AIR CONDITIONING (ACR)

ACR 111 PRINCIPLES OF REFRIGERATION 3 Hrs.
PREREQUISITE: None.
This course emphasizes the fundamental principles for air conditioning and refrigeration. Instruction is provided in the theory and principles of refrigeration and heat transfer. HVACR system components, common, and specialty tools for HVACR, an 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 HVACR tools, and maintain components of a basic compression refrigeration system.

ACR 112 HVAC SERVICE PROCEDURES 3 Hrs.
PREREQUISITE: None.
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, the student should be able to properly recover/reycle refrigerants and demonstrate safe, correct service procedures which comply with the no-venting laws.

ACR 113 REFRIGERATION PIPING PRACTICES 3 Hrs.
PREREQUISITE: None.
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, the student should understand related terminology, be able to identify ACR pipe and tubing, and various fittings.

ACR 119 FUNDAMENTALS OF GAS HEATING SYSTEMS 3 Hrs.
PREREQUISITE: None
This course provides instruction on general service and installation for common gas furnace systems components. Upon completion, students will be able to install and service gas furnaces in a wide range of applications.

ACR 120 FUNDAMENTALS OF ELECTRIC HEATING SYSTEMS 3 Hrs.
PREREQUISITE: None
This course covers the fundamentals of electric heating systems. Emphasis is placed on components, general service procedures, and basic installation. Upon completion, students should be able to install and service electric heating systems and heat pumps.

ACR 121 PRINCIPLES OF ELECTRICITY FOR HVAC 3 Hrs.
PREREQUISITE: None.
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, the student should understand and be able to apply the basic principles of HVACR circuits and circuit components.

ACR 122 HVAC ELECTRIC CIRCUITS 3 Hrs.
PREREQUISITE: None.
This course provides students with advanced applications of electrical circuits and diagrams. Students construct a variety of wiring diagrams commonly found in HVACR electrical systems. Upon completion, students should understand standard wiring diagrams and symbols and be able to construct various types of electrical circuits.

ACR 123 HVAC ELECTRICAL COMPONENTS 3 Hrs.
PREREQUISITE: None.
During this course students learn characteristics and operations of various electrical components and controls. Emphasis is placed on the operation of motors, relays, contactors, starters, and other HVACR electrical components. Upon completion, students should be able to install various electrical components and determine their proper operation.

ACR 126 COMMERCIAL HEATING SYSTEMS 3 Hrs.
PREREQUISITE: None.
This course covers the theory and application of larger heating systems. Emphasizing commercial applications such as gas heaters, boilers, unit heaters, duct heaters, and hydronic systems. Upon completion, students will be able to troubleshoot and perform general maintenance on commercial heating systems.

ACR 127 HVAC ELECTRIC MOTORS AND COMPONENTS 3 Hrs.
PREREQUISITE: None
This course covers the basic maintenance of electric motors used in HVACR systems. Topics include: types, operation, installation, and troubleshooting motors and related components. Upon completion, students should be able to install and service various types of HVACR electric motors and related components.

ACR 130 COMPUTER ASSISTED HVAC TROUBLESHOOTING 1 Hr.
PREREQUISITE: None.
This course focuses on troubleshooting procedures. Emphasis is placed on the proper use of test equipment and machine/electrical malfunctions. Upon completion, the student should be able to diagnose and repair service problems in HVACR equipment.

ACR 132 RESIDENTIAL AIR CONDITIONING 3 Hrs.
PREREQUISITE: None
This course introduces students to residential air conditioning systems. Emphasis is placed on the operation, service, and repair of residential air conditioning systems. Upon completion, the student should be able to service and repair residential air conditioning systems.

ACR 134 ICE MACHINES 3 Hrs.
PREREQUISITE: None.
This course introduces students to ice machine types and their operation emphasizing function, installation, maintenance, and troubleshooting. Upon completion, students will be able to perform installation and maintenance procedures.

ACR 138 CUSTOMER RELATIONS IN HVAC 3 Hrs.
PREREQUISITE: None.
This course covers the basic aspects of customer relations needed by the HVAC technician. Topics include employability skills associated with job performance, record keeping, service invoices, certification requirements, local ordinances, and business ethics.

ACR 144 BASIC DRAWING AND BLUEPRINT READING IN HVAC 3 Hrs.
PREREQUISITE: None.
This course covers basic drawing and blueprint reading as applied to the HVAC industry. Emphasis is placed on three-view drawings, basic duct systems, and isometric piping. Upon completion, the student should be able to perform basic drawings related to HVAC systems and read pertinent blueprints.
ACR 147 REFRIGERATION TRANSITION AND RECOVERY 3 Hrs.
PREREQUISITE: None.
This course is EPA-approved and covers material relating to the requirements necessary for type I, II, III and universal certification. Upon completion, students should be prepared to take the EPA 608 certification exam.

ACR 148 HEAT PUMP SYSTEMS I 3 Hrs.
PREREQUISITE: None
This course provides basic instruction on the operation and servicing of heat pump systems. Additional emphasis is placed on basic theory and application of refrigerants for heat pump systems and on basic service of components. Upon completion, students will be able to install and service heat pumps.

ACR 149 HEAT PUMP SYSTEMS II 3 Hrs.
PREREQUISITE: None
This is a continuation course of the basis theory and application of heat pump systems. Emphasis is placed on electrical components of heat pumps and their function. Students should possess a strong foundation of electrical principles and theory. Upon completion, students should be able to install and service heat pumps.

ACR 181/182 SPECIAL TOPICS IN AIR CONDITIONING AND REFRIGERATION 3 Hrs.
PREREQUISITE: None
These courses provide specialized instruction in various areas related to the air conditioning and refrigeration industry. Emphasis is placed on meeting the student’s needs.

ACR 192 HVAC APPRENTICESHIP/INTERNSHIP 3 Hrs.
PREREQUISITE: None
This course is designed to provide basic hands-on experiences in the work place. The student is provided with a training plan developed by the employer and instructor working together to guide the learning experience. Upon completion, the student should be able to work independently and apply related skills and knowledge. This course requires a minimum of 15 work hours per week.

ACR 203 COMMERCIAL REFRIGERATION 3 Hrs.
PREREQUISITE: ACR 111.
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, the student should be able to service and repair commercial refrigeration systems.

ACR 204 COMMERCIAL AIR CONDITIONING 3 Hrs.
PREREQUISITE: ACR 111.
This course focuses on commercial air conditioning systems. Topics include maintenance, repair, and troubleshooting. Upon completion, the student should be able to service and repair commercial air conditioning systems.

ACR 205 SYSTEM SIZING AND AIR DISTRIBUTION 3 Hrs.
PREREQUISITE: None
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 completion, the student should be able to calculate system requirements.

ACR 209 COMMERCIAL AIR CONDITIONING SYSTEMS 3 Hrs.
PREREQUISITE: None
This course focuses on servicing and maintaining HVACR systems commonly found in various types of commercial applications. Topics include system component installation and removal and service techniques. Upon completion, students should be able to troubleshoot and perform general maintenance on commercial HVACR systems.

ACR 210 TROUBLESHOOTING HVACR SYSTEMS 3 Hrs.
PREREQUISITE: None
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 mechanical and electrical components of HVACR systems.

AIR FORCE STUDIES (AFS)

AFS 101 AIR FORCE TODAY I 1 Hr.
PREREQUISITE: None.
This course is a survey course of topics relating to the Air Force and national defense. It includes a discussion of purpose, structure, and career opportunities in the United States Air Force and an introduction to effective written communication. The AFS 101 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies, and military commands.

AFS 102 AIR FORCE TODAY II 1 Hr.
PREREQUISITE: None.
This course is an introduction to interpersonal communications. Seminars focus on effective listening techniques, verbal and nonverbal communications. Practical exercises and group projects are designed to demonstrate barriers to effective communications and techniques to overcome barriers, development and presentation of oral communications, strategy, technique, and delivery of effective oral presentations. Student practicum is required. The AFS 102 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies, and military commands.

AFS 201 THE AIR FORCE WAY I 1 Hr.
PREREQUISITE: None.
This course is a survey course of topics relating to the Air Force and national defense. It includes a discussion of purpose, structure, and career opportunities in the United States Air Force and an introduction to effective written communication. The AFS 201 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies, and military commands.

AFS 202 THE AIR FORCE WAY II 1 Hr.
PREREQUISITE: None.
This course is an introduction to interpersonal communications. Seminars focus on effective listening techniques, verbal and nonverbal communications. Practical exercises and group projects are designed to demonstrate barriers to effective communications and techniques to overcome barriers, development and presentation of oral communications, strategy, technique, and delivery of effective oral presentations. Student practicum is required. The AFS 202 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies, and military commands.
ANTHROPOLOGY (ANT)

ANT 200  INTRODUCTION TO ANTHROPOLOGY  3 Hrs.
PREREQUISITE: None.
This course is a survey of physical, social, and cultural development and behavior of human beings.

ANT 210  PHYSICAL ANTHROPOLOGY  3 Hrs.
PREREQUISITE: None.
This course is a study of the human evolution based upon fossil and archaeological records as well as analysis of the variation and distribution of contemporary human populations.

ANT 220  CULTURAL ANTHROPOLOGY  3 Hrs.
PREREQUISITE: ANT 200.
This course is the application of the concept of culture to study of both primitive and modern society.

ANT 230  INTRODUCTION TO ARCHAEOLOGY  3 Hrs.
PREREQUISITE: None.
This course is an introduction to archaeological excavation techniques and post-exavulation laboratory procedures.

ART (ART)

ART 100  ART APPRECIATION  3 Hrs.
PREREQUISITE: None.
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, the student should understand the fundamentals of art, the materials used, and have a basic overview of the history of art.

ART 101  ART WORKSHOP I  3 Hrs.
PREREQUISITE: None.
The course provides an art experience for both non-art and art majors who are interested in a variety of art projects concerned with community or college related activities. Emphasis is placed on the organization of ideas in advancing their creative process. Upon completion, the student should be able to present visual evidence of the activities involved and explain how the experience advanced his or her artistic skills.

ART 102  ART WORKSHOP II  3 Hrs.
PREREQUISITE: Art Workshop I and/or None.
This course provides an art experience for both non-art and art majors who are interested in a variety of art projects concerned with community or college related activities. Emphasis is placed on the organization of ideas in advancing their creative process. Upon completion, the student should be able to present visual evidence of the activities involved and explain how the experience advanced their artistic skills.

ART 109  ART MUSEUM SURVEY  3 Hrs.
PREREQUISITE: None.
This course covers the art experienced through supervised visits to museums and art galleries. Emphasis is placed on learning through critical study. Upon completion, the student should be able to write a critical analysis of the art work experienced that demonstrates an understanding of aesthetics.

