



COURSE DESCRIPTIONS

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COURSE DESCRIPTIONS ARE ARRANGED IN ALPHABETICAL ORDER BASED ON PROGRAM AND COURSE NUMBER.

**AIR CONDITIONING/REFRIGERATION (ACR)
Course Descriptions**

ACR 111 PRINCIPLES OF REFRIGERATION 3
Prerequisite(s): As determined by college
This course emphasizes the fundamental principles for air conditioning and refrigeration. Instruction is provided in the theory and principles of refrigeration and heat transfer, HVAC/R system components, common, and specialty tools for HVAC/R, and application of the concepts of basic compression refrigeration. Upon completion, students should identify system components and understand their functions, identify and use common and specialty HVAC/R tools, and maintain components of a basic compression refrigeration system. **CORE**

ACR 112 HVACR SERVICE PROCEDURES 3
Prerequisite(s): As determined by college
This course covers system performance checks and refrigerant cycle diagnosis. Emphasis is placed on the use of refrigerant recovery/recycle units, industry codes, refrigerant coils and correct methods of charging and recovering refrigerants. Upon completion, students should be able to properly recover/recycle refrigerants and demonstrate safe, correct service procedures which comply with the no-venting laws.

ACR 113 REFRIGERATION PIPING PRACTICES 3
Prerequisite(s): As determined by college
The course introduces students to the proper installation procedures of refrigerant piping and tubing for the heating, ventilation, air conditioning and refrigeration industry. This course includes various methods of working with and joining tubing. Upon completion, students should comprehend related terminology, and be able to fabricate pipe, tubing, and pipe fittings. **CORE**

ACR 119 FUNDAMENTALS OF GAS HEATING SYSTEMS 3
Prerequisite(s): As determined by college
This course provides instruction on general service and installation for common gas furnace system components. Upon completion, students will be able to install and service gas furnaces in a wide range of applications.

ACR 121 PRINCIPLES OF ELECTRICITY FOR HVACR 3
Prerequisite(s): As determined by college
This course is designed to provide the student with the basic knowledge of electrical theory and circuitry as it pertains to air conditioning and refrigeration. This course emphasizes safety, definitions, symbols, laws, circuits, and electrical test instruments. Upon completion students should understand and be able to apply the basic principles of HVACR circuits and circuit components. **CORE**

ACR 122 HVACR ELECTRIC CIRCUITS 3
Prerequisite(s): As determined by college
This course introduces the student to electrical circuits and diagrams. Electrical symbols and basic wiring diagrams are constructed in this course. Upon completion, student should understand standard wiring diagrams and symbols and be able to construct various types of electrical circuits. **CORE**

ACR 123 HVACR ELECTRICAL COMP. 3
Prerequisite(s): As determined by college
This course introduces students to electrical components and controls. Emphasis is placed on the operations on motors, relays, contactors, starters, and other HVAC electrical components. Upon completion, students should be able to install electrical components and determine their proper operation. **CORE**

ACR 130 COMPUTER ASSISTED HVAC TROUBLESHOOTING 1
Prerequisite(s): As determined by college
This course focuses on troubleshooting procedures. Emphasis is placed on the proper use of test equipment and machine/electrical malfunctions. Upon completion, student should be able to diagnosis and repair service problems in HVAC equipment.

ACR 132 RESIDENTIAL AIR CONDITIONING 3
Prerequisite(s): As determined by college
This course introduces students to residential air conditioning systems. Emphasis is placed on the operation, service, and repair of residential air conditioning systems. Upon completion, students will be able to service and repair residential air conditioning systems.

ACR 134 ICE MACHINES 3
Prerequisite(s): As determined by college
This course introduces students to commercial ice machines. Emphasis is placed on components, electrical and mechanical operation sequences, control adjustment procedures, preventive maintenance, repairs, and installation procedures. Upon completion, student should be able to install service and repair commercial ice machines.

ACR 135 MECHANICAL/GAS/SAFETY CODES 3
Prerequisite(s): As determined by college
This course is to enhance the student knowledge of the Southern Mechanical and Gas Code as well as fire and job safety requirements. Emphasis is placed on code book content and compliance with installation requirements. Upon completion, students should be able to apply code requirements to all work.

ACR 138 CUSTOMER RELATIONS 3
Prerequisite(s): As determined by college
This course covers the basic aspects of customer relations needed to be an exemplary technician. Topics include employability skills associated with job performance, record keeping, service invoices, certification requirements, local ordinances, and business ethics.

ACR 144 BASIC DRAWING AND BLUEPRINT READING IN HVAC 3
Prerequisite(s): As determined by college
This course covers basic drawing and blueprint reading as applied to the HVAC industry. Emphasis is on tee-view drawings, basic duct systems, and isometric piping. Upon course completion, students should be able to perform basic drawings related to HVAC systems and read pertinent blueprints.

ACR 147 REFRIGERANT TRANSITION AND RECOVERY THEORY 3
Prerequisite(s): As determined by college
This course is EPA-approved and covers material relating to the requirements necessary for type I, II, and III universal certification. Upon completion, students should be prepared to take the EPA 608 certification examination.

ACR 148 HEAT PUMP SYSTEMS I 3
Prerequisite(s): As determined by college
Instruction received in this course centers around the basic theory and application of heat pump systems and components. Upon completion students will be able to install and service heat pumps in a wide variety of applications.

ACR 181 SPECIAL TOPICS IN AIR CONDITIONING AND REFRIGERATION I 3
Prerequisite(s): As determined by college
This course provides specialized instruction in various areas related to the air conditioning and refrigeration industry.

ACR 182 SPECIAL TOPICS: WINDOW UNITS AND ICE MAKERS 3
Prerequisite(s): As determined by college
This course provides students with opportunities to experience hands-on application in troubleshooting and repairing window units and in-home ice makers.

ACR 192 HVAC APPRENTICESHIP/ INTERNSHIP 3
Prerequisite(s): As determined by college
This course is designed to provide basic hands-on experiences in the work place. The student is provided with a training plan developed by the employer and instructor working together to guide the learning experience. Upon course completion, students should be able to work independently and apply related skills and knowledge. This course involves a minimum of 15 work .per week.

ACR 200 REVIEW FOR CONTRACTORS EXAM 3
Prerequisite(s): As determined by college
This course prepares students to take the State Certification Examination. Emphasis is placed on all pertinent codes, piping procedures, duct design, load calculation, psychometrics, installation procedures, and air distribution. Upon completion, students should be prepared to take the contractors exam.

