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 de-
contamination, infection control, and safety practiced in
the esthetics facility. Topics covered include demon-
stration 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, dermabraision, 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 vari-
ous 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 vari-
ous 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 cos-
metology 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 col-
lege-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 employ-
ability 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,
CRJ 140 CRIMINAL LAW AND PROCEDURE 3 Hrs.
PREREQUISITE: None.
This course examines both substantive and procedural law. The legal elements of various crimes are discussed, with emphasis placed on the contents of the Alabama Code. Areas of criminal procedure essential to the criminal justice profession are also covered.

CRJ 147 CONSTITUTIONAL LAW 3 Hrs.
PREREQUISITE: None.
This course involves constitutional law as it applies to criminal justice. It includes recent Supreme Court decisions affecting criminal justice professionals, such as right to counsel, search and seizure, due process, and civil rights.

CRJ 177 CRIMINAL AND DEVIANT BEHAVIOR 3 Hrs.
PREREQUISITE: None.
This course analyzes criminal and deviant behavior systems. An emphasis is placed on sociological and psychological theories of crime causation.

CRJ 178 NARCOTICS/DANGEROUS DRUGS 3 Hrs.
PREREQUISITE: None.
This course surveys the history and development of drug abuse in society. Theories of drug abuse, identification and classification of drugs are covered. Strategies for combating the drug problem are discussed.

CRJ 216 POLICE ORGANIZATION AND ADMINISTRATION 3 Hrs.
PREREQUISITE: None.
This course examines the principles of organization and administration of law enforcement agencies. Theories of management, budgeting, and various personnel issues are covered.

CRJ 220 CRIMINAL INVESTIGATION 3 Hrs.
PREREQUISITE: None.
This course explores the theory and scope of criminal investigation. The duties and responsibilities of the investigator are included. The techniques and strategies used in investigation are emphasized.

CRJ 226 FINGERPRINT SCIENCE 3 Hrs.
PREREQUISITE: None.
This course involves the history, classification, and current procedures of handling latent fingerprints. Latent print examination, filing, and courtroom presentations are considered.

CRJ 227 HOMICIDE INVESTIGATION 3 Hrs.
PREREQUISITE: None.
This course covers the principles, techniques, and strategies of homicide investigation. Topics emphasized include ballistics, pathology, toxicology, immunology, jurisprudence, and psychiatry.

CRJ 230 CRIMINALISTICS 3 Hrs.
PREREQUISITE: None.
This course surveys the different techniques of scientific investigation. Emphasis is given to ballistics, photography, fingerprints, DNA, trace evidence, body fluids, casts, and the like.

CRJ 236 ADVANCED CRIMINALISTICS 3 Hrs.
PREREQUISITE: None.
This course covers the collection, handling, and analysis of evidence from crime scene to laboratory to courtroom. Topics include hair, fibers, body fluids, firearms, glass, paint, drugs, documents, etc. Laboratory experience may be utilized.

CRJ 238 CRIME SCENE INVESTIGATION 3 Hrs.
PREREQUISITE: None.
This course examines the fundamentals of crime scene investigation. Measuring and sketching the scene, photography, evidence collection and preservation, and courtroom procedures are considered.

CRJ 280 INTERNSHIP IN CRIMINAL JUSTICE 1–3 Hrs.
PREREQUISITE: CRJ 230.
This course involves practical experience with a criminal justice agency under faculty supervision. Permission of the instructor is required. This course may be repeated with approval of the department head.

CRJ 290 SELECTED TOPICS: SEMINAR IN CRIMINAL JUSTICE 1–3 Hrs.
PREREQUISITE: None.
This course involves reading, research, writing, and discussion of selected subjects relating to criminal justice. Various contemporary problems in criminal justice are analyzed. This course may be repeated with approval from the department head.

CRJ 291 SELECTED TOPICS – SEMINAR IN CRIMINAL JUSTICE 1–3 Hrs.
PREREQUISITE: None.
This course involves reading, research, writing, and discussion of selected subjects relating to criminal justice. Various contemporary problems in criminal justice are analyzed. This course may be repeated with approval from the department head.

CULINARY ARTS/CHEF TRAINING (CUA)

CUA 100 ORIENTATION TO THE CULINARY ARTS 1 Hr.
PREREQUISITE: None.
This course is an introduction to the culinary arts. Emphasis is placed on identifying and designing basic layout and flow charts for effective kitchen use. Upon completion, the student will be able to identify, operate, and clean commercial equipment.

CUA 102 CATERING 3 Hrs.
PREREQUISITE: None.
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.

CUA 110 BASIC FOOD PREPARATION 3 Hrs.
PREREQUISITE: CUA 100, 111, or 114.
This course introduces the fundamental concepts, skills, and techniques involved in basic cookery. Topics include scientific principles of 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.

CUA 111 FOUNDATIONS IN NUTRITION 3 Hrs.
PREREQUISITE: None.
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.

CUA 112 SANITATION, SAFETY, AND FOOD SERVICE 2 Hrs.
PREREQUISITE: None.
This course introduces the basic principles of sanitation and safety to food handling including purchasing, storing, preparing, and serving. Topics include the
CUA 113 TABLE SERVICE 2 Hrs.
PREREQUISITE: None.
This course is a guide for the modern wait staff. Topics include laying the cover, taking the order, surveying of different styles of table service from the casual to the very formal, tabulating and presenting the bill, and busing and turning the table. Upon completion, the student will be able to demonstrate proficiency in the art of table service.

CUA 114 MEAL MANAGEMENT 3 Hrs.
PREREQUISITE: CUA 100 or 110, 111, and 112.
This course covers the principles of meal management. Topics include menu planning, food selection, recipe standardization, food preparation, and meal service for all phases of food service. Upon completion, the student will be able to apply efficient work habits, sanitation and safety in the kitchen.

CUA 115 ADVANCED FOOD PREPARATION 3 Hrs.
PREREQUISITE: CUA 100 or 110, 111, 112, 114, and 206.
In this course, students apply food preparation and meal management skills in all areas of food service. Emphasis is placed on management and technical skills needed to operate a restaurant. Upon completion, the student will develop advanced skills in food preparation and meal management.

CUA 122 FUNDAMENTALS OF QUANTITY COOKING 3 Hrs.
PREREQUISITE: CUA 100, 111, and 114.
This course covers the principles and methods of quality cooking. Topics include weights and measures, costing and converting of recipes, vocabulary and standard abbreviations, health department regulations and inspection, and food production forms and records. Upon completion, the student will have a basic knowledge of the principles of quantity food production.

CUA 132 FUNDAMENTALS OF RESTAURANT OPERATIONS 3 Hrs.
PREREQUISITE: None.
This course covers ordering, receiving, storing and issuing food stores, keeping records, and producing financial statements. Emphasis is placed on entry-level management skills. Upon completion, the student should be able to apply effective purchasing, inventory, and issuing techniques.

CUA 134 CULINARY FRENCH 2 Hrs.
PREREQUISITE: None.
This course covers classical French vocabulary and culinary terms. Emphasis is placed on basic French menu terms describing techniques and equipment. Upon completion, the student will have a basic understanding of French terminology as it relates to the food industry.

CUA 141 FOOD PRODUCTION FOR SPECIAL OPERATIONS 2 Hrs.
PREREQUISITE: None.
This course covers menu planning principles, food preparation, food procurement, and food management skills needed to provide appealing and profitable food service in special operations. Topics include fast food cookery, convenience-store food service, supermarkets, delicatessens, and take-out venues. Upon completion, the student should be able to plan, organize, and prepare food service items for special operations.

CUA 181/182 SPECIAL TOPICS IN CULINARY ARTS 3 Hrs.
PREREQUISITE: None.
These courses provide specialized instruction in various areas related to the culinary arts industry. Emphasis is placed on meeting the student’s needs.
CUA 206 ADVANCED GARDE MANGER  2 Hrs.
PREREQUISITE: CUA 110, 111, 114, and 205.
This course is a continuation of skill development in the art of Garde Manger. Major topics to be covered include preparation of gourmet foods, application of cold food fabrications and display, sausage making, ice carving, and carving decorative substances to produce buffets. Upon completion, the student should be able to lay out a basic cold food display and exhibit an understanding of the cold kitchen and its related terminology.

CUA 208 ADVANCED BAKING  2 Hrs.
PREREQUISITE: CUA 204.
This course is a continuation of CUA 204. Topics include specialty breads, pastillage, marzipan, chocolate, pulled-sugar, confections, classic desserts, pastries, and cake decorating. Upon completion, the student should be able to demonstrate pastry preparation and plating, cake decorating, and show-piece production skills.

CUA 210 BEVERAGE MANAGEMENT  2 Hrs.
PREREQUISITE: None.
This is a survey course of basic alcoholic and non-alcoholic beverages as they relate to food service. Topics include wine and food appreciation and laws related to alcohol services. Upon completion, students should be able to determine what beverages compliment various cuisines and particular tastes.

CUA 213 FOOD PURCHASING AND COST CONTROL  3 Hrs.
PREREQUISITE: None.
Emphasis is placed on procurement, yield tests, inventory control, specification, planning, forecasting, market trends, terminology, cost controls, pricing, and food service ethics. Upon completion, the student should be able to apply effective purchasing techniques based on the end-use of the product.

CUA 214 INTERNATIONAL CUISINE  3 Hrs.
PREREQUISITE: CUA 111 and 112.
This course focuses on various cuisines from countries and regions throughout the world. Students will prepare complete menus reflective of the culture and goods of these countries and regions with emphasis on ingredients and authentic preparation methods. Upon completion, students should be able to research and execute international menus.

CUA 215 REGIONAL CUISINES OF THE AMERICAS  3 Hrs.
PREREQUISITE: CUA 114.
This course provides a brief history of the ancient American foods that enhanced the world’s cuisines. Emphasis is placed on how these foods influenced the “American Cuisines” of today. Upon completion, the student will be able to research and execute regional American cuisines.

CUA 220 INTRODUCTION TO PATISSERIE  2-3 Hrs.
PREREQUISITE: None.
This is an introductory course to patisserie. Emphasis is placed on individual desserts, blown sugars, pulled sugar, pastillage gum paste, nougat. Upon completion, the student should be able to plan, execute, and evaluate dessert platters, individual plated desserts, and show pieces.

CUA 251 MENU DESIGN  2 Hrs.
PREREQUISITE: None.
This course introduces menu design. Topics include development of standardized recipes, layout, nutritional concerns, product utilization, demographics, and customer needs. Upon completion, the student should be able to write, lay out, and produce effective menus for a variety of hospitality settings.

DANCE (DNC)

DNC 110 INTRODUCTION TO DANCE STYLES  2 Hrs.
PREREQUISITE: None.
This course is an introduction to dance styles.

DNC 121 ELEMENTARY BALLET  2 Hrs.
PREREQUISITE: None.
This course is a studio course in classical ballet at the elementary level. Offered in the fall semester.

DNC 143/144 BALLET I and II  3 Hrs.
PREREQUISITE: Previous training is essential before taking these courses. These courses offer intensive training in classical ballet for students intending to major in dance. Intermediate level technique is studied, emphasizing posture and placement. The student is evaluated on his or her ability to perform the work to the required standard.