ART 113  DRAWING I  3 Hrs.
PREREQUISITE: None.
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, the student should demonstrate and apply the fundamentals of art to various creative drawing projects.

ART 114  DRAWING II  3 Hrs.
PREREQUISITE: ART 113.
This course advances the student’s drawing skills in various art media. Emphasis is placed on communication through experimentation, composition, technique, and personal expression. Upon completion, the student 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 Hrs.
PREREQUISITE: None.
This course introduces the basic concepts of two-dimensional design. Topics include the elements and principles of design with emphasis on the arrangements and relationships among them. Upon completion, the student should demonstrate an effective use of these elements and principles of design in creating two-dimensional compositions.

ART 122  TWO DIMENSIONAL COMPOSITION  3 Hrs.
PREREQUISITE: ART 113 OR ART 121.
This course introduces art materials and principles of design that acquaint the beginner with the fundamentals of two-dimensional art. Emphasis is placed on the use of art fundamentals and the creative exploration of materials in constructing two-dimensional art works. Upon completion, the student should demonstrate basic technical skills and a personal awareness of the creative potential inherent in two-dimensional art forms.

ART 133  CERAMICS I  3 Hrs.
PREREQUISITE: None.
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, the student should demonstrate through his or her work, a knowledge of the methods, as well as an understanding of the craftsmanship and aesthetics involved in ceramics.

ART 134  CERAMICS II  3 Hrs.
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, the student should demonstrate improved craftsmanship and aesthetic quality in the production of pottery.

ART 143  CRAFTS II  3 Hrs.
PREREQUISITE: None.
This course is an introduction to various creative crafts, which may include work with fibers, metal, glass, or other media. Emphasis is placed on processes, techniques, materials, and creative expression. Upon completion, the student should be able to demonstrate creative uses of materials, a knowledge of the fundamentals of art, and an understanding of craftsmanship, and aesthetic quality.

ART 173  PHOTOGRAPHY I  3 Hrs.
PREREQUISITE: None.
NOTE: A 35mm single-lens reflex camera is required. This course is an introduction to the art of photography. Emphasis is placed on the technical and aesthetic aspects of photography with detailed instruction in darkroom techniques. Upon completion, the student should understand the camera as a creative tool, understand the films, chemicals and papers, and have a knowledge of composition and history.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Prerequisites/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 174</td>
<td>PHOTOGRAPHY II</td>
<td>3</td>
<td>PREREQUISITE: ART 173. NOTE: A 35mm single-lens reflex camera is required. This course advances the students’ technical and aesthetic knowledge of photography beyond the introductory level. Emphasis is placed on photographic composition and darkroom techniques as a means of communication. Upon completion, the student should demonstrate through the photographic process his/her creative and communication skills.</td>
</tr>
<tr>
<td>ART 180</td>
<td>INTRODUCTION TO GRAPHIC DESIGN</td>
<td>3</td>
<td>PREREQUISITE: None. This course is a general introduction to graphic design. Topics include history, processes, and production design. Upon completion, the student should understand the concepts used to create media graphics.</td>
</tr>
<tr>
<td>ART 203</td>
<td>ART HISTORY I</td>
<td>3</td>
<td>PREREQUISITE: None. COREQUISITE: A grade of S in ENG 093 and RDG 085 or equivalent placement score. 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, the student 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.</td>
</tr>
<tr>
<td>ART 204</td>
<td>ART HISTORY II</td>
<td>3</td>
<td>PREREQUISITE: None. COREQUISITE: A grade of S in ENG 093 and RDG 085 or equivalent placement score. 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, the student 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.</td>
</tr>
<tr>
<td>ART 231</td>
<td>WATERCOLOR PAINTING I</td>
<td>3</td>
<td>PREREQUISITE: ART 113 or ART 121. This course introduces materials and techniques appropriate to painting on paper with water-based medium. Emphasis is placed on developing the technical skills and the expressive qualities of watercolor painting. Upon completion, the student should be able to demonstrate a basic proficiency in handling the techniques of watercolor and how it can be used for personal expression.</td>
</tr>
<tr>
<td>ART 232</td>
<td>WATERCOLOR PAINTING II</td>
<td>3</td>
<td>PREREQUISITE: ART 231. This course advances the skills and techniques of painting on paper using water based medium. Emphasis is placed on exploring the creative uses of watercolor and developing professional skills. Upon completion, the student should demonstrate and compile a body of original paintings that reflect a personal awareness of the media’s potential.</td>
</tr>
<tr>
<td>ART 233</td>
<td>PAINTING I</td>
<td>3</td>
<td>PREREQUISITE: ART 113 or ART 121. This course is designed to introduce the student to fundamental painting processes and materials. Topics include art fundamentals, color theory, and composition. Upon completion, the student should be able to discuss various approaches to the media and the creative processes associated with painting.</td>
</tr>
<tr>
<td>ART 234</td>
<td>PAINTING II</td>
<td>3</td>
<td>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, the student should be able to demonstrate the application of the fundamentals of painting and the creative process to the communication of ideas.</td>
</tr>
<tr>
<td>ART 243</td>
<td>SCULPTURE I</td>
<td>3</td>
<td>PREREQUISITE: ART 127. 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, the student should understand the fundamentals of art and three-dimensional form, as well as the various media and processes associated with sculpture.</td>
</tr>
<tr>
<td>ART 244</td>
<td>SCULPTURE II</td>
<td>3</td>
<td>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, the student should be able to apply the fundamentals of art, his or her knowledge of form, and the sculptural processes to communicating ideas.</td>
</tr>
<tr>
<td>ART 291</td>
<td>SUPERVISED STUDY IN STUDIO ART I</td>
<td>1-4</td>
<td>PREREQUISITE: Permission of instructor. This course is designed to enable the student to continue studio experiences in greater depth. Topics are to be chosen by the student with the approval of the instructor. Upon completion, the student should have a greater expertise in a particular area of art.</td>
</tr>
<tr>
<td>ART 292</td>
<td>SUPERVISED STUDY IN STUDIO ART II</td>
<td>3</td>
<td>PREREQUISITE: ART 291. This course is designed to enable the student to continue studio experiences in greater depth. Topics are to be chosen by the student with the approval of the instructor. Upon completion, the student should have a greater expertise in a particular area of art.</td>
</tr>
<tr>
<td>AST 220</td>
<td>INTRODUCTION TO ASTRONOMY</td>
<td>4</td>
<td>PREREQUISITE: None. 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.</td>
</tr>
<tr>
<td>ABR 111</td>
<td>NON-STRUCTURAL REPAIR</td>
<td>3</td>
<td>PREREQUISITE: None. Students are introduced to basic principles of non-structural panel repairs. Topics include shop safety, identification and use of hand/power tools, sheet-metal repairs, and materials. Upon completion, the student should be able to perform basic sheet-metal repairs.</td>
</tr>
</tbody>
</table>
ABR 114 NON-STRUCTURAL PANEL REPLACEMENT 3 Hrs.
PREREQUISITE: None
Students are introduced to the principles of non-structural panel replacement. Topics include replacement and alignment of bolt on panels, full and partial panel replacement procedures, and attachment methods.

ABR 122 SURFACE PREPARATION 3 Hrs.
PREREQUISITE: None
This course introduces students to methods of surface preparation for vehicular refinishing. Topics include sanding techniques, metal treatment, selection of undercoats, and proper masking procedures.

ABR 123 PAINT APPLICATION AND EQUIPMENT 3 Hrs.
PREREQUISITE: None
This course introduces students to methods of paint application and equipment used for vehicular refinishing. Topics include spray gun and related equipment use, paint mixing, matching, and applying the final topcoat.

ABR 151 SAFETY AND ENVIRONMENTAL PRACTICES 3 Hrs.
PREREQUISITE: None.
This course is designed to instruct the student in safe work practices. Topics include OSHA requirements, EPA regulations, as well as state and local laws. Upon completion, the student should be knowledgeable in shop safety and environmental regulations.

ABR 154 AUTO GLASS AND TRIM 3 Hrs.
PREREQUISITE: None.
This course is a study of automotive glass and trim. Emphasis is placed on removal and replacement of structural glass, non-structural glass and auto trim. Upon completion, the student should be able to remove and replace automotive trim and glass.

ABR 156 AUTO CUTTING AND WELDING 3 Hrs.
PREREQUISITE: None.
Students are introduced to the various automotive cutting and welding processes. Emphasis is placed on safety, plasma arc and oxy-acylylene cutting, resistance type spot welding, and Metal Inert Gas (MIG) welding. Upon completion, the student should be able to safely perform automotive cutting and welding procedures.

ABR 157 AUTOMOTIVE PLASTIC REPAIRS 3 Hrs.
PREREQUISITE: None
This course provides instruction in automotive plastic repairs. Topics include plastic welding (airless, hot and chemical), use of flexible repair fillers, identification of types of plastics, and determining the correct repair procedures for each. Upon completion, students should be able to correctly identify and repair the different types of automotive plastics.

ABR 213 AUTOMOTIVE STRUCTURAL ANALYSIS 3 Hrs.
PREREQUISITE: None
Students learn methods of determining structural misalignment. Topics include methods of inspection, types of measuring equipment, data sheets, and identifying types of structural damage.

ABR 214 AUTOMOTIVE STRUCTURAL REPAIR 3 Hrs.
PREREQUISITE: None
This course provides instruction in the correction of structural damage. Topics include types and use of alignment equipment, anchoring and pulling methods, and repair/replacement of structural components.

ABR 223 AUTOMOTIVE MECHANICAL COMPONENTS 3 Hrs.
PREREQUISITE: None
This course provides instruction in collision related mechanical repairs. Emphasis is placed on diagnosis and repairs to drive train, steering/suspension components, and various other mechanical repairs.

ABR 255 STEERING AND SUSPENSION 3 Hrs.
PREREQUISITE: None.
This course introduces students to the various types of suspension and steering systems used in the automotive industry. Emphasis is placed on system components, suspension angles and effect of body/frame alignment on these components and angles. Upon completion, the student should be able to repair and/or replace damaged components and prepare the vehicle for alignment.

ABR 291 AUTO BODY REPAIR CO-OP 1 Hr.
PREREQUISITE: None.
This course is designed to provide practical shop experience for advanced students through part-time employment in the collision repair industry. Emphasis is placed on techniques used in collision repair facilities. Upon completion, the student should have gained skills necessary for entry level employment.

ABR 292 AUTO BODY REPAIR CO-OP 2 Hrs.
PREREQUISITE: Instructor approval.
This course is designed to provide practical shop experience for advanced students through part-time employment in the collision repair industry. Emphasis is placed on techniques used in collision repair facilities. Upon completion, the student should have gained skills necessary for entry level employment.