ACR 203 COMMERCIAL REFRIGERATION 3
Prerequisite(s): As determined by college
This course focuses on commercial refrigeration systems. Emphasis is placed on evaporators, condensers, compressors, expansion devices, special refrigeration components and application of refrigeration systems. Upon completion students should be able to service and repair commercial refrigeration systems.

ACR 205 SYSTEM SIZING AND AIR DISTRIBUTION 3
Prerequisite(s): As determined by college
This course provides instruction in the load calculation of a structure and system sizing. Topics of instruction include heat loss, heat gain, equipment and air distribution sizing, and factors making acceptable indoor air quality. Upon course completion, students should be able to calculate system requirements.

ACR 210 TROUBLESHOOTING HVACR SYSTEMS 3
Prerequisite(s): As determined by college
This course provides instruction in the use of various meters and gauges used in the HVACR industry. Emphasis is placed on general service procedures, system diagnosis, and corrective measure, methods of leak detection, and system evacuation, charging and performance checks. Upon completion students should be able to perform basic troubleshooting of HVACR.

**AUTOMOTIVE BODY REPAIR (ABR)
Course Descriptions**

ABR 111 NON-STRUCTURAL REPAIR 3
Prerequisite(s): As determined by college
Students are introduced to basic principles of non-structural panel repairs. Topics include shop safety, identification and use of hand/power tools, sheet metal repairs, and materials.

ABR 114 NON-STRUCTURAL PANEL REPLACEMENT 3
Prerequisite(s): As determined by college
Students are introduced to the principles of non-structural panel replacement. Topics include replacement and alignment of bolt on panels, full and partial panel replacement procedures, and attachment methods. **CORE**

ABR 122 SURFACE PREPARATION 3
Prerequisite(s): As determined by college
This course introduces students to methods of surface preparation for automotive refinishing. Topics include sanding techniques, metal treatment, selection and use of undercoats, and proper masking procedures. Upon completion, students should be able to prepare a vehicle for refinishing. **CORE**

ABR 123 PAINT PREPARATION AND EQUIPMENT 3
Prerequisite(s): As determined by college
This course introduces students to methods of paint application and equipment used for vehicular refinishing. Topics include spray gun and related equipment use, paint mixing, matching, and applying the final topcoat.

ABR 151 SAFETY AND ENVIRONMENTAL PRACTICES 3
Prerequisite(s): As determined by college
This course provides instruction to the student in safe work practices. Topics include OSHA requirements, EPA regulations as well as state and local laws. **CORE**

ABR 154 AUTOMOTIVE GLASS AND TRIM 3
Prerequisite(s): As determined by college
This course is a study of automotive glass and trim. Emphasis is placed on removal and replacement of structural and nonstructural glass and automotive trim. Upon completion, students should be able to remove and replace automotive trim and glass.

ABR 156 CUTTING AND WELDING 3
Prerequisite(s): As determined by college
Students are introduced to the various automotive cutting and welding processes. Emphasis is placed on safety, plasma arc, oxy-acetylene cutting, resistance type spot welding, and Metal Inert Gas (MIG) welding. Upon completion, students should be able to safely perform automotive cutting and welding procedures.

ABR 213 AUTOMOTIVE STRUCTURAL ANALYSIS 3
Prerequisite(s): As determined by college
Students learn methods of determining structural misalignment. Topics include methods of inspection, types of measuring equipment, data sheets, and identifying types of structural damage.

ABR 214 AUTOMOTIVE STRUCTURAL REPAIR 3
Prerequisite(s): As determined by college
This course provides instruction in the correction of structural damage. Topics include types and use of alignment equipment, anchoring and pulling methods, and repair/replacement of structural components. **CORE**

ABR 223 AUTOMOTIVE MECHANICAL COMPONENTS 3
Prerequisite(s): As determined by college
This course provides instruction in collision related mechanical repairs. Emphasis is placed on diagnosis and repairs to drive train, steering/suspension components, and various other mechanical repairs. ASE/AUM 130 Drive Train & Axels and ASE/AUM 121 Braking Systems are suitable substitutes for this course.

ABR 224 AUTOMOTIVE ELECTRICAL COMPONENTS 3
Prerequisite(s): As determined by college

This course provides instruction in collision related electrical repairs and various restraints systems, including seat belts, seat belt tensioners, and airbags. Topics include basic DC theory, types of diagnostic equipment, circuit protection, wire repair, use of wiring diagrams, airbag modules, and impact sensors. ASE/AUM 112 – Electrical Fundamentals is a suitable substitute for this course.

ABR 255 STEERING AND SUSPENSION 3
Prerequisite(s): As determined by college
This course introduces students to the various types of suspension and steering systems used in the automotive industry. Emphasis is placed on system components, suspension angles and effect of body/frame alignment on these components and angles. ASE/AUM 122 – Steering & suspension is a suitable substitute for this course.

ABR 265 PAINT DEFECTS AND FINAL REPAIR 3
Prerequisite(s): As determined by college
This course introduces students to methods of identifying paint defects, causes, cures, and final detailing. Students learn to troubleshoot and correct paint imperfections.

**ACCOUNTING (ACC)
Course Descriptions**

ACC 129 INDIVIDUAL INCOME TAXES 3
Prerequisite(s): As required by program
This course introduces the relevant laws governing individual income taxation. Emphasis is placed on filing status, exemptions for dependents, gross income, adjustments, deductions, and computation of tax. Upon completion, students should be able to complete various tax forms pertaining to the topics covered in the course.

ACC 140 PAYROLL ACCOUNTING 2
Prerequisite(s): ACC 115 or ACC 244 and/or as required by program
This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries.

ACC 149 INTRO TO ACCOUNTING SPREADSHEETS 3
Prerequisite(s): ACC 115 or ACC 241 and/or as required by program
This course provides a working knowledge of computer spreadsheets and their use in accounting. Topics include pre-programmed problems, model-building problems, beginning-level macros, graphics, and what-if-analysis enhancements of template problems. Upon completion, students should be able to use a computer spreadsheet to complete many of the tasks required in accounting.

ACC 150 COMPUTERIZED GENERAL LEDGER 3
Prerequisite(s): ACC 115 and/or as required by program
This course introduces microcomputer applications related to the major accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting package to solve accounting problems.