DNC 160 DANCE WORKSHOP I  1-2 Hrs.
PREREQUISITE: None.
This course provides practical experience in the production and performance of a dance presentation, including sound, lighting, choreography, rehearsal, costuming, make-up, and other aspects of dance presentation.

DNC 161 DANCE WORKSHOP II  1-2 Hrs.
PREREQUISITE: DNC 160
This course is a continuation of DNC 160.

DNC 243/244 BALLET III and IV  3 Hrs.
PREREQUISITE: DNC 144 or permission of instructor.
This course covers ballet technique at advanced level emphasizing performance quality, musicality, and classical style.

DIESEL MECHANICS (DEM)

DEM 104 BASIC ENGINES  3 Hrs.
PREREQUISITE: None.
This course is designed to give the student knowledge of the diesel engine components and auxiliary systems, the proper way to maintain them, and the proper procedures for testing and rebuilding components. Emphasis is placed on safety, theory of operation, inspection, and measuring and rebuilding diesel engines according to factory specifications. Upon completion, the student should be able to measure, diagnose problems, and repair diesel engines.

DEM 105 PREVENTIVE MAINTENANCE  3 Hrs.
PREREQUISITE: None.
This course provides instructions on how to plan, develop, and install equipment surveillance and reliability strategies. Descriptions of various maintenance techniques for specialized preventive programs are discussed and computerized parts and equipment inventories and fleet management systems software are emphasized. Upon completion, the student should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

DEM 106 HEAVY EQUIPMENT OPERATIONS  3 Hrs.
PREREQUISITE: None.
This course provides instruction in heavy equipment operation. Emphasis is placed on the operation of graders, dozers, packers, pans, cranes, draglines, and other equipment. Upon completion, the student should be able to diagnose, adjust, or repair new or used heavy equipment.
DEM 110 DIESEL POWERED AUXILIARY EQUIPMENT 3 Hrs. PREREQUISITE: None.
This course provides instruction in diesel powered auxiliary equipment. Topics covered include the application of diesel engines to generators, pumps, refrigeration, drilling, boring machines, and marine power units. Upon completion, the student should be able to test, troubleshoot, diagnose, and repair diesel powered auxiliary equipment.

DEM 111 SAFETY, TOOLS, AND MANAGEMENT 3 Hrs. PREREQUISITE: None.
This course provides instruction in shop and vehicle safety. Topics include the safe use and handling of hand and power tools, preventive maintenance, and safety inspection procedures. Upon completion, the student should be able to demonstrate knowledge of preventive maintenance and applicable general safety in vehicle repair.

DEM 114 FLUID POWER COMPONENTS 3 Hrs. PREREQUISITE: None.
This course is designed to provide the fundamental knowledge of hydraulic and pneumatic components currently in use on mobile as well as stationary equipment. Instruction is provided in the identification and repair of various pumps, motor, valves, heat exchangers, and cylinders. Upon completion, the student should be able to diagnose, service, and repair hydraulic and pneumatic components.

DEM 115 HEAVY VEHICLE COLLISION REPAIR 3 Hrs. PREREQUISITE: None.
This course provides instruction in heavy vehicle collision repair. Topics include estimating damage, removal, repair, or replacement of components, and the refinishing of medium and heavy duty cabs and chassis. Upon completion, the student should be able to analyze and perform repairs to a vehicle which has received structural damage.

DEM 116 TRACK VEHICLE DRIVE TRAINS 3 Hrs. PREREQUISITE: None.
This course provides instruction in track vehicles and drive trains. Emphasis is placed on track frame roller, rail, steering clutch, axle, and driveline building and repair. Upon completion, the student should be able to identify, research specifications, repair, and adjust drive train components.

DEM 117 DIESEL AND GAS TUNE-UP 3 Hrs. PREREQUISITE: None.
This course introduces tune-up and troubleshooting according to manufacturers’ specifications. Topics include troubleshooting engine systems, tune-up procedures, and use and care of special test tools and equipment. Upon completion, the student should be able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment.

DEM 118 INDUSTRIAL AND AGRICULTURAL EQUIPMENT 3 Hrs. PREREQUISITE: None.
This course provides instruction in the fundamentals of agricultural and industrial tractor repair, maintenance, and basic service procedures. Emphasis is placed on operating and troubleshooting, combines, hoes, bailers, loaders, and other equipment. Upon completion, the student should be able to diagnose, adjust, and repair new or used industrial and agricultural equipment.

DEM 119 BEARINGS AND LUBRICANTS 3 Hrs. PREREQUISITE: None.
This course focuses on roller, ball and shell bearing design and application. Topics include vehicle and industrial bearings and lubrication requirements. Upon completion, the student should be able to diagnose related problems and service and replace bearings.

DEM 121 EQUIPMENT SAFETY/MECHANICAL FUNDAMENTALS 3 Hrs. PREREQUISITE: None.
This course provides instruction in the fundamentals of vehicle operation and safety when basic service work is to be performed in the shop. Topics include service manuals, mechanical fundamentals, preventive maintenance, and component adjustment. Upon completion, the student should be able to demonstrate knowledge of the fundamentals of vehicle operation and safety in the shop.

DEM 122 HEAVY VEHICLE BRAKES 3 Hrs. PREREQUISITE: None.
This course covers the theory and repair of braking systems used in medium and heavy duty vehicles. Topics include air, hydraulic, and ABS system diagnosis, and repair. Upon completion, the student should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles.

DEM 123 PNEUMATICS AND HYDRAULICS 3 Hrs. PREREQUISITE: None.
This course provides instruction in the identification and repair of components found in hydraulic systems. Topics include schematics, circuits, and symbols used in fluid power transmission and the troubleshooting of components in these systems. Upon completion, the student should be able to diagnose, adjust, and repair hydraulic system components.

DEM 124 ELECTRONIC ENGINE SYSTEMS 3 Hrs. PREREQUISITE: None.
This course introduces the principles of electronically controlled diesel engines. Emphasis is placed on testing and adjusting diesel engines in accordance with manufacturers’ specifications. Upon completion, the student should be able to diagnose, test, and calibrate electronically controlled diesel engines.

DEM 125 HEAVY VEHICLE DRIVE TRAINS 3 Hrs. PREREQUISITE: None.
This course introduces the principles of mechanically and hydraulically controlled medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, slider idler clutches, friction clutches, mechanical transmission power components, and hydraulics. Upon completion, the student should be able to diagnose, inspect, and repair mechanical transmissions.

DEM 126 ADVANCED ENGINE ANALYSIS 3 Hrs. PREREQUISITE: None.
This course provides instruction in the disassembly, inspection, and rebuilding of diesel and heavy-duty gas engines. Emphasis is placed on the manufacturer’s standards and factory recommended service tools and equipment. Upon completion, the student should be able to disassemble, inspect, and rebuild engines according to the manufacturer’s specifications.

DEM 127 FUEL SYSTEMS 3 Hrs. PREREQUISITE: None.
This course is designed to provide practice in troubleshooting, fault code diagnosis, information retrieval, calibration, repair, and replacement of fuel injectors, nozzles, and pumps. Emphasis is placed on test equipment, component functions, and theory. Upon
completion, the student should be able to diagnose, service, and repair fuel systems and governors.

DEM 128 POWER TRAIN LAB 3 Hrs. PREREQUISITE: None.
This lab provides reinforcement of material covered in DEM 116, DEM 125, and DEM 127.

DEM 129 DIESEL ENGINE LAB 3 Hrs. PREREQUISITE: None.
This lab allows the student to refine the skills required to repair diesel engines.

DEM 130 ELECTRICAL / ELECTRONIC FUNDAMENTALS 3 Hrs. PREREQUISITE: None.
This course introduces the student to basic Electrical/Electronic concepts and fundamentals.

DEM 131 COMPUTER APPLICATIONS FOR DIESEL MECHANICS 2 Hrs. PREREQUISITE: None.
This course introduces the student to the use of microcomputers. It includes keyboarding exercises, disk operating systems, formatting, and diagnostic applications for internal combustion engines. Upon completion, the student should be able to perform simple operations on the microcomputer, such as use of DOS, Windows 95, and word processing operations, and use the microcomputer with diesel engine diagnostic software to identify and correct engine malfunctions.

DEM 134 COMPUTER CONTROLLED ENGINE AND POWER TRAIN SYSTEMS 3 Hrs. PREREQUISITE: None.
This course introduces the student to the fundamentals of operation of computer controlled engine and power train systems.

DEM 135 HEAVY VEHICLE STEERING AND SUSPENSION 3 Hrs. PREREQUISITE: None.
This course introduces the theory and principles of medium and heavy duty steering and suspension systems. Topics include wheel and tire problems, frame members, fifth wheel, bearings, and coupling systems. Upon completion, the student should be able to troubleshoot, adjust, and repair suspension and steering components on medium and heavy duty vehicles.

DEM 136 ELECTRICAL SYSTEMS 3 Hrs. PREREQUISITE: None.
This course provides the principles of electricity, magnetism and Ohm’s Law. Emphasis is placed on batteries, starting, charging and lighting circuits, which include series, parallel, and series-parallel circuits. Upon completion, the student should be able to identify and repair minor electrical problems.

DEM 137 HEATING AND A/C SYSTEMS 3 Hrs. PREREQUISITE: DEM 136.
This course provides instruction in fundamentals, diagnosis, and repair of cab and cargo heating and refrigeration systems. Topics include operation theory, safety, maintenance, recycling and recovery procedures, recharging procedures, troubleshooting procedures, refrigerant leaks, and system repairs.

DEM 154 VEHICLE MAINTENANCE AND SAFE OPERATING PRACTICES 3 Hrs. PREREQUISITE: None.
This course provides instruction in basic entry level driving skills relating to the maintenance and safe operation of a commercial motor vehicle. Topics include preventive maintenance and safe vehicle operations. Upon completion, the student will have the skill and knowledge to safely operate a commercial motor vehicle.

DEM 156 CDL LICENSE TEST PREPARATION 3 Hrs. PREREQUISITE: None.
This course is designed to prepare students for the Alabama Commercial Driver’s License written examination. The course includes a review of major topics, sample tests, as well as basic CDL information and test-taking procedures.

DEM 158 PNEUMATICS AND HYDRAULICS II 3 Hrs. PREREQUISITE: None
This course provides instruction in the identification and repair of components found in hydraulic systems. Topics include schematics, circuits, and symbols used in fluid power transmission and the troubleshooting of components in these systems. Upon completion, the student should be able to diagnose, adjust, and repair hydraulic system components.

DEM 159 HEAVY VEHICLE DRIVE TRAINS II 3 Hrs. PREREQUISITE: None
This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-odds, slider idler clutches, friction clutches, mechanical transmission power components, and hydraulics. Upon completion, the student should be able to diagnose, inspect, and repair mechanical transmissions.

DEM 160 ADVANCED ENGINE ANALYSIS II 3 Hrs. PREREQUISITE: None
This course provides instruction in the disassembly, inspection, and rebuilding of diesel and heavy-duty gas engines. Emphasis is placed on the manufacturer's standards and factory recommended service tools and equipment. Upon completion, the student should be able to disassemble, inspect, and rebuild engines according to the manufacturer's specifications.

