

COURSE DESCRIPTIONS

This catalog reflects course descriptions detailed in THE ALABAMA COMMUNITY COLLEGE SYSTEM COURSE DIRECTORY.

Developmental courses (all courses numbered below 100) are most likely nontransferable. For institutional accounting and for certain types of financial aid these courses are counted toward a student's credit load. These courses are counted in semester grade point calculations, but these courses will not count toward graduation requirements at Northeast.

The following course descriptions have been coded in accordance with the AGSC Transfer Code Designations as explained below:

CODE A = AGSC approved transfer courses in Areas I – IV that are common to all institutions.

CODE B = Area V courses that are deemed appropriate to the degree and pre-major requirements of individual students.

CODE C = Potential Area V transfer courses that are subject to approval by respective receiving institutions.

Some courses may be offered through distance learning. Please check the schedule of courses each semester to identify these courses.

ACCOUNTING (ACC)

ACC 129. INDIVIDUAL INCOME TAXES. – 3 hours.

PREREQUISITE: As required by program.

This course introduces the relevant laws governing individual income taxation. Emphasis is placed on filing status, exemptions for dependents, gross income, adjustments, deductions, and computation of tax. Upon completion, students should be able to complete various tax forms pertaining to the topics covered in the course.

ACCOUNTING TECHNOLOGY (ACT)

ACT 249. PAYROLL ACCOUNTING. – 3 hours.

This course focuses on federal, state and local laws affecting payrolls. Emphasis is on payroll accounting procedures and practices, and on payroll tax reports. Upon completion of this course, the student will be able to apply knowledge of federal, state and local laws affecting payrolls. CORE

AIR CONDITIONING AND REFRIGERATION TECHNOLOGY (ACR)

ACR 111. PRINCIPLES OF REFRIGERATION. – 3 hours.

This course emphasizes the fundamental principles for air conditioning and refrigeration. Instruction is provided in the theory and principles of refrigeration and heat transfer, HVAC/R system components, common, and specialty tools for HVAC/R, and application of the concepts of basic compression refrigeration. Upon completion, students should identify system components and understand their functions, identify and use common and specialty HVAC/R tools, and maintain components of a basic compression refrigeration system. This is a CORE course.

ACR 112. HVACR SERVICE PROCEDURES. – 3 hours.

PREREQUISITE: As determined by college

This course covers system performance checks and refrigerant cycle diagnosis. Emphasis is placed on the use of refrigerant recovery/recycle units, industry codes, refrigerant coils and correct methods of charging and recovering refrigerants. Upon completion, students should be able to properly recover/recycle refrigerants and demonstrate safe, correct service procedures which comply with the no-venting laws.

ACR 113. REFRIGERATION PIPING PRACTICES.

– 3 hours.

PREREQUISITES: As determined by college.

The course introduces students to the proper installation procedures of refrigerant piping and tubing for the heating, ventilation, air conditioning and refrigeration industry. This course includes various methods of working with and joining tubing. Upon completion, students should comprehend related terminology, and be able to fabricate pipe, tubing, and pipe fittings. CORE

ACR 119. FUNDAMENTALS OF GAS HEATING SYSTEMS. – 3 hours.

PREREQUISITES: As determined by college.

This course provides instruction on general service and installation for common gas furnace system components. Upon completion, students will be able to install and service gas furnaces in a wide range of applications.

ACR 121. PRINCIPLES OF ELECTRICITY FOR HVACR. – 3 hours.

This course is designed to provide the student with the basic knowledge of electrical theory and circuitry as it pertains to air conditioning and refrigeration. This course emphasizes safety, definitions, symbols, laws, circuits, and electrical test instruments. Upon completion students should understand and be able to apply the basic principles of HVACR circuits and circuit components. This is a CORE course.

ACR 122. HVACR ELECTRIC CIRCUITS. – 3 hours.

PREREQUISITE: As determined by college.

This course introduces the student to electrical circuits and diagrams. Electrical symbols and basic wiring diagrams are constructed in this course. Upon completion, student should understand standard wiring diagrams and symbols and be able to construct various types of electrical circuits. This is a CORE course.

ACR 123. HVAC/R ELECTRICAL COMPONENTS.

– 3 hours.

PREREQUISITE: As required by college.

This course introduces students to electrical components and controls. Emphasis is placed of the operations on motors, relays, contactors, starters, and other HVAC electrical components. Upon completion, students should be able to install electrical components and determine their proper operation. This is a CORE course.

ACR 128. HEAT LOAD CALCULATIONS. – 3 hours.

PREREQUISITE: As required by college.

This course focuses on heat flow into and out of building structures. Emphasis is placed on determining heat gain/heat loss of a given structure. Upon completion, students should be able to calculate heat load and determine HVAC equipment size requirements.

ACR 134. ICE MACHINES. – 3 hours.

PREREQUISITE: As required by college.

This course introduces students to commercial ice machines. Emphasis is placed on components, electrical and mechanical operation sequences, control adjustment procedures, preventive maintenance, repairs, and installation procedures. Upon completion, student should be able to install, service and repair commercial ice machines.

ACR 135. MECHANICAL/GAS/SAFETY CODES. – 3 hours

PREREQUISITE: As required by college.

This course is to enhance the student's knowledge of the International Fuel Gas Code and International Mechanical Code as well as fire and job safety requirements. Emphasis is placed on code book content and compliance with installation requirements. Upon completion, students should be able to apply code requirements to all work.

ACR 138. CUSTOMER RELATION IN HVAC. – 3 hours.

PREREQUISITE: As required by college.

This course covers the basic aspects of customer relations needed be the HVAC technician. Topics include employability skills associated with job performance, record keeping, service invoices, certification requirements, local ordinances, and business ethics. Upon completion, students should be able to get a job and keep it.

ACR 144. BASIC DRAWING AND BLUEPRINT READING IN HVAC. – 3 hours.

PREREQUISITE: As required by college.

This course covers basic drawing and blueprint reading as applied to the HVAC industry. Emphasis is on three-view drawings, basic duct systems, and isometric piping. Upon course completion, students should be able to perform basic drawings related to HVAC systems and read pertinent blueprints.

ACR 147. REFRIGERANT TRANSITION AND RECOVERY THEORY. – 3 hours.

PREREQUISITE: As determined by college.

This course is EPA-approved and covers material relating to the requirements necessary for type I, II, and III universal certification. Upon completion, students should be prepared to take the EPA 608 certification examination.

ACR 148. HEAT PUMP SYSTEMS I. – 3 hours.

PREREQUISITE: As determined by college.

Instruction received in this course centers around the basic theory and application of heat pump systems and components. Upon completion students will be able to install and service heat pumps in a wide variety of applications.

ACR 181. SPECIAL TOPICS IN AIR CONDITIONING AND REFRIGERATION I. – 3 hours.

PREREQUISITE: As required by college.

This course provides specialized instruction in various areas related to the air conditioning and refrigeration industry.

ACR 200. REVIEW FOR CONTRACTORS EXAM. – 3 hours.

PREREQUISITE: As required by collage.

This course prepares students to take the State Certification Examination. Emphasis is placed on all pertinent codes, piping

procedures, duct design, load calculation, psychometrics, installation procedures, and air distribution. Upon completion, students should be prepared to take the contractors exam.

ACR 203. COMMERCIAL REFRIGERATION. – 3 hours.

PREREQUISITE: As determined by college.

This course focuses on commercial refrigeration systems. Emphasis is placed on evaporators, condensers, compressors, expansion devices, special refrigeration components and application of refrigeration systems. Upon completion students should be able to service and repair commercial refrigeration systems.

ACR 205. SYSTEM SIZING AND AIR DISTRIBUTION. – 3 hours.

PREREQUISITE: As required by college.

This course provides instruction in the load calculation of a structure and system sizing. Topics of instruction include heat loss, heat gain, equipment and air distribution sizing, and factors making acceptable indoor air quality. Upon course completion, students should be able to calculate system requirements.

ACR 210. TROUBLESHOOTING HVACR SYSTEMS. – 3 hours.

PREREQUISITE: As determined by college.

This course provides instruction in the use of various meters and gauges used in the HVACR industry. Emphasis is placed on general service procedures, system diagnosis, and corrective measure, methods of leak detection, and system evacuation, charging and performance checks. Upon completion students should be able to perform basic troubleshooting of HVAC/R.

ADVANCED MANUFACTURING (ADM)

ADM 101. PRECISION MEASUREMENT. – 3 hours.

This course covers the use of precision measurement instruments utilized in inspection. In addition, basic print reading techniques reverse engineering, and related industry standards required in advanced manufacturing disciplines are covered. Upon completion, students should be able to demonstrate correct use of precision measuring instruments, interpret basic prints and apply basic reverse engineering techniques.

ADM 114. DESIGN INNOVATION. – 3 hours.

