisite: HR 1012, 1013, 1033 and sophomore standing or consent of instructor

**HR 2113 3.0 hours**  
**Turf Management**

A lecture and hands-on course to provide the experience a student needs to become proficient in turfgrass management. Students will develop a solid understanding of the basic principles of concepts of turf management and be able to put them into practice. Offered spring semester only. Prerequisite: HR 1012, 1013, 2053 and sophomore standing or consent of instructor

**HR 2146 6.0 hours**  
**Horticulture Internship**

A supervised work experience (at least 40 hours per week for eight weeks) in an actual horticulture business or work situation. The work experience shall be coordinated with the student's regular class work to provide a realistic view of the duties of a horticulture employee. Should be taken the last half of the students last spring semester at ECC. Prerequisite: Completion of Horticulture Core and horticulture elective courses.

**HR 2701-2705 1.0-5.0 hours**  
**Independent Study-Horticulture**

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. Prerequisite: None

**HR 2711-2715 1.0-5.0 hours**  
**Special Topics-Horticulture**

A study of 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. Prerequisite: None

**HOSPITALITY  
MANAGEMENT**

**HM 1002 2.0 hours**  
**Introduction to Hospitality**

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. Prerequisite: None

**HM 1011 1.0 hours**  
**Food Safety & Sanitation**

Food safety and sanitation deal with proper food handling procedures, common errors in food handling and the negative impact when the system breaks down. The course explains

basic biology of microbial growth, correct food handling, sanitizing and maintaining clean food contact surfaces and food storage. Completion of the course will earn a "safe food handling certificate". Prerequisite: None

**HM 1012 2.0 hours**  
**Culinary Development & Basic Cost Control**

The proud profession of the Culinarian is deep in history, tradition and detail. This course provides two elements relating to that foundation- Professional history and development, and Basic costing. Culinary Development deals with the structure of the kitchen and restaurant as well as individuals well known through history. Students learn professional expectations in the professional kitchen as well. Basic to all Food & Beverage operations is knowing how to value the cost of goods for sale. This course provides foundational tools in identifying and using fundamental costing elements in food, beverage and labor, as well as learning how to utilize ratios for determining recipe extensions, pricing strategies and other kitchen formulas. Prerequisite: None

**HM 1013 3.0 hours**  
**Customer Service**

This course explores the various successful techniques involved in establishing effective communications and functional relationships with the customer. Prerequisite: None

**HM 1021 1.0 hours**  
**Equipment Identification, Function & Use**

Equipment Identification, Function and Use is a survey of equipment commonly found in a modern commercial kitchen. The student will learn it's intended use, detailed cleaning and general maintenance. Due to the extreme cost devoted to equipment in today's kitchen, this course trains students how to keep each piece working at optimal function and in a clean sanitary fashion. Prerequisite: None

**HM 1023 3.0 hours**  
**Purchasing & Product Identification**

Purchasing and Product Identification is the study of different food products in their purchased raw/purchased form and how to accurately purchase need product in accurate amounts for production. The product identification portion will demonstrate the size, season, packing, and general information on quality identification based on categories of produce (vegetables and fruits), groceries and dry goods, dairy products, meats, fish, poultry, and other usable products in the line of food production. Prerequisite or Corequisite: HM 1012, HM 1011

**HM 1044 4.0 hours**  
**Basic Culinary Methods and Techniques**

The course will provide a foundational level of the basics of professional cooking. Students completing Basic Culinary Methods and Techniques will learn about knife skills, basics of stocks and sauces, and the four primary methods of cooking: Dry Heat without fats or oils, Dry Heat with fats or oils, Moist Cookery, and Combination Cookery. This course will provide the basics necessary to proceed with careers in Culinary Arts, Restaurant Management, or Lodging Management. Prerequisite or Corequisite: HM 1012, HM 1011, HM 1021, HM 1023

**HM 1052 2.0 hours**  
**Restaurant Operations Practical I**

The course will utilize skills learned in basic foods classes and allow practice through operating a mock restaurant at the college. One meal per day will be served for the general public and the students will be responsible for preparing and serving the food. Prerequisite or Corequisite: HM 1044

**HM 1103 3.0 hours**  
**Fundamentals of Baking**

The course will provide a foundational level of the basics baking. The study of yeast raised breads, quick breads, cakes, pies and basic pastries will be covered along with the products used in their making. The student will be exposed to lecture and extensive hands on work in the bakery lab.

Prerequisite or Corequisite: HM 1044

**HM 1122 2.0 hours**  
**Menu Planning**

This course is the study of the development and use of menus in the effective function of a foodservice operation. Common to all foodservice establishments is the use of the product offerings, and their posting in the form of a menu. Menu Planning will explore the development based on the establishment's concept, target market appeal, and profitability. Students will learn the creative process and produce an actual working menu for their own concept vision. Prerequisite or Corequisite: HM 1044

**HM 1133 3.0 hours**  
**Intermediate Culinary Methods & Techniques**

A continuation of Basic Culinary Methods and Techniques, this course goes in more depth with the different types of cooking methods concentrating on less quantity production and more technique in individual plated items. Also included are, pantry work (salads and luncheon items) and breakfast foods. Prerequisite or Corequisite: HM 1044, HM 1142 Prerequisite: None

**HM 1142 2.0 hours**  
**Dining Room Management & Table Service**

Dining Room Management and Table Service identifies the different types of service found in the restaurant industry today. Students will learn proper service techniques using each style of service and the critical interaction between the kitchen and dining room. Lecture will include American service, French Haute service, Russian and English service. The student will learn these service types through hands on activities by serving meals in the restaurant area. Prerequisite or Corequisite: HM 1044, HM 1133

**HM 1203 3.0 hours**  
**Culinary Internship**

The course is an internship. Minimum work hours under an ACF Certified Chef de Cuisine or higher or equivalent experience and qualifications. Work hours are to be completed with 40 clock hour segments per week. This internship also meets the beginning criteria for ACF Apprenticeships (full apprenticeship consists of 6000 work hours within 3 years). Prerequisite or Corequisite: HM 1133, HM 1103

**HM 2004 4.0 hours**  
**Quantity Food Production I**

Survey of basic 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. Prerequisite: None

**HM 2012 2.0 hours**  
**Sanitation/Food Handling Certification**

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. Prerequisite: None

**HM 2033 3.0 hours**  
**Hospitality Management Internship I**

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 2044 4.0 hours**  
**Quantity Food Production II**



Continuation of HM 2004. 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 2004

**HM 2053 Hospitality Management Internship II** **3.0 hours**  
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 2063 Restaurant Management** **3.0 hours**  
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 cost control, purchasing, legal problems, furniture and decor for clubs, restaurants and related institutions. Prerequisite: None

**HM 2073 Destination World Geography** **3.0 hours**  
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. Prerequisite: None

**HM 2083 Travel and Tourism** **3.0 hours**  
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.  
Prerequisite: None

**HM 2093 Hotel & Resort Operations Management** **3.0 hours**  
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. Prerequisite: None

**HM 2103 Airline Reservations & Ticketing** **3.0 hours**  
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 Convention Sales & Group Planning** **3.0 hours**  
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. Prerequisite: None

**HM 2123 Food & Beverage Management** **3.0 hours**  
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.

Prerequisite: None

**HM 2701-2705 Independent Study-Hospitality** **1.0-5.0 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.  
Prerequisite: None

**HM 2711-2715 Special Topics-Hospitality** **1.0-5.0 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.  
Prerequisite: None

## INDUSTRIAL ENGINEERING

**IE 1112 Industrial Power Systems Lec** **2.0 hours**  
A study of hydraulic, and pneumatic industrial power systems. The course will cover all areas of hydraulic and pneumatic systems, parts, troubleshooting and interpreting schematics. Corequisite: IE 1121 Prerequisite: None

**IE 1113 Introduction to Heating, Ventilating, & Air Conditioning (HVAC)** **3.0 hours**  
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 Prerequisite: None

**IE 1121 Industrial Power Systems Lab** **1.0 hours**  
A study of hydraulic, and pneumatic industrial power systems. The course will cover all areas of hydraulic and pneumatic systems, parts, troubleshooting and interpreting schematics. Prerequisite: None

**IE 1123 Industrial Computer Applications** **3.0 hours**  
A software application course to prepare those with a technical interest in the uses of computers in industry. Standard applications such as DOS, Windows Basic, spreadsheet, data base, and word processing for technical objectives will be covered. We will also cover Industrial Data Highway Systems and the uses of digital pictures. Prerequisite: None

**IE 1133 Industrial & Control Systems Wiring** **3.0 hours**  
This course is designed to have students work with industrial wiring procedures, standards and regulations. We will cover NEC code, JIC standards and manufacture specification covering industrial wiring. We will do panel layout, high and low voltage installation, AC, DC wiring and sensor installation. We will also review conduit, cable tray and wireway installation. Prerequisite: None