DEM 161 VEHICLE ELECTRONIC AND ELECTRICAL SYSTEMS 3 Hrs. PREREQUISITE: None.
This course provides instruction in the theory and application of AC and DC power on diesel vehicles. Troubleshooting and repair of wiring harnesses, starting motors, charging systems, and accessories are included along with the computerized monitoring of vehicle systems. The student must demonstrate the ability to identify components, test and repair systems, and use the manufacturers literature.

DEM 181/182 SPECIAL TOPICS IN DIESEL MECHANICS 3 Hrs. PREREQUISITE: None.
These courses provide specialized instruction in various areas related to the diesel mechanics industry. Emphasis is placed on meeting student’s needs.

DEM 190 SELECTED TOPICS 3 Hrs. PREREQUISITE: None.
This course covers selected topics in the diesel mechanics field. Emphasis is placed on topics which keep the student informed about the latest changes in diesel technology.

DEM 191 SPECIAL PROJECTS IN DIESEL MECHANICS 2-3 Hrs. PREREQUISITE: None.
This course provides information on current trends in diesel mechanics as they relate to employment responsibilities. Topics may vary by term to reflect relevant training needs by the industry.
This course allows the student to work parallel in a job closely related to the student’s major while attending college. The grade is based on the employer’s evaluation of the student’s productivity, an evaluation work report submitted by the student, and the student’s learning contract.

DEM 193 PRACTICUM 3 Hrs.
PREREQUISITE: None.
This course provides work experience in selected areas to enhance the student’s manipulative skills.

DRAFTING (DDT)

DDT 104 BASIC COMPUTER AIDED DRAFTING 3 Hrs.
PREREQUISITE: None.
This course provides an introduction to basic Computer Aided Drafting and Design (CADD) functions and techniques, using “hands-on” applications. Topics include terminology, hardware, basic CADD and operating system functions, file manipulation, and basic CADD software applications in producing softcopy and hardcopy.

DDT 111 FUNDAMENTALS OF DRAFTING AND DESIGN TECHNOLOGY 3 Hrs.
PREREQUISITE: None.
This course serves as an introduction to the field of drafting and design and provides a foundation for the entire curriculum. Topics include safety, lettering, tools and equipment, geometric constructions, and orthographic sketching. Upon completion, the student should develop and use safe work habits, identify and properly use common drafting tools and equipment, construct geometric figures, and sketch basic orthographic views of objects.

DDT 115 BLUEPRINT READING FOR MACHINISTS 3 Hrs.
PREREQUISITE: None.
This course provides the students with terms and definitions, theory of orthographic projection, and other information required to interpret drawings used in the machine trades. Topics include multi-view projection, pictorial drawings, dimensions and notes, lines and symbols, and sketching. Upon completion, the student should be able to interpret blueprint drawings used in the machine trades.

DDT 116 BLUEPRINT READING FOR CONSTRUCTION 3 Hrs.
PREREQUISITE: None.
This course provides the students with terms and definitions, theory of orthographic projection, and other information required to interpret drawings used in the construction trades. Topics include multi-view projection, dimensions and notes, lines and symbols, sketching, foundations plans, site plans, floor plans, elevations, sections, details, schedules, electrical plans and specifications. Upon completion, the student should be able to interpret blueprint drawings used in the construction trades.

DDT 118 BASIC ELECTRICAL DRAFTING 3 Hrs.
PREREQUISITE: DDT 104, DDT 111, and DDT 124
This course covers the universal language of electrical drafting, including electrical lines, symbols, abbreviations, and notation. Emphasis is placed on typical components such as generators, controls, transmission networks, and lighting, heating, and cooling devices. Upon completion, the student should be able to draw basic diagrams of electrical and electronic circuits using universally accepted lines and symbols.

DDT 122 ADVANCED TECHNICAL DRAWING 3 Hrs.
PREREQUISITE: DDT 128
This course covers the methods of providing size description and manufacturing information for production drawings. Emphasis will be placed on accepted dimensioning and tolerancing practices including Geometric Dimensioning and Tolerancing for both the Customary English System and the ISO System. Upon completion, the student should be able to apply dimensions, tolerances, and notes to drawings to acceptable standards, including Geometric Dimensioning and Tolerancing, and produce drawings using and specifying common threads and various fasteners, including welding methods.

DDT 124 BASIC TECHNICAL DRAWING 3 Hrs.
PREREQUISITE: None.
This course covers sections, auxiliary views, and basic space geometry. Emphasis will be placed on the theory as well as the mechanics of applying sections, basic dimensioning, auxiliary views and basic space geometry. Upon completion, students should have an understanding of orthographic projection and be able to identify orthographic planes, produce orthographic views of objects, apply various sectioning techniques and methods, and reproduce drawings.

DDT 125 SURFACE DEVELOPMENT 3 Hrs.
PREREQUISITE: None.
This course covers surface intersections and developments. Emphasis is placed on the basic types of intersections using simple geometric forms. Upon completion, the student should be able to draw common types of surface intersection and handle them simply as applications of the concepts learned in this class.

DDT 126 SECTIONS AND CONVENTIONAL PRACTICE 3 Hrs.
PREREQUISITE: DDT 111 and DDT 124
This course provides techniques for representing more or less complicated interiors of parts that cannot be shown clearly by means of hidden lines. Topics include visualization and development of all standard sectional views, section lining, and associated conventional practices used by the drafter. Upon completion, the student should be able to select appropriate sectional views to represent more or less complex interior detail and execute detailed drawings as selected using orthographic multi view projection and conventional practices.

DDT 127 INTERMEDIATE COMPUTER AIDED DRAFTING AND DESIGN 3 Hrs.
PREREQUISITE: DDT 104
This course covers intermediate-level concepts and applications of CADD. Emphasis will be placed on intermediate-level features, commands, and applications of CADD software.

DDT 128 INTERMEDIATE TECHNICAL DRAWING 3 Hrs.
PREREQUISITE: DDT 111 and DDT 124
This course is designed to develop a strong foundation in common drafting and design practices and procedures. Topics include dimensioning concepts and pictorial drawings, auxiliary view, basic space geometry, and pictorial drawings. Upon completion, students should be able to project and develop auxiliary views, locate and specify points, lines and planes in space, develop axonometric, oblique, and perspective drawings.
DDT 130 **FUNDAMENTALS OF DRAFTING FOR RELATED TRADES** 3 Hrs.  
PREREQUISITE: None.  
This course provides an overview of related technical trades drafting. Theory is covered within a broad range of drafting specialties including civil, structural, electrical, mechanical, and electronic drawing. Emphasis is placed on a basic understanding of what each of these fields require for graphic communication.

DDT 131 **MACHINE DRAFTING BASICS** 3 Hrs.  
PREREQUISITE: DDT 111 and DDT 124  
This course in machine drafting and design provides instruction in the largest specialty area of drafting in the United States, in terms of scope and job opportunities. Emphasis will be placed on the applications of multi-view drawings, including drawing organization and content, title blocks and parts lists, assembly drawings, detail drawings, dimensioning and application of engineering controls in producing industrial-type working drawings. Upon completion, the student should be able to organize, layout, and produce industrial-type working drawings, including the application of title blocks, parts lists, assemblies, details, dimensions, and engineering controls.

DDT 132 **ARCHITECTURAL DRAFTING** 3 Hrs.  
PREREQUISITE: DDT 111 and DDT 124  
This course in architectural design and drafting introduces basic terminology, concepts, and principles of architectural design and drawing. Topics include design considerations, lettering, terminology, site plans, and construction drawings. Upon completion, the student should be able to draw, dimension, and specify basic residential architectural construction drawings.

DDT 133 **BASIC SURVEYING** 3 Hrs.  
PREREQUISITE: None.  
This course covers the use of surveying instruments, mathematical calculations, and the theory of land surveying. Topics include USGS benchmarks, measuring horizontal and vertical angles and distances, terms, and recording, and interpreting field notes. Upon completion, the student should be able to recognize benchmarks and measure, specify, and record field notes.

DDT 134 **DESCRIPTIVE GEOMETRY** 3 Hrs.  
PREREQUISITE: DDT 111 and DDT 124  
This course is designed to teach the fundamental concepts of descriptive geometry through an emphasis on logical reasoning, visualization, and practical applications. Topics include orthographic projection, points and lines in space, auxiliary views, plane representation, intersecting and non-intersecting lines, piercing and intersecting planes, plane development, and calculations. Upon completion, the student should be able to project and intersect points, lines, and planes, with their relationships in space, as well as develop surfaces of an object for fabrication purposes.

DDT 150 **THEORY OF RESIDENTIAL DRAWING AND DESIGN** 3 Hrs.  
PREREQUISITE: DDT 111 and DDT 124  
This course provides the theory of residential drawing and design. Topics include architectural styles, house design, site and space planning, climate, drawing requirements, construction materials and process, terminology, and specific types of drawings required to complete a full set of construction documents. Introductory, intermediate, and advanced topics are covered. Emphasis is placed on an understanding of the issues.

DDT 181/182 **SPECIAL TOPICS IN DRAFTING AND DESIGN TECHNOLOGY** 3 Hrs.  
PREREQUISITE: None.  
These courses provide specialized instruction in various areas related to the drafting industry. Emphasis is placed on meeting students’ needs.

DDT 191 **DRAFTING INTERNSHIP** 1 Hr.  
PREREQUISITE: None.  
This course is designed for those who are involved in a structured employment situation that is directly related to the field of drafting and design and is coordinated with the drafting instructor. The student must spend at least 5 hours per week in an activity planned and coordinated jointly by the instructor and the employer. Upon completion, the student will have gained valuable work experience in a well-planned, coordinated training/work situation.

DDT 192 **DRAFTING INTERNSHIP** 2 Hrs.  
PREREQUISITE: None.  
This course is limited to those who are involved in a structured employment situation that is directly related to the field of drafting and design and is coordinated with the drafting instructor. The student must spend at least 10 hours per week in an activity planned and coordinated jointly by the instructor and the employer. Upon completion, the student will have gained valuable work experience in a well-planned, coordinated training/work situation.

DDT 193 **DRAFTING INTERNSHIP** 3 Hrs.  
PREREQUISITE: None.  
This course is limited to those who are involved in a structured employment situation that is directly related to the field of drafting and design and is coordinated with the drafting instructor. The student must spend at least 15 hours per week in an activity planned and coordinated jointly by the instructor and the employer. Upon completion, the student will have gained valuable work experience in a well-planned, coordinated training/work situation.

DDT 211 **INTERMEDIATE MACHINE DRAFTING** 3 Hrs.  
PREREQUISITE: None.  
This second course in machine drafting and design provides more advanced instruction in the largest specialty area of drafting. Topics include applications of previously developed skills in the organization and development of more complex working drawings, use of vendor catalogs and the Machinery’s Handbook for developing specifications, and use of standardized abbreviations in working drawings.

DDT 212 **INTERMEDIATE ARCHITECTURAL DRAFTING** 3 Hrs.  
PREREQUISITE: DDT 132 and DDT 150  
This second course in architectural design and drafting continues with more advanced and detailed architectural plans. Topics include floor construction and detailing, foundation, wall, and roof construction and detailing, use of standards manuals, perspective drawings, electrical plans, plumbing plans, and building materials, with emphasis on residential and some light commercial applications. Upon completion, the student should be able to draw and specify advanced-level plans including various architectural details.