This course introduces students to concepts that enable them to think like a designer when approaching architectural, engineering and additive manufacturing tasks. Emphasis will be placed on design and problem-solving skills when working independently, or with a team. This course focuses on giving students exposure to creativity, problem solving skills, and the design processes in which a design-centered approached will be employed to develop innovated solutions. This course includes components to develop basic skills to express innovated solutions to design problems with the application of projects, drawings, as well as oral and written communication skills. Students will be introduced to related computer based tools used by architect, engineers, and design manufacturers. (e.g., spreadsheet, word processing, presentation software, and Internet).

ADM 150. TECHNICAL COOPERATIVE EDUCATION. – 1 hour.

Students work on a part-time basis in a job directly related to applied technologies. The employer and supervising instructor evaluate

students' progress. Upon course completion, students will be able to apply skills and knowledge in an employment setting.

ADM 151. TECHNICAL COOPERATIVE EDUCATION.

– 1 hour.

Students work on a part-time basis in a job directly related to applied technologies. The employer and supervising instructor evaluate students' progress. Upon course completion, students will be able to apply skills and knowledge in an employment setting.

ADM 152. TECHNICAL COOPERATIVE EDUCATION.

– 1 hour.

Students work on a part-time basis in a job directly related to applied technologies. The employer and supervising instructor evaluate students' progress. Upon course completion, students will be able to apply skills and knowledge in an employment setting.

ADM 153. TECHNICAL COOPERATIVE EDUCATION.

– 1 hour.

Students work on a part-time basis in a job directly related to applied technologies. The employer and supervising instructor evaluate students' progress. Upon course completion, students will be able to apply skills and knowledge in an employment setting.

ADM 154. TECHNICAL COOPERATIVE EDUCATION.

– 1 hour.

Students work on a part-time basis in a job directly related to applied technologies. The employer and supervising instructor evaluate students' progress. Upon course completion, students will be able to apply skills and knowledge in an employment setting.

ADM 160. ADDITIVE MANUFACTURING PRODUCTION TECHNIQUES. – 3 hours.

In this class student will utilize the various Additive Manufacturing (AM) design software to learn different techniques of building additively. Student will engaged in using the software and build theory to discover best build for the part. Tool paths, angles, rotation and build support will be discussed. Additive process will include polymers and powders. Cost and build time will be calculated on the different build parameters.

ADM 261. REVERSE ENGINEERING. – 3 hours.

PREREQUISITE: As determined by college.

During this course students learn the process of quality control inspection of parts and uses of reverse engineering processes employing 3D printing, scanning, and Coordinate Measuring Machine (CMM technologies). Emphasis is on using applicable software to produce 3D models or converting scanned images into 3D models; using CMM for parts inspection and generating points cloud for 3D modeling; interfacing generated models with reverse engineering methods.

ART (ART)

ART 100. ART APPRECIATION. – 3 hours. A

This course is designed to help the student find personal meaning in works of art and develop a better understanding of the nature and validity of art. Emphasis is on the diversity of form and content in original art work. Upon completion, students should understand the fundamentals of art, the materials used and have a basic overview of the history of art.

ART 113. DRAWING I. – 3 hours. B

This course provides the opportunity to develop perceptual and technical skills in a variety of media. Emphasis is placed on communication through experimenting with composition, subject matter and technique. Upon completion, students should demonstrate and apply the fundamentals of art to various creative drawing projects.

ART 114. DRAWING II. – 3 hours. B

PREREQUISITE: Drawing I.

This course advances the students drawing skills in various art media. Emphasis is placed on communication through experimentation, composition, technique and personal expression. Upon completion, students should demonstrate creative drawing skills, the application of the fundamentals of art, and the communication of personal thoughts and feelings.

ART 121. TWO-DIMENSIONAL COMPOSITION I.

– 3 hours. B

PREREQUISITE: Determined by instructor.

This course introduces the basic of concepts of two-dimensional design. Topics include the elements and principles of design with emphasis on the arrangements and relationships among them. Upon completion, students should demonstrate an effective use of these elements and principles of design in creating two-dimensional compositions.

ART 127. THREE-DIMENSIONAL COMPOSITION.

– 3 hours. B

PREREQUISITE: ART 113 OR ART 121, and permission of instructor.

This course introduces art materials and principles of design that acquaint the beginner with the fundamentals of three-dimensional art. Emphasis is placed on the use of art fundamentals and the creative exploration of materials in constructing three-dimensional art works. Upon completion, students should demonstrate basic technical skills and a personal awareness of the creative potential inherent in three dimensional art forms.

ART 133. CERAMICS I. – 3 hours. C

PREREQUISITE: As required by college.

This course introduces methods of clay forming as a means of expression. Topics may include hand building, wheel throwing, glazing, construction, design, and the functional and aesthetic aspects of pottery. Upon completion, students should demonstrate through their work, a knowledge of the methods, as well as an understanding of the craftsmanship and aesthetics involved in ceramics.

ART 134. CERAMICS II. – 3 hours. C

PREREQUISITE: ART 133.

This course develops the methods of clay forming as a means of expression. Topics may include hand building, glazing, design and the functional and aesthetic aspects of pottery, although emphasis will be placed on the wheel throwing method. Upon completion, students should demonstrate improved craftsmanship and aesthetic quality in the production of pottery.

ART 203. ART HISTORY I. – 3 hours. A

This course covers the chronological development of different forms of art, such as sculpture, painting, and architecture. Emphasis is placed on history from the ancient period through the Renaissance. Upon completion, students should be able to communicate a knowledge of time period and chronological sequence including a knowledge of themes, styles and of the impact of society on the arts.

ART 204. ART HISTORY II. – 3 hours. A

This course covers a study of the chronological development of different forms of art, such as sculpture, painting and architecture. Emphasis is placed on history from the Baroque to the present. Upon completion, students should be able to communicate a knowledge of time period and chronological sequence including a knowledge of themes, styles and of the impact of society on the arts.

ART 216. PRINTMAKING I. – 3 hours. C

PREREQUISITE: ART 113, ART 121, and/or as required by program.

This course introduces various printmaking processes. Topics include relief, intaglio, serigraphy, or lithography and the creative process. Upon completion, students should have a basic understanding of the creative and technical problems associated with printmaking.

ART 217. PRINTMAKING II. – 3 hours. C

PREREQUISITE: ART 216 and/or as required by program.

This course provides the opportunity for the student to study a printmaking process beyond the introductory level. Emphasis is placed on creativity, composition, and technique in the communication of ideas through printmaking. Upon completion, students should demonstrate an understanding of the printmaking process as a creative tool for the expression of ideas.

ART 233. PAINTING I. – 3 hours. B

PREREQUISITE: ART 113, ART 121, and/or as required by program.

This course is designed to introduce the student to fundamental painting processes and materials. Topics include art fundamentals, color theory, and composition. Upon completion, students should be able to demonstrate the fundamentals of art and discuss various approaches to the media and the creative processes associated with painting.

ART 234. PAINTING II. – 3 hours. C

PREREQUISITE: ART 233.

This course is designed to develop the student's knowledge of the materials and procedures of painting beyond the introductory level. Emphasis is placed on the creative and technical problems associated with communicating through composition and style. Upon completion, students should be able to demonstrate the application of the fundamentals of painting and the creative process to the communication of ideas.

ART 243. SCULPTURE I. – 3 hours. C

PREREQUISITE: ART 125, ART 127 and/or as required by program.

This course provides a study of three-dimensional form by familiarizing students with sculpting media and techniques. Topics include the fundamentals of art, sculpting media with emphasis on the creative process. Upon completion, students should understand the fundamentals of art and three-dimensional form, as well as the various media and processes associated with sculpture.

ART 244. SCULPTURE II. – 3 hours. C

PREREQUISITE: ART 243

This course is designed to sharpen skills in the media and processes of sculpture. Emphasis is placed on personal expression through three-dimensional form. Upon completion, students should be able to apply the fundamentals of art, their knowledge of form, and the sculptural processes to communicating ideas.

ASTRONOMY (AST)

AST 220. INTRODUCTION TO ASTRONOMY.

– 4 hours. A

This course covers the history of astronomy and the development of astronomical thought leading to the birth of modern astronomy and its most recent development. Emphasis is placed on the coverage of astronomical instruments and measuring technologies, the solar system, the Milky Way galaxy, important extra galactic objects and cosmology. Laboratory is required.

BASIC STUDY SKILLS (BSS)

BSS 115. SUCCESS AND STUDY SKILLS. – 1 hour. C

This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal setting, and critical thinking. Upon completion, students should be able to apply appropriate study strategies and techniques to the development of an effective study plan.