**ACCOUNTING TECHNOLOGY (ACT)
Course Descriptions**

ACT 246 MICROCOMPUTER ACCOUNTING 3
Prerequisite(s): ACT 141 and/or as required by program
This course utilizes the microcomputer in the study of financial accounting principles and practices. Emphasis is placed on the use of software programs for financial accounting applications. Upon completion of this course, the student will be able to use software programs for financial accounting applications.

ACT 247 ADVANCED ACCOUNTING APPLICATIONS ON THE COMPUTER 3
Prerequisite(s): ACT 246 and/or as required by program
In this course, students use the microcomputer in managerial accounting. Emphasis is on a variety of software programs for managerial accounting applications. Upon completion of this course, the student will be able to use various managerial accounting software programs.

ACT 249 PAYROLL ACCOUNTING 3
Prerequisite(s): ACT 145 or ACT 141 and/or as required by program
This course focuses on federal, state and local laws affecting payrolls. Emphasis is on payroll accounting procedures and practices, and on payroll tax reports. Upon completion of this course, the student will be able to apply knowledge of federal, state and local laws affecting payrolls.

ACT 253 INDIVIDUAL INCOME TAX 3
Prerequisite(s): BUS 210, 241, and/or as required by program
This course focuses on the fundamentals of the federal income tax laws with primary emphasis on those affecting the individual. Emphasis is on gross income determination, adjustments to income, business expenses, itemized deductions, exemption, capital gains/losses, depreciation, and tax credits. Upon completion of this course, the student will be able to apply the fundamentals of the federal income tax laws affecting the individual.

**ANTHOPOLOGY (ANT)
Course Descriptions**

ANT 200 INTRODUCTION TO ANTOPOLOGY 3
Prerequisite(s): As required by program
This course is a survey of physical, social, and cultural development and behavior of human beings.

**ART (ART)
Course Descriptions**

ART 100 ART APPRECIATION 3
Prerequisite(s): As required by program
This course is designed to help the student find personal meaning in works of art and develop a better understanding of the nature and validity of art. Emphasis is on the diversity of form and content in original art work. Upon completion, students should understand the fundamentals of art, the materials used and have a basic overview of the history of art.

ART 113 DRAWING I 3
Prerequisite(s): As required by program
This course provides the opportunity to develop perceptual and technical skills in a variety of media. Emphasis is placed on communication through experimenting with composition, subject matter and technique. Upon completion, students should demonstrate and apply the fundamentals of art to various creative drawing projects.

ART 114 DRAWING II 3
Prerequisite(s): Drawing I and/or as required by program
This course advances the students drawing skills in various art media. Emphasis is placed on communication through experimentation, composition, technique and personal expression. Upon completion, students should demonstrate creative drawing skills, the application of the fundamentals of art, and the communication of personal thoughts and feelings.

ART 121	TWO DIMENSIONAL COMPOSITION I	3
<i>Prerequisite(s): As required by program.</i>		
This course introduces the basic of concepts of two-dimensional design. Topics include the elements and principles of design with emphasis on the arrangements and relationships among them. Upon completion, students should demonstrate an effective use of these elements and principles of design in creating two-dimensional compositions.		
ART 122	TWO DIMENSIONAL COMPOSITION II	3
<i>Prerequisite(s): ART 121 and/or as required by program.</i>		
This course covers the theories and practice of composing two-dimensional images. Emphasis is placed on the relation between the basic elements and principles of design and their impact on the visual message. Upon completion, students should, through personal expression, demonstrate an effective use of these elements and principles of design in creating two-dimensional compositions.		
ART 127	3-DIMENSIONAL COMPOSITION	3
<i>Prerequisite(s): Art 121</i>		
This course covers the theories and practice of composing two-dimensional images. Emphasis is placed on the relation between the basic elements and principles of design and their impact on visual message. Upon completion, students should, through personal expression, demonstrate an effective use of these elements and principles of design in creating two-dimensional compositions.		
ART 203	ART HISTORY I	3
<i>Prerequisite(s): As required by program.</i>		
This course covers the chronological development of different forms of art, such as sculpture, painting and architecture. Emphasis is placed on history from the ancient period through the Renaissance. Upon completion of the course, students should be able to communicate a knowledge of time period and conological sequence including a knowledge of themes, styles and of the impact of society on the arts.		
ART 204	ART HISTORY II	3
<i>Prerequisite(s): Art History I</i>		
This course covers the chronological development of different forms of art, such as sculpture, painting and architecture. Emphasis is placed on history from the Baroque to the present. Upon completion of the course, students should be able to communicate a knowledge of time period and conological sequence including a knowledge of themes, styles and of the impact of society on the arts.		
ART 233	PAINTING I	3
<i>Prerequisite(s): ART 113, 121, and/or as required by program.</i>		
This course is designed to introduce the student to fundamental painting processes and materials. Topics include art fundamentals, color theory, and composition. Upon completion, students should be able to demonstrate the fundamentals of art and discuss various approaches to the media and the creative processes associated with painting.		
ART 286	ART FOR TEACHERS	3
<i>Prerequisite(s): As required by program.</i>		
This course provides the opportunity for perspective teachers to experience and analyze art in order to effectively incorporate the art curriculum into the classroom. Emphasis is placed on the exploration of teaching skills using art knowledge and the aesthetic experience. Upon completion, students should be able to demonstrate the ability to communicate art knowledge and the validity of the art curriculum.		