DDT 213 **CIVIL DRAFTING, PLAT MAPS** 3 Hrs.  
PREREQUISITE: DDT 111 and DDT 124  
This course introduces the drafting practices, symbols, conventions, and standards utilized in civil engineering contract documents. Topics include site planning, land surveying, topographic surveys, along with civil terminology. Upon completion, the student
should be able to draw accurate plat maps giving legal descriptions of land parcels, draw simple site plans, and identify and use proper symbols and conventions on civil engineering drawings.

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<th>Course Code</th>
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<th>Hours</th>
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<tr>
<td>DDT 214</td>
<td>PIPE DRAFTING</td>
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<td>DDT 111 and DDT 124</td>
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<tr>
<td>DDT 215</td>
<td>GEOMETRIC DIMENSIONING and TOLERANCING</td>
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<td>None</td>
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<tr>
<td>DDT 221</td>
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<td>DDT 222</td>
<td>ADVANCED ARCHITECTURAL DRAFTING</td>
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<td>DDT 225</td>
<td>STRUCTURAL STEEL DRAFTING</td>
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<td>DDT 111 and DDT 124</td>
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<td>DDT 226</td>
<td>TECHNICAL ILLUSTRATION</td>
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<td>DDT 231</td>
<td>ADVANCED COMPUTER AIDED DRAFTING (CAD)</td>
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<td>DDT 233</td>
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<td>DDT 237</td>
<td>CURRENT TOPICS IN CAD</td>
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<td>DDT 238</td>
<td>SPECIAL TOPICS IN COMPUTER AIDED DRAFTING (CAD)</td>
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<td>DDT 231</td>
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This course covers the theory and practical applications necessary to understand the basic design and terminology of structural steel components used in light commercial buildings. Emphasis is placed on structural steel drafting techniques, bolted and welded connections, framing plans, sections, fabrication and connection details, and bills of material. Upon completion, the student should be able to produce engineering and shop drawings incorporating standard shapes, sizes, and details using the A.I.S.C. Manual and incorporating safety practices.
DDT 239
INDIVIDUAL STUDIES
1-4 Hrs.
PREREQUISITE: None.
This course provides practical application of prior attained skills and experiences as selected by the instructor for the individual student. Emphasis is placed on applying knowledge from prior courses toward the solution of individual drafting and design problems. Upon completion, the student will demonstrate the application of previously attained skills and knowledge in the solution of typical drafting applications and problems.

DDT 249
ADVANCED CAD APPLICATIONS
2-3 Hrs.
PREREQUISITE: None.
This course is a direct applications lab. Emphasis is placed on extensive CAD usage, finished product hard copy, speed and accuracy.

ECONOMICS (ECO)

ECO 231
PRINCIPLES OF MACROECONOMICS
3 Hrs.
PREREQUISITE: None.
This course is an introduction to macroeconomic theory, analysis, and policy applications. Topics include the following: scarcity, demand and supply, national income analysis, major economic theories concerning monetary and fiscal policies as stabilization measures, the banking system, and other economic issues or problems including international trade.

ECO 232
PRINCIPLES OF MICROECONOMICS
3 Hrs.
PREREQUISITE: None.
This course is an introduction of the microeconomic theory, analysis, and applications. Topics include scarcity, the theories of consumer behavior, production and cost, markets, output and resource pricing, and international aspects of Microeconomics.

ELECTRICAL TECHNOLOGY (ELT)

ELT 104
DISTRIBUTION SYSTEMS
3 Hrs.
PREREQUISITE: ELT 106 and ELT 109
This course involves the theory, applications, calculations, and connections associated with transformers and power distribution systems commonly used in the electrical field.

ELT 106
AC PRINCIPLES OF ELECTRICITY II
3 Hrs.
PREREQUISITE: ELT 107 and ELT 108
COREQUISITE: ELT 109
This course is a study of AC magnetic devices including single phase and three phase transformers, basic motor principles of electromagnetism, AC relay principles, and testing these components. Topics covered include AC transformer, AC motor, and AC relay principles and their applications. Upon completion, the student should be able to explain, wire, troubleshoot and test these basic components in various real world circuits.

ELT 107
DC PRINCIPLES OF ELECTRICITY II
3 Hrs.
PREREQUISITE: None
COREQUISITE: ELT 108
This course is a study of energy sources, and measurements, batteries, conductor sizes and ratings electric magnetic fields, and electrical safety. Emphasis is on energy transfer, electric heating, battery supplies, conductor ratings, and protection, magnetic fields and safety. Upon completion, the student should be able to explain types of energy, batteries, different types of conductors and wire batteries, magnetic coils, and power circuits and troubleshoot them.

ELT 108
DC FUNDAMENTALS
3 Hrs.
PREREQUISITE: None
COREQUISITE: ELT 107
This course provides a study of atomic theory, direct current (DC), properties of conductors and insulators, direct current characteristics of series, parallel, and series parallel circuits. Inductors and capacitors are introduced and their effects of DC circuits are examined. Students are prepared to analyze complex DC circuits, solve for unknown circuit variables with the use of Ohm's Law and to use basic electronic test equipment.

ELT 109
AC FUNDAMENTALS
3 Hrs.
PREREQUISITE: ELT 107 and ELT 108
COREQUISITE: ELT 106
This course provides a study of the theory of alternating current (AC). Students are prepared to analyze complex AC circuit configurations with resistor, capacitors, and inductors in series and parallel combinations. Upon completion, students should be able to design AC circuits and explain the function of alternating circuits such as RLC, impedance, phase relationships and power factor.

ELT 110
WIRING METHODS
3 Hrs.
PREREQUISITE: ELT 106 and ELT 109
This course is a study of various tasks, wiring methods, materials, and associated NEC requirements that students will be required to work with in residential and commercial wiring courses.

ELT 114
RESIDENTIAL WIRING METHODS
3 Hrs.
PREREQUISITE: None
This course is a study of residential wiring practices and methods, the NEC requirements and residential blueprint interpretations.

ELT 115
RESIDENTIAL WIRING METHODS II
3 Hrs.
PREREQUISITE: ELT 114
This course is a study of residential wiring practices and methods, the NEC requirements and residential blueprint interpretations.

ELT 117
AD/DC MACHINES
3 Hrs.
PREREQUISITE: ELT 106 and ELT 109
This course covers the theory and operation of DC motors single and three phase AC motors and the labs will reinforce this knowledge. Emphasis is placed on the various types of single and three phase motors, wiring diagrams, starting devices, and practical application in the lab.

ELT 118
COMMERCIAL/INDUSTRIAL WIRING I
3 Hrs.
PREREQUISITE: ELT 106 and ELT 109
This course focuses on principles and applications of commercial and industrial wiring. Topics include, electrical safety practices, an overview of National Electric Code requirements as applied to commercial and industrial wiring, conduit bending, circuit design, pulling cables, transformers, switch gear, and generation principles.

ELT 122
ADVANCED AC/DC MACHINES
3 Hrs.
PREREQUISITE: ELT 106 and ELT 109
This course focuses on single and three-phase motors and also introduces students to DC motors. Emphasis is placed on field wiring, various types of AC and DC motors, troubleshooting procedures, and utilization of test equipment. Upon completion, the student should be able to explain, wire, troubleshoot, and test all types of AC and DC electric motors.
ELT 132 COMMERCIAL/INDUSTRIAL WIRING II 3 Hrs.
PREREQUISITE: ELT 106 and ELT 109
This course is a continuation of ELT 131 and is all inclusive, including the study of branch circuits, installation requirements for services, feeders and special equipment considerations, including the NEC code requirements. Emphasis is placed on load calculations, conductors, service sizing, installation requirements, NEC code requirements, transformers, lighting, HVAC, and special equipment considerations. Upon completion, the student should be able to know how to size complete electrical commercial/industrial systems and know the NEC requirements for each system.

ELT 192 PRACTICUM/INTERN/CO-OP 1 Hr.
PREREQUISITE: Complete at least 15 hours in electrical classes
This course provides practical experience in the field early in the student’s training as an electrician’s helper on the job, working a special project or conducting research/study in a directed area of the field. Emphasis is placed on gaining hands-on experience with tools of the trade as well as a better understanding of NEC directives. Upon completion, the student should possess a higher state of proficiency in the basic skills of connecting electrical wiring and conduit; this course may be repeated with the instructor’s permission.

ELT 193 PRACTICUM/INTERN/CO-OP 2 Hrs.
PREREQUISITE: Complete at least 15 hours in electrical classes
This course provides practical experience in the electrical craft as an electrician’s helper on the job, working a special project or conducting research/study in a directed area of the field. Emphasis is placed on gaining hands-on experience with tools of the trade as well as a better understanding of NEC directives. Upon completion, the student should possess a higher state of proficiency in the basic skills of connecting electrical wiring and conduit; this course may be repeated with the instructor’s permission.

ELT 194 PRACTICUM/INTERN/CO-OP 3 Hrs.
PREREQUISITE: Complete at least 15 hours in electrical classes
This course provides practical experience in the electrical craft as an electrician’s helper or higher level working more advanced special projects or conducting more advanced research/study in a directed area of the field. Emphasis is placed on gaining hands-on experience with tools of the trade as well as a better understanding of NEC directives while studying in the classroom one hour per week. Upon completion, the student should possess a higher state of proficiency in the basic skills and a better knowledge of testing for the Electrical Journeymen’s Block Test.

ELT 195 PRACTICUM/INTERN/CO-OP 4 Hrs.
PREREQUISITE: Complete at least 15 hours in electrical classes
This course provides additional practical experience in the electrical craft as an apprentice electrician or higher level working advanced projects or research/study in a directed area of the field. Emphasis is placed on gaining more hands-on experience with tools of the trade as well as NEC directives while studying in the classroom two hour per week. Upon completion, the student should possess a higher state of proficiency in all electrician skills and a better knowledge of testing for the Electrical Journeymen’s Block Test.

ELT 200 SPECIAL PROJECTS TBA
PREREQUISITE: Complete at least 15 hours in electrical classes
This course provides additional time and/or practice for the electrical technology major on a project which will enhance his/her abilities to perform required tasks. Emphasis is placed on the upgrading of the students skills and abilities. Upon completion, the student should be able to perform at a higher ability within his/her chosen field of study.

ELT 206 OSHA SAFETY STANDARDS 3 Hrs.
PREREQUISITE: None.
This course provides the student with the knowledge of OSHA safety standards as required by this organization, and as it relates to the job site. Emphasis is placed on overall safety practices, construction site safety practices, and safety procedures required by Federal/State laws. Upon completion, the student should be able to understand the requirements of OSHA as it relates to general and specific construction sites.

ELT 209 MOTOR CONTROLS I 3 Hrs.
PREREQUISITE: ELT 106 and ELT 109
This course covers the use of motor control symbols, magnetic motor starters, running overload protection, push button stations, sizing of magnetic motor starters and overload protection, and complex ladder diagrams of motor control circuits. Topics include sizing magnetic starters and overload protection, the use of push-button stations, ladder diagrams, and magnetic motor starters in control of electric motors, wye-delta starting, part start winding, resistor starting and electric starting devices. Upon completion, students should be able to understand the operation of motor starters, overload protection, interpret ladder diagrams using push-button stations and understand complex motor control diagrams.