**IE 2103 Introduction to Manufacturing Processes** **3.0 hours**  
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, blueprint reading, material flow, and equipment up keep.  
Prerequisite: None

**IE 2113 Maintenance Practices** **3.0 hours**  
A study of basic industrial maintenance and repair techniques with emphasis in the mechanical area covering bearing, gearing, gear reducers, belt drives, chain and sprockets, coupling, clutches and brakes, lubrication and variable speed drives. We will also cover areas of preventive maintenance and methods used such as vibration analysis, balancing and infrared testing. Prerequisite: None

**IE 2173 Industrial Systems Troubleshooting** **3.0 hours**  
Integrated system 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.  
Prerequisite: None

**IE 2183 Process & Control Systems** **3.0 hours**  
This course is designed to have students work with PLC's and analog control in the use of process and motion control. We will work with Servo systems, sensors, AC & DC motion control. We will design and setup PID control loops. Close-loop systems will also be covered.  
Prerequisite: None

**IE 2701-2705 Independent Study-Industrial Engineering** **1.0-5.0 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.  
Prerequisite: None

**IE 2711-2715 Special Topics-Industrial Engineering** **1.0-5.0 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.  
Prerequisite: None

## JOURNALISM

**JR 1003 Newswriting** **3.0 hours**  
Introduction to the fundamentals of newswriting. Emphasis is placed upon journalistic principles, writing, editing and design, including work on official student publications.  
Prerequisite: None

**JR 1103 Journalism Productions** **3.0 hours**  
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 Independent Study-Journalism** **1.0-5.0 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.  
Prerequisite: None

**JR 2711-2715 Special Topics-Journalism** **1.0-5.0 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.  
Prerequisite: None

**JR 2801 Journalism Practicum** **1.0 hours**  
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

**JR 2803 Journalism Practicum** **3.0 hours**  
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 a campus newspaper or yearbook. May be repeated.  
Prerequisite: consent of instructor

## MATHEMATICS

### MT 0103 **Pre-Algebra** 3.0 hours

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, 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 **Pre/Introductory Algebra** 5.0 hours

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 **Introductory Algebra** 3.0 hours

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 satisfies the college's prerequisite for Intermediate Algebra. Prerequisite: Satisfactory math placement score or a grade of "C" or better in MT 0103 Pre-Algebra in addition to one year of high school algebra. Not intended for transfer. Graphic calculator required.

### MT 0205 **Introductory/Intermediate Algebra** 5.0 hours

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 **Medication Calculations for Allied Health** 1.0 hours

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.  
Prerequisite: None Not intended for transfer. Enrollment limited to students enrolled in EM 1112 EMT-Paramedic or NR 1014 Fundamentals of Nursing.

### MT 1213 **Electronic Algebra/Trigonometry** 3.0 hours

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 **Electronic Calculus** 3.0 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. A 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 or consent of instructor. Not intended for transfer.

### MT 1303 **Intermediate Algebra** 3.0 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 with two years of high school algebra or a grade of "C" or better in MT 0203 Introductory Algebra. Not intended for transfer. Graphic calculator required.

### MT 1313 **Real Number System** 3.0 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** 3.0 hours

College Mathematics is designed to satisfy the mathematics requirement for students in programs not requiring College Algebra. Topics covered include introduction to logic, number bases, complex numbers, exponents, polynomials, rational expressions, radicals, solving equations and inequalities, graphing 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 & Nonmetric Geometry** 3.0 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 or plan 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** 3.0 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 requirement. Topics covered in MT 1403 include: complex number, logs and exponents, polynomials, rational expressions, radicals, solving equations and inequalities, graphing equations and inequalities, matrices, permutations and combinations, theory of 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. Graphic calculator required.

### MT 1413 **Trigonometry** 3.0 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 applications, 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 scores or grade "C" or better in MT 1403 College Algebra.

### MT 1505 **Pre-Calculus Math** 5.0 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 Pre-Calculus will be discussed.  
Prerequisite: Satisfactory math placement score or a grade of "B" or better in MT 1303 Intermediate Algebra.

### MT 1605 **Analytic Geometry & Calculus I** 5.0 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, antidifferentiations, and the definite integral.  
Prerequisite: Satisfactory math placement score or a grade of "C" or better in either MT 1505 or both MT 1403 and 1413.

### MT 2003 **Finite Mathematics** 3.0 hours

Finite Mathematics is designed to be an introduction to linear math and its applications, matrix algebra and it 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 2004 **Finite Mathematics** 4.0 hours

Finite Mathematics is designed to be an introduction to linear math and its applica-



tions, matrix algebra and its applications, linear programming, probability and decision making applications.  
Prerequisite: A grade of "C" or better in either Math 1403 College Algebra or MT 1505 Pre-Calculus Mathematics, or consent of instructor.

**MT 2013 3.0 hours**  
**Survey Calculus**  
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 2014 4.0 hours**  
**Survey Calculus**  
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 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 3.0 hours**  
**Statistics**  
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 5.0 hours**  
**Analytic Geometry & Calculus II**  
A continuation of MT 1605 including the following topics: applications of the definite integral, logarithmic and exponential functions, trigonometric functions, techniques of integration, approximate, integration, polar coordinates, conic section, vectors, and parametric equations.  
Prerequisite: A grade of 'C' or better in MT 1605

**MT 2205 5.0 hours**  
**Analytic Geometry & Calculus III**  
A continuation of MT 2105 including the following topics: hyperbolic functions, indeterminate forms, improper integrals, vectors in three-dimensional space, solid analytic geometry, differential calculus of functions of several variables, multiple integration, and infinite series.  
Prerequisite: A grade of 'C' or better in MT 2105

**MT 2303 3.0 hours**  
**Differential Equations**  
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 1.0-5.0 hours**  
**Independent Studies-Mathematics**  
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.  
Prerequisite: Consent of division chair.

**MT 2711-2715 1.0-5.0 hours**  
**Special Topics-Mathematics**  
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.  
Prerequisite: Consent of division chair.

**Applied Piano-Secondary-Level 0**  
Private lessons in piano. Enrollment restricted to pre-college level students. May be repeated.  
Prerequisite: consent of instructor

**MU 0401 1.0 hours**  
**Applied Organ-Level 0**  
Private lessons in pipe organ. Enrollment restricted to pre-college level students with consent of the instructor. May be repeated.  
Prerequisite: None

**MU 1003 3.0 hours**  
**Fundamentals of Music**  
A basic study of music including notation, scales, intervals, chords, and rhythms; intended to provide basic music reading, writing, and performing skills. Open to all students.  
Prerequisite: None

**MU 1021 1.0 hours**  
**ECC Choral Association**  
A performance course open, with consent of the instructor, to all students and community members who have had previous choral experience. Prerequisite: None

**MU 1041 1.0 hours**  
**ECC Community Orchestra**  
A performance course open, with consent of the instructor, to all students and community members who have had previous instrumental experience. Prerequisite: None

**MU 1051 1.0 hours**  
**College Wind Ensemble**  
A performance course open, with the consent of the instructor, to all students and community members, who have had previous instrumental experience. Prerequisite: None

**MU 1061 1.0 hours**  
**ECC Choral Association**  
A performance course open, with consent of the instructor, to all students and community members who have had previous choral experience.  
Prerequisite: MU 1021

**MU 1071 1.0 hours**  
**ECC Community Orchestra**  
A performance course open, with consent of the instructor, to all students and community members who have had previous instrumental experience. Prerequisite: MU 1041

**MU 1101 1.0 hours**  
**ECC Singers**  
A wide variety of styles from traditional choral concert music to choreographed popular music. Open through audition to all students with previous musical experience.  
Prerequisite: None

**MU 1111 1.0 hours**  
**Jazz Band**  
A studio band which prepares and presents concerts, while dealing primarily with music of the jazz idiom. Open by the consent of the director to all college students who are qualified instrumentalists. Prerequisite: None

**MU 1121 1.0 hours**  
**ECC Singers**  
A wide variety of styles from traditional choral concert music to choreographed popular music. Open through audition to all students with previous musical experience.  
Prerequisite: MU 1101

**MU 1131 1.0 hours**  
**Jazz Band**  
A studio band which prepares and presents concerts, while dealing primarily with music of the jazz idiom. Open by the consent of the director to all college students who are qualified instrumentalists. Prerequisite: MU 1111

**MU 1201 1.0 hours**  
**Applied Voice-Level 0**  
Pre-college level private lessons in voice. Enrollment open to pre-college age students and college non-music majors. May be repeated.  
Prerequisite: consent of instructor

**MU 1211 1.0 hours**  
**Voice Class-Level I**  
A group lesson experience for the beginning

voice student. Required of all first semester voice students. Open to all students.  
Prerequisite: None