ABR 293 AUTO BODY REPAIR CO-OP 3 Hrs.
PREREQUISITE: Instructor approval.
This course is designed to provide practical shop experience for advanced students through part-time employment in the collision repair industry. Emphasis is placed on techniques used in collision repair facilities. Upon completion, the student should have gained skills necessary for entry level employment.

AUTOMOTIVE TECHNOLOGY (AUM)
AUM 101 FUNDAMENTALS OF AUTOMOTIVE TECHNOLOGY 3 Hrs.
PREREQUISITE: None.
This course provides basic instruction in Fundamentals of Automotive Technology.

AUM 110 ELECTRICAL AND ELECTRONIC SYSTEMS I 3 Hrs.
PREREQUISITE: None.
This is an introductory course in automotive electrical and electronic systems. Emphasis is placed on troubleshooting and repair of systems, subsystems, and components.

AUM 112 STARTING, CHARGING SYSTEMS AND ACCESSORIES 3 Hrs.
PREREQUISITE: None.
This course is designed to provide the basic knowledge of troubleshooting, maintenance, and repair of automotive electrical accessories. This includes the use of special tools when servicing batteries, starting systems, charging, and lighting systems. All troubleshooting and maintenance procedures must be in accordance with manufacturer's specifications.
AUM 121 BRAKING SYSTEMS 3 Hrs.
PREREQUISITE: None
This course provides instruction in automotive technology or auto mechanics. Emphasis is placed on the practical application of brakes.

AUM 122 STEERING AND SUSPENSION 3 Hrs.
PREREQUISITE: None.
This course provides instruction in automotive technology or auto mechanics. Emphasis is placed on the practical application of steering and suspension.

AUM 124 ENGINE REPAIR I 3 Hrs.
PREREQUISITE: None
This course provides instruction on the operation, design, and superficial repair of automotive engines. Emphasis is placed on understanding the four stroke cycle, intake and exhaust manifolds and related parts, engine mechanical timing components, engine cooling and lubrication system principles and repairs, and basic fuel and ignition operation.

AUM 130 DRIVE TRAIN AND AXLES 3 Hrs.
PREREQUISITE: None
This course provides basic instruction in automotive drive trains and axles. Emphasis is placed on the understanding and application of basic internal and external operation relating to proper operation and drivability.

AUM 133 MOTOR VEHICLE AIR CONDITIONING 3 Mrs.
PREREQUISITE: None
This course provides basic instruction in theory, operation, and repair of automotive heating and air conditioning systems. Phasis is placed on the understanding and repair of vehicle air conditioning and heating systems, including but not limited to air management, electrical and vacuum controls, refrigerant recovery, and component replacement.

AUM 181/182/281 SPECIAL TOPICS 1-3 Hrs.
PREREQUISITE: None.
These courses are designed to allow the student to specialize in a particular area of study with minimum instruction in automotive mechanics application and with evaluation at the instructor’s discretion. Emphasis is placed on a topic/project that the student is interested in and may include any related area in automotive mechanics. Upon completion, the student should be able to work with minimum instruction and execute the necessary techniques to finish a live work project of his or her choice.

AUM 191/291 CO-OP 2-3 Hrs.
PREREQUISITE: None.
These courses constitute a series wherein the student works on a part-time basis in a job directly related to automotive mechanics. In these courses, the employer evaluates the student’s productivity, and the student submits a descriptive report of his work experiences. Upon completion, the student will demonstrate skills learned in an employment setting.

AUM 210 ELECTRICAL AND ELECTRONIC SYSTEMS II 3 Hrs.
PREREQUISITE: None
This course provides instruction in advanced automotive electrical and electronic systems. Emphasis is placed on advanced troubleshooting and repair of electrical systems, subsystems, and components.

AUM 211 AUTOMOTIVE ELECTRONICS 3 Hrs.
PREREQUISITE: None
This course builds on the principles of laws of electricity. Emphasis is placed on series, parallel, and series-parallel circuits. Upon completion, the student should be able to calculate, build, and measure circuits.

AUM 220 ENGINE REPAIR II 3 Hrs.
PREREQUISITE: None
This course provides in depth instruction concerning internal engine diagnosis, overhaul and repair, including but not necessarily limited to the replacement of timing chains, belts, and gears, as well as the replacement or reconditioning of valve train components as well as replacement of pistons, connecting rods, piston rings, bearings, lubrication system components, gaskets, and oil seals.

AUM 222 MANUAL TRANSMISSION/TRANSAXLE 3 Hrs.
PREREQUISITE: None.
This course includes a study of manual transmission/transaxle components, gear ratios, and power flow. Topics include manual and hydraulic clutches and their service and repair. Upon completion, the student should be able to remove, repair, and replace manual transmission/transaxle components.

AUM 224 MANUAL TRANSMISSION AND TRANSAXLE 3 Hrs.
PREREQUISITE: None
This course covers basic instruction in manual transmission and transaxles. Emphasis is placed on the understanding and application of basic internal and external operation relating to proper operation and drivability.

AUM 230 AUTO TRANSMISSION AND TRANSAXLE 3 Hrs.
PREREQUISITE: None
This course provides basic instruction in automatic transmissions and transaxles. Emphasis is placed on the comprehension of principles and powerflow of automatic transmissions and repairing or replacing internal and external components.

AUM 239 ENGINE PERFORMANCE 3 Hrs.
PREREQUISITE: None
This course provides basic instruction in engine performance with emphasis on fuel and ignition systems relating to engine operation.

AUM 244 ENGINE PERFORMANCE II 3 Hrs.
PREREQUISITE: None
This course provides advanced instruction in engine performance. Emphasis is placed on engine management and computer controls of ignition fuel, and emissions systems relating to engine performance and drivability.

AUM 246 AUTOMOTIVE EMISSIONS 3 Hrs.
PREREQUISITE: None
This is an introductory course in automotive emission systems. Emphasis is placed on troubleshooting and repair of systems, subsystems, and components.

BARBERING (BAR)

BAR 110 ORIENTATION TO BARBERING 3 Hrs.
PREREQUISITE: None.
COREQUISET: BAR 111, BAR 112, and BAR 113
This course provides an orientation to professional barber styling. Topics include professional image, basic fundamentals, and the history of barber-styling. Upon completion, the student should be able to identify the core concepts of the profession.

BAR 111 SCIENCE OF BARBERING 3 Hrs.
PREREQUISITE: None.
COREQUISIT: BAR 110, BAR 112, and BAR 113
This course introduces the student to the basic science of barber-styling. Topics include anatomy/physiol-
ogy, disorders and treatments of the skin, scalp, and hair, and theory of facial and scalp massage. Upon completion, the student should be familiar with the anatomical structures, as well as disorders and treatments of the skin, scalp, and hair.

**BAR 112 BACTERIOLOGY AND SANITATION** 3 Hrs.  
**PREREQUISITE:** None.  
**COREQUISITE:** BAR 110, BAR 111, and BAR 113  
This course provides the theory of bacteriology and sanitation. Topics include the types of bacteria and sanitation procedures. Upon completion, the student should be able to identify types of bacteria and methods of sanitation.

**BAR 113 BARBER-STYLING LAB** 3 Hrs.  
**PREREQUISITE:** None.  
**COREQUISITE:** BAR 110, BAR 111, and BAR 112  
This course provides practical application of barber-styling fundamentals. Emphasis is placed on the care of implements, shampooing, and hair cutting. Upon completion, the student should be able to care for his or her implements properly and demonstrate the basic techniques of shampooing and hair cutting with only minimal supervision.

**BAR 114 ADVANCED BARBER-STYLING LAB** 3 Hrs.  
**PREREQUISITE:** BAR 110, BAR 111, BAR 112, and BAR 113  
**COREQUISITE:** BAR 115, BAR 132, and BAR 140  
This course provides the student with practical experience in hair cutting and facial massage. Emphasis is placed on hands-on experience. Upon completion, the student will be able to cut and style a client's hair, demonstrating correct scissor and clipper cutting and styling techniques.

**BAR 115 HAIR CUTTING BASICS** 4 Hrs.  
**PREREQUISITE:** BAR 110, BAR 111, BAR 112, and BAR 113  
**COREQUISITE:** BAR 114, BAR 132, and BAR 140  
This course provides practical experience in basic scissor and clipper hair cutting. Upon completion, the student should be able to cut and style a client's hair, demonstrating correct scissor and clipper cutting and styling techniques.

**BAR 132 HAIR STYLING AND DESIGN** 3 Hrs.  
**PREREQUISITE:** BAR 110, BAR 111, BAR 112, and BAR 113  
**COREQUISITE:** BAR 114, BAR 115, and BAR 140  
This course introduces the student to the art of hair style and design. Topics include the selection of styles to create a mood or complement facial features as well as hair replacement and hair pieces. Upon completion, the student should know the principals of style and design.

**BAR 140 PRACTICUM** 2 Hrs.  
**PREREQUISITE:** BAR 110, BAR 111, BAR 112, and BAR 113  
**COREQUISITE:** BAR 114, BAR 115, and BAR 132  
This course provides the student an opportunity to combine knowledge and skill covering all aspects of barber-styling in a professional setting or school lab with minimal supervision. Emphasis is placed on utilization of the knowledge and technical skills covered in the barbering-styling curriculum. Upon completion, the student should be able to function in a professional setting with very little assistance.

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**BIOLOGY (BIO)**

**BIO 101 INTRODUCTION TO BIOLOGY I** 4 Hrs.  
**GIVEN FOR BOTH BIO 101 AND 103.**  
**CREDIT TOWARD GRADUATION WILL NOT BE GIVEN FOR BOTH BIO 101 AND 103.**  
**PREREQUISITE:** None.  
Introduction to Biology covers historical studies illustrating the scientific method, cellular structure, bioenergetics, cell reproduction, Mendelian and molecular genetics, and a survey of human organ systems. (Internet Only) Includes required laboratory.

**BIO 102 INTRODUCTION TO BIOLOGY II** 4 Hrs.  
**PREREQUISITE:** BIO 101.  
Introduction to Biology II is the second of a two-course sequence for non-science majors. It covers evolutionary principles and relationships, environmental and ecological topics, classification, and a survey of biodiversity. (Internet Only) Includes required laboratory.

**BIO 103 PRINCIPLES OF BIOLOGY I** 4 Hrs.  
**GIVEN FOR BOTH BIO 101 AND 103.**  
**CREDIT TOWARD GRADUATION WILL NOT BE GIVEN FOR BOTH BIO 101 AND 103.**  
**PREREQUISITE:** Regular admission status.  
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. Laboratory is required.

**BIO 104 PRINCIPLES OF BIOLOGY II** 4 Hrs.  
**PREREQUISITE:** BIO 103.  
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, reproduction. Laboratory is required.