ELT 212 MOTOR CONTROL II 3 Hrs.
PREREQUISITE: ELT 106, ELT 109, and ELT 209
This course covers complex ladder diagrams of motor control circuits and the uses of different motor starting techniques. Topics include wye-delta starting, part start winding, resistor starting, and electronic starting devices. Upon completion, the student should be able to understand and interpret the more complex motor control diagrams and understand the different starting techniques of electrical motors.

ELT 221 ELECTRONICS FOR ELECTRICIANS 3 Hrs.
PREREQUISITE: ELT 106 and ELT 109
This course introduces the basic principles of solid state electronic equipment as found in many electrical and motor control circuits. Emphasis is placed on fundamental concepts of diodes, transistors, FETs and MOSFETs as they are used in electrical control circuits. Upon completion, the student should be able to explain the basic operation of these solid state components and be able to perform basic troubleshooting tasks.

ELT 224 SECURITY AND ALARM SYSTEMS 3 Hrs.
PREREQUISITE: ELT 107 and ELT 108
This course introduces the basic operation and installation of home and business security and fire alarm systems as well as low voltage (under 30V) systems such as lighting, door chimes and intercom systems. Emphasis is placed on installation of home and business security and fire alarm systems. Upon completion, students should be able to install residential and commercial security systems in accordance with code and directives.
ELT 231 PROGRAMMABLE CONTROLS I 3 Hrs.  
PREREQUISITE: ELT 106 and ELT 109  
COREQUISITE: ELT 102  
This state-of-the-art course includes the fundamental principals of programmable logic controls (PLCs) including hardware and programming. Emphasis is placed on but not limited to the following: hardwiring associated with the PLC, different options available with most PLCs, and basic ladder logic programming. Upon completion, the student must demonstrate his or her ability by developing programs, loading programs into real world PLCs, and troubleshooting the system if necessary.

ELT 232 PROGRAMMABLE CONTROLS II 3 Hrs.  
PREREQUISITE: ELT 102  
COREQUISITE: ELT 231  
This state-of-the-art course includes the principals of PLC's, including hardware, programming, and program design. Emphasis is placed on, but not limited to the following: developing working programs, timers, counters, different special functions, and designing programs from existing hardwired systems. Upon completion, the student must demonstrate his or her ability by developing programs, loading programs into real world PLCs, and troubleshooting the system if necessary.

ELT 241 NATIONAL ELECTRIC CODE 3 Hrs.  
PREREQUISITE: None.  
This course introduces the students to the National Electric Code and text and teaches the student how to find needed information within this manual. Emphasis is placed on locating and interpreting needed information within the NEC code manual. Upon completion, the student should be able to locate the NEC code requirements for a specific electrical installation.

ELT 242 JOURNEYMAN-MASTER PREP EXAM 3 Hrs.  
PREREQUISITE: None.  
This course is designed to help prepare a student to take either the Journeyman or Master Certification Exam. Emphasis is placed on review of electrical concepts and/or principals, practice tests, and test taking procedures. Upon completion, the student should be able to pass the Journeyman/Masters Certifying Exam.

ELT 243 ELECTRICAL COST ESTIMATING 3 Hrs.  
PREREQUISITE: ELT 110 and ELT 114  
This course provides an in-depth study of calculating wiring materials required and labor needed by man hours to complete a job. Emphasis is placed on how to document cope of work required, sue various take-off sheets, and correct means by which to arrive at total job costs. Upon completion, students should be able to perform actual calculations of sample jobs including overhead and operating costs.

ELT 244 CONDUIT BENDING AND INSTALLATION 3 Hrs.  
PREREQUISITE: None.  
This course provides the student the knowledge to properly bend electrical metallic tubing, rigid galvanized and intermediate metal conduit, and PVC conduit. Emphasis is placed on the theory and practical application of conduit bending methods. Upon completion, the student should be able to get measurements, layout, and successfully bend conduit using hand type, mechanical, and hydraulic benders.

ELT 245 ELECTRICAL GROUNDING SYSTEMS 3 Hrs.  
PREREQUISITE: ELT 106 and ELT 109  
This course provides the knowledge to understand how to properly ground an electrical system. Emphasis is placed on, but not limited to the following: residential installations, commercial installations, and the function of independent grounding elements. Upon completion, the students should be able to explain and design a simple grounding system.

ENGINEERING (EGR)

EGR 125 MODERN GRAPHICS FOR ENGINEERS 3 Hrs.  
PREREQUISITE: None.  
This course provides an introduction to manual and computer-assisted techniques of graphic communication employed by professional engineers. Topics include: lettering; instrumental and computer-aided drafting, technical sketching, orthographic projection, pictorial, sectional, and auxiliary views and dimensioning.

EGR 156 COMPUTER METHODS FOR ENGINEERS 3 Hrs.  
PREREQUISITE: MTH 115.  
This course consists of engineering applications using the FORTRAN IV computer programming language.

ENGLISH (ENG)

ENG 080 ENGLISH LABORATORY 1-2 Hrs.  
PREREQUISITE: None.  
This course, which may be repeated as needed, provides students with a laboratory environment where they can receive help from qualified instructors on English assignments at the developmental level. Emphasis is placed on one-to-one guidance to supplement instruction in English courses. A student's success in this course is measured by success in other English courses in which the student is enrolled.

ENG 092 BASIC ENGLISH I 3-4 Hrs.  
PREREQUISITE: None.  
This course is a review of basic writing skills and basic grammar. Emphasis is placed on the composing process of sentences and paragraphs in standard American written English. The student will demonstrate these skills chiefly through the writing of well-developed, multi-sentence paragraphs.

ENG 093 BASIC ENGLISH II 3-4 Hrs.  
PREREQUISITE: A grade of S in ENG 092 or equivalent placement score  
This course is a review of composition skills and grammar. Emphasis is placed on coherence and the use of a variety of sentence structures in the composing process and on standard American written English usage. The student will demonstrate these skills chiefly through the writing of paragraph blocks and short essays.

ENG 097 PHONICS 1-2 Hrs.  
PREREQUISITE: None.  
This course provides help to students who are experiencing English-language difficulties associated with sound. Emphasis is placed on the sounds of
English words, intonation, differentiating accents, pronunciation, and listening skills. The student’s grade will reflect the degree of improvement demonstrated by that student from the beginning to the end of the semester.

COM 100 INTRODUCTORY TECHNICAL ENGLISH I 3 Hrs.
PREREQUISITE: A grade of S in ENG 092 or equivalent placement score.
This course is designed to enhance reading and writing skills for the workplace. Emphasis is placed on technical reading, job-related vocabulary, sentence writing, punctuation, and spelling with substantial focus on occupational performance requirements. Upon completion, the student should be able to identify main ideas with supporting details and produce mechanically correct short writings appropriate to the workplace.

ENG 101 ENGLISH COMPOSITION I 3 Hrs.
PREREQUISITE: A grade of S in ENG 093 or equivalent placement score.
English Composition I provides instruction and practice in the writing of at least six (6) extended compositions and the development of analytical and critical reading skills and basic reference and documentation skills in the composition process. English Composition I may include instruction and practice in library usage.

ENG 102 ENGLISH COMPOSITION II 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 101.
English Composition II provides instruction and practice in the writing of six (6) formal, analytical essays, at least one of which is a research project using outside sources and/or references effectively and legally. Additionally, English Composition II provides instruction in the development of analytical and critical reading skills in the composition process. English Composition II may include instruction and practice in library usage.

ENG 130 TECHNICAL REPORT WRITING 3 Hrs.
PREREQUISITE: ENG 101.
This course provides instruction in the production of technical and/or scientific reports. Emphasis is placed on research, objectivity, organization, composition, documentation, and presentation of the report. The student will demonstrate the ability to produce a written technical or scientific report by following the prescribed process and format.

ENG 225 EARLY ENGLISH LITERATURE 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course begins with the Anglo-Saxon period and ends with the publication of Paradise Lost and includes extensive treatment of Chaucer, Shakespeare, and Milton, as well as other important early authors including a significant number of early American writers. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate these works to their historical and literary contexts, and understand relevant criticism and research.

ENG 226 MODERN LITERATURE IN ENGLISH 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This is a survey course of eighteenth- and nineteenth-century literature written in English. It includes roughly equal treatment of Enlightenment, Romantic, and Victorian literature in both England and America. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate these works to their historical and literary contexts, and understand relevant criticism and research.

ENG 227 TWENTIETH CENTURY LITERATURE IN ENGLISH 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102. Coverage of this course starts with the beginning of the 20th century and ends with the present. This course will cover standard literary texts from both England and America, with an inclusion of literature, which reflects the globalization of English in the 20th Century. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate these works to their historical and literary contexts, and understand relevant criticism and research.

ENG 246 CREATIVE WRITING I 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course provides instruction and practice in the writing of critical analysis of imaginative forms of literature. Emphasis is placed on originality in the creative writing process, and this course may include instruction on publishing. The student will compose a significant body of imaginative literature, which may be read by or to the class.

ENG 247 CREATIVE WRITING II 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 246.
A continuation of ENG 246, this course provides instruction and practice in the writing of critical analysis of imaginative forms of literature. Emphasis is placed on originality in the creative writing process, and this course may include instruction on publishing. The student will compose a significant body of imaginative literature, which may be read by or to the class.

ENG 248 CREATIVE WRITING III 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 247.
A continuation of ENG 247, this course provides instruction and practice in the writing of critical analysis of imaginative forms of literature. Emphasis is placed on originality in the creative writing process, and this course may include instruction on publishing. The student will compose a significant body of imaginative literature, which may be read by or to the class.

ENG 249 CREATIVE WRITING IV 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 248.
A continuation of ENG 248, this course provides instruction and practice in the writing of critical analysis of imaginative forms of literature. Emphasis is placed on originality in the creative writing process, and this course may include instruction on publishing. The student will compose a significant body of imaginative literature, which may be read by or to the class.

ENG 251 AMERICAN LITERATURE I 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course is a survey of American literature from its inception to the middle of the nineteenth century. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.

ENG 252 AMERICAN LITERATURE II 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course is a survey of American literature from the middle of the nineteenth century to the present. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion, the
student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.

ENG 261 ENGLISH LITERATURE I 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course is a survey of English literature from the Anglo-Saxon period to the Romantic Age. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.

ENG 262 ENGLISH LITERATURE II 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course is a survey of English literature from the Romantic Age to the present. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.

ENG 271 WORLD LITERATURE I 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course is a study of selected literary masterpieces from Homer to the Renaissance. Emphasis is placed on major representative works and writers of this period on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.

ENG 272 WORLD LITERATURE II 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course is a study of selected literary masterpieces from the Renaissance to the present. Emphasis is placed on major representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.

ENG 273 GREAT WORLD MASTERPIECES I 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course is a survey of the significant literature of Western civilization, beginning with ancient Greece and continuing through the Renaissance. Emphasis is placed on representative works and writers, on the ideas that shaped and that are reflected in these works, and on the literary periods and movements during which these works were produced. The student will demonstrate through tests and literary critiques with appropriate research and documentation an understanding of these works.