**MU 1221 1.0 hours**  
**Applied Voice-Level II**  
Private lessons in voice. Enrollment restricted to advanced voice students. Proper placement will be determined by the instructor.  
Prerequisite: MU 1211

**MU 1301 1.0 hours**  
**Applied Piano-Beginning (Level I)**  
A group lesson experience for the beginning piano student. Open to all students regardless of major. Prerequisite: None

**MU 1311 1.0 hours**  
**Applied Piano-Beginning (Level II)**  
A group lesson experience for the beginning piano student. Open to all students regardless of major. Prerequisite: MU 1301

**MU 1321 1.0 hours**  
**Applied Piano-Beginning (Level III)**  
A group lesson experience for the beginning piano student. Open to all students regardless of major. Prerequisite: MU 1311

**MU 1331 1.0 hours**  
**Applied Piano-Beginning (Level IV)**  
A group lesson experience for the beginning piano student. Open to all students regardless of major. Prerequisite: MU 1321

**MU 1341 1.0 hours**  
**Applied Piano-Secondary-Level I**  
Private lessons in piano. Open to all students with some previous piano training, with consent of instructor. Proper placement will be determined by the instructor.  
Prerequisite: MU 1331 or equivalent

**MU 1351 1.0 hours**  
**Applied Piano-Secondary-Level II**  
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 1341

**MU 1361 1.0 hours**  
**Applied Piano-Secondary-Level III**  
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 1351

**MU 1371 1.0 hours**  
**Applied Piano-Secondary-Level 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 1361

**MU 1401 1.0 hours**  
**Applied Organ-Level I**  
Private lessons in organ. Open to any college student, with consent of instructor. Proper placement will be determined by the instructor. Prerequisite: None

**MU 1411 1.0 hours**  
**Applied Organ-Level II**  
Private lessons in organ. Open to any college student, with consent of instructor. Proper placement will be determined by the instructor. Prerequisite: MU 1401

**MU 1501 1.0 hours**  
**Applied Instrumental-Level I**  
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

**MU 1511 1.0 hours**  
**Applied Instrumental-Level II**  
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: MU 1501

**MU 1603 3.0 hours**  
**Music Appreciation**  
A historical survey of the development of

**MUSIC**  
MU 0341 1.0 hours

music, intended to provide a background for the understanding and application of music. Recommended for non-music majors.  
Prerequisite: None

**MU 1613** **3.0 hours**  
**Music Theory I(Written)**  
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. Prerequisite: None

**MU 1621** **1.0 hours**  
**Music Theory I(Aural)**  
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. Prerequisite: None

**MU 1623** **3.0 hours**  
**Music Appreciation**  
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 10th 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.  
Prerequisite: None

**MU 1703** **3.0 hours**  
**Music Theory II(Written)**  
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 1711** **1.0 hours**  
**Music Theory II(Aural)**  
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** **3.0 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** **3.0 hours**  
**Popular Music**  
A survey of the historical and stylistic development of jazz, rock, folk, and country music, as well as musical theatre. Special attention will be given to listening and research assignments. Prerequisite: None

**MU 2021** **1.0 hours**  
**ECC Choral Association**  
A performance course open, with consent of the instructor, to all students and community members who have had previous choral experience. Prerequisite: MU 1061

**MU 2031** **1.0 hours**  
**ECC Choral Association**  
A performance course open, with consent of the instructor, to all students and community members who have had previous choral experience. Prerequisite: MU 2021

**MU 2041** **1.0 hours**  
**ECC Community Orchestra**  
A performance course open, with the consent of the instructor, to all students and community members, who have had previous instrumental experience. Prerequisite: MU 1071

**MU 2043** **3.0 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 2051** **1.0 hours**  
**College Wind Ensemble**  
A performance course open, with the consent of the instructor, to all students and community members, who have had previous instrumental experience. Prerequisite: MU 1051

**MU 2061** **1.0 hours**  
**ECC Community Orchestra**  
A performance course open, with consent of the instructor, to all students and community members who have had previous instrumental experience. Prerequisite: MU 2041

**MU 2101** **1.0 hours**  
**ECC Singers**  
A wide variety of styles from traditional choral concert music to choreographed popular music. Open through audition to all students with previous musical experience.  
Prerequisite: MU 1121

**MU 2103** **3.0 hours**  
**Music Theory III(Written)**  
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 2111** **1.0 hours**  
**Jazz Band**  
A studio band which prepares and presents concerts, while dealing primarily with music of the jazz idiom. Open by the consent of the director of all college students who are qualified instrumentalists.  
Prerequisite: MU 1131

**MU 2121** **1.0 hours**  
**Music Theory III(Aural)**  
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 2131** **1.0 hours**  
**Jazz Band**  
A studio band which prepares and presents concerts, while dealing primarily with music of the jazz idiom. Open by the consent of the director to all college students who are qualified instrumentalists.  
Prerequisite: MU 2111.

**MU 2141** **1.0 hours**  
**ECC Singers**  
A wide variety of styles from traditional choral concert music to choreographed popular music. Open through audition to all students with previous musical experience.  
Prerequisite: MU 2101

**MU 2201** **1.0 hours**  
**Applied Voice-Level III**  
Private lessons in voice. Enrollment restricted to advanced voice students. Proper placement will be determined by the instructor.  
Prerequisite: MU 1221

**MU 2203** **3.0 hours**  
**Music Theory IV(Written)**  
A continuation of MU 2103 and MU 2121 to more complex areas of chromatic harmony and analytical techniques for major trends in 20th century composition.  
Prerequisite: MU 2103 & 2121

**MU 2211** **1.0 hours**  
**Music Theory IV(Aural)**  
A continuation of MU 2103 and MU 2121 to more complex areas of chromatic harmony and analytical techniques for major trends in 20th century composition.  
Prerequisite: MU 2102 & 2211

**MU 2221** **1.0 hours**  
**Applied Voice-Level IV**  
Private lessons in voice. Enrollment restricted to advanced voice students. Proper placement will be determined by the instructor.  
Prerequisite: MU 2201

**MU 2301** **1.0 hours**  
**Applied Piano-Level I**  
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

**MU 2311** **1.0 hours**  
**Applied Piano-Level II**  
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: MU 2301

**MU 2321** **1.0 hours**  
**Applied Piano-Level III**  
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: MU 2311

**MU 2331** **1.0 hours**  
**Applied Piano-Level 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: MU 2321

**MU 2401** **1.0 hours**  
**Applied Organ (Level III)**  
Private lessons in organ. Open to any college student, with consent of instructor. Proper placement will be determined by the instructor. Prerequisite: MU 1411

**MU 2411** **1.0 hours**  
**Applied Organ (Level IV)**  
Private lessons in organ. Open to any college student, with consent of instructor. Proper placement will be determined by the instructor. Prerequisite: MU 2401

**MU 2501** **1.0 hours**  
**Applied Instrumental-Level III**  
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: MU 1511

**MU 2511** **1.0 hours**  
**Applied Instrumental-Level 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: MU 2501

**MU 2701-2705** **1.0-5.0 hours**  
**Independent Study-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.  
Prerequisite: None

**MU 2711-2715** **1.0-5.0 hours**  
**Special Topics-Music**  
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.  
Prerequisite: None

## NURSING

**NR 0100-0103** **0.5-3.0 hours**  
**Workshop/Seminar**  
Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment.  
Prerequisite: None

**NR 1014** **4.5 hours Union campus**  
**4.0 hours Rolla campus**  
**Fundamentals of Nursing Lec**  
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 regimens. 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; MT 1011; history/government elective Placement: fall semester, first year

**NR 1022 2.5 hours**  
**Fundamentals of Nursing Lab**

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

Prerequisite: 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 5.0 hours**  
**Nursing of Adults & Children I Lec**

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 5.0 hours**  
**Nursing of Adults & 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 2.0 hours**  
**Mental Health Nursing Lec**

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 3.0 hours**  
**Mental Health Nursing Lab**

Mental health facilities and the college laboratory are utilized for students to perfect communication skills and apply knowledge acquired in NR 1052. Fifteen hours practicum per week.

Prerequisite: NR 1014, 1022, 1035, 1045; BI 2102, 2112, 2202, 2203; PY 1103, 2403 Corequisite: NR 1052 Placement: summer session, first year Course completed in eight week session.