**BIO 120 MEDICAL TERMINOLOGY** 3 Hrs.  
**PREREQUISITE:** None.  
This course is a survey of words, terms, and descriptions commonly used in medical arts. Emphasis is placed on spelling, pronunciation, and meanings of prefixes, suffixes, and roots. No laboratory is required.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
<th>Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 100</td>
<td>INTRODUCTION TO BUSINESS</td>
<td>3</td>
<td>None</td>
<td>This course is a survey course designed to acquaint the student with American business as a dynamic process in a global setting. Topics include the private enterprise system, forms of business ownership, marketing, factors of production, personnel, labor, finance, and taxation.</td>
</tr>
<tr>
<td>BUS 146</td>
<td>PERSONAL FINANCE</td>
<td>3</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 175</td>
<td>RETAILING</td>
<td>3</td>
<td>None</td>
<td>This course is a survey 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.</td>
</tr>
<tr>
<td>BIO 150</td>
<td>HUMAN BIOLOGY</td>
<td>3</td>
<td>None</td>
<td>This course introduces the human body with emphasis on structure, function, and pathology. No laboratory is required.</td>
</tr>
<tr>
<td>BIO 201</td>
<td>HUMAN ANATOMY and PHYSIOLOGY I</td>
<td>4</td>
<td>BIO 103*</td>
<td>Students with a strong background in biology should talk with a counselor to determine if they may be exempt from this prerequisite. 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. Laboratory is required.</td>
</tr>
<tr>
<td>BIO 202</td>
<td>HUMAN ANATOMY and PHYSIOLOGY II</td>
<td>4</td>
<td>BIO 103* and BIO 201**</td>
<td>Students with a strong background in biology should talk with a counselor to determine if they may be exempt from this prerequisite. ** A grade of C or better in BIO 201 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. Laboratory is required.</td>
</tr>
<tr>
<td>BIO 220</td>
<td>GENERAL MICROBIOLOGY</td>
<td>4</td>
<td>BIO 103, 201, OR 202 (RECOMMENDED 4 SEMESTER HOURS OF CHEMISTRY)</td>
<td>* Students with a strong background in biology should talk with a counselor to determine if they may be exempt from this prerequisite. Students with a strong background in biology should talk with a counselor to determine if they may be exempt from this prerequisite. ** A grade of C or better in BIO 201 General Microbiology introduces the student to the 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. Laboratory is required.</td>
</tr>
<tr>
<td>BUS 176</td>
<td>PROMOTIONAL STRATEGIES</td>
<td>3</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 177</td>
<td>SALESMANSHIP</td>
<td>3</td>
<td>None</td>
<td>This course provides an introduction to the principles and practices of salesmanship. Topics include industrial and retail selling methods of market analysis, professional salesmanship and sales methods, consumer types, attitudes, and behavior.</td>
</tr>
<tr>
<td>BUS 186</td>
<td>ELEMENTS OF SUPERVISION</td>
<td>3</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 188</td>
<td>PERSONAL DEVELOPMENT</td>
<td>1</td>
<td>None</td>
<td>This course provides strategies for personal and professional development. Topics include business etiquette, personal appearance, interviewing techniques, and development of a self-concept necessary for business success.</td>
</tr>
<tr>
<td>BUS 189</td>
<td>HUMAN RELATIONSHIPS</td>
<td>1-3</td>
<td>None</td>
<td>This course enables employees to better understand actions and motivations within the organizational structure. Topics include general principles of human behavior operating in the workplace.</td>
</tr>
<tr>
<td>BUS 190</td>
<td>MANAGEMENT WORKSHOP I</td>
<td>1-3</td>
<td>None</td>
<td>This course is a part of a series of workshops wherein current topics of interest are presented. They are offered upon demand and can be tailored for the needs of individuals, business and industry.</td>
</tr>
<tr>
<td>BUS 191</td>
<td>MANAGEMENT WORKSHOP II</td>
<td>1-3</td>
<td>None</td>
<td>This course is a part of a series of workshops wherein current topics of interest are presented. They are offered upon demand and can be tailored for the needs of individuals, business and industry.</td>
</tr>
<tr>
<td>BUS 215</td>
<td>BUSINESS COMMUNICATION</td>
<td>3</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 241</td>
<td>PRINCIPLES OF ACCOUNTING I</td>
<td>3</td>
<td>MTH 100 placement</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 242</td>
<td>PRINCIPLES OF ACCOUNTING II</td>
<td>3</td>
<td>BUS 241</td>
<td>This course is a continuation of BUS 241. In addition to a study of financial accounting, this course also places emphasis upon managerial accounting, with</td>
</tr>
</tbody>
</table>
coverage of corporations, statement analysis introductory cost accounting, and use of information for planning, control, and decision making.

**BUS 260 STATISTICAL DATA ANALYSIS**  3 Hrs.
PREREQUISITE: CIS 146 and MTH 112 or equivalent placement score.
Introduction to the use of basic statistical concepts in business applications. Descriptive statistics, index numbers, measures of central tendency and variation, probability, random variables, discrete and continuous probability distributions, sampling distributions, and point and interval estimation are covered. Computer software applications are utilized.

**BUS 263 THE LEGAL AND SOCIAL ENVIRONMENT OF BUSINESS**  3 Hrs.
PREREQUISITE: None.
This course provides an overview of the legal and social environment for business operations with emphasis on contemporary issues and their subsequent impact on business. Topics include the Constitution, the Bill of Rights, the legislative process, civil and criminal law, administrative agencies, trade regulations, consumer protection, contracts, employment, and personal property.

**BUS 271 BUSINESS STATISTICS I**  3 Hrs.
PREREQUISITE: Two years of high school algebra, MTH 100 or equivalent placement score.
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 Hrs.
PREREQUISITE: BUS 271.
This course is a continuation of BUS 271. Topics include sampling theory, statistical interference, regression and correlation, chi square, analysis of variance, time series index numbers, and decision theory.

**BUS 275 PRINCIPLES OF MANAGEMENT**  3 Hrs.
PREREQUISITE: None.
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 Hrs.
PREREQUISITE: None.
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 Hrs.
PREREQUISITE: None.
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 Hrs.
PREREQUISITE: None.
This course provides a general overview of the field of marketing. Topics include marketing strategies, channels of distribution, marketing research, and consumer behavior.

**BUS 291 ALTERNATING BUSINESS CO-OP**  1-3 Hrs.
PREREQUISITE: None.
This three-course sequence allows students to alternate semesters of full-time work in a job closely related to the student's academic major with semesters of full-time academic work. Emphasis is placed on a student's work experience as it integrates academic knowledge with practical applications in the business environment. The grade is based on the employer's evaluation of student productivity, evaluative reports submitted by the student, and the development and assessment by the student of a learning contract.

**Carpentry (CAR)**

**CAR 111 CONSTRUCTION BASICS**  3 Hrs.
PREREQUISITE: None.
This course introduces students to the opportunities in and requirements of the construction industry. Topics include economic outlook for construction, employment outlook, job opportunities, training, apprenticeship, entrepreneurship, construction tools, materials, and equipment, and job safety. Upon completion, the student should be able to identify the job market, types of training, knowledge of apprenticeship opportunities, construction tools, materials, equipment, and safety procedures.

**CAR 112 FLOORS, WALLS, SITE PREP**  3 Hrs.
PREREQUISITE: CAR 111.
This course introduces the student to floor and wall layout and construction. Topics include methods of house framing, components of floor framing, layouts, sub-flooring, connectors and fasteners, and site preparation. Upon completion, the student will be able to identify various types of floor framing systems, select the sizes of floor joists, identify types of house framing, list types of fasteners, and identify property lines, set backs, and demonstrate a working knowledge of terrain and batter boards.

**CAR 113 FLOORS, WALLS, SITE PREP LAB**  3 Hrs.
PREREQUISITE: CAR 111.
(COREQUISITE: CAR 112.)
The student will engage in applications of floor and wall construction, application of required tools, use of the builder transit, level rod, tape measure, and grade stakes. Emphasis is placed on cutting sill plates, floor joists, girders, header bridging, sub-flooring, stud wall partitions, door and window headers, wall bracing, leveling instruments, and batter boards. Upon completion, the student should be able to layout and construct a floor, including the sill, joist bridging and openings, install sub-flooring, construct interior and exterior walls, and layout property stakes of site plans.

**CAR 114 INTRODUCTION TO CARPENTRY TOOLS AND MATERIALS**  3 Hrs.
PREREQUISITE: None.
This course provides practical and safe application of hand, portable power, stationary and pneumatic tools, use of building materials, fasteners and adhesives, and job site safety. Emphasis is placed on the safe use of hand, power, and pneumatic tools, proper selection of lumber, plywood, byproducts, nails, bolts, screws, adhesives, fasteners, and other construction materials, and job safety. Upon completion, the student should be able to identify hand, power, stationary and pneumatic tools and demonstrate their safe use; identify and properly select wood and non-wood building products, and properly use nails, fasteners and adhesives.
CAR 121 INTRODUCTION TO BLUEPRINT READING 3 Hrs.
PREREQUISITE: None.
This course introduces the student to the basic concepts of blueprint reading. Topics include scales, symbols, site plans, and notations. Upon completion, the student should be able to identify drawings, scale various drawings, and identify different types of lines, symbols, and notations.

CAR 122 CONCRETE AND FORMING 3 Hrs.
PREREQUISITE: CAR 111.
This course introduces the student to the properties and uses of concrete and to the procedures for designing concrete forms. Topics include making and pouring concrete, constructing concrete forms, reinforcement methods, finishing concrete, and job safety. Upon completion, the student should be able to list safety rules for the job site, identify components of concrete, describe how concrete forms are built, and how concrete is poured, reinforced, and finished.

CAR 123 CONCRETE AND FORMING LAB 3 Hrs.
PREREQUISITE: CAR 111. COREQUISITE: CAR 122.
This course provides students with practical experience in concrete applications. Emphasis is placed on job site safety, concrete forming, mixing, pouring, finishing, and reinforcing. Upon completion, the student should be able to properly construct walls and floors, and demonstrate proper uses of metal studs and framing members.

CAR 124 WALL AND FLOOR SPECIALTIES 3 Hrs.
PREREQUISITE: CAR 111.
This course introduces the student to the use of structural steel and metal studs in walls and floors. Emphasis is placed on wall and floor construction. Upon completion, the student should be able to describe components and proper application of structural steel, properly construct walls and floors, and demonstrate proper use of metal studs and framing members.

CAR 131 ROOF AND CEILING SYSTEMS 3 Hrs.
PREREQUISITE: CAR 111.
This course focuses on the design and installation of roof and ceiling systems. Emphasis is placed on rafters, trusses, ceiling joists, roof decking, and roofing materials. Upon completion, the student should be able to identify proper installation methods of roofing materials, and describe applicable safety rules.