**AUTOMOTIVE SERVICE (ASE)
Course Descriptions**

ASE 101	FUNDAMENTALS OF AUTOMOTIVE TECHNOLOGY	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in Fundamentals of Automotive Technology. CORE		
ASE 112	ELECTRICAL FUNDAMENTALS	3
<i>Prerequisite: As required by program.</i>		
This course introduces the principles and laws of electricity. Emphasis is placed on wiring diagrams, test equipment, and identifying series, parallel and series-parallel circuits. Upon completion, students should be able to calculate, build, and measure circuits. CORE		
ASE 121	BRAKING SYSTEMS	3
<i>Prerequisite: As required by program.</i>		
This course provides instruction in automotive technology or auto mechanics. Emphasis is placed on the practical application of brakes. CORE		
ASE 122	SUSPENSION AND STEERING	3
<i>Prerequisite: As required by core program.</i>		
This course provides instruction in automotive technology or auto mechanics. Emphasis is placed on the practical application of steering and suspension. CORE		
ASE 124	AUTOMOTIVE ENGINES	3
<i>Prerequisite: As required by program.</i>		
This course provides instruction on the operation design, and superficial repair of automotive engines. Emphasis is placed on understanding the four stroke cycle, intake and exhaust manifolds and related parts, engine mechanical timing components, engine cooling and lubrication system principles and repairs, and basic fuel and ignition operation. CORE		
ASE 130	DRIVE TRAIN AND AXLES	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in automotive drive trains and axles. Emphasis is placed on the understanding and application of basic internal and external operation relating to proper operation and drivability. CORE		
ASE 133	MOTOR VEHICLE AIR CONDITIONING	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in theory, operation, and repair of automotive heating and air conditioning systems. Emphasis is placed on the understanding and repair of vehicle air conditioning and heating systems, including but not limited to air management, electrical and vacuum controls, refrigerant recovery, and component replacement.		
ASE 150	DEALERSHIP WORK EXPERIENCE	2
<i>Prerequisite: As required by program.</i>		
At the end of each on-campus period, the student returns to the sponsoring dealership to complete this segment of the program working full-time under the supervision of the dealership student work coordinator. He/she is expected to complete work assignments in the dealership that will reinforce and parallel the course work just completed at the college. Although indicated as 10 contact , students generally work on a full-time basis (40 per week) at the dealership. An evaluation of the student's in dealership work performance is completed by the dealership supervisor.		
(40 per week) at the dealership. An evaluation of the student's in dealership work performance is completed by the dealership supervisor.		
ASE 162	ELECTRICAL AND ELECTRONIC SYSTEMS	3
<i>Prerequisite: As required by program.</i>		
This is an intermediate course in automotive electrical and electronic systems. Emphasis is placed on troubleshooting and repair of battery, starting, charging, and lighting systems, subsystems, and components. CORE		

ASE 212	ADVANCED ELECTRICAL AND ELECTRONIC SYSTEMS	3
<i>Prerequisite: As required by program.</i>		
This course provides instruction in advanced automotive electrical and electronic systems. Emphasis is placed on troubleshooting and repair of advanced electrical and electronic systems, subsystems, and components.		
ASE 220	ADVANCED AUTOMOTIVE ENGINES	3
<i>Prerequisite: As required by program.</i>		
This course provides in depth instruction concerning internal engine diagnosis, overhaul and repair, including but not necessarily limited to the replacement of timing chains, belts, and gears, as well as the replacement or reconditioning of valve train components as well as replacement of pistons, connecting rods, piston rings, bearings, lubrication system components, gaskets, and oil seals.		
ASE 224	MANUAL TRANSMISSION AND TRANSAXLE	3
<i>Prerequisite: As required by program.</i>		
This course covers basic instruction in manual transmissions and transaxes. Emphasis is placed on the understanding and application of basic internal and external operation relating to proper operation and drivability.		
ASE 230	AUTOMATIC TRANSMISSION AND TRANSAXLE	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in automatic transmissions and transaxes. Emphasis is placed on the comprehension of principles and power-flow of automatic transmissions and repairing or replacing internal and external components. CORE		
ASE 239	ENGINE PERFORMANCE	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in engine performance with emphasis on fuel and ignition systems relating to engine operation. CORE		
ASE 244	ENGINE PERFORMANCE AND DIAGNOSTICS	3
<i>Prerequisite: As required by program.</i>		
This course provides advanced instruction in engine performance. Emphasis is placed on engine management and computer controls of ignition, fuel, and emissions systems relating to engine performance and drivability. CORE		
ASE 246	AUTOMOTIVE EMISSIONS	3
<i>Prerequisite: As required by program.</i>		
This is an introductory course in automotive emission systems. Emphasis is placed on troubleshooting and repair of systems, subsystems, and components.		
ASE 250	DEALERSHIP WORK EXPERIENCE	2
<i>Prerequisite: As required by program.</i>		
At the end of each on-campus period, the student returns to the sponsoring dealership to complete this segment of the program working full-time under the supervision of the dealership student work coordinator. He/she is expected to complete work assignments in the dealership that will reinforce and parallel the course work just completed at the college. Although indicated as 10 contact, students generally work on a full-time basis (40 per week) at the dealership. An evaluation of the student's in dealership work performance is completed by the dealership supervisor.		
ASE 252	DEALERSHIP WORK EXPERIENCE	2
<i>Prerequisite: As required by program.</i>		
At the end of each on-campus period, the student returns to the sponsoring dealership to complete this segment of the program working full-time under the supervision of the dealership student work coordinator. He/she is expected to complete work assignments in the dealership that will reinforce and parallel the course work just completed at the college. Although indicated as 10 contact, students generally work on a full-time basis (40 per week) at the dealership. An evaluation of the student's in dealership work performance is completed by the dealership supervisor.		
ASE 262	DEALERSHIP WORK EXPERIENCE	2
<i>Prerequisite: As required by program.</i>		
At the end of each on-campus period, the student returns to the sponsoring dealership to complete this segment of the program working full-time under the supervision of the dealership student work coordinator. He/she is expected to complete work assignments in the dealership that will reinforce and parallel the course work just completed at the college. Although indicated as 10 contacts, students generally work on a full-time basis (40 per week) at the dealership. An evaluation of the student's in dealership work performance is completed by the dealership supervisor.		

**AUTOMOTIVE MECHANICS (AUM)
Course Descriptions**

AUM 101	FUNDAMENTALS OF AUTOMOTIVE TECHNOLOGY	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in Fundamentals of Automotive Technology. CORE		
AUM 112	ELECTRICAL FUNDAMENTALS	3
<i>Prerequisite: As required by program.</i>		
This course introduces the principles and laws of electricity. Emphasis is placed on wiring diagrams, test equipment, and identifying series, parallel and series-parallel circuits. Upon completion, students should be able to calculate, build, and measure circuits. CORE		
AUM 121	BRAKING SYSTEMS	3
<i>Prerequisite: As required by program.</i>		
This course provides instruction in automotive technology or auto mechanics. Emphasis is placed on the practical application of brakes. CORE		
AUM 122	SUSPENSION AND STEERING	3
<i>Prerequisite: As required by program.</i>		
This course provides instruction in automotive technology or auto mechanics. Emphasis is placed on the practical application of steering and suspension. CORE		
AUM 124	AUTOMOTIVE ENGINES	3
<i>Prerequisite: As required by program.</i>		
This course provides instruction on the operation design, and superficial repair of automotive engines. Emphasis is placed on understanding the four stroke cycle, intake and exhaust manifolds and related parts, engine mechanical timing components, engine cooling and lubrication system principles and repairs, and basic fuel and ignition operation. CORE		
AUM 130	DRIVE TRAIN AND AXLES	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in automotive drive trains and axles. Emphasis is placed on the understanding and application of basic internal and external operation relating to proper operation and drivability. CORE		
AUM 133	MOTOR VEHICLE AIR	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in theory, operation, and repair of automotive heating and air conditioning systems. Emphasis is placed on the understanding and repair of vehicle air conditioning and heating systems, including but not limited to air management, electrical and vacuum controls, refrigerant recovery, and component replacement.		