**NR 2012 2.0 hours**  
**Maternal, Neonatal & Women's Health Nursing Lec**

A course designed to provide the student with basic knowledge of quality women's healthcare. 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 monitoring, 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 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 & Women's Health Nursing Lab**

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

Prerequisite: NR 1014, 1022, 1035, 1045, 1052, 1063; BI 2102, 2112, 2202, 2203; PY 1103, 2403 Corequisite: NR 2012, 2032, 2042, 2991; BI 2402, 2412; EN 1223 Placement: fall semester, second year

**NR 2032 2.0 hours**  
**Nursing of Adults & Children II Lec**

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 & Children II Lab**

Clinical practice opportunities are provided in healthcare 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 5.0 hours**  
**Nursing of Adults & Children III Lec**

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 5.0 hours**  
**Nursing of Adults & 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, 2043; PR 2103 Corequisite: NR 2045, 2991; EN 1333 Placement: spring semester, second year

**NR 2701-2705 1.0-5.0 hours**  
**Independent Study-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.

Prerequisite: None

**NR 2711-2715 1.0-5.0 hours**  
**Special Topics-Nursing**

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. Prerequisite: None

**NR 2991 1.0 hours**  
**Nursing Trends**

A study of selected topics related to the development of nursing practice and education; current issues; trends; ethical and legal aspects; professional organizations. 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

**OFFICE CAREERS**

**OF 0100-0103 0.5-3.0 hours**  
**Workshop/Seminar**

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

**OF 1011 1.0 hours**  
**Keyboarding**

Designed for the student who has not typed before. Includes beginning instruction on the keyboard and numbers only using a microcomputer. Prerequisite: None

**OF 1013 3.0 hours**  
**Keyboarding/Formatting**

A study of the keyboard and techniques of touch typewriting, development of basic skills, and the arrangement of typewritten material. Individualized instruction using microcomputer. Prerequisite: None

**OF 1021 1.0 hours**  
**Keyboard Skillbuilding I**

A course to increase speed and accuracy 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 1023 3.0 hours**  
**Document Production**

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 1.0 hours**  
**Keyboard Skillbuilding II**

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 3.0 hours**  
**Advanced Document Production**

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. Skill-building software is included. Individualized instruction using microcomputer. Prerequisite: OF 1023

<p><b>OF 1043</b> <b>Speedwriting I</b> 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</p>	<p><b>3.0 hours</b></p>	<p>JAVA, and good web page design. Learn the basic HTML document elements. Prerequisite: None</p>	<p><b>OF 2033</b> <b>Internship I</b> Supervised work experience in an actual office situation putting to use the skills and related knowledge learned in previous courses. Supervision on the job will be led by office personnel. Coordination of work experience to classroom learning will be done by the instructor. Time will be arranged. Prerequisite: enrollment in the Office Careers Program and consent of instructor</p>	<p><b>3.0 hours</b></p>
<p><b>OF 1053</b> <b>Speedwriting II</b> 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</p>	<p><b>3.0 hours</b></p>	<p><b>OF 1113</b> <b>Office Procedures</b> 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: None</p>	<p><b>OF 2043</b> <b>Legal Document Production</b> 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</p>	<p><b>3.0 hours</b></p>
<p><b>OF 1061</b> <b>Medical/Dental Office Software</b> 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 careers or others interested in medical office management software. Prerequisite: None</p>	<p><b>1.0 hours</b></p>	<p><b>OF 1131</b> <b>Voice Recognition</b> This course is designed to use voice recognition software to create personal and business documents. Prerequisite: OF 1013 or the equivalent.</p>	<p><b>OF 2053</b> <b>Legal Speedwriting</b> 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</p>	<p><b>3.0 hours</b></p>
<p><b>OF 1071</b> <b>Microsoft Works/IBM</b> 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.</p>	<p><b>1.0 hours</b></p>	<p><b>OF 1133</b> <b>Machine Transcription</b> 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</p>	<p><b>OF 2063</b> <b>Legal Office Procedures</b> 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</p>	<p><b>3.0 hours</b></p>
<p><b>OF 1081</b> <b>Word MOUS</b> 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.</p>	<p><b>1.0 hours</b></p>	<p><b>OF 1141</b> <b>Advanced Internet Topics</b> Students will learn how to use advanced Internet tools and techniques. Some of the topics include advance search techniques and tools, advanced e-mail features, download data and programs, different types of mailing lists, and e-commerce. Prerequisite: OF 1101 or consent of the instructor.</p>	<p><b>OF 2073</b> <b>Medical Office Procedures</b> 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. Preparing health insurance forms will be stressed using the computer. Individualized instruction. Prerequisite: OF 1023, 1083, and BI 1112 or BI 1113.</p>	<p><b>3.0 hours</b></p>
<p><b>OF 1083</b> <b>Business Writing Skills</b> Business Writing Skills is a course to improve 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 on improving written communication by writing sentences, paragraphs, and various business messages. Oral communications will be improved through class work. Prerequisite: None</p>	<p><b>3.0 hours</b></p>	<p><b>OF 1143</b> <b>Business Communications</b> 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 0133, or OF 1083</p>	<p><b>OF 2083</b> <b>Medical Transcription</b> 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 microcomputers. Prerequisite: OF 1023, 1083, 1183, and BI 1113</p>	<p><b>3.0 hours</b></p>
<p><b>OF 1093</b> <b>Records Management</b> 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, microrecords 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</p>	<p><b>3.0 hours</b></p>	<p><b>OF 1173</b> <b>Word MOUS Expert</b> 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. Prerequisite or Corequisite: Keyboarding skills.</p>	<p><b>OF 2093</b> <b>Legal Transcription</b> This course is designed to prepare students for activities performed by a transcriptionist in a law firm or other legal setting where documents are to be converted from the spoken word to printed form. 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. Prerequisite: OF 1023 and OF 1083</p>	<p><b>3.0 hours</b></p>
<p><b>OF 1101</b> <b>The Internet</b> This course is designed to introduce students who want to know how to use the 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. Prerequisite: None</p>	<p><b>1.0 hours</b></p>	<p><b>OF 1183</b> <b>Introduction to Medical Transcription</b> 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 1113</p>	<p><b>OF 2103</b> <b>Office Microcomputer Applications</b> 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</p>	<p><b>3.0 hours</b></p>
<p><b>OF 1111</b> <b>Web Page Design</b> This course introduces the basics of HTML and</p>	<p><b>1.0 hours</b></p>	<p><b>OF 1213</b> <b>Desktop Publishing</b> Introduction 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.</p>	<p><b>OF 2113</b> <b>Office Simulation &amp; Problem Solving</b> The simulation gives students an opportunity to work for different departments in a company. Students will use microcomputer application software to generate, manipulate, and analyze data; to solve information management problems; and to present this data to help management solve business problems. Prerequisite: None</p>	<p><b>3.0 hours</b></p>



**OF 2123** **3.0 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 2133** **3.0 hours**  
**Internship II**  
 Supervised work experience in an actual office situation putting to use the skills and related knowledge learned in previous courses. Supervision on the job will be led by office personnel. Coordination of work experience to classroom learning will be done by the instructor. Time will be arranged.  
 Prerequisite: enrollment in the Office Occupations Program and consent of instructor

**OF 2183** **3.0 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.  
 Prerequisite: BI 1113, OF 1183, OF 2083, OF 1023, OF 1083.

**OF 2203** **3.0 hours**  
**Web Page Design I**  
 Learn to use PageMill to design Web pages. Course will focus on creating attractive pages that effectively combine text and images as well as other media such as sound, video, and other special effects. Prerequisite: None

**OF 2701-2705** **1.0-5.0 hours**  
**Independent Study-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.  
 Prerequisite: None

**OF 2711-2715** **1.0-5.0 hours**  
**Special Topics-Office Careers**  
 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.  
 Prerequisite: None

**PHILOSOPHY AND RELIGION**

**PR 1003** **3.0 hours**  
**Introduction to Philosophy**  
 A course which introduces the student to some of the major areas of philosophic inquiry concerning human experiences and the nature of the reality through the reading and discussion of representative selections from contemporary and classical writings.  
 Prerequisite: None

**PR 1203** **3.0 hours**  
**History of Modern Philosophy**  
 A study of the historical development in the awareness and solutions to western philosophic problems from modern times to the present. The course is based upon the teachings of the great philosophers, with emphasis upon their importance for us today.  
 Prerequisite: None

**PR 1303** **3.0 hours**  
**Living World Religions**  
 An introductory survey course of the major Eastern and Western religions of the world today, with emphasis on the similarities and differences in their basic teachings and practices, historical backgrounds, and lives of their

founders. Prerequisite: None

**PR 2103** **3.0 hours**  
**Contemporary Ethical Problems**  
 A course concerned with moral action—deciding whether acts are good or bad, right or wrong. It begins with a study of why people act the way they do and considers different approaches to moral conduct. Discussions center on such modern problems as mercy killing, abortion, capital punishment, and sexual, medical, and business ethics.  
 Prerequisite: None

**PR 2403** **3.0 hours**  
**Biblical Literature I: Old Testament**  
 A critical-historical survey of the Old Testament as literature. Emphasis is placed upon the different modern approaches to Biblical understanding and criticism, especially as it applies to the Exodus Event in the history of Israel through the Division of the Kingdom. The course is designed to help the student appreciate the Bible as great literature from a critical point of view. Prerequisite: None