BIOLOGY (BIO)

BIO 103. PRINCIPLES OF BIOLOGY I. – 4 hours. A

This is an introductory course for science and non-science majors. It covers physical, chemical, and biological principles common to all organisms. These principles are explained through a study of cell structure and function, cellular reproduction, basic biochemistry, cell energetics, the process of photosynthesis, and Mendelian and molecular genetics. Also included are the scientific method, basic principles of evolution, and an overview of the diversity of life with emphasis on viruses, prokaryotes, and protist. A 120 minute laboratory is required.

BIO 104. PRINCIPLES OF BIOLOGY II. – 4 hours. A

This course is an introduction to the basic ecological and evolutionary relationships of plants and animals and a survey of plant and animal diversity including classification, morphology, physiology, and reproduction. A 180 minute laboratory is required.

BIO 201. HUMAN ANATOMY AND PHYSIOLOGY I.

– 4 hours. B

Human Anatomy and Physiology I covers the structure and function of the human body. Included is an orientation of the human body, basic principles of chemistry, a study of cells and tissues, metabolism, joints, the integumentary, skeletal, muscular, and nervous systems, and the senses. Dissection, histological studies, and physiology are featured in the laboratory experience. A 120 minute laboratory is required.

BIO 202. HUMAN ANATOMY AND PHYSIOLOGY II.

– 4 hours. B

Human Anatomy and Physiology II covers the structure and function of the human body. Included is a study of basic nutrition, basic principles of water, electrolyte, and acid-base balance, the endocrine, respiratory, digestive, excretory, cardiovascular, lymphatic, and reproductive systems. Dissection, histological studies, and physiology are featured in the laboratory experience. A 120 minute laboratory is required.

BIO 220. GENERAL MICROBIOLOGY. – 4 hours. B
(RECOMMENDED 4 SEMESTER HOURS OF CHEMISTRY).

This course includes historical perspectives, cell structure and function, microbial genetics, infectious diseases, immunology, distribution, physiology, culture, identification, classification, and disease control of microorganisms. The laboratory experience includes microtechniques, distribution, culture, identification, and control. Two 120 minute laboratories are required.

BIO 230. HUMAN PATHOPHYSIOLOGY. – 4 hours. C

PREREQUISITE: BIO 201, BIO 202, AND BIO 220.

Human Pathophysiology covers the nature, etiology, prognosis, prevention, and therapeutics of human disease. A 120 minute laboratory is required.

BUSINESS (BUS)**BUS 146. PERSONAL FINANCE. – 3 hours. C**

PREREQUISITE: As Required by program.

This course is a survey of topics of interest to the consumer. Topics include budgeting, financial institutions, basic income tax, credit, consumer protection, insurance, house purchase, retirement planning, estate planning, investing, and consumer purchases.

BUS 147. INTRO TO FINANCE. – 3 hours. C

This course is a survey of monetary and credit systems. Topics include the role of the Federal Reserve System, sources of capital, including forms of long-term corporate financing, and consumer credit in the financial structure of our economy.

BUS 175. RETAILING. – 3 hours. C

This course is a study of the principles and practices of retailing. Topics include planning, policies and procedures of distribution, store design, layout and location, the economic and social role of retailing, competitive strategies, and retail management.

BUS 176. PROMOTIONAL STRATEGIES. – 3 hours. C

This course provides an overview of the tools and techniques used by businesses in their promotional strategies. Topics include variables affecting promotional decision, information needed to access these variables, the strengths and limitations of methods and strategies, and the fundamentals of managerial decision making.

BUS 177. SALESMANSHIP. – 3 hours. C

This course provides an introduction to the principles and practices of ethical salesmanship. Topics include industrial and retail selling methods of market analysis, professional salesmanship and sales methods, consumer types, attitudes, and behavior.

BUS 178. PURCHASING. – 3 hours. C

This course provides an overview of the principles of purchasing for resale. Topics include buying techniques, market buying systems, financial management of purchasing department, market information systems, and problems confronting retail and wholesale buyers.

BUS 186. ELEMENTS OF SUPERVISION. – 3 hours. C

This course is an introduction to the fundamentals of supervision. Topics include the functions of management, responsibilities of the supervisor, management-employee relations, organizational structure, project management, and employee training and rating.

BUS 215. BUSINESS COMMUNICATION. – 3 hours. C

This course covers written, oral and nonverbal communications. Topics include the application of communication principles to the production of clear, correct, and logically organized faxes, e-mail, memos, letters, resumes, reports, and other business communications.

BUS 241. PRINCIPLES OF ACCOUNTING I. – 3 hours. B

This course is designed to provide a basic theory of accounting principles and practices used by service and merchandising enterprises. Emphasis is placed on financial accounting, including the accounting cycle, and financial statement preparation analysis.

BUS 242. PRINCIPLES OF ACCOUNTING II.
– 3 hours. B

PREREQUISITE: BUS 241.

This course is a continuation of BUS 241. In addition to a study of financial accounting, this course also places emphasis upon managing accounting, with coverage of corporations, statement analysis introductory cost accounting, and use of information for planning, and decision making.

BUS 245. ACCOUNTING WITH QUICKBOOKS.

– 3 hours.

PREREQUISITE: As required by college.

COREQUISITES: As required by college.

This course will introduce students to computerized accounting systems using QuickBooks. Students will set up and perform routine tasks such as recording business transactions, maintaining customer and vendor files, vouchering, controlling inventory, processing sales, maintaining fixed asset and depreciation schedules, and preparing payroll. Additional procedures covered include setting up a chart of accounts, summarizing data, generating financial reports and banking transactions.

BUS 246. COMPUTERIZED ACCOUNTING.

– 3 hours. C.

PREREQUISITE: BUS 242. Principles of Accounting II.

This course utilizes the microcomputer in a study of accounting principles and practices. Emphasis is on the preparation and analysis of financial statements, measuring business activities, and making rational business decisions.

BUS 248. MANAGERIAL ACCOUNTING. – 3 hours. B

PREREQUISITE: BUS 241

This course is designed to familiarize the student with management concepts and techniques of industrial accounting procedures. Emphasis is placed on cost behavior, contribution approach to decision-making, budgeting, overhead analysis, cost-volume-profit analysis, and cost accounting systems.

BUS 263. THE LEGAL AND SOCIAL ENVIRONMENT OF BUSINESS. – 3 hours. B

This course provides an overview of the legal and social environment for business operations with emphasis on contemporary issues and subsequent impact on business. Topics include the Constitution, the Bill of Rights, the legislative process, civil and criminal law, administering agencies, trade regulations, consumer protection, contracts, employment and personal property.

BUS 271. BUSINESS STATISTICS I. – 3 hours. B

PREREQUISITE: Two years of high school Algebra, Intermediate Algebra (MTH 100), or appropriate score on Math Placement Test.

This is an introductory study of basic statistical concepts applied to economic and business problems. Topics include the collection, classification and presentation of data, statistical description and analysis of data, measures of central tendency and dispersion, elementary probability, sampling, estimation and introduction to hypothesis testing.

BUS 272. BUSINESS STATISTICS II. – 3 hours. B

PREREQUISITE: BUS 271.

This course is a continuation of BUS 271. Topics include sampling theory, statistical inference, regression and correlation, chi square, analysis of variance, time series index numbers, and decision theory.

BUS 275. PRINCIPLES OF MANAGEMENT. – 3 hours. B

This course provides a basic study of the principles of management. Topics include planning, organizing, staffing, directing, and controlling with emphasis on practical business applications.

BUS 276. HUMAN RESOURCE MANAGEMENT.

– 3 hours. C

This course provides an overview of the responsibilities of the supervisor of human resources. Topics include the selection, placement, testing, orientation, training, rating, promotion, and transfer of employees.

BUS 279. SMALL BUSINESS MANAGEMENT.

– 3 hours. C

PREREQUISITE: As required by program.

This course provides an overview of the creation and operation of a small business. Topics include buying a franchise, starting a business, identifying capital resources, understanding markets, managing customer credit, managing accounting systems, budgeting systems, inventory systems, purchasing insurance, and the importance of appropriate legal counsel.

BUS 285. PRINCIPLES OF MARKETING. – 3 hours. B

This course provides a general overview of the field of marketing. Topics include marketing strategies, channels of distribution, marketing research, and consumer behavior.

BUS 296. BUSINESS INTERNSHIP. – 3 hours. C

PREREQUISITE: Minimum 6 semester hours completed. Minimum GPA 2.0

This course allows the student to apply knowledge and skills in a real-world work place. Evaluation is based upon a well-developed portfolio, job-site visits by the instructor, the employer's evaluation of the student, and the development and assessment by the student of a learning contract.

CHEMISTRY (CHM)**CHM 104. INTRODUCTION TO INORGANIC CHEMISTRY. – 4 hours. A**

PREREQUISITE: MTH 098 or equivalent mathematics placement score.