AUM 162	ELECTRICAL AND ELECTRONIC SYSTEMS	3
<i>Prerequisite: As required by program.</i>		
This is an intermediate course in automotive electrical and electronic systems. Emphasis is placed on troubleshooting and repair of battery, starting, charging, and lighting systems, subsystems, and components. CORE		
ASE 212	ADVANCED ELECTRICAL AND ELECTRONIC SYSTEMS	3
<i>Prerequisite: As required by program.</i>		
This course provides instruction in advanced automotive electrical and electronic systems. Emphasis is placed on troubleshooting and repair of advanced electrical and electronic systems, subsystems, and components.		
AUM 220	ADVANCED AUTOMOTIVE ENGINES	3
<i>Prerequisite: As required by program.</i>		
This course provides in depth instruction concerning internal engine diagnosis, overhaul and repair, including but not necessarily limited to the replacement of timing chains, belts, and gears, as well as the replacement or reconditioning of valve train components as well as replacement of pistons, connecting rods, piston rings, bearings, lubrication system components, gaskets, and oil seals.		
AUM 224	MANUAL TRANSMISSION AND TRANSAXLE	3
<i>Prerequisite: As required by program.</i>		
This course covers basic instruction in manual transmissions and transaxes. Emphasis is placed on the understanding and application of basic internal and external operation relating to proper operation and drivability.		
AUM 230	AUTOMATIC TRANSMISSION AND TRANSAXLE	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in automatic transmissions and transaxes. Emphasis is placed on the comprehension of principles and power-flow of automatic transmissions and repairing or replacing internal and external components. CORE		
AUM 239	ENGINE PERFORMANCE	3
<i>Prerequisite: As required by program.</i>		
This course provides basic instruction in engine performance with emphasis on fuel and ignition systems relating to engine operation. CORE		
AUM 244	ENGINE PERFORMANCE AND DIAGNOSTICS	3
<i>Prerequisite: As required by program.</i>		
This course provides advanced instruction in engine performance. Emphasis is placed on engine management and computer controls of ignition, fuel, and emissions systems relating to engine performance and drivability. CORE		
AUM 246	AUTOMOTIVE EMISSIONS	3
<i>Prerequisite: As required by program.</i>		
This is an introductory course in automotive emission systems. Emphasis is placed on troubleshooting and repair of systems, subsystems, and components.		

**AUTOMATED MANUFACTURING TECHNOLOGY (ATM)
Course Descriptions**

ATM 181	MANUFACTURING TECHNOLOGY: SPECIAL TOPIC	3
This course provides an introduction to manufacturing technology.		
ATM 205	INTRODUCTION FOR AUTOMATED MANUFACTURING	3
<i>Prerequisite: As required by program.</i>		
This course is a conventional current flow of electronic devices and networks. Topics include semiconductor diodes, power supplies, bipolar-junction transistors, amplifiers, buffers, field-effect transistors, and thyristors. Upon completion of this course a student will be able to analyze a discrete-component electronic network. CORE Note: This course will serve as a suitable substitute for ETC 103.		
ATM 221	ROBOTICS	3
<i>Prerequisite: As required by program.</i>		
This course of study includes: interfacing, robot applications, feedback, and advanced software concepts. Upon completion of this course as student will be able to program and operate an advanced robot.		
ATM 231	ROBOTICS PROJECT	3
<i>Prerequisite: As required by program.</i>		
In this course, students apply skills learned to design, fabricate, analyze, program, and operate a robotics system under faculty supervision. CORE		
ATM 261	ROBOT OPERATION AND PROGRAMMING	3
<i>Prerequisite: As required by program.</i>		
This training course is designed to provide the basic skills needed to operate and program the robot cell. The course provides both classroom and performance based hands on training in the use of controls, operations, and part programming.		
ATM 281	PROCESS CONTROL: SPECIAL TOPIC	3
<i>Prerequisite: As required by program.</i>		
These courses provide specialized instruction in process control and how it is related to automated manufacturing technology.		

**BARBERING (BAR)
Course Descriptions**

BAR 110	ORIENTATION TO BARBERING	3
<i>Prerequisite: As required by program.</i>		
This course provides an orientation to professional barber styling. Topics include professional image, basic fundamentals, and the history of barber-styling. Upon completion, the student should be able to identify the core concepts of the profession. NDC CORE		
BAR 111	SCIENCE OF BARBERING	3
<i>Prerequisite: As required by program.</i>		
This course introduces the student to the basic science of barber-styling. Topics include anatomy/physiology, disorders and treatments of the skin, scalp, and hair, and theory of facial and scalp massage. Upon completion, the student should be familiar with the anatomical structures, as well as disorders and treatments of the skin, scalp, and hair. NDC CORE		
BAR 112	BACTERIOLOGY AND SANITATION	3
<i>Prerequisite: As required by program.</i>		
This course provides the theory of bacteriology and sanitation. Topics include the types of bacteria and sanitation procedures. Upon completion, the student should be able to identify types of bacteria and methods of sanitation. NDC CORE		
BAR 113	BARBERING-STYLING LAB	3
<i>Prerequisite: As required by program.</i>		

This course provides practical application of barber-styling fundamentals. Emphasis is placed on the care of implements, shampooing and haircutting. Upon completion, the student should be able to care for their implements properly and demonstrate the basic techniques of shampooing and haircutting with only minimal supervision. NDC CORE

BAR 120 **PROPERTIES OF CHEMISTRY** **3**

Prerequisite: As required by program.