**PR 2503** **3.0 hours**  
**Biblical Literature II: Old Testament**  
 A critical-historical survey of the Old Testament as literature. Emphasis is placed upon the different modern approaches to Biblical writings after the Division of the Kingdom until the end of the Old Testament period. The course is designed to help the student appreciate the Bible as great literature from a critical point of view. Prerequisite: None

**PR 2603** **3.0 hours**  
**Biblical Literature III: New Testament**  
 A critical-historical survey of the New Testament as literature. Special emphasis is placed upon the different modern approaches to Biblical understanding and criticism, and upon the different literary types of writings found in the New Testament itself, especially the Gospels and Letters of Paul. The course is designed to help the student appreciate the Bible as great literature from a critical point of view.  
 Prerequisite: None

**PR 2701-2705** **1.0-5.0 hours**  
**Independent Study-Philosophy/Religion**  
 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.  
 Prerequisite: None

**PR 2711-2715** **1.0-5.0 hours**  
**Special Topics-Philosophy/Religion**  
 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.  
 Prerequisite: None

**PHYSICAL EDUCATION**

**PE 1002** **2.0 hours**  
**Fitness for Life**  
 A basic introduction to lifestyle 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.  
 Prerequisite: None

**PE 1011** **1.0 hours**  
**Aerobic Dance**  
 An exercise program choreographed and set to music for continuous rhythmic activity. Selected conditioning exercises and dance movements are designed to allow students to work toward improved cardiovascular fitness. May be taken at the beginning, intermediate, or advanced levels. Prerequisite: None

**PE 1021** **1.0 hours**  
**Aerobic Dance**  
 An exercise program choreographed and set to music for continuous rhythmic activity. Selected conditioning exercises and dance movements are designed to allow students to work toward improved cardiovascular fitness. May be taken at the beginning, intermediate or

advanced levels. Prerequisite: PE 1011

**PE 1031** **1.0 hours**  
**Aqua Aerobics**  
 Introduction to various aquatic fitness class formats. Circuit, interval, shallow and deep water formats will be utilized to effect cardiovascular training and conditioning response. Water shoes are strongly recommended for the student. Prerequisite: None

**PE 1041** **1.0 hours**  
**Aqua Aerobics**  
 Introduction to various aquatic fitness class formats. Circuit, interval, shallow, and deep water formats will be utilized to effect cardiovascular training and conditioning response. Water shoes are strongly recommended for the student. Prerequisite: PE 1031

**PE 1051** **1.0 hours**  
**Archery**  
 A basic introduction to the fundamental skills and safety rules of archery activities. May be taken at the beginning or intermediate levels.  
 Prerequisite: None

**PE 1061** **1.0 hours**  
**Archery**  
 A basic introduction to the fundamental skills and safety rules of archery activities. May be taken at the beginning or intermediate levels.  
 Prerequisite: PE 1051

**PE 1081** **1.0 hours**  
**Introduction to Fitness Center**  
 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.  
 Prerequisite: None

**PE 1091** **1.0 hours**  
**Backpacking**  
 Introduction to backpacking as a lifetime recreational activity. Instruction in techniques, safety, equipment, trip planning and map and compass skills. Field trips are required.  
 Prerequisite: None

**PE 1121** **1.0 hours**  
**Basketball**  
 Introduction to the fundamental skills, strategies and rules of basketball. May be taken at the beginning or intermediate levels.  
 Prerequisite: None

**PE 1131** **1.0 hours**  
**Basketball**  
 Introduction to the fundamental skills, strategies and rules of basketball. May be taken at the beginning or intermediate levels.  
 Prerequisite: PE 1121

**PE 1161** **1.0 hours**  
**Bowling**  
 Introduction to the fundamental skill, strategies and rules of bowling. May be taken at the beginning or intermediate levels.  
 Prerequisite: None

**PE 1171** **1.0 hours**  
**Bowling**  
 Introduction to the fundamental skills, strategies and rules of bowling. May be taken at the beginning or intermediate levels.  
 Prerequisite: PE 1161

**PE 1181** **1.0 hours**  
**Intermediate Fitness**  
 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 the use of equipment designed to improve cardio-respiratory fitness.  
 Prerequisite: PE 1081

**PE 1201** **1.0 hours**  
**Canoeing**  
 Introduction to river canoeing as a lifetime recreational activity. Instruction in safety, canoeing techniques, trip planning, equipment and map and compass skills. Field trips are required. Prerequisite: None

**PE 1231** **1.0 hours**  
**Martial Arts-Beginning**  
 A modern eclectic martial art utilizing tech-

niques 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

**PE 1241 1.0 hours**  
**Martial Arts-Intermediate**  
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: PE 1231

**PE 1271 1.0 hours**  
**Folk & Square Dance**  
Instruction in the skills and patterns of square dancing and selected international and American folk dances. Prerequisite: None

**PE 1281 1.0 hours**  
**Advanced Fitness**  
A course designed to provide opportunities for the student to develop an individual programs of exercise based on the concepts and guidelines for each component of fitness: muscular strength and endurance, flexibility, body composition, and cardio- respiratory endurance. Students will select the exercise programs and establish goals for the components they wish to improve. Prerequisite: PE 1081, PE 1181

**PE 1301 1.0 hours**  
**Golf**  
Introduction to the fundamental skills and rules of golf activities. May be taken at the beginning, intermediate, or advanced levels.  
Prerequisite: None

**PE 1311 1.0 hours**  
**Golf**  
Introduction to the fundamental skills and rules of golf activities. May be taken at the beginning, intermediate or advanced levels.  
Prerequisite: PE 1301

**PE 1341 1.0 hours**  
**Karate**  
Basic principles and practices of traditional Japanese karate through participation in systematically organized patterns of assertive/reactive exercises. May be taken at the beginning, intermediate or advanced levels.  
Prerequisite: None

**PE 1351 1.0 hours**  
**Karate**  
Basic principles and practices of traditional Japanese karate through participation in systematically organized patterns of assertive/reactive exercises. May be taken at the beginning, intermediate or advanced levels.  
Prerequisite: PE 1341

**PE 1381 1.0 hours**  
**Physical Fitness**  
Introduction to various lifelong fitness activities tailored to the individual student's age and fitness category. May be taken at the beginning, intermediate or advanced levels.  
Prerequisite: None

**PE 1391 1.0 hours**  
**Physical Fitness**  
Introduction to various lifelong fitness activities tailored to the individual student's age and fitness category. May be taken at the beginning, intermediate or advanced levels.  
Prerequisite: PE 1381

**PE 1402 2.0 hours**  
**Introduction to Physical Education**  
An introductory professional course for the physical education major and minor, designed to provide the opportunity to explore the history, scope, values and philosophy of physical education, professional responsibilities and career opportunities. Prerequisite: None

**PE 1421 1.0 hours**  
**Racquet Sports**  
Introduction to the fundamental skills, strategies and rules of racquet sports. Includes table tennis, badminton, and pickle ball.  
Prerequisite: None

**PE 1451 1.0 hours**  
**Racquetball**  
Introduction to the fundamental skills, strate-

gies and rules of racquetball.  
Prerequisite: None

**PE 1461 1.0 hours**  
**Self Defense for Women**  
Introduction to the physical skills and strategies used in self defense along with lectures on prevention of physical attack.  
Prerequisite: None

**PE 1502 2.0 hours**  
**Personal Health & Wellness**  
Emphasis is placed on relating course content to lifestyle to foster a better understanding of the major health issues of 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. Prerequisite: None

**PE 1521 1.0 hours**  
**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

**PE 1531 1.0 hours**  
**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: PE 1521

**PE 1561 1.0 hours**  
**Soccer**  
Introduction to the fundamental skills, strategies and rules of soccer. May be taken at the beginning or intermediate levels.  
Prerequisite: None

**PE 1571 1.0 hours**  
**Soccer**  
Introduction to the fundamental skills, strategies and rules of soccer. May be taken at the beginning or intermediate levels.  
Prerequisite: PE 1561

**PE 1601 1.0 hours**  
**Softball**  
Introduction to fundamental skills, strategies and rules of soft ball. May be taken at the beginning or intermediate levels.  
Prerequisite: None

**PE 1611 1.0 hours**  
**Softball**  
Introduction fundamental skills, strategies and rules of soft ball. May be taken at the beginning or intermediate levels.  
Prerequisite: PE 1601

**PE 1641 1.0 hours**  
**Tennis**  
Instruction in the fundamental skills, strategies and rules of tennis. May be taken at the beginning or intermediate level.  
Prerequisite: None