This is a survey course of general chemistry for students who do not intend to major in science or engineering and may not be substituted for CHM 111. Lecture will emphasize the facts, principles, and theories

of general chemistry including math operations, matter and energy, atomic structure, symbols and formulas, nomenclature, the periodic table, bonding concepts, equations, reactions, stoichiometry, gas laws, phases of matter, solutions, pH, and equilibrium reactions. Laboratory is required.

CHM 105. INTRODUCTION TO ORGANIC CHEMISTRY. – 4 hours. A

PREREQUISITE: CHM 104 or CHM 111.

This is a survey course of organic chemistry and biochemistry for students who do not intend to major in science or engineering. Topics will include basic nomenclature, classification of organic compounds, typical organic reactions, reactions involved in life processes, function of biomolecules, and the handling and disposal of organic compounds. Laboratory is required.

CHM 111. COLLEGE CHEMISTRY I. – 4 hours. A

PREREQUISITE: MTH 112 or equivalent mathematics placement score.

This is the first course in a two-semester sequence designed for the science or engineering major who is expected to have a strong background in mathematics. Topics in this course include measurement, nomenclature, stoichiometry, atomic structure, equations and reactions, basic concepts of thermochemistry, chemical and physical properties, bonding, molecular structure, gas laws, kinetic-molecular theory, condensed matter, solutions, colloids, and some descriptive chemistry topics. Laboratory is required.

CHM 112. COLLEGE CHEMISTRY II. – 4 hours. A

PREREQUISITE: CHM 111.

This is the second course in a two-semester sequence designed primarily for the science and engineering student who is expected to have a strong background in mathematics. Topics in this course include chemical kinetic, chemical equilibria, acids and bases, ionic equilibria of weak electrolytes, solubility product principle, chemical thermodynamics, electrochemistry, oxidation-reduction, nuclear chemistry, an introduction to organic chemistry and biochemistry, atmospheric chemistry, and selected topics in descriptive chemistry including the metals, nonmetals, semi-metals, coordination compounds, transition compounds, and post-transition compounds. Laboratory is required.

CHM 221. ORGANIC CHEMISTRY I. – 4 hours. B

PREREQUISITE: CHM 112.

This is the first course in a two-semester sequence. Topics in this course include nomenclature, structure, physical and chemical properties, synthesis, and typical reactions for aliphatic, alicyclic, and aromatic compounds with special emphasis on reactions mechanisms, spectroscopy, and stereochemistry. Laboratory is required and will include the synthesis and confirmation of representative organic compounds with emphasis on basic techniques.

CHM 222. ORGANIC CHEMISTRY II. – 4 hours. B

PREREQUISITE: CHM 221.

This is the second course in a two-semester sequence. Topics in this course include nomenclature, structure, physical and chemical properties, synthesis, and typical reactions for aliphatic, alicyclic, aromatic, and biological compounds, polymers and their derivatives, with special emphasis on reaction mechanisms, spectroscopy, and stereochemistry. Laboratory is required and will include the synthesis and confirmation representative organic compounds with emphasis on basic techniques.

CHILD DEVELOPMENT (CHD)

CHD 100. INTRODUCTION TO EARLY CARE AND EDUCATION OF CHILDREN. – 3 hours. C

PREREQUISITE: As required by program.

This course introduces the child care profession including the six functional areas of the Child Development Associate (CDA) credential. Emphasis is placed on using positive guidance techniques, setting up a classroom and planning a schedule. Upon completion students should be able to create and modify children's environments to meet individual needs, use positive guidance to develop positive relationships with children, and promote children's self-esteem, self-control, and self-motivation.

CHD 201. CHILD GROWTH AND DEVELOPMENT PRINCIPLES. – 3 hours. C

PREREQUISITE: As required by program.

This course is a systematic study of child growth and development from conception through early childhood. Emphasis is placed on principles underlying physical, mental, emotional, and social development, and on methods of child study and practical implications. Upon completion, students should be able to use knowledge of how young children differ in their development and approaches to learning to provide opportunities that support the physical, social, emotional, language, cognitive, and aesthetic development of children.

CHD 202. CHILDREN'S CREATIVE EXPERIENCES. – 3 hours. C

PREREQUISITE: As required by program.

This course focuses on fostering creativity in preschool children and developing a creative attitude in teachers. Topics include selecting and developing creative experiences in language arts, music, science, math, and movement with observation and participation with young children required. Upon completion, students should be able to select and implement creative and age-appropriate experiences for young children.

CHD 203. CHILDREN'S LITERATURE AND LANGUAGE DEVELOPMENT. – 3 hours. C

PREREQUISITE: As required by program.

This course surveys appropriate literature and language arts designed to enhance young children's speaking, listening pre-reading and writing skills. Emphasis is placed on developmental appropriateness as related to language. Upon completion, students should be able to create, evaluate, and demonstrate activities which support a language-rich environment for young children.

CHD 204. METHODS AND MATERIALS FOR TEACHING CHILDREN. – 3 hours. C

PREREQUISITE: As required by program.

This course introduces basic methods and materials used in teaching young children. Emphasis is placed on students compiling a professional resource file of activities used for teaching math, language arts, science, and social studies concepts. Upon completion students should be able to demonstrate basic methods of creating learning experiences using appropriate techniques, materials, and realistic expectations.

CHD 205. PROGRAM PLANNING FOR EDUCATING YOUNG CHILDREN. – 3 hours. C

PREREQUISITE: As required by program.

This course is designed to give students practice in lesson and unit planning, writing behavioral objectives, and evaluating activities taught to young children. Emphasis is placed on identifying basic aspects of cognitive development and how children learn. Upon completion students should be able to plan and implement developmentally appropriate curriculum and instructional practices based on knowledge of individual differences and the curriculum goals and content.

CHD 206. CHILDREN'S HEALTH AND SAFETY. – 3 hours. C

PREREQUISITE: As required by program.

This course introduces basic health, nutrition, and safety management practices for young children. Emphasis is placed on setting up and maintaining a safe, healthy environment for young children including specific procedures for infants and toddlers and procedures regarding childhood illnesses and communicable diseases. Upon completion, students should be able to prepare a healthy, safe environment, plan nutritious meals and snacks, and recommend referrals if necessary.

CHD 209. INFANT AND TODDLER EDUCATION PROGRAMS. – 3 hours. C

PREREQUISITE: As required by program.

This course focuses on child development from infancy to thirty months of age with emphasis on planning programs using developmentally-appropriate material. Emphasis is placed on positive ways to support an infant's social, emotional, physical, and intellectual development. Upon completion, students should be able to plan an infant-toddler program and environment that is appropriate and supportive of the families and the children.

CHD 210. EDUCATING EXCEPTIONAL CHILDREN. – 3 hours. C

PREREQUISITE: As required by program.

This course explores the many different types of exceptionalities found in young children. Topics include speech, language, hearing, and visual impairments; gifted and talented children; mental retardation; emotion, behavioral, and neurological handicaps. Upon completion, students should be able to identify appropriate strategies for working with young exceptional children.

CHD 214. FAMILIES AND COMMUNITIES IN EARLY CARE AND EDUCATION PROGRAMS. – 3 hours. C

PREREQUISITE: As determined by college.

This course provides students with information about working with diverse families and communities. Students will be introduced to family and community settings, the importance of relationships with children, and the pressing needs of today's society. Students will study and practice techniques for developing these important relationships and effective communication skills.

CHD 215. SUPERVISED PRACTICAL EXPERIENCE IN CHILD DEVELOPMENT. – 3 hours. C

PREREQUISITE: As required by program.

This course provides a minimum of 90 hours of hands-on, supervised experience in an approved program for young children. Emphasis is placed on performance of daily duties which are assessed

by the college instructor and the cooperating teacher. Upon completion, students should be able to demonstrate competency in a child care setting.

CHD 217. MATH AND SCIENCE FOR YOUNG CHILDREN. – 3 hours. C

PREREQUISITE: As determined by college.

This course provides students with information on children's conceptual development and The fundamental basic concepts of both math and science. Students learn various techniques for planning, implementing and evaluating developmentally appropriate activities. Students will also learn about integrated curriculum.

COMPUTERIZED NUMERICAL CONTROL (CNC)

CNC 158. DIE FUNDAMENTALS. – 3 hours.

PREREQUISITE: As required by program.

The purpose of this course is to teach the general fundamentals of stamping. Topics include the dangers of a press operation, the primary components of presses and their functions, the operations of various types of dies, various stamping production methods, and the numerous components used to make up various dies. Upon completion students should be completely familiar with stamping operations and have a fundamental knowledge of how dies are constructed and how they shape material.

CNC 160. DIE CONSTRUCTION AND TRYOUT.

– 3 hours.

PREREQUISITE: As required by program.

This course is an introduction into constructing and testing dies. Emphasis is placed on safety, machining skills, die construction, and die tryout. Upon completion the students should be able to read a print, construct the die from that print, and test its performance.

CNC 161. DIE MAINTENANCE AND REPAIR. – 3 hours.