This course provides the student with a basic knowledge of chemicals used in barber-styling. Topics include the changes produced in the hair and skin through exposure to chemicals, electricity, and special light spectrums. Upon completion, the student should understand the proper use of implements and chemicals to treat hair and skin. NDC

BAR 121 **CHEMICAL HAIR PROCESSING** **3**

Prerequisite: As required by program.

This course provides the student with knowledge and hands-on experience using chemicals to alter the appearance of hair. Emphasis is placed on the use of chemicals to relax, wave, and soft curl the hair. Upon completion, the student should be competent in the use of chemicals to produce desired structure changes to the hair. NDC

BAR 122 **HAIR COLORING CHEMISTRY** **3**

Prerequisite: As required by program.

This course provides the student with a basic knowledge of hair color alteration. Topics include temporary, semi-permanent, and permanent changes. Upon completion, the student should be able to identify and explain the procedures for each classification of hair color alteration. NDC

BAR 124 **HAIR COLORING METH. LAB** **3**

Prerequisite: As required by program.

This course provides the student an opportunity for practical application of all classifications of chemical hair coloring and processing products in a supervised environment. Emphasis is placed on experience in all classifications of hair coloring and processing procedures. NDC

BAR 130 **MARKETING AND BUSINESS MANAGEMENT** **3**

Prerequisite: As required by program.

This course provides the student with marketing and management skills that are essential for successful salon management. Topics include first aid, job search, bookkeeping, selling techniques, shop floor plans, shop location, and legal regulations. Upon completion, the student should be aware of marketing and business management requirements for a successful salon. NDC

BAR 131 **STRUCTURE AND DISORDERS OF NAILS** **3**

Prerequisite: As required by program.

This course provides the student with knowledge of nail structure and experience in identifying nail disorders. Emphasis is placed on identifying disorders and also using the correct implements and supplies for healthy nail care and manicures. Upon completion, the student should be capable of providing professional nail care. NDC

BAR 132 **HAIR STYLING AND DESIGN** **3**

Prerequisite: As required by program.

This course introduces the student to the art of hair style and design. Topics include the selection of styles to create a mood or complement facial features as well as hair replacement and hair pieces. Upon completion, the student should know the principals of style and design. NDC CORE

BAR 133 **HAIR STYLING AND MANAGEMENT LAB** **3**

Prerequisite: As required by program.

This course includes hair styling and management procedure. Emphasis is placed on styling, management, marketing, and legal regulations. Upon completion, the student should be able to integrate a variety of skills and be ready to begin an internship in a salon setting. NDC

BIOLOGY (BIO)
Course Descriptions

BIO 101 **INTRODUCTION TO BIOLOGY I** **4**

Prerequisite(s): As required by program

Introduction to Biology I is the first of a two-course sequence designed for non-science majors. It covers historical studies illustrating the scientific method, cellular structure, bioenergetics, cell reproduction, Mendelian and molecular genetics, and a survey of human organ systems. A 120-minute laboratory is required.

BIO 102 **INTRODUCTION TO BIOLOGY II** **4**

Prerequisite(s): BIO 101 and/or as required by program

Introduction to Biology II is the second of a two-course sequence for non-science majors. It covers evolutionary principles and relationships, environmental and ecological topics, classification, and a survey of biodiversity. A 120-minute laboratory is required.

BIO 103 **PRINCIPLES OF BIOLOGY I** **4**

Prerequisite(s): As required by program

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

BIO 104 **PRINCIPLES OF BIOLOGY II** **4**

Prerequisite(s): BIO 103

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

BIO 201 **HUMAN ANATOMY AND PHYSIOLOGY I** **4**

Prerequisite(s): BIO 103 and/or as required by program

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

BIO 202 **HUMAN ANATOMY AND PHYSIOLOGY II** **4**

Prerequisite(s): BIO 103, 201, and/or as required by program

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

BIO 220 **GENERAL MICROBIOLOGY** **4**

Prerequisite(s): BIO 103 (Recommended: 4 Semester of Chemistry) and/or as required by program

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

BIO 120 **MEDICAL TERMINOLOGY** **3**

Prerequisite(s): As required by program

This course is a survey of words, terms, and descriptions commonly used in medical arts. Emphasis is placed on spelling, pronunciation, and meanings of prefixes, suffixes, and roots. No laboratory is required.

BIO 230 **HUMAN PATHOPHYSIOLOGY** **4**

Prerequisite(s): BIO 201, 202, 220, and/or as required by program

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

BANKING AND FINANCE (BFN)
Course Descriptions

BFN100 **PRINCIPLES OF BANKING** **2**

Prerequisite(s): As required by program

This course is an introduction to the broad area of banking. Topics include the evolution of banking, Federal Reserve System, documents and forms used, rudimentary laws and regulations, as well as a study of the specialized services offered. Upon completion of this course, the student will be able to perform basic banking functions.

BFN101 **LAW AND BANKING: PRINCIPLES** **2**

Prerequisite(s): As required by program

This course is an introduction to banking law and legal issues, with special emphasis on the Uniform Commercial Code. Topics include the role of regulators, torts, contracts, real estate, bankruptcy, and the legal implications of consumer lending. Upon completion of the course, the student will be able to work with basic banking documents.

BFN 102 **LAW AND BANKING: APPLICATIONS** **2**

Prerequisite(s): As required by program

This course is an introduction to laws pertaining to secured transactions, letters of credit, the bank collection process, check losses and the legal issues related to processing checks. Topics include negotiable instruments, authorized signatures, collection routes, forgery and fraud, letters of credit and secured transactions. Upon completion of this course, the student will be able to work with more complex banking documents.

BFN 103 **PERSONNEL AND THE LAW** **1**

Prerequisite(s): As required by program

This course is an introduction to some basic laws essential to the management of bank personnel. Topics include the Civil Rights Act, EEOC, ERISA, COBRA, and OSHA. Upon completion of this course the student will be able to understand what rights he or she has in the workplace.

BFN 207 **ESSENTIALS OF BANKING** **1**

Prerequisite(s): As required by program

This course provides an orientation to the essential principles, concepts, and operations of banking. Topics include sweep accounts, branches, Federal Reserve System, importance of banks in the economy, laws and regulations, and financial statements. Upon completion of this course, the student will have the rudimentary skills to perform basic banking functions.

BUILDING CONSTRUCTION (BUC)
Course Descriptions

BUC 110 **BASIC CONSTRUCTION TOOLS AND MATERIALS** **3**

Prerequisite: As required by program.