CAR 132 INTERIOR AND EXTERIOR FINISHING 3 Hrs.
PREREQUISITE: CAR 111.
This course introduces the student to interior and exterior finishing materials and techniques. Topics include interior trim of windows and doors, ceilings and wall moldings, exterior sidings, trim work, painting, and masonry finishes. Upon completion, the student should be able to identify different types of doors, windows and moldings, and describe the uses of each, identify types of exterior sidings and trim, and describe the different types of paint and their proper application.

CAR 133 ROOF and CEILING SYSTEMS LAB 3 Hrs.
PREREQUISITE: CAR 111. COREQUISITE: CAR 131.
The course provides students with practical experience in building and installing roof and ceiling systems. Emphasis is placed on job site safety, layout and cutting of rafters and joists, cutting and building trusses, installing roof decking, and roofing materials. Upon completion, the student should be able to cut and install rafters, joists and trusses, cut and apply roof decking and roofing materials, and apply safety rules for job site.

CAR 193 INTERNSHIP IN CARPENTRY 3 Hrs.
PREREQUISITE: CAR 111.
This course is designed to provide exposure to carpentry practices in non-employment situations. Emphasis is placed on techniques used in the carpentry profession. This course allows students to refine their skills necessary for entry-level employment.

CAR 213 PLANS, SPECIFICATIONS AND CODES 3 Hrs.
PREREQUISITE: None.
This course provides students experience in house plans, specifications, and building codes. Upon completion, the student should be able to read and draw a set of plans, list and use specifications to order materials, and use codes to plan location and safety of structures.

CAR 215 SPECIAL PROJECTS IN CARPENTRY 3 Hrs.
PREREQUISITE: None.
This course allows the student to plan, execute, and present results of individual projects in carpentry. Emphasis is placed on enhancing skill attainment in the carpentry field. This culminating course allows students to independently apply skills attained in previous courses.

CAR 217 ESTIMATING 3 Hrs.
PREREQUISITE: CAR 111 and CAR 121.
This course provides the student with technical knowledge to estimate construction materials and costs for preparing order sheets or bids on construction jobs. Emphasis is placed on techniques for estimating jobs. Upon completion, the student should be able to develop a comprehensive estimate for a carpentry job.

CAR 218 CONSTRUCTION PROJECT MANAGEMENT 3 Hrs.
PREREQUISITE: None.
This course focuses on the basic scheduling of projects. Topics include project definition, basic building blocks for scheduling, refining a schedule, and communications. Upon completion, the student is expected to understand the meaning and purpose of project planning and management, use a schedule in management, and be able to communicate and coordinate work activities.

CHEMISTRY (CHM)

CHM 104 INTRODUCTION TO INORGANIC CHEMISTRY 4 Hrs.
PREREQUISITE: MTH 098 (Developmental Algebra II) 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 Hrs.
PREREQUISITE: CHM 104 (Introduction to Inorganic Chemistry) or CHM 111 (College Chemistry I)
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 109 INTRODUCTORY CHEMISTRY FOR NON-MAJORS I 4 Hrs.
PREREQUISITE: or CO-REQUISITE: MTH 100.
This is a survey course to teach basic scientific literacy and chemical principles. Includes environmental chemistry, household chemicals, nutrition, genetic engineering, and other subjects pertinent to non-majors. Not open to students that have earned credits in CHM 104 or CHM 111.

CHM 110 INTRODUCTORY CHEMISTRY FOR NON-MAJORS II 4 Hrs.
PREREQUISITE: CHM 109.
This is a survey course to teach basic scientific literacy and chemical principles. Includes environmental chemistry, household chemicals, nutrition, genetic engineering, and other subjects pertinent to non-majors. Not open to students that have earned credits in CHM 105 or CHM 112.

CHM 111 COLLEGE CHEMISTRY I 4 Hrs.
PREREQUISITE: MTH 112 or equivalent math 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 thermochimistry, 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 Hrs.
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 kinetics, 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 Hrs.
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 reaction 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 Hrs.
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 of representative organic compounds with emphasis on basic techniques.

CHILD DEVELOPMENT (CHD)

CHD 100 INTRODUCTION TO EARLY CARE AND EDUCATION OF CHILDREN 3 Hrs.
PREREQUISITE: None.
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, the student 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 Hrs.
PREREQUISITE: None.
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, the student 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 Hrs.
PREREQUISITE: None.
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, art, science, math, and movement with observation and participation with young children required. Upon completion, the student 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 203 CHILDREN’S LITERATURE AND LANGUAGE DEVELOPMENT 3 Hrs.
PREREQUISITE: None.
This course surveys appropriate literature and language arts activities 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, the student should be able to create, evaluate, and implement creative and age-appropriate experiences for young children.

CHD 204 METHODS AND MATERIALS FOR TEACHING CHILDREN 3 Hrs.
PREREQUISITE: None.
This course introduces basic methods and materials used in teaching young children. Emphasis is placed on the student compiling a professional resource file of activities used for teaching math, language arts, science, and social studies concepts. Upon completion, the student 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 Hrs.
PREREQUISITE: None.
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, the student 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 Hrs.
PREREQUISITE: None.
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, the student should be able to prepare a healthy, safe environment, plan nutritious meals and snacks, and recommend referrals if necessary.

CHD 208 ADMINISTRATION OF CHILD DEVELOPMENT PROGRAMS 3 Hrs.
PREREQUISITE: None.
This course includes appropriate administrative policies and procedures relevant to preschool programs. Topics include local, state, and federal regulations; budget planning; record keeping; personnel policies and parent involvement. Upon completion, the student should be able to identify elements of a sound business plan, develop familiarity with basic record-keeping techniques, and identify elements of a developmentally appropriate program.

CHD 209 INFANT AND TODDLER EDUCATION PROGRAMS 3 Hrs.
PREREQUISITE: None.
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, the student should be able to plan an infant-toddler program and environment which is appropriate and supportive of the families and the children.

CHD 210 EDUCATING EXCEPTIONAL YOUNG CHILDREN 3 Hrs.
PREREQUISITE: None.
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; emotional, behavioral, and neurological handicaps. Upon completion, the student should be able to identify appropriate strategies for working with young exceptional children.

CHD 211 CHILD DEVELOPMENT SEMINAR 2 Hrs.
PREREQUISITE: None.
A selection of topics relating to young children are addressed in this course. Subject matter will vary according to industry and student needs. Upon completion, the student should demonstrate competencies designed to assess course objectives.

CHD 215 SUPERVISED PRACTICAL EXPERIENCE IN CHILDHOOD DEVELOPMENT 3 Hrs.
PREREQUISITE: CHD 202, CHD 204, and CHD 205.
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, the student should be able to demonstrate competency in a child care setting.

COMMERCIAL ART (CAT)

CAT 118 DESIGN DRAWING 3 Hrs.
PREREQUISITE: None.
This course introduces students to five basic drawing component skills. Topics include the perception of edges, space, relationships, shadow, and lights. Upon completion, the student should be able to apply the fundamentals of drawing and be able to use different mediums and techniques.

CAT 126 TYPESETTING FUNDAMENTALS 3 Hrs.
PREREQUISITE: None.
This course introduces students to type and text production. Emphasis is placed on development of the typographic form from historic pictography representation to modern-type styles and high-resolution electronic image setting. Upon completion, the student should be able to apply the fundamentals of drawing and be able to use different mediums and techniques.

CAT 130 PRINCIPLES OF DESIGN 3 Hrs.
PREREQUISITE: None.
This course introduces students to the basic principles and elements of design. Emphasis is placed on design concepts including asymmetrical, symmetrical, and radial design, as well as line, shape, texture, value, and color in design. Upon completion, the student should be able to apply design concepts.

CAT 132 BASIC ADVERTISING DESIGN 3 Hrs.
PREREQUISITE: None.
This course focuses on design assignments related to the commercial art field and introduces students to graphic design techniques and camera-ready art. Emphasis is placed on creating and producing advertising design pieces. Upon completion, the student should be able to apply creative thinking in design communications and should be able to produce advertising design from concept to printed pieces.

CAT 140 PHOTOGRAPHY 3 Hrs.
PREREQUISITE: None.
This course is an introduction to black and white 35mm photography. Emphasis is placed on photographic composition and aesthetic and technical aspects of photography. Upon completion, the student should be able to operate a single reflex camera, and be able to apply techniques of technical camera applications, film processing, and darkroom printing.

CAT 142 INTERMEDIATE ADVERTISING DESIGN 3 Hrs.
PREREQUISITE: CAT 132.
This course includes advance design concepts and assignments. Emphasis is placed on various design elements including artistic rendering, photo illustrations, typography, and computer layout as applied to advertising campaigns. Upon completion, the student should be able to use his or her graphic arts skills to produce professional art work.
CAT 144 BASIC AIRBRUSH ARTISTRY 3 Hrs.
PREREQUISITE: None.
This course introduces beginning students to the fundamentals of airbrush art using basic control and modeling exercises. Topics include airbrush maintenance, the rendering of a cube, cylinder, circle, and graduated wash. Upon completion, the student should be able to produce a finished illustration.

CAT 146 INTERMEDIATE AIRBRUSH ARTISTRY 3 Hrs.
PREREQUISITE: CAT 144.
This course focuses on intermediate level airbrush techniques. Topics include the rendering of textures and surfaces such as chrome, glass, wood, and reflections used in technical illustrations. Upon completion, the student should be able to create portfolio quality work.

CAT 148 ADVANCED AIRBRUSH ARTISTRY 3 Hrs.
PREREQUISITE: CAT 146.
This course is an advanced study for students proficient in airbrush techniques. Topics include technical illustrations such as editorials, advertising, and self-promotional pieces. Upon completion, the student should be able to develop strong design concepts.

CAT 150 ADVANCED ADVERTISING DESIGN 3 Hrs.
PREREQUISITE: CAT 142.
This course allows students to create, design, and produce a corporate image project. Emphasis is placed on the development of the repetitive grids, using photographs as clip art, scanned images, and page layout software. Upon completion, the student should be able to apply manual and computer skills to advertising design projects.

CAT 152 DIGITAL PHOTOGRAPHY 3 Hrs.
PREREQUISITE: CAT 140.
This course introduces the student to digital imaging techniques. Emphasis is placed on the technical application of the camera and on digital photographic lighting methods. Upon completion, the student should be able to determine the need for digital photography versus reproduction quality advertising photography and understand both concepts.

CAT 160 PORTFOLIO 3 Hrs.
PREREQUISITE: CAT 150.
This course provides the advanced student an opportunity to use previous commercial art training to design and produce a professional and marketable portfolio for final presentation. Emphasis is placed on a complete portfolio, resume, cover letter, and self-promotional piece. Upon completion, the student should be able to formulate portfolio quality work for job interviews.