PREREQUISITE: As required by program.

This course serves as a follow on to CNC 160 Tool and Die Construction and Tryout. Emphasis is placed on safety, inspection, measurement, sharpening, grinding, disassembly, and the reassembly process. Upon completion the students should be able to safely inspect a die and perform the necessary functions to insure it is ready for use.

CNC 232. BASIC TOOL AND DIE. – 4 hours.

PREREQUISITE: As required by program.

This course introduces the application and use of jigs, fixtures and stamping dies. Emphasis is placed on design and manufacture of simple jigs, fixtures and stamping dies. Upon completion, students should be able to design and build simple jigs, fixtures and stamping die components.

COMPUTER SCIENCE (CIS)

CIS 113. SPREADSHEET SOFTWARE APPLICATIONS.

– 3 hours. C

PREREQUISITE: As required by program.

This course provides students with hands-on experience using spreadsheet software. Students will develop skills common to most spreadsheet software by developing a wide variety of spreadsheets.

Emphasis is on planning, developing, and editing functions associated with spreadsheets.

CIS 146. MICROCOMPUTER APPLICATIONS.

– 3 hours. B

PREREQUISITE: As required by program.

This course is an introduction to the most common microcomputer software applications. These software packages should include typical features of applications, such as word processing, spreadsheets, database management, and presentation software. Upon completion, students will be able to utilize selected features of these packages. This course will help prepare students for the MOS and IC 3 certification. This course or an equivalent is CORE for the AAT and AAS CIS programs.

CIS 147. ADVANCED MICRO APPLICATIONS.

– 3 hours. B

PREREQUISITE: As required by program.

This course is a continuation of CIS 146 in which students utilize the advanced features of topics covered in CIS 146. Advanced functions and integration of word processing, spreadsheets, database, and presentation packages among other topics are generally incorporated into the course and are to be applied to situations found in society and business. Upon completion, the student should be able to apply the advanced features of selected software appropriately to typical problems found in society and business. This course will help prepare students for the MOS certification.

CIS 149. INTRODUCTION TO COMPUTERS.

– 3 hours. C

PREREQUISITE: As required by program.

This course is an introduction to computers and their impact on society. The course covers the development of computers, their impact on society, as well as future implications of development of computer and related communication technologies. This course introduces programming and computer operating systems. Upon completion, students will have basic knowledge of computer technology and will be able to perform basic functions with a computer system. The course will help prepare students for the IC 3 certification.

CIS 150. INTRODUCTION TO COMPUTER LOGIC AND PROGRAMMING. – 3 hours. C

PREREQUISITE: As required by program.

This course includes logic, design and problem solving techniques used by programmers and analysts in addressing and solving common programming and computing problems. The most commonly used techniques of flowcharts, structure charts, and pseudocode will be covered and students will be expected to apply the techniques to designated situations and problems. This is a CORE course.

CIS 151. GRAPHICS FOR THE WORLD WIDE WEB.

– 3 hours. C

PREREQUISITE: As required by college.

This course will provide an overview to the theory, tools, and techniques necessary for creating high-quality graphics using design software tools.

CIS 157. INTRODUCTION TO APP DEVELOPMENT WITH SWIFT. – 3 hours. C

PREREQUISITE: As required by college.

This introductory one-semester course is designed to help students build a solid foundation in programming fundamentals using Swift as the language. Students get practical experience with the tools, techniques, and concepts needed to build a basic iOS system.

CIS 159. INTRODUCTION TO GRAPHIC DESIGN FOR APPS. – 3 hours. C

PREREQUISITE: As required by college.

This introductory one-semester course is designed to enable students to integrate graphics for mobile app development. Students receive practical experience with the tools, techniques, and concepts needed to build or incorporate basic graphics.

CIS. 171. LINUX I. – 3 hours. C

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course presents fundamental applications in Linux. Included in this course are skills development for OS installation and setup, recompile techniques, system configuration settings, file/folder structures and types, run levels, basic network applications, and scripting. Additionally, the course presents security features from an administrative and user consideration.

CIS 172. LINUX II. – 3 hours. C

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course is a continuation of CIS 171 and includes advanced features of Linux. Included in the course are web applications, integrated network configurations, file transfer, server administration, system controls, IP tables/firewall to secure Linux systems, and strategic user-group applications specific to administrative network control.

CIS 199. NETWORK COMMUNICATIONS. – 3 hours. C

PREREQUISITE: As required by college.

This course is designed to introduce students to basic concepts of computer networks. Emphasis is placed on terminology and technology involved in implementing selected networked systems. The course covers various network models, topologies, communications protocols, transmission media, networking hardware and software, and network troubleshooting. Students gain hands-on experience in basic networking. This course further helps prepare students for certification.

CIS 207. WEB DEVELOPMENT. – 3 hours. C

PREREQUISITE: As required by program.

At the conclusion of this course, students will be able to use specified markup languages to develop basic Web pages.

CIS 208. WEB AUTHORING SOFTWARE. – 3 hours. C

Students utilize various Web authoring tools to construct and edit Web sites for a variety of applications. Upon completion students will be able to use these tools to develop or enhance Web sites.

CIS 209. ADVANCED WEB DEVELOPMENT. – 3 hours. C

PREREQUISITE: As required by college.

This is an advanced Web design course emphasizing the use of scripting languages to develop interactive Web sites. Upon completion students will be able to create data driven Web sites. This course

helps prepare students for the Certified Internet Webmaster (CIW) Foundations certification.

CIS 212. VISUAL BASIC PROGRAMMING. – 3 hours. B

PREREQUISITE: As required by program.

This course emphasizes BASIC programming using a graphical user interface. The course will emphasize graphical user interfaces with additional topics on such topics as advanced file handling techniques, simulation, and other selected areas. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.

CIS 220. APP DEVELOPMENT WITH SWIFT I. – 3 hours. C

PREREQUISITE: As required by college.

This is the first of two courses designed to teach specific skills related to app development using Swift language.

CIS 227. APP DEVELOPMENT WITH SWIFT II. – 3 hours. C

PREREQUISITE: As required by college.

This course focuses on building specific features for iOS apps. Students apply their knowledge and skills to developing new apps.

CIS 246. ETHICAL HACKING. – 3 hours. C

PREREQUISITE: As required by college.

This course emphasizes scanning, testing, and securing computer systems. The lab-intensive environment provides opportunities to understand how perimeter defenses work and how hackers are able to compromise information systems. With awareness of hacking strategies, students learn to counteract those attempts in an ethical manner.

CIS 251. C++ PROGRAMMING. – 3 hours. B

PREREQUISITE: As required by program.

This course is an introduction to the C++ programming language including object oriented programming. Topics include: problem solving and design; control structures; objects and events; user interface construction; and document and program testing.

CIS 268. SOFTWARE SUPPORT. – 3 hours. C

PREREQUISITE: As required by college.

This course provides students with hands-on practical experience in installing computer software, operating systems, and troubleshooting. The class will help to prepare participants for the A+ Certification sponsored by CompTIA.

CIS 269. HARDWARE SUPPORT. – 3 hours. C

PREREQUISITE: As required by college.

This course provides students with hands-on practical experience in installation and troubleshooting computer hardware. The class will help to prepare participants for the A+ Certification sponsored by CompTIA.

CIS 270. CISCO CCNA I. – 3 hours. C

PREREQUISITE: As required by college.

This course is the first part of a four part curriculum leading to CISCO Certified Network Associate (CCNA) certification. The content of this course is based on current requirements from the CISCO Networking Academy certification standards.

CIS 271. CISCO CCNA II. – 3 hours. C

PREREQUISITE: As required by college.

This course is the second part of a four part curriculum leading to CISCO Certified Network Associate (CCNA) certification. The content of this course is based on current requirements from the CISCO Networking Academy certification standards.

CIS 272. CISCO CCNA III. – 3 hours. C

PREREQUISITE: As required by college.

This course is the third part of a four part curriculum leading to Cisco Certified Network Associate (CCNA) certification. The content of this course is based on current requirements from the Cisco Networking Academy certification standards.

CIS 273. CISCO CCNA IV. – 3 hours. C

PREREQUISITE: As required by program.

This course is the fourth part of a four part curriculum leading to Cisco Certified Network Associate (CCNA) certification. The content of this course is based on current requirements from the Cisco Networking Academy certification standards.

CIS 276. SERVER ADMINISTRATION. – 3 hours. C

PREREQUISITE: As required by college.

This course introduces network operating system administration. Topics included in this course are network operating system software installation, administration, monitoring, and maintenance; user, group, and computer account management; shared resource management; and server hardware management. Students gain hands-on experience in managing and maintaining a network operating system environment.

CIS 280. NETWORK SECURITY. – 3 hours. C

PREREQUISITE: As required by college.