**PE 1651 1.0 hours**  
**Tennis**  
Instruction in the fundamental skills, strategies and rules of tennis. May be taken at the beginning and intermediate level.  
Prerequisite: PE 1641

**PE 1671 1.0 hours**  
**Volleyball**  
Instruction in the fundamental skills, strategies and rules of power volleyball. May be taken at the beginning or intermediate level.  
Prerequisite: None

**PE 1681 1.0 hours**  
**Volleyball**  
Instruction in the fundamental skills, strategies and rules of power volleyball. May be taken at the beginning or intermediate level.  
Prerequisite: PE 1671

**PE 1711 1.0 hours**  
**Strength Training**  
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

**PE 1721 1.0 hours**  
**Strength Training**

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: PE 1711

**PE 1791 1.0 hours**  
**Varsity Baseball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: None

**PE 1801 1.0 hours**  
**Varsity Baseball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: PE 1791

**PE 1831 1.0 hours**  
**Varsity Basketball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: None

**PE 1841 1.0 hours**  
**Varsity Basketball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: PE 1831

**PE 1871 1.0 hours**  
**Varsity Soccer**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: None

**PE 1881 1.0 hours**  
**Varsity Soccer**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: PE 1871

**PE 1911 1.0 hours**  
**Varsity Softball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: None

**PE 1921 1.0 hours**  
**Varsity Softball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: PE 1911

**PE 1951 1.0 hours**  
**Varsity Volleyball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: None

**PE 1961 1.0 hours**  
**Varsity Volleyball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels.  
Prerequisite: PE 1951

**PE 2011 1.0 hours**  
**Aerobic Dance**  
An exercise program choreographed and set to music for continuous rhythmic activity. Selected conditioning exercises and dance movements are designed to allow students to work toward improved cardiovascular fitness. May be taken at the beginning, intermediate or advanced levels.  
Prerequisite: PE 1021

**PE 2021 1.0 hours**  
**Aerobic Dance**



An exercise program choreographed and set to music for continuous rhythmic activity. Selected conditioning exercises and dance movements are designed to allow students to work toward improved cardiovascular fitness. May be taken at the beginning, intermediate or advanced levels. Prerequisite: PE 2011

**PE 2031 1.0 hours**

**Aqua Aerobics**  
Introduction to various aquatic fitness class 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: PE 1041

**PE 2041 1.0 hours**

**Aqua Aerobics**  
Introduction to various aquatic fitness class 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: PE 2031

**PE 2042 2.0 hours**

**Lifeguarding**  
This course will include lifeguard skills for pool, waterpark, waterfront, CPR for Professional Rescuers and First Aid. American Red Cross certification is possible for those who qualify. The student should be able to swim 500 yds continuously using freestyle, breaststroke, elementary backstroke and sidestroke; surface dive to a minimum of 7 feet and retrieve a 10 pound objective; and tread water for 2 minutes using legs only. These skills must be successfully completed before the end of the first week of classes. Mandatory field trips scheduled for completion of skills. Prerequisite: None

**PE 2053 3.0 hours**

**Physical Education for Children**  
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. Prerequisite: None

**PE 2202 2.0 hours**

**Care & Prevention of Athletic Injuries**  
A study of the treatment of wounds, shock, poisoning, fractures, unconsciousness, stoppage of breathing, and the care and prevention of athletic injuries. Designed for physical education majors. Prerequisite: None

**PE 2231 1.0 hours**

**Martial Arts-Advanced**  
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: PE 1241

**PE 2241 1.0 hours**

**Martial Arts-Advanced**  
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: PE 2231

**PE 2301 1.0 hours**

**Golf**  
Introduction to the fundamental skills and rules of golf activities. May be taken at the beginning, intermediate or advanced levels. Prerequisite: PE 1311

**PE 2302 2.0 hours**

**Coaching Baseball**  
A physical education major course in organization and management of a competitive baseball program to include individual techniques, team play, rules and problems with coaching baseball. Includes "little league" applications. Prerequisite: None

**PE 2311 1.0 hours**

**Golf**

Introduction to the fundamental skills and rules of golf activities. May be taken at the beginning, intermediate or advanced levels. Prerequisite: PE 2301

**PE 2341 1.0 hours**

**Karate**  
Basic principles and practices of traditional Japanese karate through participation in systematically organized patterns of assertive/reactive exercises. May be taken at the beginning, intermediate or advanced levels. Prerequisite: PE 1351

**PE 2351 1.0 hours**

**Karate**  
Basic principles and practices of traditional Japanese karate through participation in systematically organized patterns of assertive/reactive exercises. May be taken at the beginning, intermediate or advanced levels. Prerequisite: PE 2341

**PE 2381 1.0 hours**

**Physical Fitness**  
Introduction to various lifelong fitness activities tailored to the individual student's age and fitness category. May be taken at the beginning, intermediate or advanced levels. Prerequisite: PE 1391

**PE 2391 1.0 hours**

**Physical Fitness**  
Introduction to various lifelong fitness activities tailored to the individual student's age and fitness category. May be taken at the beginning, intermediate or advanced levels. Prerequisite: PE 2381

**PE 2402 2.0 hours**

**Coaching Basketball**  
A course in organization and management of a competitive basket ball program. Topics include systems of offense and defense, game rules, training schedules and problems arising during training and the regular playing season. Prerequisite: PE 1121, 1131, 1831, 1841, 2831 or 2841, or consent of instructor

**PE 2502 2.0 hours**

**Coaching Volleyball**  
A study of the organization and management of a school volleyball program to include individual techniques, offensive and defensive strategy, rules and problems in coaching volleyball. Prerequisite: PE 1671, 1681, 1951, 1961, 2951 or 1961, or consent of instructor

**PE 2701-2705 1.0-5.0 hours**

**Independent Study-Physical 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. Prerequisite: None

**PE 2711-2715 1.0-5.0 hours**

**Special Topics-Physical Education**  
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. Prerequisite: None

**PE 2721 1.0 hours**

**Strength Training**  
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: PE 2711

**PE 2791 1.0 hours**

**Varsity Baseball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 1801

**PE 2801 1.0 hours**

**Varsity Baseball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercolle-

giate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 2791

**PE 2831 1.0 hours**

**Varsity Basketball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 1841

**PE 2841 1.0 hours**

**Varsity Basketball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 2831

**PE 2871 1.0 hours**

**Varsity Soccer**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 1881

**PE 2881 1.0 hours**

**Varsity Soccer**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 2871

**PE 2911 1.0 hours**

**Varsity Softball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 1921

**PE 2921 1.0 hours**

**Varsity Softball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 2911

**PE 2951 1.0 hours**

**Varsity Volleyball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 1961

**PE 2961 1.0 hours**

**Varsity Volleyball**  
A course in individual skills, team strategy and conditioning to prepare a team for intercollegiate competition. May be taken at the beginning, intermediate and advanced levels. Prerequisite: PE 1951

**PHYSICS**

**PH 1003 3.0 hours**

**Physical Science I**  
An introductory course in cosmology. Topics of student 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. Prerequisite: None

**PH 1023 3.0 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. Corequisite: PH 1032

**PH 1032 2.0 hours**

**Physical Science III Lab**  
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 3.0 hours**  
**Introduction to Physics Lec**  
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 Corequisite: PH 1112

**PH 1112 2.0 hours**  
**Introduction to Physics Lab**  
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 3.0 hours**  
**College Physics I Lec**  
A study of mechanics, properties of matter, and thermodynamics. Not recommended for math, physical science, or engineering students.  
Prerequisite: MT 1413 and 1403, 1505, or equivalent. Corequisite: PH 1712

**PH 1712 2.0 hours**  
**College Physics I Lab**  
A study of mechanics, properties of matter, and thermodynamics. Not recommended for math, physical science, or engineering students.  
Prerequisite: MT 1413 and 1403, 1505, or equivalent.