ENG 274 GREAT WORLD MASTERPIECES II 3 Hrs.
PREREQUISITE: A grade of C or better in ENG 102.
This course is a survey of the significant literature of Western civilization, beginning with the Renaissance and continuing through the present. Emphasis is placed on representative works and writers, on the ideas that shaped and that are reflected in these works, and on the literary periods and movements during which these works were produced. The student will demonstrate through tests and literary critiques with appropriate research and documentation an understanding of these works.

ENG 299 DIRECTED STUDIES IN LANGUAGE AND LITERATURE 1-3 Hrs.
PREREQUISITE: Permission of Instructor.
This course, which may be repeated for credit so long as the topics differ, provides the student the opportunity to study an English-language or literary topic chosen by the student in consultation with the instructor. Emphasis is placed on the student’s investigating the topic and reporting the results of the investigation. The student will demonstrate knowledge of the topic through either a written or an oral presentation.

EMERGENCY MEDICINE (EMS)

EMERGENCY MEDICAL TRAINING I (Basic)

EMS 105 FIRST RESPONDER 3 Hrs.
PREREQUISITE: None
This course provides theory in emergency procedures as contained in the current National Standard Training Curriculum (NSTC) for the First Responder. The course is an introduction to the emergency medical services system and provides fundamentals for students to improve the quality of emergency care provided as the first person to an emergency scene until emergency medical services arrive. Completion of specific student competencies, as outlined in the current NSTC for the First Responder, are required for successful course completion.

EMS 107 EMERGENCY VEHICLE OPERATOR 1 Hr.
PREREQUISITE: Must present a valid driver’s license as required by program.
The Emergency Vehicle Operator Course – Ambulance provides the student with training as contained in the current National Standard Training Curriculum (NSTC) for the Emergency Vehicle Operator Course (EVOC) Ambulance. The course provides the knowledge and skill practice necessary for individuals to learn how to safely operate all types of ambulances. Topics include introduction to the NSTC for ambulance operators; legal aspects of ambulance operation; communication and reporting; roles and responsibilities; ambulance types and operation, ambulance inspection, maintenance, and repair; navigation and route planning; basic maneuvers and normal operating situations; operations in emergency mode and unusual situations, special considerations in safety; and the run. Completion of specific student competencies, utilizing NSTC guidelines, are required for successful completion of this course. NOTE: To qualify for licensure status as an ambulance driver in the State of Alabama, students must successfully complete this course and meet additional requirements as required by the Alabama Department of Public Health.

EMS 140 EMT PREPARATORY AND PRE-HOSPITAL 2 Hrs.
PREREQUISITE: Admission to the EMT- Basic Program.
This course is one of four courses (EMS 140, 141, 142, 143) required for successful completion of the EMT-Basic Program according to the current National Standard Curriculum for the EMT-Basic. Content areas include introduction to emergency medical
care; the well being of the EMT-Basic; medical/legal and ethical issues; the human body; baseline vitals and SAMPLE history; lifting and moving; airway management; ambulance operations; gaining access; an overview of hazardous materials; incident management systems; mass casualty situations; and triage; and state and local EMS rules/regulations. Computer use in simulated scenarios is also included in the course. Successful completion of student cognitive, psychomotor, and affective domain competencies are required in this course.

EMS 141 EMT ASSESSMENT AND TRAUMA RELATED INJURIES 3 Hrs.
PREREQUISITE: Admission to the EMT-Basic Program.
This course is one of four courses (EMS 140, 141, 142, 143) required for successful completion of the EMT-Basic program according to the current National Standard Curriculum for the EMT-Basic. Content areas include scene size-up; initial assessment; focused history and physical exam; medical and trauma; detailed physical exam; on-going assessment; communications; documentation; bleeding and shock; soft tissue injuries; musculoskeletal care; and injuries to the head and spine. Computer use in simulated scenarios is also included in the course. Successful completion of student cognitive, psychomotor, and affective domain competencies are required in this course.

EMS 142 EMT MEDICAL EMERGENCIES AND PEDIATRIC CARE 3 Hrs.
PREREQUISITE: Admission to the EMT-Basic Program.
This course is one of four courses (EMS 140, 141, 142, 143) required for successful completion of the EMT-Basic Program according to the current National Standard Curriculum for the EMT-Basic. Content areas include general pharmacology: respiratory emergencies; cardiovascular emergencies; diabetic emergencies (including the use of a digital glucometer); altered mental status; allergic reactions; poisoning/overdose emergencies; environmental emergencies; behavioral emergencies; obstetrics; and infants/children. Computer use in simulated scenarios will also be included in the course. Successful completion of student cognitive, psychomotor, and affective domain competencies are required in this course.

EMS 143 EMT BASIC CLINICAL COMPETENCIES 1 Hr.
PREREQUISITE: Admission to the EMT-Basic Program.
This course is one of four courses (EMS 140, 141, 142, 143) required for successful completion of the EMT-Basic Program according to the current National Standard Curriculum for the EMT-Basic. It provides students with clinical education experiences to enhance knowledge and skills learned in the EMT-Basic Program. Successful completion of student cognitive, psychomotor, and affective domain competencies are required in this course.

EMS 280 BASIC LIFE SUPPORT INSTRUCTOR 1 Hr.
PREREQUISITE: Successful completion, within the past 12 months, of all areas of basic life support training (CPR).
This course provides students with concepts as related to areas of basic life support instruction. Topics include history, concepts, and systems of emergency cardiac care; cardiopulmonary physiology, dysfunc-
the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

EMP 193 PATIENT ASSESSMENT AND MANAGEMENT 3 Hrs.
PREREQUISITE: Admission to the EMT-Paramedic Program.
COREQUISITE: Approved anatomy and physiology course(s).
This course provides the knowledge and skills needed to perform a comprehensive patient assessment, make initial management decisions, and to communicate assessment findings and patient care verbally and in writing. Content areas include: airway management, history taking, techniques of the physical examination, patient assessment, clinical decision making, communications, documentation, and assessment based management. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

EMP 194 PARAMEDIC GENERAL PHARMACOLOGY 2 Hrs.
PREREQUISITE: Admission to the EMT-Paramedic Program.
COREQUISITE: Approved anatomy and physiology course(s).
NOTE: HPS-104, General Pharmacology for the Health Sciences, may be substituted for this course.
This course introduces basic pharmacological agents and concepts, with an emphasis on drug classifications and the knowledge and skills required for safe, effective medication administration. Content areas include: general principles of pharmacology and pharmacologic pathophysiology; venous and intravenous access techniques, the metric and apothecary system; computation of dosage and solution problems, administration of pharmacologic agents; and nasogastric tube placement. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

EMP 195 ADVANCED TRAUMA MANAGEMENT A 6 Hrs.
PREREQUISITE: Admission to the EMT-Paramedic Program.
COREQUISITE: Approved anatomy and physiology course(s), approved for clinical studies.
NOTE: The combination of EMP-196, Advanced Trauma Management-B, and EMP-197, Clinical Competencies-I will substitute for this course.
This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific medical conditions. Content areas include: pulmonology, neurology, gastroenterology, renal/urology, toxicology, hematology, environmental conditions, infectious and communicable diseases, abuse and assault, patients with special challenges, and acute interventions for the chronic care patient. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

EMP 198 MEDICAL PATIENT MANAGEMENT I 3 Hrs.
PREREQUISITE: Admission to the EMT-Paramedic Program.
COREQUISITE: Approved anatomy and physiology course(s).
This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific medical conditions. Content areas include: pulmonology, neurology, gastroenterology, renal/urology, toxicology, hematology, environmental conditions, infectious and communicable diseases, abuse and assault, patients with special challenges, and acute interventions for the chronic care patient. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

EMP 199 CARDIOVASCULAR ELECTROPHYSIOLOGY 3 Hrs.
PREREQUISITE: Admission to the EMT-Paramedic Program.
COREQUISITE: Approved anatomy and physiology course(s).
This course introduces the cardiovascular system, cardiovascular electrophysiology, and electrocardiographic monitoring. Content areas include: cardiovascular anatomy and physiology, cardiovascular electrophysiology, electrocardiographic monitoring, rhythm analysis, and prehospital 12-lead electrocardiogram monitoring and interpretation. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

EMP 200 MEDICAL PATIENT MANAGEMENT IIA 6 Hrs.
PREREQUISITE: Admission to the EMT-Paramedic Program.
COREQUISITE: Approved anatomy and physiology course(s), approved for clinical studies.
NOTE: The combination of EMP-201, Medical Patient Management-IIB, and EMP-202, Clinical Competencies-II will substitute for this course.
This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific medical conditions. Content areas include: endocrinology, allergies and anaphylaxis, behavioral/psychiatric conditions, gynecology, obstetrics, neonatology, pediatrics, and geriatrics. In the clinical setting, theory and skills are applied to a variety of medical situations across the life span of the patient, with a focus on communication with and management of cardiac, acute care, psychiatric/behavioral, obstetrical, newborn, pediatric, geriatric, and acute interventions for chronic care patients, and patients with special challenges. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

EMP 203 CARDIOVASCULAR PATIENT MANAGEMENT 3 Hrs.
PREREQUISITE: Admission to the EMT-Paramedic Program, EMP-199.
COREQUISITE: Approved anatomy and physiology course(s).
This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific car-
diovascular conditions. Content areas include: assessment of the cardiovascular patient, pathophysiology of cardiovascular disease, and techniques of management including appropriate pharmacologic agents and electrical therapy. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

EMP 204 TRANSITION TO PARAMEDIC PRACTICE 3 Hrs.
PREREQUISITE: Admission to the EMT- Paramedic Program.
COREQUISITE: Approved anatomy and physiology course(s).
This course is designed to meet additional state and local educational requirements for paramedic practice. Content may include: prehospital protocols, transfer medications, topics in critical care and transport, system presentation, and/or national standard certification courses as dictated by local needs or state requirement. Upon completion, the student should have met all ancillary educational requirements set forth by the Alabama Department of Public Health and local employers.

EMP 205 PARAMEDIC TERMINAL COMPETENCIES 2 Hrs.
PREREQUISITE: Admission to the EMT- Paramedic Program, approved anatomy and physiology course(s).
This course is designed to review the National Standard Curriculum for the EMT- Paramedic and to assist students in preparation for the paramedic licensure examination. Emphasis is placed on validation of knowledge and skills through didactic review, skills lab performance, computer simulation, and practice testing. Upon completion, the student should be sufficiently prepared to sit for the paramedic licensure examination.

EMP 206 PARAMEDIC FIELD PRECEPTORSHIP 6 Hrs.
PREREQUISITE: Admission to the EMT- Paramedic Program. Approved anatomy and physiology course(s), approved for clinical studies.
This course provides field experiences in the prehospital setting with advanced life support EMS units. Under the direct supervision of a field preceptor, students synthesize cognitive knowledge and skills developed in the skills laboratory and hospital clinical to provide safe and effective patient care in the prehospital environment. Upon completion, the student should have refined and validated his or her patient care practices to provide safe and effective patient care over a broad spectrum of patient situations and complaints.

EMP 207 PARAMEDIC TEAM LEADER PRECEPTORSHIP 1 Hr.
PREREQUISITE: Admission to the EMT- Paramedic Program, approved anatomy and physiology course(s).
This course is designed to evaluate the student’s ability to integrate didactic, psychomotor skills, clinical, and field internship instruction to serve as a competent entry-level paramedic. This final evaluative (rather than instructional) course focuses on the student’s professional attributes and integrative competence in clinical decision-making and team leadership in the pre-hospital setting. Upon completion, the student should have demonstrated adequate knowledge and skills, professional attitudes and attributes, clinical decision-making, and team leadership abilities to effectively function as a competent entry-level paramedic.