This course provides a study of threats to network security and methods of securing a computer network from such threats. Topics included in this course are security risks, intrusion detection, and methods of securing authentication, network access, remote access, Web access, and wired and wireless network communications. Upon completion students will be able to identify security risks and describe appropriate counter measures.

CIS 282. COMPUTER FORENSICS. – 3 hours. C

This course introduces students to methods of computer forensics and investigations. This course helps prepare students for the International Association of Computer Investigative Specialists (IACIS) certification.

CIS 285. OBJECT ORIENTED PROGRAMMING. – 3 hours. B

PREREQUISITE: CIS 251

This course is a advanced object-oriented programming course and covers advanced program development techniques and concepts in the context of an object-oriented language, such as C++ or Java. Subject matter includes object-oriented analysis and design, encapsulation, inheritance, polymorphism (operator and function overloading), information hiding, abstract data types, reuse, dynamic memory allocation, and file manipulation. Upon completion, students should be able to develop a hierarchical class structure necessary to the implementation of an object-oriented software system.

CIS 296. DIRECTED STUDIES IN COMPUTER SCIENCE. – 3 hours. C

PREREQUISITE: As required by college

This course allows study of currently relevant computer science topics, with the course being able to be repeated for credit for each different topic covered. Course content will be determined by the instructor and will vary according to the topic being covered. Upon completion, the student will be able to demonstrate specified skills.

CIS 299. DIRECTED STUDIES IN COMPUTER SCIENCE. – 3 hours. C

PREREQUISITE: As required by college.

This course allows independent study under the direction of an instructor. Topics to be included in the course material will be approved by the instructor prior to or at the beginning of the class. Upon completion, the student will be able to demonstrate knowledge of the topics as specified by the instructor.

COSMETOLOGY (COS)

COS 111. INTRODUCTION TO COSMETOLOGY. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 112 and/or as required by program.

In this course, students are provided a study of personal and professional image, ethical conduct, sanitation, hair styling, and nail care. Topics include personal and professional development, bacteriology, decontamination, infection control, draping, shampooing, conditioning, hair shaping, and hair styling. Upon completion, students should be able to apply safety rules and regulations and write procedures for skills identified in this course. NDC, CORE

COS 112. INTRODUCTION TO COSMETOLOGY LAB. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 111 and/or as required by program.

In this course, students are provided the practical experience for sanitation, shampooing, hair shaping, hairstyling, and nail care. Emphasis is placed on sterilization, shampooing, hair shaping, hairstyling, manicuring, and pedicuring. Upon completion, the student should be able to perform safety and sanitary precautions, shampooing, hair shaping, hairstyling, and nail care procedures. NDC, CORE

COS 113. THEORY OF CHEMICAL SERVICES. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 114 and/or as required by program.

This course focuses on the theory of hair and scalp disorders, permanent waving, chemical relaxers, and the composition of the hair. Topics include disorders and analysis of the scalp and hair, permanent waving, chemical hair relaxing, and soft curling. Upon completion, the student should be able to write procedures for permanent waving and chemical relaxing, identify the composition of the hair, safety and sanitary precautions and steps for scalp and hair analysis as well as the disorders. NDC, CORE

COS 114. CHEMICAL SERVICES LAB. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 113 and/or as required by program.

In this course, students are provided the practical experience of permanent waving, chemical relaxing, and hair analysis. Topics include

permanent waving, chemical relaxing, soft curl, and scalp and hair analysis. Upon completion, the student should be able to analyze the scalp and hair and perform these chemical services using safety and sanitary precautions. NDC, CORE

COS 115. HAIR COLORING THEORY. – 3 hours

PREREQUISITE: As required by program.

COREQUISITE: COS 116 and/or as required by program.

In this course, students learn the techniques of hair coloring and hair lightening. Emphasis is placed on color application, laws, levels and classifications of color and problem solving. Upon completion, the student should be able to identify all phases of hair coloring and the effects of the hair. NDC, CORE

COS 116. HAIR COLORING LAB. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 115 and/or as required by program.

In this course, students apply hair coloring and hair lightening techniques. Topics include consultation, hair analysis, skin test and procedures and applications of all phases of hair coloring and lightening. Upon completion, the student should be able to perform procedures for hair coloring and hair lightening. NDC, CORE

COS 117. BASIC SPA TECHNIQUES. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 118 and/or as required by program.

This course is the study of cosmetic products, massage, skin care, and hair removal, as well as identifying the structure and function of various systems of the body. Topics include massage skin analysis, skin structure, disease and disorder, light therapy, facials, facial cosmetics, anatomy, and hair removal. Upon completion, the student should be able to state procedures for analysis, light therapy, facials, hair removal, and identify the structures, functions, and disorders of the skin. NDC, CORE

COS 118. BASIC SPA TECHNIQUES LAB. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 117 and/or as required by program.

This course provides practical applications related to the care of the skin and related structure. Emphasis is placed on facial treatments, product application, skin analysis, massage techniques, facial make-up, and hair removal. Upon completion, the student should be able to prepare clients, assemble sanitized materials, follow procedures for product application, recognize skin disorders, demonstrate facial massage movement, cosmetic application, and hair removal using safety and sanitary precautions. NDC, CORE

COS 123. COSMETOLOGY SALON PRACTICES.

– 3 hours.

PREREQUISITE: As required by program.

This course is designed to allow students to practice all phases of cosmetology in a salon setting. Emphasis is placed on professionalism, receptionist duties, hair styling, hair shaping, chemical, and nail and skin services for clients. Upon completion, the student should be able to demonstrate professionalism and the procedures of cosmetology in a salon setting. NDC

COS 127. ESTHETICS THEORY. – 3 hours.

PREREQUISITE: As required by college.

This course includes an advanced study of anatomy and physiology relating to skin care, cosmetic chemistry, histology of the skin, and massage and facial treatments. Upon completion, the student should be

able to discuss the functions of the skin, effects of chemicals on skin, different types of massage and benefits, and key elements of the basic facial treatment.

COS 134. ADVANCED ESTHETICS. – 3 hours.

PREREQUISITE: As required by college.

This course includes an advanced study of anatomy and physiology relating to skin care, cosmetic chemistry, histology of the skin, and massage and facial treatments. Upon completion, the student should be able to discuss the functions of the skin, effects of chemicals on skin, different types of massage and benefits, and key elements of the basic facial treatment.

COS 135. ADVANCED ESTHETICS APPLICATIONS.

– 3 hours.

PREREQUISITE: As required by college.

This course provides advanced practical applications related to skin care. Principal topics include massage techniques, various facial treatments, proper product application through skin analysis, and introduction to ingredients and treatments used by the esthetician. Upon completion, the student should be able to perform various massage techniques, prescribe proper type of facial treatment and product, and demonstrate facials using any of the eight functions of the facial machine.

COS 143. SPECIALTY HAIR PREPARATION

TECHNIQUES. – 3 hours.

PREREQUISITE: As required by program.

This course focuses on the theory and practice of hair designing. Topics include creating styles using basic and advanced techniques of back combing, up sweeps and braiding. Upon completion, the student should be able to demonstrate the techniques and procedures for hair designing. NDC

COS 144. HAIR SHAPING AND DESIGN. – 3 hours.

PREREQUISITE: As required by program.

In this course, students learn the art and techniques of hair shaping. Topics include hair sectioning, correct use of hair shaping implements, and elevations used to create design lines. Upon completion, the student should be able to demonstrate the techniques and procedures for creating hair designs. NDC

COS 151. NAIL CARE. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 152 and/or as required by program.

This course focuses on all aspects of nail care. Topics include salon conduct, professional ethics, sanitation, nail structure, manicuring, pedicuring, nail disorders, and anatomy and physiology of the arm and hand. Upon completion, the student should be able to demonstrate professional conduct, recognize nail disorders and diseases, and identify the procedures for sanitation and nail care services. NDC

COS 152. NAIL CARE APPLICATIONS. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 151 and/or as required by program.

This course provides practice in all aspects of nail care. Topics include salon conduct, professional ethics, bacteriology, sanitation and safety, manicuring and pedicuring. Upon completion, the student should be able to perform nail care procedures. NDC

COS 153. NAIL ART. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 154 and/or as required by program.

This course focuses on advanced nail techniques. Topics include acrylic, gel, fiberglass nails, and nail art. Upon completion, the student should be able to identify the different types of sculptured nails and recognize the different techniques of nail art. NDC

COS 154. NAIL ART APPLICATIONS. – 3 hours.

PREREQUISITE: As required by program.

COREQUISITE: COS 153 and/or as required by program.

This course provides practice in advanced nail techniques. Topics include acrylic, gel, fiberglass nails, and nail art. Upon completion, the student should be able to perform the procedures for nail sculpturing and nail art. NDC

COS 163. FACIAL TREATMENTS. – 3 hours.

PREREQUISITE: As required by college.