This course emphasizes the tools and materials used in the construction industry. Topics include safety, hand tools, hand held power tools and construction materials. Upon completion, students should be able to work safely within the industry and operate various hand tools and power equipment. CORE

BUC 115 **ROOF AND CEILING FRAMING** **3**

Prerequisite: BUC 110 and/or as required by program.

This course focuses on construction framing above the wall-plate line. Topics include ceiling framing roof framing, trusses and heavy timber construction. Upon completion, students should be able to frame residential ceilings and roofs, design and build trusses and apply heavy timber construction principals.

BUC 121 **FLOORS AND WALLS FRAMING** **3**

Prerequisite: BUC 110 and/or as required by program.

This course focuses on the basic foundation systems and construction framing. Topics include site identification, installation of foundations, wooden floors and wall systems. Upon completion, students should be able to properly locate a structure, layout a foundation excavation, and perform basic construction framing procedures for wooden floors and wall systems.

BUC 131 **INTERIOR AND EXTERIOR FINISHES** **3**

Prerequisite: BUC 110 and/or as required by program.

This course is designed to provide students an in-depth understanding of interior framing for finishes and finish applications. Topics include interior and exterior wall coverings, cabinets, flooring, cornices, gable-end framing, interior and exterior finishes for cornices, doors, and hardware installation. Upon completion, students should be able to frame cornices and apply interior and exterior finishes to walls and overhangs, and install floors, cabinets, and doors.

BUC 141 **ON-GRADE CONCRETE APPLICATIONS** **3**

Prerequisite: BUC 110 and/or as required by program.

This course emphasizes techniques and principles required to design on-grade concrete forms. Topics include concrete curbs, edge forms, footing forms, concrete wall forms, concrete piers and columns, and templates with anchor bolts and dowels. Upon completion, students should be able to perform on-grade concrete slab forming, wall forming, curb forming, and set templates with anchor bolts.

BUC 143 **ABOVE-GRADE CONCRETE APPLICATIONS** **3**

Prerequisite: BUC 110 and/or as required by program.

This course emphasizes techniques and principles required to build above grade forms and to provide practice in constructing above-grade form systems. Topics include beam forms, slab forms, flying-form tables, crane-set wall panels, gang-form system for walls, and stair forms. Upon completion, students should be able to build above-grade concrete form systems, flying-form tables for scale, and build gang-form systems for walls and stairs.

BUC 214 **SOILS AND SITE WORK** **3**

Prerequisite: As required by program.

This course covers site conditions and soil types and their physical properties. Topics include site preparation, access, mechanical analysis, classification of soils, and hydrostatics of groundwater. Upon completion, students should be able to adequately prepare a building site according to plans and specifications.

BUC 217 **CONSTRUCTION SURVEYING** **3**

Prerequisite: As required by program.

This course covers field surveying applications for residential and commercial construction. Topics include building layout and leveling, linear measurement and turning angles, plumbing vertical members, and topographic and utilities surveys. Upon completion, students should be able to properly and accurately use surveying equipment to lay out residential and commercial buildings.

BUSINESS (BUS)
Course Descriptions

BUS 100 **INTRODUCTION TO BUSINESS** **3**

Prerequisite(s): As required by program

This is a survey course designed to acquaint the student with American business as a dynamic process in a global setting. Topics include the private enterprise system, forms of business ownership, marketing, factors of production, personnel, labor, finance, and taxation.

BUS 146 **PERSONAL FINANCE** **3**

Prerequisite(s): As required by program

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

BUS 147 **INTRODUCTION TO FINANCE** **3**

Prerequisite(s): As required by program

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

BUS 150 **BUSINESS MATH** **3**

Prerequisite(s): As required by program

This course is a study of practical business mathematics. Topics include fundamental processes of arithmetic with emphasis on decimals and percentages, markup, discounts, bank reconciliation, simple and compound interest discounting notes, depreciation methods, and present value.

BUS 186 **ELEMENTS OF SUPERVISION** **3**

Prerequisite(s): As required by program

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

BUS 188 **PERSONAL DEVELOPMENT** **3**

Prerequisite(s): As required by program

This course provides strategies for personal and profession development. Topics include business etiquette, personal appearance, interviewing techniques, and development of a self-concept necessary for business success.

BUS 189 **HUMAN RELATIONSHIPS** **3**

Prerequisite(s): As required by program

This course enables employees to better understand actions and motivations within the organizational structure. Topics include general principles of human behavior operating in the workplace.

BUS 190 **MANAGEMENT WORKSHOP I** **3**

Prerequisite(s): As required by program

This course is a part of a series of workshops where in current topics of interest are presented. They are offered upon demand and can be tailored for the needs of individuals, business and industry.

BUS 191 **MANAGEMENT WORKSHOP II** **3**

Prerequisite(s): As required by program

This course is a part of a series of workshops where in current topics of interest are presented. They are offered upon demand and can be tailored for the needs of individuals, business and industry.

BUS 192 **MANAGEMENT WORKSHOP III** **3**

Prerequisite(s): As required by program

This course is a part of a series of workshops where in current topics of interest are presented. They are offered upon demand and can be tailored for the needs of individuals, business and industry.

BUS 194 **BUSINESS CO-OP II** **3**

Prerequisite(s): As required by program

This course is part of a series wherein the student works in a degree/program related job. Emphasis is placed on student's work experience as it integrates academic knowledge with practical application through exposure to practices in the business environment. The grade is based on the employer's evaluation of each student's productivity, content of a descriptive report submitted by the student, and student development and assessment of a learning contract.

BUS 198 **COMPUTER INFORMATION SYSTEMS IN A CALL CENTER** **3**

Prerequisite(s): Instructor Approval and Minimum and/or as required by program

This course is a "hands-on" introduction to the computer systems used in a typical call center. Topics include computer fundamentals, basic hardware, and specific software applications common to the call center industry. Working within a customer information database and basic keyboarding will also be a component of this course.

BUS 202 **PROFESSIONAL DEVELOPMENT** **3**

Prerequisite(s): Instructor Approval and Minimum and/or as required by program

This course equips the student with the skills to effectively present themselves for call center interviews. Topics include resume writing, presentation skills and interviewing techniques.

BUS 210 **INTRODUCTION TO ACCOUNTING** **3**

Prerequisite(s): As required by program

This course is an introduction to accounting and financial reporting concepts and the use of accounting information for financial and managerial decisions. Information is presented from a financial statement user approach.