CAT 175 ILLUSTRATION I 3 Hrs.
PREREQUISITE: None.
This course introduces the student to the fundamentals of illustration using assorted media including pencil, watercolor, gouache, colored pencil, pastels, etc. Emphasis is placed on drawing and illustrating perception, color, and execution. Dynamic illustrations are pursued through layouts for print advertisements, articles, and books.

CAT 176 ILLUSTRATION II 3 Hrs.
PREREQUISITE: CAT 175.
This course develops the student's ability to illustrate and apply those illustrations to practical projects incorporating advertising and page illustrations for articles, books and assorted applications. Realistic and stylized illustration concepts will be explored along with different media.

CAT 180 CURRENT TOPICS IN COMMERCIAL ART 3 Hrs.
PREREQUISITE: None.
This course is a survey of current trends in the commercial art industry. Emphasis is placed on perspective drawing, watercolor and medical illustration, typography design and font management, comic art and computer animation, digital graphics, and advanced computer graphics. Upon completion, the student should be able to perform skills in graphic illustration and should be able to use current technology in the industry.

CAT 182 3D GRAPHICS AND ANIMATION 3 Hrs.
PREREQUISITE: CAT 111.
This course is designed to tap the imagination of the student in a three dimensional problem solving environment. Topics include a basic introduction to the concepts of 3D design and animation as applied to a design project. Upon completion, the student should be able to create and animate objects in a three-dimensional environment.

CAT 183/184 SPECIAL TOPICS IN COMMERCIAL ART 3 Hrs.
PREREQUISITE: None.
These courses provide specialized instruction in various areas related to the commercial art industry. Emphasis is placed on meeting students' needs.

CAT 185 IMAGING I 3 Hrs.
PREREQUISITE: None.
Introduction to Illustrator and Photoshop software on the Macintosh computer. Emphasis is placed on using the tools in both software programs and advancing to practical advertising and page layouts using stock photos, images, and basic design principles. Comprehending and applying commands and procedures is the objective.

CAT 186 IMAGING II 3 Hrs.
PREREQUISITE: CAT 185.
This course develops the student's techniques with scanned images, stock photos, and images in combination with graphic design. Projects for page layouts to article and booklet layout will be introduced and emphasis placed on total execution from concept to printed piece.

CAT 191 COOPERATIVE WORK EXPERIENCE IN COMMERCIAL ART 1 Hr.
PREREQUISITE: CAT 142.
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, the student should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

CAT 202 ADVERTISING 3 Hrs.
PREREQUISITE: None.
Through a variety of projects simulating various real world advertising media, this course guides students to apply design in persuasive commercial communications. Students study understanding the target audience, psychology of persuasive communication, types of advertising approaches, and working with the advertising client. Emphasis is on learning to think from the customers point of view in order to identify the types of visual communication most likely to enhance sales.
### COMMERCIAL FOOD SERVICES (CFS)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFS 101</td>
<td>Orientation to the Food Service Industry</td>
<td>1 Hr.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 102</td>
<td>Catering</td>
<td>2 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 110</td>
<td>Basic Food Preparation</td>
<td>3 Hrs.</td>
<td>CFS 101, CFS 111, and CFS 114.</td>
</tr>
<tr>
<td>CFS 111</td>
<td>Foundations in Nutrition</td>
<td>3 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 112</td>
<td>Sanitation, Safety, and Food Service</td>
<td>2 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 113</td>
<td>Table Service</td>
<td>2 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 114</td>
<td>Meal Management</td>
<td>3 Hrs.</td>
<td>CFS 101, CFS 110, CFS 111, and CFS 112.</td>
</tr>
<tr>
<td>CFS 141</td>
<td>Food Production for Special Operations</td>
<td>2 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 199</td>
<td>Healthy Cooking</td>
<td>1 Hr.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 201</td>
<td>Meat Preparation and Processing</td>
<td>2 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 204</td>
<td>Foundations of Baking</td>
<td>3 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 213</td>
<td>Food Purchasing and Cost Control</td>
<td>3 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 251</td>
<td>Menu Design</td>
<td>2 Hrs.</td>
<td>None.</td>
</tr>
<tr>
<td>CFS 260</td>
<td>Internship for Commercial Food Service</td>
<td>3 Hrs.</td>
<td>Permission of instructor.</td>
</tr>
<tr>
<td>CFS 299</td>
<td>Special Topics in Commercial Food Preparation</td>
<td>3 Hrs.</td>
<td>Permission of instructor.</td>
</tr>
</tbody>
</table>

This course is an introduction to the food service industry and employment opportunities. This course focuses on the different types of food service/hospitality outlets. Upon completion, the student will be knowledgeable of business and career opportunities within the food service industry.

This course includes the theory and practice of operating a catering business. Topics include food production and management related to catering and other special services. Upon completion, the student will have a working knowledge of the principles involved in operating a catering business.

This course introduces the fundamental concepts, skills, and techniques involved in basic food preparation and the relationship of food composition and structure to food preparation. The student will develop competencies in food preparation as it relates to the food service industry.

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 economic and cultural influences on food selection. Upon completion, the student will be able to apply the basic principles of meal planning.

This course introduces the basic principles of sanitation and safety to food handling including purchasing, storing, preparing, and serving. Topics include the scientific principles of food sanitation, food spoilage, food-borne disease, personal health and hygiene, and the sanitary care of the physical plant and equipment. Upon completion, the student will be able to demonstrate an understanding of sanitation and safety procedures related to H.A.C.C.P. regulations and the implementation of H.A.C.C.P. systems.

This course is a guide for the modern wait staff. Topics include laying the cover, taking the order, surveying of the other stations of the kitchen, and customer needs. Upon completion, the student should be able to write, lay out, and produce effective menus for a variety of hospitality settings.

The student will become educated in the principles of sanitation and safety for the prevention of disease through a lecture/lab course. Basic principles of nutrition will be discussed along with practical aspects of nutrition management of meats including beef, pork, poultry, fish, and seafood so they can be used for final preparations in the other stations of the kitchen. Upon completion, the student will be able to demonstrate an understanding of the principles in meat preparation and processing.

This course covers the principles of meat preparation and processing. The student will be responsible for the preparation of meats including beef, pork, poultry, fish, and seafood so they can be used for final preparations in the other stations of the kitchen. Upon completion, the student should be able to plan, organize, and prepare food service items for special operations.

This course provides instruction in special topics in commercial food preparation. Emphasis is placed on timely topics related to commercial food preparation.
and service and may be repeated as subject matter varies. Upon completion, the student will have an understanding of timely topics relative to the commercial food preparation industry.

COMPUTERIZED NUMERICAL CONTROL (CNC)

CNC 101 INTRODUCTION TO CNC  6 Hrs.
PREREQUISITE: None.
This is an introductory course with emphasis placed on the basic concepts and terminology of numerical control. Topics include Cartesian coordinate system, CNC principles, and machine capabilities. Student will gain an understanding of CNC machine tools and their usage.

CNC 102 CNC TURNING OPERATIONS  6 Hrs.
PREREQUISITE: None.
This course is a study introducing the student to two-axis part programming. Applications of graphics programming and lathe set-up are also included. Students will learn to write CNC Turning programs, set-up, and operate the CNC lathe.

CNC 103 MANUAL PROGRAMMING  6 Hrs.
PREREQUISITE: None.
This course will emphasize calculations for CNC machine tools. Topics will include G and M codes, radius programming, and cutter compensations. Student will learn to write a variety of CNC programs which can be used on the job as reference programs.

CNC 104 CNC MILLING OPERATIONS  6 Hrs.
PREREQUISITE: None.
This is a course in programming and operation of the CNC Milling Machines. Applications include maintenance, safety, and production of machine parts through programming, set-up, and operation. Student will learn to produce finished parts on the CNC milling machines.

CNC 142 APPLIED GEOMETRY FOR CNC MACHINE  3 Hrs.
PREREQUISITE: None.
This course introduces applied geometry as it relates to CNC. Emphasis is placed on geometry applied to problem solving used to make calculations for machining parts for CNC from engineering drawings. Upon completion, the student should be able to solve problems required for planning, making, and checking of machined parts.

CNC 143 APPLIED TRIGONOMETRY FOR CNC MACHINING  3 Hrs.
PREREQUISITE: None.
This course introduces the concepts of applied trigonometry for CNC machining. Topics include computing unknown sides, angles, projection of auxiliary lines to solve two or more right triangles as it relates to CNC programming and precision machining. Upon completion, the student should be able to analyze and make computations in orderly steps to make and inspect parts.

CNC 181/281 SPECIAL TOPICS IN COMPUTERIZED NUMERICAL CONTROL  3 Hrs.
PREREQUISITE: None.
These courses provide specialized instruction in various areas related to CNC. Emphasis is placed on meeting student’s needs.

CNC 215 QUALITY CONTROL AND ASSURANCE  3 Hrs.
PREREQUISITE: None.
This is an advanced course in parts inspection using Geometric Dimensioning and Tolerancing, and familiarization of the Coordinate Measuring Machine. Topics include part set-up, tolerance applications, maximum material and least material conditions, perpendicularity and point of intersection. Upon completion, the student should be able to inspect machined parts demonstrating an understanding of G.D.T and C.M.M.

CNC 216 QUALITY CONTROL II  3 Hrs.
PREREQUISITE: None.
This course is a continuation of CNC 215. Topics include set-up, and operation of a CNC coordinate measuring machine. Students will learn to program and set up a complex part for inspection.

CNC 217 TOOLLING AND MACHINING DATA  3 Hrs.
PREREQUISITE: None.
This course focuses on technical applications in cutting tool technologies. Emphasis is placed on machining data for material removal parameters on turning and milling machines. Students will learn tool selection, tool terminology, and material removal calculations.

CNC 218 PROGRAMMING AND SET-UP FOR ELECTRICAL DISCHARGE MACHINING  6 Hrs.
PREREQUISITE: None.
This course introduces the student to the concept of EDM (Electrical Discharge Machining). Topics include principles, programming techniques, set-up, and operation. Students will learn to product basic machine parts.

CNC 222 COMPUTER NUMERICAL CONTROL GRAPHICS: TURNING  3 Hrs.
PREREQUISITE: None.
This course introduces Computer Numerical Control graphics programming and concepts for turning center applications. Emphasis is placed on the interaction of menus to develop a shape file in a graphics CAM system and to develop tool path geometry and part geometry. Upon completion, the student should be able to develop a job plan using CAM software, include machine selection, tool selection, operational sequence, speed, feed, and cutting depth.