This course includes all phases of facial treatments in the study of skin care. Topics include treatments for oily, dry, and special skin applications. Upon completion, students will be able to apply facial treatments according to skin type.

COS 164. FACIAL MACHINE. – 3 hours.

PREREQUISITE: As required by college.

This is a course designed to provide practical experience using the vapor and facial machine with hydraulic chair. Topics include the uses of electricity and safety practices, machine and apparatus, use of the magnifying lamp, and light therapy. Upon completion, the student will be able to demonstrate an understanding of electrical safety and skills in the use of facial machines.

COS 165. RELATED SUBJECTS ESTHETICIANS.

– 3 hours.

PREREQUISITE: As required by college.

This course includes subjects related to the methods for removing unwanted hair. This course includes such topics as electrolysis information and definitions, safety methods of permanent hair removal, the practice of removal of superfluous hair, and the use of depilatories. Upon completion of this course, students will be able to apply depilatories and practice all safety precautions.

COS 167. STATE BOARD REVIEW. – 3 hours.

PREREQUISITE: As required by program.

Students are provided a complete review of all procedures and practical skills pertaining to their training in the program. Upon completion, the student should be able to demonstrate the practical skills necessary to complete successfully the required State Board of Cosmetology examination and entry-level employment.

COS 168. BACTERIOLOGY AND SANITATION.

– 3 hours.

PREREQUISITE: As required by program.

In this skin care course, emphasis is placed on the decontamination, infection control and safety practiced in the esthetics facility. Topics covered include demonstration of sanitation, sterilization methods and bacterial prevention. Upon completion, the student will be able to properly sanitize facial implements and identify non-reusable items. NDC.

COS 181-182. SPECIAL TOPICS. – 3 hours

PREREQUISITE: As required by program.

These courses provide for instruction unique to various areas of the cosmetology industry. Emphasis is on meeting individual student needs.

COS 190. INTERNSHIP IN COSMETOLOGY.

– 1-3 hours.

PREREQUISITE: As required by program.

This course is designed to provide exposure to cosmetology practices in non-employment situations. Emphasis is on dependability, attitude, professional judgment, and practical cosmetology skills. Upon completion, the student should have gained skills necessary for entry-level employment. NDC

COS 191. CO-OP. – 3 hours

PREREQUISITE: As required by college.

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

CRIMINAL JUSTICE (CRJ)

CRJ 100. INTRODUCTION TO CRIMINAL JUSTICE.

– 3 hours. B

PREREQUISITE: As required by program.

This course surveys the entire criminal justice process from law enforcement to the administration of justice through corrections. It discusses the history and philosophy of the system and introduces various career opportunities.

CRJ 110. INTRODUCTION TO LAW ENFORCEMENT.

– 3 hours. B

PREREQUISITE: As required by program.

This course examines the history and philosophy of law enforcement, as well as the organization and jurisdiction of local, state, and federal agencies. It includes the duties and functions of law enforcement officers.

CRJ 116. POLICE PATROL. – 3 hours. C

PREREQUISITE: As required by program.

This course studies the duties, and responsibilities of the uniformed police patrol. It emphasizes the importance of patrol functions and includes principles, methods, procedures and resources used in police patrol operations.

CRJ 117. COMMUNITY RELATIONS. – 3 hours. C

PREREQUISITE: As required by program.

This course discusses the role of the police officer in achieving and maintaining public support. It includes public information, juvenile relations, public relations, service, and mobilizing community involvement and cooperation.

CRJ 140. CRIMINAL LAW AND PROCEDURE.

– 3 hours. C

PREREQUISITE: As required by program.

This course examines both substantive and procedural law. The legal elements of various crimes are discussed, with emphasis placed on the contents of the Alabama Code. Areas of criminal procedure essential to the criminal justice profession are also covered.

CRJ 146. CRIMINAL EVIDENCE. – 3 hours. C

PREREQUISITE: As required by program.

This course considers the origins of the law of evidence and current rules of evidence. Types of evidence, their definitions and uses are covered, as well as the functions of the court regarding evidence.

CRJ 150. INTRODUCTION TO CORRECTIONS.

– 3 hours. B

PREREQUISITE: As required by program.

This course provides an introduction to the philosophical and historical foundations of corrections in America. Incarceration and some of its alternatives are considered.

CRJ 160. INTRODUCTION TO SECURITY. – 3 hours. B

PREREQUISITE: As required by program.

This course surveys the operation, organization and problems in providing safety and security to business enterprises. Private, retail, and industrial security are covered.

CRJ 208. INTRODUCTION TO CRIMINOLOGY.

– 3 hours. B

PREREQUISITE: As required by program.

This course delves into the nature and extent of crime in the United States, as well as criminal delinquent behavior and theories of causation. This study includes criminal personalities, principles of prevention, control, and treatment.

CRJ 209. JUVENILE DELINQUENCY. – 3 hours. B

PREREQUISITE: As required by program.

This course examines the causes of delinquency. It also reviews programs of prevention, and control of juvenile delinquency as well as the role of the courts.

CRJ 219. FIREARMS. – 3 hours. C

PREREQUISITE: As required by program.

This course covers the moral implications, legal provisions, safety precautions, and restrictions governing the use of firearms. The use of sidearms and riot guns with stationary and combat targets is explored.

CRJ 227. HOMICIDE INVESTIGATION. – 3 hours. C

PREREQUISITE: As required by program.

This course covers the principles, techniques and strategies of homicide investigation. Topics emphasized include ballistics, pathology, toxicology, immunology, jurisprudence, and psychiatry.

CRJ 230. CRIMINALISTICS. – 3 hours. C

This course surveys the different techniques of scientific investigation. Emphasis is given to ballistics, photography, fingerprints, DNA, trace evidence, body fluids, casts, and the like.

CRJ 238. CRIME SCENE INVESTIGATION. – 3 hours. C

This course examines the fundamentals of crime scene investigation. Measuring and sketching the scene, photography, evidence collection and preservation, and courtroom procedures are considered.

CRJ 280. INTERNSHIP IN CRIMINAL JUSTICE.

– 3 hours. C

This course involves practical experience with a criminal justice agency under faculty supervision. Permission of the instructor is required. This course may be repeated with the approval of the department head.

CRJ 290. SELECTED TOPICS—SEMINAR IN CRIMINAL JUSTICE. – 1-3 hours. C

This course involves reading, research, writing, and discussion of selected subjects to criminal justice. Various contemporary problems in criminal justice are analyzed. This course may be repeated with approval from the department head.

CULINARY ARTS (CUA)

CUA 110. BASIC FOOD PREPARATION. – 3 hours.

PREREQUISITE: As required by college.

COREQUISITE: CUA 120.

In this course students acquire fundamental knowledge and skills in preparing a variety of basic foods. Specific topics include safety, the history of food service, professional standards of conduct and ethics, credentialing, the kitchen brigade, tools, and techniques for preparing various types of food items.

CUA 111. FOUNDATIONS IN NUTRITION. – 3 hours.

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course focuses on nutrition and meal planning in relation to the food preparation industry. Topics include the science of food and nutrition, essential nutrients and their relation to the growth, maintenance and functioning of the body, nutritional requirements of different age levels and cultural influences on food selection. Upon completion of this course, students will be able to apply the basic principles to meal planning.

CUA 112. SANITATION, SAFETY, AND FOOD SERVICE. – 3 hours.

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course introduces the basic principles of sanitation and safety to food service handling including purchasing, storing, preparation and serving. Specific topics include the dangers of microbial contaminants, food allergens, and foodborne illness, safe handling of food, the flow of food, and food safety management systems. At the conclusion of this course students will be prepared to test for ServSafe® certification. The content of this course is foundational for all culinary arts classes.

CUA 114. MEAL MANAGEMENT. – 3 hours.

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course covers the principles of meal management. Topics include menu planning, food selection, recipe standardization, food preparation, and meal service for all phases of food service. Upon

completion of this course, students will be able to apply efficient work habits, sanitation and safety in the kitchen.

CUA 115. ADVANCED FOOD PREPARATION. – 3 hours.

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

In this course students apply food preparation and meal management skills in all areas of food service. Emphasis is placed on management and technical skills needed to operate a restaurant. Upon completion, students will develop advanced skills in food preparation and meal management.

CUA 120. BASIC FOOD PREPARATION LAB. – 2 hours.

PREREQUISITE: As required by college.

COREQUISITE: CUA 110.

In this course students apply fundamental knowledge and skills in preparing a variety of basic foods. Specific topics include safety, the history of food service, professional standards of conduct and ethics, credentialing, the kitchen brigade, tools, and techniques for preparing various types of food items. At the conclusion of this course students will demonstrate basic food preparation skills.

CUA 130. CHOCOLATE AND TRUFFLES. – 3 hours.

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course is a specialty hands-on course in chocolate, focusing on: tempering, chocolate candy making and the use of chocolate as a centerpiece medium. The student will have competency in chocolate to apply in the industry.