REFRESHER COURSES (Continuing Education)
EMS 113 INFECTION CONTROL FOR HEALTH PROFESSIONALS 1 Hr.
PREREQUISITE: None.
This course is designed for students planning to enter a health related field of study or public service occupations. The course focuses on the sources of communicable diseases and describes methods for prevention of transmission of bloodborne and airborne pathogens. Topics include prevention; universal precautions (body-substance isolation) and asepsis; immunization; exposure control; disposal; labeling; transmission; exposure determination; post-exposure reporting; and an exposure control plan. The course is taught following current guidelines set forth by the Occupational Safety and Health Administration (OSHA). Upon completion, the student should be able to participate in the clinical setting, identify potential sources of bloodborne and airborne pathogens, and use appropriate universal precautions.

EMS 150 EMT-BASIC REFRESHER 2 Hrs.
PREREQUISITE: Completion of a NSTC course for EMT-Basic or None.
This course provides the student with theory as contained in the National Training Curriculum (NSTC) for the EMT-Basic. It also serves as a transition or bridge course when a new national curriculum is adopted. This course contains specific content areas as defined by the NSTC. The student is required to complete specific competencies, as outlined by the NSTC, for successful course completion.

EMS 153 EMS DISPATCHER 3 Hrs.
PREREQUISITE: None.
This course provides students with theory as contained in the National Training Curriculum (NSTC) for EMS Dispatcher. This course is designed to prepare EMS dispatcher personnel to communicate base station for the purpose of receiving request for emergency medical services and allocating community resources in a response to such request. Upon completion, the student should have an understanding of emergency medical services dispatch procedures and be able to effectively receive a call or dispatch appropriate personnel, utilizing a scenario in a simulated situation.

EMS 190 EMT-INTERMEDIATE REFRESHER 2 Hrs.
PREREQUISITE: Completion of a NSTC course for the EMT-Intermediate.
This course provides students with a review of material contained in the National Standard Training Curriculum (NSTC) for the EMT-Intermediate. It also serves as a transition or bridge course when a new national curriculum is adopted. This course contains specific content areas as defined by the NSTC and the Alabama Department of Public Health. The student is required to complete specific competencies according to the NSTC for successful course completion.

EMS 265 PARAMEDIC REFRESHER 3 Hrs.
PREREQUISITE: Completion of a NSTC course for the Paramedic or None.
This course provides students with a review of material contained in the current National Standard Training Curriculum (NSTC) for the Paramedic. It also serves as a transition or bridge course when a new national curriculum is adopted. This course contains specific content areas as defined by the NSTC. The student is required to complete specific competencies for successful course completion.
Course Descriptions 137

FIRE SCIENCE/FIRE SERVICES MANAGEMENT (FSC)

FSC 100 BASIC FIREFIghtERSHIP  2 Hrs.
PREREQUISITE: None.
This course is an introduction to the basics of Fire Science, including fire chemistry, salvage, hydraulics, laying hose, laddering, and overhaul work.

FSC 101 INTRODUCTION TO THE FIRE SERVICE  3 Hrs.
PREREQUISITE: None.
This course is a survey of the philosophy and history of fire protection, loss of property and life by fire, review of municipal fire defenses, and the organization and function of federal, state, county, city, and private fire protection.

FSC 103 HAZARDOUS MATERIALS I  3 Hrs.
PREREQUISITE: None.
This is a survey of fundamental facts and operations applicable to hazardous materials incidents. The emphasis is on storage, handling, standards, special equipment, toxicology, and monitoring.

FSC 104 HAZARDOUS MATERIALS II  3 Hrs.
PREREQUISITE: FSC 103.
This course is a continuation of the study of hazardous materials and application to specialized hazardous materials response teams. Emphasis is placed on specialized skills and equipment required to mitigate a hazardous materials incident.

FSC 105 CHEMISTRY FOR THE FIRE SERVICE  3 Hrs.
PREREQUISITE: None.
This is a survey of general chemistry as applied to the fire service. Emphasis is on fundamental facts, principles, theories, and applications.

FSC 111 FIRE HYDRAULICS  3 Hrs.
PREREQUISITE: None.
This course is a review of basic mathematics, hydraulic laws and formulae as applied to the fire service, water supply problems, and underwriters' requirement for pumps.

FSC 120 FIRE HAZARDS  3 Hrs.
PREREQUISITE: None.
The course includes the characteristics and behavior of fire; fire-hazard properties of solid, liquid, and gas materials; and the storage and handling of these materials.

FSC 130 INTRODUCTION TO FIRE SUPPRESSION  3 Hrs.
PREREQUISITE: None.
This course is a study of fire suppression, organization, fire suppression equipment, characteristics and behavior of fire, and fire hazard properties of ordinary materials.

FSC 200 FIRE COMBAT TACTICS AND STRATEGY  3 Hrs.
PREREQUISITE: None.
This course is a review of fire chemistry, equipment and manpower, basic fire fighting tactics and strategy, methods of attack, and pre-planning fire problems.

FSC 205 FIRE INSTRUCTOR I  3 Hrs.
PREREQUISITE: None.
This course is a study of the instructor's roles and responsibilities; factors that influence the teaching/learning process; the techniques of planning, preparing, and presenting an effective lesson; training aids and their utilization; and the purpose and principles of testing and evaluation.

FSC 206 FIRE INSTRUCTOR II  3 Hrs.
PREREQUISITE: FSC 205.
This is a study of task and job analysis; behavioral/performance objectives; lesson plan and instructional material development; the teaching/learning process; methods of instruction and evaluation; and the use of references.

FSC 207 FIRE INSTRUCTOR III  3 Hrs.
PREREQUISITE: FSC 206.
This is a study of occupational analysis; development of course instructional materials, evaluations, and training records and reports.

FSC 210 BUILDING CONSTRUCTION FOR THE FIRE SERVICE  3 Hrs.
PREREQUISITE: None.
This course highlights and assesses the problems and hazards to fire personnel when a building is attacked by fire or is under stress from other factors dealing with collapse.

FSC 211 BUILDING CONSTRUCTION AND RELATED CODES  3 Hrs.
PREREQUISITE: None.
This course includes a thorough examination of national, state, and local laws and ordinances which regulate and/or influence the field of fire prevention.

FSC 220 FIRE EXTINGUISHMENT AGENTS  3 Hrs.
PREREQUISITE: None.
This is a study of water supplies and services, principles of hydraulic calculations and tests, fire extinguishing chemicals, and the selection and use of extinguishing agents.

FSC 230 THE ISO (AIA) STANDARDS  3 Hrs.
PREREQUISITE: None.
This course is a study of insurance theory and practice, the economics of the ISO grading system, and a city's fire defense and insurance rates. Included is a detailed analysis of a city's water supply, fire department, fire alarm, fire prevention, and other grading methods of fire defense.

FSC 235 BREATHING APPARATUS SPECIALIST COURSE  3 Hrs.
PREREQUISITE: FSC 206.
This is an in-depth survey of respiratory hazards, search and rescue techniques, emergency procedures and routine care, and inspection procedures as related to the fire service. Extreme emphasis is placed upon understanding and handling personal and equipment limitations.

FSC 240 FIRE CAUSE DETERMINATION  3 Hrs.
PREREQUISITE: None.
This course covers the burning characteristics of combustibles, interpretation of clues, burn patterns leading to points of origin, identification of incendiary indications, sources of ignition an ignited materials, and preservation of fire scene evidence.

FSC 241 ARSON INVESTIGATION  3 Hrs.
PREREQUISITE: None.
This is an introduction to arson and incendiarism, arson laws, methods of determining fire causes, evidence, interviewing and detaining witnesses, procedures in handling juveniles, and court procedures.