CNC 223 COMPUTER NUMERICAL CONTROL GRAPHICS PROGRAMMING: MILLING  3 Hrs.
PREREQUISITE: None.
This course introduces Computer Numerical Control graphics programming and concepts for machining center applications. Emphasis is placed on developing a shape file in a graphics CAM system and transferring coded information from CAM graphics to the CNC milling center. Upon completion, the student should be able to develop a complete job plan using CAM software to create a multi-axis CNC program.

CNC 227 INTRODUCTION TO STATISTICAL PROCESS CONTROL  3 Hrs.
PREREQUISITE: None.
This is an introductory course in statistical process control of manufacturing processes. Topics include control charts, pareto diagrams, and cause - effect diagrams. Upon completion, the student is expected to perform basic functions in analysis and control of manufacturing processes.

CNC 229 TOTAL QUALITY MANAGEMENT  3 Hrs.
PREREQUISITE: None.
This is an introductory course designed to cover Total Quality Management (TQM) concepts. Topics include common direction, team building, statistical analysis, and problem solving skills and techniques. Upon completion, the student will acquire a knowledge in TQM as it relates to the industrial setting.
CNC 230  COMPUTER NUMERICAL CONTROL  SPECIAL PROJECTS  3 Hrs.
PREREQUISITE: None.
This course is designed to allow the student to work in the lab with limited supervision. The student is to enhance his or her proficiency levels on various CNC machine tools. Upon completion, the student is expected to plan, execute, and present results of advanced CNC products.

CNC 234  PRECISION MACHINING PRACTICES  5 Hrs.
PREREQUISITE: None.
This course is designed to teach construction, operation, and safety precautions of the JIG-BORE and hardinge chucking lathe. Topics include precision boring, facing head, and rotary table. Upon completion, the student should be able to manufacture parts with extreme close tolerance.

COMPUTER SCIENCE (CIS)

CIS 117  DATABASE MANAGEMENT SOFTWARE APPLICATIONS  3 Hrs.
PREREQUISITE: MTH 098 or MTH 100 or equivalent placement score.
This course provides students with hands-on experience using database management software. Students will develop skills common to most database management software by developing a wide variety of databases. Emphasis is on planning, developing, and editing functions associated with database management.

CIS 146  MICROCOMPUTER APPLICATIONS  3 Hrs.
PREREQUISITE: None.
This course is an introduction to the most common software applications of microcomputers and includes “hands-on” use of microcomputers and some of the major commercial software. These software packages should include typical features of office suites, such as word processing, spreadsheets, database systems, and other features found in current software packages. Upon completion, the student will understand common applications and be able to utilize selected features of these packages.

CIS 160  MULTIMEDIA FOR THE WORLD WIDE WEB  3 Hrs.
PREREQUISITE: None.
This course covers contemporary, interactive multimedia technology systems, focusing on types, applications, and theories of operation. In addition to the theoretical understanding of the multimedia technologies, the student will learn how to digitize and manipulate images, voice, and video materials, including authoring a website utilizing multimedia.

CIS 170  FUNDAMENTALS OF COMPUTER NETWORKING  3 Hrs.
PREREQUISITE: MTH 100 and one of the following: CIS 212 or CIS 191 or CIS 251.
Adding to the rapid pace of automation and computerization is the need for ever increasing connectivity. The introduction of digital transmission technologies combined with the advent of inexpensive computing power has resulted in an explosion of features and services and a bewildering range of communications strategies. This course provides the technical foundations and skills necessary to understand local area networks, data transmission, network operating systems and protocols, and client/server concepts.

CIS 177  MARKETING ON THE WORLD WIDE WEB  3 Hrs.
PREREQUISITE: None.
Technological change has provided businesses with tremendous opportunities for increasing the efficiency and effectiveness of many activities. By using the tools of the Internet, businesses have taken information and information sharing to new levels, transforming the very core of business. This course will examine how the Internet has changed business with an emphasis on increasing a professional’s ability to use and understand the tools of the Internet.

CIS 191  INTRO TO COMPUTER SCIENCE  3 Hrs.
PREREQUISITE: MTH 100 or equivalent math placement score.
This course introduces fundamental concepts, including an algorithmic approach to problem-solving via the design and implementation of programs in selected language such as Pascal, C, Ada, Visual Basic, or other appropriate languages. Structured programming techniques involving input/output, conditional statements, loops, files, arrays, and structures, and simple data structures are introduced. Upon completion, the student will be able to demonstrate knowledge of the subject through the completion of programming assignments and testing.

CIS 193  INTRO TO COMPUTER PROGRAMMING LAB  1 Hr.
COREQUISITE: CIS 191.
In the Programming laboratory, students develop and apply the basic programming skills taught in CIS 191.

CIS 196A  WORD PROCESSING  3 Hrs.
PREREQUISITE: OAD 101
This course is designed to provide the student with basic word processing skills through classroom instruction and outside lab. Emphasis is placed on the utilization of software features to create, edit, and print common office documents. Upon completion, the student should be able to demonstrate the ability to use industry standard software and generate appropriately formatted, accurate, and attractive business documents such as memos, letters, tables, and reports.

CIS 196B  ADVANCED WORD PROCESSING  3 Hrs.
PREREQUISITE: OAD 125/CIS 196A
This course is designed to increase student proficiency in using the advanced word processing functions through classroom instruction and outside lab. Emphasis is on the use of software to maximize productivity. Upon completion, the student should be able to demonstrate the ability to generate complex documents such as forms, newsletters, and multi-page documents.

CIS 196C  WORDPERFECT  3 Hrs.
PREREQUISITE: OAD 101
This course is designed to provide the student with basic word processing skills through classroom instruction and outside lab. Emphasis is placed on the utilization of software features to create, edit, and print common office documents. Upon completion, the student should be able to demonstrate the ability to use industry-standard software and generate appropriately formatted, accurate, and attractive business documents such as memos, letters, tables, and reports. The State Department of Education refers to this course as Office Applications.
CIS 196D THE ELECTRONIC OFFICE 3 Hrs.
PREREQUISITE: OAD 125/CIS 196A or OAD 231/CIS 196C or CIS 196G

Electronic Office is designed to work with each of the four Microsoft Office programs: Word, Excel, PowerPoint, and Access to create meaningful projects and perform business tasks. Students will learn how to streamline specific applications by integrating two or more of the Office programs, and how to use the World Wide Web to gather information. Upon completion, the student should be able to demonstrate the ability to use industry-standard software and generate appropriately formatted, accurate, and attractive business documents.

CIS 196E MICROSOFT EXCEL 3 Hrs.
PREREQUISITE: OAD 101

This course is designed to provide the student with a firm foundation in the use of computerized equipment and appropriate software in performing spreadsheet tasks through classroom instruction and outside lab. Emphasis is on spreadsheet terminology and design, common formulas, proper file and disk management procedures. Upon completion, the student should be able to use spreadsheet features to design, format, and graph effective spreadsheets. The State Department of Education refers to this course as Spreadsheet Applications.

CIS 196F ELECTRONIC PUBLISHING 3 Hrs.
PREREQUISITE: OAD 101

This course is designed to introduce the student to the elements and techniques of page design, layout, and typography through classroom instruction and outside lab. Emphasis is on the use of current commercial desktop publishing software, graphic tools, and electronic input/output devices to design and print high quality publications such as newsletters, brochures, catalogs, forms, and flyers. Upon completion, the student should be able to utilize proper layout and design concepts in the production of attractive desktop published documents.

CIS 196G MICROSOFT ACCESS AND POWERPOINT 3 Hrs.
PREREQUISITE: OAD 101

Access is a computer program used to enter, maintain, and retrieve related data in a format known as a database. Upon completion, the student should be able to create a database, organize and update the data, prepare queries to find the needed information, and choose attractive and functional methods for viewing the information on screen and in printed reports. PowerPoint is a presentation graphics program that is used to organize and present information directly from a computer or printed for distribution. Upon completion, the student should be able to prepare a PowerPoint presentation, modify a presentation, format slides, add visual appeal and animation to presentations, share and connect data, link and embed objects and files, and save a presentation as a Website. The State Department of Education refers to this course as Database Applications.

CIS 196H QUICKBOOKS I COMMERCIAL SOFTWARE APPLICATIONS 3 Hrs.
PREREQUISITE: OAD 137, BUS 241 and BUS 242

This is a “Hands-on” introduction of the Quickbooks program, with the emphasis being primarily on use of an existing ledgers and financial management systems using advanced features of this program.

CIS 203 INTRODUCTION TO THE INFORMATION HIGHWAY 3 Hrs.
PREREQUISITE: CIS 146.

This course introduces the student to the basic principles of the information highway. Students will be exposed to different network information tools such as electronic mail, network news, gophers, the World Wide Web, browsers, commercial information services and the use of appropriate editors or software to introduce construction of Web environments.

CIS 212 VISUAL BASIC 3 Hrs.
PREREQUISITE: None.

This course is an introduction to the BASIC programming language. Included in this course are topics in an algorithmic approach to problem solving, structured programming techniques and constructs, using functions and macros, simple data structures, and using files for input and output. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.

CIS 251 C PROGRAMMING 3 Hrs.
PREREQUISITE: None.

This course is an introduction to the C programming language. Topics included in this course are topics in an algorithmic approach to problem solving, structured programming techniques and constructs, using functions and macros, simple data structures, and using files for input and output. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.

CIS 273 NETWORKING AND DATA COMMUNICATIONS 3 Hrs.
PREREQUISITE: CIS 170.

This course is an introduction to computer networks and data communications technology. Topics included in this course are networking and communications hardware, software, topologies, models, and protocols. Upon completion, the student will be able to demonstrate knowledge on the topics through completion of assignments and appropriate tests.

CIS 286 COMPUTERIZED MANAGEMENT INFO SYSTEMS 3 Hrs.
PREREQUISITES: MTH 100 placement and one of the following: CIS 146 or CIS 231 or CIS 191.

This course covers the nature of computerized management information systems, problems created by the computer relative to personnel, components of computer systems, programming, and application of computers to business problems.

CIS 294 SPECIAL TOPICS 3 Hrs.
PREREQUISITE: Permission of instructor

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 knowledge of the course topic through completion of assignments and appropriate tests.

CIS 299 DIRECTED STUDIES IN COMPUTER SCIENCE 1-3 Hrs.
PREREQUISITE: Permission of instructor

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 pri-
or 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 COSMETOLOGY SCIENCE AND ART 3 Hrs.
PREREQUISITE: None.
COREQUISITE: COS 112, COS 125 and COS 143
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, the student should be able to apply safety rules and regulations and write procedures for skills identified in this course.

COS 112 COSMETOLOGY SCIENCE and ART LAB 3 Hrs.
PREREQUISITE: None.
COREQUISITE: COS 111, COS 125, and COS 143
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.

COS 114 CHEMICAL METHODOLOGY LAB 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 125 and COS 143
COREQUISITE: COS 121, COS 122, and COS 141
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.