CUA 203. STOCKS AND SAUCES. – 3 hours.

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course challenges the student to the greatest tests of a chef's skills. Whether they are classic or contemporary good sauces demand the highest technical expertise. Students learn why particular sauces will or will not go with particular dishes. The student will focus on brown and white stocks; consommés, fumets and essences; glazes, and roux. The student will further develop mother sauces and compound sauces.

CUA 204. FOUNDATIONS OF BAKING. – 3 hours.

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course covers basic ingredients, weights and measures, baking terminology, and formula calculations. Topics include yeast-raised products, quick breads, pastry dough, various cakes and cookies, and appropriate filling and finishing techniques. Upon completion, students should be able to prepare and evaluate baked products.

CUA 217. INTRODUCTION TO PASTRIES. – 2 hours.

PREREQUISITE: As required by college.

COREQUISITE: As required by college.

This course focuses on preparing cakes and tortes. Emphasis is on the techniques necessary for Bavarian creams, ganache, buttercream, whipped cream, marzipan, chocolate, and production of mignardises and petit fours. Upon completion, student should be able to plan, execute and evaluate dessert platters, individual plated desserts, and show pieces.

DRAFTING AND DESIGN TECHNOLOGY (DDT)

DDT 104. BASIC COMPUTER AIDED DRAFTING AND DESIGN. – 3 hours.

This course provides an introduction to basic Computer Aided Drafting and Design (CADD) functions and techniques, using 'hands on' applications. Topics include terminology, hardware, basic CADD and operating system functions, file manipulation, and basic CADD software applications in producing softcopy and hardcopy.

DDT 117. MANUFACTURING PROCESSES. – 3 hours.

This course in materials and processes includes the principles and methodology of material selection, application, and manufacturing processes. Emphasis is directed to solids to include material characteristics, castings, forging, and die assemblies. Upon completion, students should be able to discuss and understand the significance of materials' properties, structure, basic manufacturing processes, and express and interpret material specifications.

DDT 124. BASIC TECHNICAL DRAWING. – 3 hours.

PREREQUISITES: DDT 104.

This course covers sections, auxiliary views, and basic space geometry. Emphasis will be placed on the theory as well as the mechanics of applying sections, basic dimensioning, auxiliary views, and basic space geometry.

DDT 144. BASIC 3D MODELING. – 3 hours.

This course is an introduction to 3D solid modeling techniques utilizing feature-based, constraint-based parametric design. This course encourages the student to visualize parts in the 3D world and have a "design intent" plan for each part in which they will design. Upon completion of the course students should be able to create basic 3D models and 2D working drawings.

DDT 220. ADVANCED TECHNICAL DRAWING.

– 3 hours.

PREREQUISITES: DDT 144, DDT 124.

This course covers the methods of providing size description and manufacturing information for production drawings. Emphasis will be placed on accepted dimensioning and tolerancing practices including Geometric Dimensioning and Tolerancing for both the Customary English System and the ISO System. Upon completion, students should be able to apply dimensions, tolerances, and notes to drawings to acceptable standards, including Geometric Dimensioning and Tolerancing, and produce drawings using and specifying common threads and various fasteners, including welding methods.

DDT 225. STRUCTURAL STEEL DRAFTING. – 3 hours.

PREREQUISITES: DDT 124.

This course covers the theory and practical applications necessary to understand the basic design and terminology of structural steel components used in light commercial buildings. Emphasis is placed on structural steel techniques, bolted and welding connections, framing plans, sections, fabrication and connection details, and bills of material. Upon completion, students should be able to produce engineering and shop drawings incorporating standards shapes, sizes, and details using the A.I.S.C. Manual and incorporating safety practices.

DDT 236. DESIGN PROJECT. – 3 hours.

PREREQUISITE: Advisor approval.

This course allows the student to plan, execute, and present results of an individual design project. Emphasis is placed on attainment of skills related to a project agreed upon by the Instructor and student. The student will be able to demonstrate and apply competencies identified and agreed upon between the student and instructor.

ECONOMICS (ECO)**ECO 231. PRINCIPLES OF MACROECONOMICS.**

– 3 hours. A

This course is an introduction to macroeconomic theory, analysis, and policy applications. Topics include the following: scarcity, demand and supply, national income analysis, major economic theories concerning monetary and fiscal policies as stabilization measures, the banking system and other economic issues or problems including international trade.

ECO 232. PRINCIPLES OF MICROECONOMICS.

– 3 hours. A

This course is an introduction of the microeconomic theory, analysis, and applications. Topics include scarcity; the theories of consumer behavior, production and cost, markets, output and resource pricing, and international aspects of microeconomics.

ELECTRICAL TECHNOLOGY (ELT)**ELT 114. RESIDENTIAL WIRING METHODS I.**

– 3 hours.

This course is a study of residential wiring practices and methods, the NEC requirements and residential blueprint interpretations. ELT 114 and ELT 115 may be taken in the place of ELT 116.

ELT 115. RESIDENTIAL WIRING METHODS II.

– 3 hours.

This course is a study of residential wiring practices and methods, the NEC requirements and residential blueprint interpretations. ELT 114 and ELT 115 may be taken in the place of ELT 116.

ELT 116. RESIDENTIAL WIRING. – 6 hours.

This course is a study of residential wiring practices and methods, the NEC requirements and residential blueprint interpretations. ELT 116 may be taken in the place of ELT 114 and ELT 115.

EMERGENCY MEDICAL SERVICES (EMS)**EMS 100. CARDIOPULMONARY RESUSCITATION I.**

– 1 hour.

This course provides students with concepts as related to areas of basic life support to include coronary artery disease, prudent heart living, symptoms of heart attack, adult one-and – two rescuer CPR, first aid for choking, pediatric basic life support, airway adjuncts, EMS system entry access, automated external defibrillation (AED), and special situations for CPR. Upon course completion, students should be able to identify situations requiring action related to heart or breathing conditions and effectively implement appropriate management for each condition. Students successfully completing this course will receive appropriate documentation of course completion.

EMS 101. CARDIOPULMONARY RESUSCITATION II.

– 1 hour.

PREREQUISITE: EMS 100 or program approval.

This course provides students with a review of concepts learned in EMS-100. In addition, the course provides the student with theory and application of airway adjuncts as utilized with airway obstruction and maintenance as well as respiratory and cardiac arrest. Assessment and management of acute ischemic stroke will also be included. Upon course completion, students should be able to identify situations requiring action related to heart or breathing conditions and effectively implement appropriate management for these conditions. Students successfully completing this course will receive appropriate documentation of course completion.

EMS 103. FIRST AID/CPR. – 1 hour.

This course provides a study of basic first aid and cardiopulmonary resuscitation (CPR). Students will be able to perform basic first aid and CPR techniques. Upon completion, the student will be eligible for CPR certification testing. *This course does not satisfy the requirements for Nursing, Emergency Medical Services, Medical Assistant, and Allied Health programs.*

EMS 105. EMERGENCY MEDICAL RESPONDER.

– 3 hours.

This course provides theory in emergency procedures as contained in the current National Standards Training Curriculum (NSTC) for the First Responder. The course is an introduction to the emergency medical services system and provides fundamentals for students to improve the quality of emergency care provided as the first person to an emergency scene until emergency medical services arrive. Completion of specific student competencies, as outlined in the current NSTC for the First Responder, is required for successful course completion.

EMS 106. MEDICAL TERMINOLOGY. – 2 hours.

This course provides students with a survey of words, terms, and descriptions commonly used in health related professions. The course includes spelling, pronunciation, and meaning of prefixes, suffixes, roots, and terms. Students may have the opportunity to utilize computer assisted instruction for learning various medical terms. Upon course completion, students should have the knowledge to associate a variety of medical terms with their meaning and utilize medical terms to effectively communicate with other health professionals.

**EMS 107. EMERGENCY VEHICLE OPERATOR–
AMBULANCE. – 1 hour.**

PREREQUISITE: Must present a valid driver's license, proof of current automobile liability insurance and program approval.

The Emergency Vehicle Operator Course – Ambulance provides the student with training as contained in the current National Standard Training Curriculum (NSTC) for the Emergency Vehicle Operator Course (EVOC) Ambulance. The course provides the knowledge and skill practice necessary for individuals to learn how to safely operate all types of ambulances. Topics include introduction to the NSTC for ambulance operators; legal aspects of ambulance operation; communication and reporting; roles and responsibilities; ambulance types and operation; ambulance inspection, maintenance, and repair; navigation and route planning; basic maneuvers and normal operating situations; operations in emergency mode and unusual situations, special considerations in safety; and the run. Completion of specific student competencies, utilizing NSTC guidelines, are required for successful completion of this course. NOTE: To qualify for licensure status as an ambulance driver in the State of Alabama, students must