**PH 1803 3.0 hours**  
**College Physics II Lec**  
A continuation of PH 1703 and 1712, including a study of electricity, magnetism, light, and atomic physics. Not recommended for math, physical science, or engineering students.  
Prerequisite: PH 1703 & PH 1712 Corequisite: PH 1812

**PH 1812 2.0 hours**  
**College Physics II Lab**  
A continuation of PH 1703 and 1712, including a study of electricity, magnetism, light, and atomic physics. Not recommended for math, physical science, or engineering students.  
Prerequisite: PH 1703 & PH 1712

**PH 2001 1.0 hours**  
**Physical Science Lab**  
This course emphasizes and address the Key Skills that are identified in "Core Competencies and Key Skills" for Missouri schools (1991).  
Prerequisite: None

**PH 2103 3.0 hours**  
**General Physics I Lec**  
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 Corequisite: PH 2112

**PH 2112 2.0 hours**  
**General Physics I Lab**  
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 3.0 hours**  
**General Physics II Lec**  
A study of electricity, magnetism, light, and modern physics. Three hours lecture and two two-hour laboratory periods per week.  
Prerequisite: PH 2103 & PH 2112 Prerequisite or Corequisite: MT 2205 Corequisite: PH 2212

**PH 2212 2.0 hours**  
**General Physics II Lab**

A study of electricity, magnetism, light, and modern physics. Three hours lecture and two two-hour laboratory periods per week.  
Prerequisite: PH 2103 & PH 2112 Prerequisite or Corequisite: MT 2205

**PH 2701-2705 1.0-5.0 hours**  
**Independent Study-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.  
Prerequisite: None

**PH 2711-2715 1.0-5.0 hours**  
**Special Topics-Physics**  
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.  
Prerequisite: None

## POLITICAL SCIENCE

**PS 1103 3.0 hours**  
**Introduction to Political Science**  
A course which introduces the student to the theory and content of politics: specifically a comparative study of democratic and non-democratic governments. Basic concepts and approaches to the study of political activity are discussed. PS 1103 complies with the provisions of Section 170.011 RSMo. requiring the study of state and federal constitutions.  
Prerequisite: None

**PS 1203 3.0 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 RSMo. requiring the study of state and federal constitutions.  
Prerequisite: None

**PS 2103 3.0 hours**  
**International Relations**  
A study of the major factors underlying international relations: climate and geography, national concepts and institutions, and the development of foreign policy. Today's problems of developing nations, East vs. West, and nuclear potentials are considered.  
Prerequisite: None

**PS 2203 3.0 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 supervisions, financial control, personnel supervision, and democratic accountability. Prerequisite: None

**PS 2701-2705 1.0-5.0 hours**  
**Independent Study-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.  
Prerequisite: None

**PS 2711-2715 1.0-5.0 hours**  
**Special Topics-Political Science**  
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.  
Prerequisite: None

## PRECISION MACHINING

**MA 1161 1.0 hours**  
**Introduction to CNC Mill & Lathe Lec**  
An introductory course in Computer Nu-

merical 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: MA1241 and MA1242 or machine tool experience. Corequisite: MA 1162

**MA 1162 2.0 hours**  
**Introduction to CNC Mill & Lathe Lab**  
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: MA 1241 & MA 1242 or machine tool experience.

**MA 1211 1.0 hours**  
**Machine Tool I Lec**  
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. Prerequisite: None

**MA 1212 2.0 hours**  
**Machine Tool I Lab**  
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. Prerequisite: None

**MA 1221 1.0 hours**  
**Machine Tool II Lec**  
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: MA 1211 & MA 1212 Corequisite: MA 1222

**MA 1222 2.0 hours**  
**Machine Tool II Lab**  
A course that students basic machine shop math, basic computer numerical control, blue print reading, and shop theory. Projects are made using processes and machines in shop.  
Prerequisite: MA 1211 & MA 1212

**MA 1231 1.0 hours**  
**Advanced Machine Tool I Lec**  
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: MA 1221 & MA 1222 Corequisite: MA 1232

**MA 1232 2.0 hours**  
**Advanced Machine Tool I Lab**  
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: MA 1221 & MA 1222

**MA 1241 1.0 hours**  
**Advanced Machine Tool II Lec**  
A course that studies basic metallurgy, jigs and fixtures, advanced tooling, advanced blue print reading, and non-traditional machining practices.  
Prerequisite: MA 1231 & MA 1232 Corequisite: MA 1242

**MA 1242 2.0 hours**  
**Advanced Machine Tool II Lab**  
A course that studies basic metallurgy, jigs and fixtures, advanced tooling, advanced blue print reading, and non-traditional machining practices. Prerequisite: MA 1231 & MA 1232

**MA 1411 1.0 hours**  
**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. Prerequisite: None

**MA 1512** **2.0 hours**  
**CAD/CAM Fundamentals I/Mold Maker**  
 A course designed to introduce current CAD design methodologies used for mold design and CAM mold manufacturing methods used for CNC machine technology. Prerequisite: None

**MA 1612** **2.0 hours**  
**Mold Making Fundamentals I Lec**  
 A course designed to introduce mold making techniques using current machine tools and support equipment includes hand tools and manual fabrication of molds. Corequisite: MA 1613 Prerequisite: None

**MA 1613** **3.0 hours**  
**Mold Making Fundamentals I Lab**  
 A course designed to introduce mold making techniques using current machine tools and support equipment includes hand tools and manual fabrication of molds. Prerequisite: None

**MA 1622** **2.0 hours**  
**Mold Making Fundamentals II Lec**  
 The second course that expands upon the skills and methods used for mold manufacturing using current machine technology. Prerequisite: None

**MA 1623** **3.0 hours**  
**Mold Making Fundamentals II Lab**  
 The second course that expands upon the skills and methods used for mold manufacturing using current machine technology. Prerequisite: None

**MA 1713** **3.0 hours**  
**Mold Fabrication Processes**  
 A course designed to introduce alternative mold manufacturing processes with some focus on rapid manufacturing techniques and other state-of-the-art processes. Prerequisite: None

**MA 2211** **1.0 hours**  
**Measurement & Inspection Lec**  
 A study of measuring tools used in the production process, surface plate set up techniques, comparison usage, sine plates, surface testers, and coordinate measuring machines. Corequisite: MA 2212 Prerequisite: None

**MA 2212** **2.0 hours**  
**Measurement & Inspection Lab**  
 A study of measuring tool used in the production process, surface plate set up techniques, comparison usage, sine plates, surface testers, and coordinate measuring machines. Prerequisite: None

**MA 2221** **1.0 hours**  
**Advanced Machining & Processes Lec**  
 Advanced course work in CNC, EDM Electronic Discharge Machining, Honing, Roller burnishing, forming, mold making, production machining, and laser machining. Prerequisite: MA 1242 & MA 1242 Corequisite: MA 2222

**MA 2222** **2.0 hours**  
**Advanced Machining & Processes Lab**  
 Advanced course work in CNC, EDM Electronic Discharge Machining, Honing, Roller burnishing, forming, mold making, production machining, and laser machining. Prerequisite: MA 1241 & MA 1242

**MA 2313** **3.0 hours**  
**Metallurgy**  
 The study of materials such as plastic, composite, ceramic, carbon steel, tool steel, cast iron, aluminum's brass, bronze, and stainless steel. And the study of coatings, corrosion, alloying, and heat treating. Prerequisite: MA 1241 & MA 1242

**MA 2321** **1.0 hours**  
**Advanced CNC Machining Lec**  
 Applications of using CAD into CAM to the CNC machining process. Prerequisite: MA 1241, MA 1242, DF 2143, MA 1161, MA 1162, and MA 2513 Corequisite: MA 2322

**MA 2322** **2.0 hours**

**Advanced CNC Machining Lab**  
 Applications of using CAD into CAM to the CNC machining process. Prerequisite: MA 1241, MA 1242, DF 2143, MA 1161, MA 1162, and DF 2513

**MA 2411** **1.0 hours**  
**Geometric Dimensional Tolerance & Statistical Process Control Lec**  
 The application of geometric dimensional tolerance and statistical process control in the precision machining process. Prerequisite: DF 1012, DF 1021, MA 1241, and MA 1242. Corequisite: MA 2412

**MA 2412** **2.0 hours**  
**Geometric Dimensional Tolerance & Statistical Process Control Lab**  
 The application of geometric dimensional tolerance and statistical process control in the precision machining process. Prerequisite: DF 1012, DF 1021, MA 1241, and MA 1242.

**MA 2512** **2.0 hours**  
**CAD/CAM Fundamentals II/Mold Makers**  
 A second intensified course designed to further develop student experience as it applies to typical CAD and CAM for applications in mold manufacturing. Prerequisite: MA 1512

**MA 2513** **3.0 hours**  
**Computer Aided Manufacturing**  
 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. Prerequisite: MA 1241, MA 1242, DF 2143, MA 1161, & MA 1162.

**MA 2701-2705** **1.0-5.0 hours**  
**Independent Study-Mold Making**  
 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. Prerequisite: None

**MA 2711-2715** **1.0-5.0 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. Prerequisite: None

## PSYCHOLOGY

**PY 1103** **3.0 hours**  
**General Psychology**  
 A course designed to provide the student with a broad, general introduction to the field of psychology. It is a study of behavior designed to present an account of the significant concepts and findings of contemporary psychology. The course should provide a clear description of the bodies of knowledge in the core areas of psychology. Prerequisite: None

**PY 1203** **3.0 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** **3.0 hours**  
**Personal & 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** **3.0 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 2403** **3.0 hours**  
**Human Development**  
 A course designed to provide the student with a broad, general introduction to human development. The entire life span will be covered including those concepts and principles basic to an understanding of human development. Development will be studied using an integrated approach from the biological, psychological, sociological, and cultural perspectives. Prerequisite: PY 1103 or consent of instructor

**PY 2503** **3.0 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** **1.0-5.0 hours**  
**Independent Study-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 materials not currently available at ECC. For each semester hour enrolled, the student will be required to spend a minimum of two hours per week. Prerequisite: None

**PY 2711-2715** **1.0-5.0 hours**  
**Special Topics-Psychology**  
 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. Prerequisite: None

**PY 2803** **3.0 hours**  
**Family Violence 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** **3.0 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** **3.0 hours**  
**Probation & 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** **3.0 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 Developmental Services of Franklin County and the different programs offered to persons with developmental disabilities. Prerequisite: PY 1103 and consent of instructor.