COS 121 COLORIMETRY 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 125, and COS 143
COREQUISITE: COS 114, COS 122, and COS 141
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 on the hair.

COS 122 COLOR APPLICATIONS 3 Hrs.
PREREQUISITE: None.
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.

COS 125 CAREER AND PERSONAL DEVELOPMENT 3 Hrs.
PREREQUISITE: None.
COREQUISITE: COS 111, COS 112, and COS 143
This course provides the study and practice of personal development and career building. Emphasis is placed on building and retaining clientele, communication skills, customer service, continuing education, and goal setting. Upon completion, the student should be able to communicate effectively and practice methods for building and retaining clientele.

COS 131 AESTHETICS 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 114, COS 121, COS 122, COS 125, COS 141, and COS 143
COREQUISITE: COS 132, COS 144, and COS 158
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, facial treatments, and cosmetic anatomy, and hair removal. Upon completion, the student should be able to state procedures for analysis, light therapy, facial treatment, hair removal, and identify the structures, functions, and disorders of the skin.

COS 132 AESTHETICS APPLICATIONS 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 114, COS 121, COS 122, COS 125, COS 141, and COS 143
COREQUISITE: COS 131, COS 144, and COS 158
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.

COS 133 SALON MANAGEMENT TECHNOLOGY 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 114, COS 121, COS 122, COS 125, COS 131, COS 132, COS 141, COS 143, COS 144, and COS 158
COREQUISITE: COS 167, COS 182, and COS 191
This course is designed to develop entry-level management skills for the beauty industry. Topics include job-seeking, leader and entrepreneurship development, business principles, business laws, insurance, marketing, and technology issues in the workplace. Upon completion, the student should be able to list job-seeking and management skills and the technology that is available for use in the salon.

COS 141 APPLIED CHEMISTRY FOR COSMETOLOGY 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 125, and COS 143
COREQUISITE: COS 114, COS 121, COS 122, COS 125, COS 141, and COS 143
This course focuses on chemistry relevant to professional hair and skin care products, hair and its related structures, permanent waving, chemical hair relaxing, and hair coloring. Topics include knowledge of basic chemistry, pH scale measurements, water, shampooing and cosmetic chemistry, physical and chemical changes in hair structure. Upon completion, the student should be able to define chemistry, types of matter, and describe chemical and cosmetic reactions as related to the hair and skin structure.

COS 143 HAIR DESIGNS 3 Hrs.
PREREQUISITE: None.
COREQUISITE: COS 111, COS 112, and COS 125
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.
COS 144 HAIR SHAPING AND DESIGN 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 114, COS 121, COS 122, COS 125, COS 141, and COS 143
COREQUISITE: COS 131, COS 132, and COS 158
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.

COS 151 NAIL CARE 3 Hrs.
PREREQUISITE: None.
COREQUISITE: COS 152 and COS 156
This course focuses on 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.

COS 152 NAIL CARE APPLICATIONS 3 Hrs.
PREREQUISITE: None.
COREQUISITE: COS 151 and COS 156
This course provides practice in all aspects of nail care. Topics include salon conduct, professional ethics, sanitation, manicuring, and pedicuring. Upon completion, the student should be able to perform nail care procedures.

COS 153 NAIL ART 3 Hrs.
PREREQUISITE: COS 151, COS 152, and COS 156
COREQUISITE: COS 154, COS 162, and COS 191
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.

COS 154 NAIL ART APPLICATIONS 3 Hrs.
PREREQUISITE: COS 151, COS 152, and COS 156
COREQUISITE: COS 153, COS 162, and COS 191
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.

COS 156 CAREER AND PERSONAL DEVELOPMENT 3 Hrs.
PREREQUISITE: None.
COREQUISITE: COS 151 and COS 152
This course is designed to focus on personal development and career building. Emphasis is placed on building and retaining clientele, communication skills, customer service, continuing education, and setting goals. Upon completion, the student should be able to list types of communication skills, state personal goals, and develop a continuing education plan.

COS 158 EMPLOYABILITY SKILLS 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 114, COS 121, COS 122, COS 125, COS 141, and COS 143
COREQUISITE: COS 131, COS 132, and COS 144
This course provides the study of marketable skills to prepare the student to enter the workforce. Emphasis is placed on resumes, interviews, client and business relations, personality, computer literacy, and attitude. Upon completion, students should be prepared to obtain employment in the field for which they have been trained.

COS 160 IMAGE PROJECTION 3 Hrs.
PREREQUISITE: COS 131, COS 132, and COS 168
COREQUISITE: COS 164 and COS 169
This course includes the study of professionalism, personal development, and ethics related to skin care. Topics include practical applications for hygiene, care of the feet and nails, and human relations. Upon completion, the student will be able to project visual poise and demonstrate professionalism needed in customer service.

COS 162 SPECIAL TOPICS IN COSMETOLOGY 3 Hrs.
PREREQUISITE: COS 151, COS 152, and COS 156
COREQUISITE: COS 153, COS 154, and COS 191
This course is designed to focus on personal development and nail art. Topics include salon conduct, professional ethics, sanitation, manicuring, and pedicuring. Upon completion, the student should be able to design lines. Upon completion, the student should be able to demonstrate the techniques and procedures for creating hair designs.

COS 164 FACIAL MACHINE 3 Hrs.
PREREQUISITE: COS 131, COS 132, and COS 168
COREQUISITE: COS 160 and COS 169
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 AESTHETICIANS 3 Hrs.
PREREQUISITE: COS 131, COS 132, COS 160, COS 164, COS 168, and COS 169
COREQUISITE: COS 125 and COS 166
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, the student will be able to apply depilatories and practice all safety precautions.

COS 166 COLOR PSYCHOLOGY-COORDINATION 3 Hrs.
PREREQUISITE: COS 131, COS 132, COS 160, COS 164, COS 168, and COS 169
COREQUISITE: COS 125 and COS 166
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, the student will be able to apply depilatories and practice all safety precautions.

COS 167 STATE BOARD REVIEW 1-3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 114, COS 121, COS 122, COS 125, COS 131, COS 132, COS 141, COS 143, COS 144, and COS 158
COREQUISITE: COS 133, COS 182, and COS 191
The student is provided a complete review of all procedures and practical skills pertaining to his or her training in the program. Upon completion, the student should be able to demonstrate the practical skills necessary to successfully complete the required State Board of Cosmetology examination and entry-level employment.
COS 168 BACTERIOLOGY AND SANITATION 3 Hrs.
PREREQUISITE: None.
COREQUISITE: COS 131 and COS 132
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.

COS 169 SKIN FUNCTIONS 3 Hrs.
PREREQUISITE: COS 131, COS 132, and COS 168
COREQUISITE: COS 160 and COS 164
This course introduces skin functions and disorders. Topics include practical application for skin disorder treatments, dermabrasion, and skin refining. Upon completion, the student will be able to demonstrate procedures for acne, facials, and masks for deeper layers and wrinkles.

COS 181 SPECIAL TOPICS 3 Hrs.
PREREQUISITE: COS 125, COS 131, COS 132, COS 160, COS 164, COS 165, COS 166, COS 168, and COS 169
COREQUISITE: COS 190
These courses provide for instruction unique to various areas of the cosmetology industry. Emphasis is on meeting individual student needs.

COS 182 SPECIAL TOPICS 3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 114, COS 121, COS 122, COS 125, COS 131, COS 132, COS 143, COS 144, and COS 158
COREQUISITE: COS 133, COS 167, and COS 191
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 Hrs.
PREREQUISITE: COS 125, COS 131, COS 132, COS 160, COS 164, COS 165, COS 166, COS 168, and COS 169
COREQUISITE: COS 181
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.

COS 191 CO-OP 1-3 Hrs.
PREREQUISITE: COS 111, COS 112, COS 114, COS 121, COS 122, COS 125, COS 131, COS 132, COS 141, COS 143, COS 144, and COS 158
COREQUISITE: COS 133, COS 167, and COS 182
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, the student should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

COSMETOLOGY INSTRUCTOR TRAINING (CIT)

CIT 211 TEACHING AND CURRICULUM DEVELOPMENT 3 Hrs.
PREREQUISITE: None
COREQUISITE: CIT 212 and CIT 213
This course focuses on principles of teaching, teaching maturity, personality conduct, and the development of cosmetology curriculum. Emphasis is placed on teacher roles, teaching styles, teacher challenges, aspects of curriculum development, and designing individual courses. Upon completion, the student should be able to describe the role of teacher, identify means of motivating students, develop a course outline, and develop lesson plans.

CIT 212 TEACHER MENTORSHIP 3 Hrs.
PREREQUISITE: None
COREQUISITE: CIT 211 and CIT 213
This course is designed to provide the practice through working with a cosmetology instructor in a mentoring relationship. Emphasis is placed on communication, student assessment, and assisting students in the lab. Upon completion, the student should be able to communicate with students, develop a course of study, and apply appropriate teaching methods.

CIT 213 LESSON PLAN DEVELOPMENT 3 Hrs.
PREREQUISITE: None
COREQUISITE: CIT 211 and CIT 212
This course introduces students to methods for developing lesson plans. Emphasis is placed on writing lesson plans and on the four-step teaching plan. Upon completion, the student should be able to write daily lesson plans and demonstrate the four-step teaching method.

CIT 221 LESSON PLAN IMPLEMENTATION 3 Hrs.
PREREQUISITE: CIT 211, CIT 212, and CIT 213
COREQUISITE: CIT 222 and CIT 223
This course is designed to provide practice in preparing and using lesson plans. Emphasis is placed on organizing, writing, and presenting lesson plans using the four-step teaching method. Upon completion, the student should be able to prepare and present a lesson using the four-step teaching method.

CIT 222 INSTRUCTIONAL MATERIALS AND METHODS 3 Hrs.
PREREQUISITE: CIT 211, CIT 212, and CIT 213
COREQUISITE: CIT 221 and CIT 223
This course focuses on visual and audio aids and materials. Emphasis is placed on the use and characteristics of instructional aids. Upon completion, the student should be able to prepare teaching aids and determine their most effective use.

CIT 223 INSTRUCTIONAL MATERIALS AND METHODS APPLICATIONS 3 Hrs.
PREREQUISITE: CIT 211, CIT 212, and CIT 213
COREQUISITE: CIT 221 and CIT 222
This course is designed to provide practice in preparing and using visual and audio aids and materials. Emphasis is placed on the preparation and use of different categories of instructional aids. Upon completion, the student should be able to prepare and effectively present different types of aids for use with a four step lesson plan.

CRIMINAL JUSTICE (CR)

CRJ 100 INTRODUCTION TO CRIMINAL JUSTICE 3 Hrs.
PREREQUISITE: None.
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 Hrs.
PREREQUISITE: None.
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.