FSC 250 FIRE PREVENTION INSPECTION  3 Hrs.
PREREQUISITE: None.
This is a study of the organization and function of the fire prevention team. Course content includes inspections, survey and mapping procedures, recognition of fire hazards, and public relations as affected by fire prevention.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>FSC 260</td>
<td>SPECIAL SERVICE HAZARDS</td>
<td>3 Hrs.</td>
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<tr>
<td></td>
<td>This is a study of electrical transmissions and</td>
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<td>related equipment appliances, radiation hazards,</td>
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<td>flammable metals, and riots, disaster and civil</td>
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<td>defense organizations, and hazard plans.</td>
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<td>FSC 270</td>
<td>FIRE PROTECTION SYSTEMS</td>
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<td>PREREQUISITE: None.</td>
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<td></td>
<td>This is a study of portable fire extinguishing</td>
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<td>equipment, sprinkler systems, protection systems</td>
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<td>for special hazards, and fire alarms and detection</td>
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<td>systems.</td>
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<td>FSC 280</td>
<td>FIRE APPARATUS AND EQUIPMENT</td>
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<td>PREREQUISITE: None.</td>
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<td>This is a study of driving laws, techniques,</td>
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<td>construction and operation of pumping engines,</td>
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<td>ladder trucks, aerial platforms, specialized</td>
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<td>equipment and apparatus maintenance.</td>
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<td>FSC 285</td>
<td>INDUSTRIAL FIRE PROTECTION</td>
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<td>PREREQUISITE: None.</td>
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<td>This is an introduction to fire protection in</td>
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<td>industrial plants, which includes the study of</td>
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<td>practices and procedures involved in establishing</td>
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<td>and managing an in-plant fire protection plan.</td>
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<td>FSC 292</td>
<td>ELEMENTS OF SUPERVISION/FIRE SERVICE SUPERVISION</td>
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<td>PREREQUISITE: None.</td>
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<td>This course covers the responsibility of supervisors,</td>
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<td>organization, human relations, grievance training,</td>
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<td>rating, promotion, quality-quantity control and</td>
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<td>management-employee relations.</td>
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<td>FSC 293</td>
<td>FIRE SERVICE ADMINISTRATION</td>
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<td>PREREQUISITE: None.</td>
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<td>This is a study of the principles, practices and</td>
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<td>objectives of fire administration, of fire</td>
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<td>defenses and insurance rates, of personnel</td>
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<td>management, and of records, reports, and</td>
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<td>evaluation.</td>
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<td>FSC 294</td>
<td>FIRE DEPARTMENT MANAGEMENT</td>
<td>3 Hrs.</td>
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<td>PREREQUISITE: None.</td>
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<td>This is an introduction to planning, budgeting</td>
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<td>organization, staffing, evaluation, and public</td>
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<td>relations of fire departments.</td>
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<td>FSC 297</td>
<td>SELECTED TOPICS IN FIRE SERVICE OPERATIONS</td>
<td>1-3 Hrs.</td>
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<td>PREREQUISITE: None.</td>
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<td>This course provides directed reading and</td>
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<td>discussion of selected topics related to fire</td>
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<td>service operations. The course may be</td>
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<td>repeated for credit.</td>
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<td>FSC 299</td>
<td>LEGAL ASPECTS OF THE FIRE SERVICE</td>
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<td>PREREQUISITE: None.</td>
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<td>This is an introduction to the overall legal</td>
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<td>duties, responsibilities and limitations placed</td>
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<td>upon the fire service professional. It includes</td>
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<td></td>
<td>the study and practical application of civil and</td>
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<td></td>
<td>criminal procedures based upon current state and</td>
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<td></td>
<td>federal codes.</td>
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<tr>
<td>FRN 101</td>
<td>INTRODUCTORY FRENCH I</td>
<td>4 Hrs.</td>
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<tr>
<td></td>
<td>PREREQUISITE: None.</td>
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<tr>
<td></td>
<td>This course provides an introduction to French.</td>
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<td></td>
<td>Topics include the development of basic</td>
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<td></td>
<td>communication skills and the acquisition of basic</td>
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<td></td>
<td>knowledge of the cultures of French-speaking</td>
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<td></td>
<td>areas.</td>
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<tr>
<td>FRN 102</td>
<td>INTRODUCTORY FRENCH II</td>
<td>4 Hrs.</td>
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<td></td>
<td>PREREQUISITE: FRN 101.</td>
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<tr>
<td></td>
<td>This continuation course includes the development</td>
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<td></td>
<td>of basic communication skills and the acquisition</td>
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<td>of basic knowledge of the cultures of French-</td>
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<td></td>
<td>speaking areas.</td>
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<td>GEOGRAPHY (GEO)</td>
<td></td>
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<tr>
<td>GEO 100</td>
<td>WORLD REGIONAL GEOGRAPHY</td>
<td>3 Hrs.</td>
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<tr>
<td></td>
<td>PREREQUISITE: None.</td>
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<tr>
<td></td>
<td>This course surveys various countries and major</td>
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<td></td>
<td>regions of the world with respect to location and</td>
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<td></td>
<td>landscape, world importance, political status,</td>
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<td></td>
<td>population, type of economy, and its external and</td>
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<td></td>
<td>internal organization problems and potentials.</td>
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<tr>
<td>GEO 200</td>
<td>GEOGRAPHY OF NORTH AMERICA</td>
<td>3 Hrs.</td>
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<td></td>
<td>PREREQUISITE: GEO 100.</td>
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<tr>
<td></td>
<td>This course is a survey of the geography of the</td>
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<tr>
<td></td>
<td>United States and Canada with special emphasis on</td>
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<td></td>
<td>land usage, mineral resources, industrial</td>
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<td></td>
<td>development, and social and economic adaptation</td>
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<td></td>
<td>of man and the natural environment.</td>
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<td>GEOLOGY (GLY)</td>
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<tr>
<td>GLY 101</td>
<td>INTRODUCTION TO GEOLOGY I</td>
<td>4 Hrs.</td>
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<tr>
<td></td>
<td>PREREQUISITE: None.</td>
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<td></td>
<td>Introduction to Geology I is the first in a two</td>
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<tr>
<td></td>
<td>part sequence dealing with the structure of the</td>
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<td></td>
<td>earth including materials, internal and external</td>
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<td></td>
<td>processes, deformation, energy, and plate</td>
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<td></td>
<td>tectonics. Laboratory is required.</td>
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<td>GLY 102</td>
<td>INTRODUCTION TO GEOLOGY II</td>
<td>4 Hrs.</td>
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<td>PREREQUISITE: GLY 101 and/or None.</td>
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<td></td>
<td>Introduction to Geology II is the second in a two</td>
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<td></td>
<td>part sequence dealing with a historical perspective</td>
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<td></td>
<td>of the earth. Topics include items such as</td>
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<td>geologic time, earth’s origin, evolution of</td>
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<td></td>
<td>continents and ocean basins, minerals, energy</td>
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<td>resources, planetary geology, and mountain</td>
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<td>building. Laboratory is required.</td>
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<td>HEALTH EDUCATION (HED)</td>
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<tr>
<td>HED 199</td>
<td>ECOLOGICAL APPROACH TO HEALTH AND FITNESS</td>
<td>3 Hrs.</td>
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<tr>
<td></td>
<td>PREREQUISITE: None.</td>
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<tr>
<td></td>
<td>This course examines a myriad of factors</td>
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<td></td>
<td>influencing health and fitness behavior.</td>
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<td></td>
<td>Intrapersonal, interpersonal, institutional,</td>
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<td></td>
<td>community, and public policy factors are</td>
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<td>examined.</td>
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<td>HED 221</td>
<td>PERSONAL HEALTH</td>
<td>3 Hrs.</td>
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<td>PREREQUISITE: None.</td>
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<td></td>
<td>This course introduces principles and practices</td>
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<td></td>
<td>of personal and family health; it includes</td>
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<td>human reproduction, growth and development,</td>
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<td>psychological dimensions of health, human</td>
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<td>sexuality, nutrition and fitness, aging, death</td>
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<td></td>
<td>and dying.</td>
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<tr>
<td>HED 231</td>
<td>FIRST AID</td>
<td>3 Hrs.</td>
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<td>PREREQUISITE: None.</td>
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<td>This course provides instruction to the</td>
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<td>immediate, temporary care which should be</td>
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<td>given to the victims of accidents and sudden</td>
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<td>illness. It also includes standard and advanced</td>
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<td></td>
<td>requirements of the American Red Cross, and/or</td>
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<td></td>
<td>the American Heart Association. CPR training is</td>
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<td></td>
<td>also included.</td>
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<td>HED 277</td>
<td>CPR RECERTIFICATION</td>
<td>1 Hr.</td>
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<td>PREREQUISITE: Prior certification in CPR.</td>
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<td>In this course, instruction and review of up-dated</td>
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<td></td>
<td>information concerning cardio-pulmonary</td>
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<td>resuscitation (CPR) is presented. The student</td>
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<td>must satisfactorily execute skills needed to</td>
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<td></td>
<td>meet requirements for recertification in Basic</td>
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<td>Cardiac Life Support (BCLS) as required by the</td>
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<td></td>
<td>American Heart Association.</td>
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<td>HED 299</td>
<td>SPECIAL TOPICS: STRESS MANAGEMENT</td>
<td>2 Hrs.</td>
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<td>PREREQUISITE: None.</td>
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<td>This course will permit the student to focus on,</td>
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<td>examine, and address current specific issues and</td>
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|             | topics
in the general area of health and disease. Stress management techniques will be described and evaluated and the relationship between stress and disease will be discussed.

HEALTH INFORMATION TECHNOLOGIES (HIT)

HIT 230  MEDICAL CODING SYSTEMS I  3 Hrs.
PREREQUISITE: BIO 120 and BIO 150.
This course is intended to develop an understanding of coding and classification systems in order to assign valid diagnostic and procedure codes. Instruction includes description of classification and nomenclature systems; coding diagnoses and procedures; sequencing codes; analyzing actual medical records to identify data elements to be coded; and validating coded clinical information. Student competency includes demonstration of coding principles, and applications (manual and/or computer assisted).

HIT 232  MEDICAL CODING SYSTEMS II  3 Hrs.
PREREQUISITE: HIT 230.
This course is a continuation of Medical Coding Systems I which is intended to develop an understanding of coding and classification systems in order to assign valid diagnostic and procedure codes. Instruction includes coding diagnoses and procedures; sequencing codes; analyzing actual medical records to identify data elements to be coded; validating coded clinical information, DRG assignment and case mix/severity of illness data. Student competency includes demonstration of coding principles, and applications (manual and/or computer assisted).

HIT 260  PROFESSIONAL PRACTICE EXPERIENCE  3 Hrs.
PREREQUISITE: HIT 232.
This course allows the student to correlate the experience of previous courses with on-site and on-campus laboratory learning experience. Emphasis is placed on application of all previous course work and orientation to all aspects of practice in a health information management department of a health care facility. Student competency is demonstrated by application of skills covered in theory and laboratory classes.

HEAVY EQUIPMENT OPERATOR (HEO)

HEO 111  INTRODUCTION TO HEAVY EQUIPMENT  6 Hrs.
PREREQUISITE: None.
This course presents the fundamentals of heavy equipment operation. Topics include personal, fire, and shop safety; identification, use and maintenance of tools, and an introduction to the major pieces of equipment. Upon completion, the student will understand safety procedures and the functions of major pieces of heavy equipment.

HEO 114  BULLDOZER OPERATION  6 Hrs.
PREREQUISITE: None.
This course covers safety, principles of operation and maintenance of bulldozers. Topics include operator maintenance, servicing, and operation in both actual and simulated conditions. Upon completion, the student will have gained skills necessary to operate bulldozers.

HEO 115  MOTOR GRADER OPERATOR  6 Hrs.
PREREQUISITE: None.
This course covers safety, principles of operation and maintenance of motor graders. Topics include operator maintenance, servicing, and operation in both actual and simulated conditions. Upon completion, the student will have gained skills necessary to operate motor graders.

HEO 116  EXCAVATOR AND BACKHOE OPERATION  6 Hrs.
PREREQUISITE: None.
This course covers safety, principles of operation and maintenance of excavators and backhoes. Topics include operator maintenance, servicing, and operation in both actual and simulated conditions. Upon completion, the student will have gained skills needed to operate excavators and backhoes.

HEO 117  HEAVY EQUIPMENT TRANSPORTATION  3 Hrs.
PREREQUISITE: None.
This course introduces students to the principles of leading and transporting heavy equipment. Topics include loading and unloading techniques, tie-down and weight distribution, and safety precautions for over-the-road hauling. Students develop skills needed in the loading and transporting heavy equipment.

HEO 181/182  SPECIAL TOPICS IN HEAVY EQUIPMENT OPERATION  1-3 Hrs.
These courses provide specialized instruction in various areas related to the heavy equipment operator industry. Emphasis is placed on meeting student’s needs.

HISTORY (HIS)

HIS 101  WESTERN CIVILIZATION I  3 Hrs.
PREREQUISITE: None.
This course is a survey of social, intellectual, economic, and political developments, which have molded the modern western world. This course covers the ancient and medieval periods and concludes in the era of the Renaissance and Reformation.

HIS 102  WESTERN CIVILIZATION II  3 Hrs.
PREREQUISITE: None.
This course is a continuation of HIS 101; it surveys development of the modern western world from the era of the Renaissance and Reformation to the present.

HIS 201  UNITED STATES HISTORY I  3 Hrs.
PREREQUISITE: None.
This course surveys United States history during colonial, Revolutionary, early national and antebellum periods. It concludes with the Civil War and Reconstruction.

HIS 202  UNITED STATES HISTORY II  3 Hrs.
PREREQUISITE: None.
This course is a continuation of HIS 201; it surveys United States history from the Reconstruction era to the present.

HIS 256  AFRICAN-AMERICAN HISTORY  3 Hrs.
PREREQUISITE: None.
This course focuses on the experience of African-American people in the western hemisphere, particularly the United States. It surveys the period from the African origins of the slave trade during the period of exploration and colonization to the present. The course presents a comparison between the African experience in the United States and in Mexico and South America.

HIS 299  DIRECTED STUDIES IN HISTORY  1-3 Hrs.
PREREQUISITE: None.
This course affords the student the opportunity to study selected topics of a historical nature under the direction of an instructor either as part of class or on an individual basis. Internships with historical and preservation organizations, thesis development, and the analysis of secondary monographs are examples of activities for this course. HIS 299 may be repeated for credit.