**PY 2853** **3.0 hours**  
**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 0100-0103** **0.5-3.0 hours**  
**Workshop/Seminar**  
 Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**RE 1014** **4.0 hours**  
**Principles of Real Estate**  
 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** **3.0 hours**  
**Real Estate Appraisal**  
 An introduction to real estate appraisals, the study of the nature of real property, property values, general and local trends, site evaluation, building cost estimates, depreciation, and estimates on remodeling and modernization. Certification by the Independent Fee Appraisers Association may be necessary before employment. Offered evenings only. Prerequisite: None

**RE 2701-2705** **1.0-5.0 hours**  
**Independent Study-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. Prerequisite: None

**RE 2711-2715** **1.0-5.0 hours**  
**Special Topics-Real Estate**  
 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. Prerequisite: None

## RETAILING

**RT 0100-0103** **0.5-3.0 hours**  
**Workshop/Seminar**  
 Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**RT 2003** **3.0 hours**  
**Display Project**  
 A study of visual and promotional merchandising activities that are vital to the success of a retail firm. Topics include: promotional activities, public relations, construction and evaluation of displays and promotional budgets. Prerequisite: None

**RT 2013** **3.0 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 market place. Recognition of motivation and the reactions of consumers and related business influences is also covered.

Prerequisite: None

**RT 2023** **3.0 hours**  
**Merchandising I: Starting Your Own Business**  
 An introduction to the principles of retailing. Emphasis is on the development, interpretation, and use of fundamental management and merchandising skills. Topics include: establishing a retail store, merchandise planning, salesmanship, display, promotion, advertising, personnel, finance, and control. Particular attention is given to problem-solving through use of common retailing problems chosen to raise some of the major issues confronting retailing and retailers today. Prerequisite: None

**RT 2033** **3.0 hours**  
**Merchandising II**  
 A study of the problems inherent in merchandising including: buying, control, pricing for profit, planning sales, model stocks, and promotions. Arithmetic skills are stressed. Prerequisite: None

**RT 2043** **3.0 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 2053** **3.0 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: RT 2043 and retailing major

**RT 2701-2705** **1.0-5.0 hours**  
**Independent Study-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. Prerequisite: None

**RT 2711-2715** **1.0-5.0 hours**  
**Special Topics-Retailing**  
 A study of 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. Prerequisite: None

## SMALL ENGINE REPAIR

**SE 0100-0103** **0.5-3.0 hours**  
**Workshop/Seminar**  
 Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**SE 1015** **5.0 hours**  
**Small Engine Repair I**  
 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. Prerequisite: None

**SE 1025** **5.0 hours**  
**Small Engine Repair II**  
 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 on procedures for repair and replacement of engine parts and components. Small engine cooling, lubricating, electrical, and starting systems are studied. Engine overhaul and machine procedures are discussed in detail, and lab work includes the disassembly, measuring, and reassembly of engine components. Small engine tune-up is also covered. Prerequisite: None

**SE 2701-2705** **1.0-5.0 hours**  
**Independent Study-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. Prerequisite: None

**SE 2711-2715** **1.0-5.0 hours**  
**Special Topics-Small Engine Repair**  
 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. Prerequisite: None

## SOCIOLOGY

**SO 1103** **3.0 hours**  
**General Sociology**  
 An introductory course in the field of sociology with special emphasis on the scientific study of social relations, social organizations, social institutions, and social dynamics. Prerequisite: None

**SO 1203** **3.0 hours**  
**American Social Problems**  
 A study of select problems, including consideration of proposed lines of action in dealing with them. Problem areas include population, the affluent society, poverty, urban renewal, delinquency and crime, automation, the aging, ethnic and racial relations, and the role of the United States in the relationship to the underdeveloped areas of the world. Prerequisite: None

**SO 2103** **3.0 hours**  
**Human Relations**  
 An introduction to the applied principles of sociology and psychology as they relate to human interaction in small groups. Major emphasis is placed on analysis of the interaction process with a view toward additional understanding of individual and group behavior and the problems attendant to leadership. Prerequisite: None

**SO 2203** **3.0 hours**  
**Marriage & Family**  
 A study of the family, society, and the individual. The course includes background on American family patterns; premarital behavior; marriage and variations in family forms; and problems of the family today. Special emphasis is given to marriage and the family as a kind of human relationship. Prerequisite: consent of instructor

**SO 2303** **3.0 hours**  
**Introduction to Social Work**  
 A study of philosophy, historical development, and perspectives of social work. Prerequisite: SO 1103

**SO 2701-2705** **1.0-5.0 hours**  
**Independent Study-Sociology**  
 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. Prerequisite: None

**SO 2711-2715** **1.0-5.0 hours**  
**Special Topics-Sociology**  
 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. Prerequisite: None

## WELDING

**WL 0100-0103** **0.5-3.0 hours**  
**Workshop/Seminar**  
 Introductory level course designed to upgrade or develop specific skills relative to current or anticipated employment. Prerequisite: None

**WL 1001** **1.0 hours**  
**Personal Welding**  
 A course designed to introduce the student to his or her home welder and its related functions. Prerequisite: None

**WL 1011** **1.0 hours**  
**Welding I Lec (Introductory)**  
 An introduction to oxygen-acetylene brazing, cutting, and electric arc welding. The study of safety in oxy-acetylene and electric arc welding is also included. Prerequisite: None

**WL 1013** **3.0 hours**  
**Welding I Lab (Introductory)**  
 An introduction to oxygen-acetylene brazing, cutting, and electric arc welding. The study of safety in oxy-acetylene and electric arc welding is also included. Prerequisite: None

**WL 1021** **1.0 hours**  
**Welding II Lec (All Position SMAW)**  
 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 gouging is also included. Prerequisite: WL 1011, WL 1013 Corequisite: WL 1023

**WL 1023** **3.0 hours**  
**Welding II Lab (All Position SMAW)**

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 gouging is also included. Prerequisite: WL 1011, WL 1013

**WL 1031** **1.0 hours**  
**Welding III Lec (Advanced SMAW)**  
 A course which stresses the skills in SMAW of groove welds in the 1G, 2G, 3G, 4G and 45 positions. The study of welding codes and standards, and testing and inspecting of welds will also be covered. Prerequisite: WL 1011, WL 1013, WL 1021, WL 1023 Corequisite: WL 1033

**WL 1033** **3.0 hours**  
**Welding III Lab (Advanced SMAW)**  
 A course which stresses the skills in SMAW of groove welds in the 1G, 2G, 3G, 4G and 45 positions. The study of welding codes and standards, and testing and inspecting of welds will also be covered.

Prerequisite: WL 1011, WL 1013, WL 1021, WL 1023

**WL 1041** **1.0 hours**  
**Welding IV Lec (GMAW)**  
 A course which stresses the development of skills in GMAW of fillet and groove welds in the flat, horizontal, vertical and overhead positions. GMAW and FCAW equipment, setup and operation and shielding gases are among the topics to be discussed. Prerequisite: WL 1011, WL 1013, WL 1021, WL 1023, WL 1031, WL 1033 Corequisite: WL 1044

**WL 1044** **4.0 hours**  
**Welding IV Lab GMAW**  
 A course which stresses the development of

All statements in this publication including fees are subject to change at any time without prior notification. They are not to be regarded as offers to contract. The time(s) and/or day(s) that classes are scheduled to meet is tentative. Due to space limitations and a capacity enrollment, the time that a class is scheduled to meet may need to be changed.

**Policy of Non-Discrimination**

Applicants for admission and employment, students, employees, and sources of referral of applicants for admission and employment are hereby notified that East Central College does not discriminate on the basis of race, color, religion, national origin, ancestry, gender, age, disability, or veteran status in admission, or access to, or treatment in, employment practices.

**Contact information:**

- If you are a person with special needs and require assistance or services, please contact the counseling office and a representative will discuss your needs.
- If you are a person with a hearing disability, our TDD number is (636) 583-4851.
- Inquiries concerning compliance may be directed to Director of Human Resource Services, East Central College, P.O. Box 529, Union, Missouri, 63084, Telephone (636) 583-5193.