BUS 215 **BUSINESS COMMUNICATION** **3**

Prerequisite(s): As required by program

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

BUS 241 **PRINCIPLES OF ACCOUNTING I** **3**

Prerequisite(s): As required by program

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

BUS 242 PRINCIPLES OF ACCOUNTING II 3
Prerequisite(s): BUS 241 and/or as required by program
 This course is a continuation of BUS 241. In addition to a study of financial accounting, this course also places emphasis upon managerial accounting, with coverage of corporations, statement analysis introductory cost accounting, and use of information for planning, control, and decision-making.

BUS 246 ACCOUNTING ON THE MICROCOMPUTER 3
Prerequisite(s): BUS 242 and/or as required by program
 This course utilizes the microcomputer in a study of accounting principles and practices. Emphasis is on the preparation and analysis of financial statements, measuring business activity, and making rational business decisions.

BUS 248 MANAGERIAL ACCOUNTING 3
Prerequisite(s): BUS 241, 242, and/or as required by program
 This course is designed to familiarize the student with management concepts and techniques of industrial accounting procedures. Emphasis is placed on cost behavior, contribution approach to decision-making, budgeting, overhead analysis, cost-volume-profit analysis, and cost accounting systems.

BUS 261 BUSINESS LAW I 3
Prerequisite(s): As required by program
 This course provides an overview of legal principles affecting businesses. Topics include contracts, agency and employment, negotiable instruments, bailments, and sale of goods.

BUS 262 BUSINESS LAW II 3
Prerequisite(s): As required by program
 This course is a continuation of BUS 261. Topics include legal principles related to partnerships, corporations, real property and leases, insurance, security devices, bankruptcy, trust and estates; government regulations of business and labor; civil and criminal liability; and business security.

BUS 263 THE LEGAL AND SOCIAL OF BUSINESS ENVIRONMENT 3
Prerequisite(s): As required by program
 This course provides an overview of the legal and social environment for business operations with emphasis on contemporary issues and their subsequent impact on business. Topics include the Constitution, the Bill of Rights, the legislative process, civil and criminal law, administrative agencies, trade regulations, consumer protection, contracts, employment and personal property.

BUS 275 PRINCIPLES OF MANAGEMENT 3
Prerequisite(s): As required by program
 This course provides a basic study of the principles of management. Topics include planning, organizing, staffing, directing, and controlling with emphasis on practical business applications.

BUS 276 HUMAN RESOURCE MANAGEMENT 3
Prerequisite(s): As required by program
 This course provides an overview of the responsibilities of the supervisor of human resources. Topics include the selection, placement, testing, orientation, training, rating, promotion, and transfer of employees.

BUS 277 MANAGEMENT SEMINAR 3
Prerequisite(s): As required by program
 This course offers study of current problems, issues, and developments in the area of management. Students are guided through individual projects and outside research related to their areas of concentration and employment training.

BUS 279 SMALL BUSINESS MANAGEMENT 3
Prerequisite(s): As required by program
 This course provides an overview of the creation and operation of a small business. Topics include buying a franchise, starting a business, identifying capital resources, understanding markets, managing customer credit, managing accounting systems, budgeting systems, inventory systems, purchasing insurance, and the importance of appropriate legal counsel.

BUS 285 PRINCIPLES OF MARKETING 3
Prerequisite(s): As required by program
 This course provides a general overview of the field of marketing. Topics include marketing strategies, channels of distribution, marketing research, and consumer behavior.

BUS 296 BUSINESS INTERNSHIP I 3
Prerequisite(s): Minimum 6 Semester Completed/Minimum GP 2.0 (C) and/or as required by program
 This two-course sequence allows the student to work part-time on a job closely related to his or her academic major while attending classes on a full-time basis. Emphasis is placed on a student's work experience as it integrates academic knowledge with practical applications in the business environment. The grade is based on a term paper, job-site visits by the instructor, the employer's evaluation of the student, and the development and assessment by the student of a learning contract.

BUS 297 BUSINESS INTERNSHIP II 3
Prerequisite(s): Minimum 6 Semester Completed/Minimum GP 2.0 (C) and/or as required by program
 This two-course sequence allows the student to work part-time on a job closely related to his or her academic major while attending classes on a full-time basis. Emphasis is placed on a student's work experience as it integrates academic knowledge with practical applications in the business environment. The grade is based on a term paper, job-site visits by the instructor, the employer's evaluation of the student, and the development and assessment by the student of a learning contract.

BUS 298 DIRECTED STUDIES I 3
Prerequisite(s): As required by program
 This course offers independent study under faculty supervision. Emphasis is placed on subject relevancy and student interest and need.

BUS 299 DIRECTED STUDIES II 3
Prerequisite(s): As required by program
 This course offers independent study under faculty supervision. Emphasis is placed on subject relevancy and student interest and need.

CABINETMAKING (CAB)
 Course Descriptions

CAB 101 INTRODUCTION TO CABINETMAKING 3
Prerequisite: As required by program.
 This is a beginning woodworking course which deals with basic materials and processes. Topics include introduction to tools and equipment and safety. Upon course completion, students should be able to perform techniques for building small projects, techniques of gluing, clamping, nailing, and screwing. CORE NDC

CAB 102 INTRODUCTION TO LUMBER 3
Prerequisite: As required by program.
 This is an introductory course to lumber, grades, sizes, characteristics and uses. Also included in the course are the operation, care and sharpening of woodworking equipment. Upon course completion, students should be able to construct and finish a

furniture project and demonstrate the characteristics and methods of sawing lumber. CORE NDC

CAB 103 SIZES, DIMENSION AND JOINTS 3
Prerequisite: As required by program.
 This course includes the study of cutting lumber to dimensions and materials to size with power tools. Emphasis is on job planning and the construction of all types of joints made with hand and power tools. Upon course completion, students should be able to plan jobs, make shop drawings, job layouts and patterns. CORE NDC

CAB 104 CABINET SHOP OPERATIONS 3
Prerequisite: As required by program.
 This course covers establishing and maintaining a custom cabinet shop. Topics include financing, equipment acquisition, maintenance, inventory techniques, OSHA requirements, shop organization, and safety and delivery systems. Upon completion, students should be able to organize and maintain a custom cabinet business. CORE NDC

CAB 140 WOODFINISHING FUNDAMENTALS 2
Prerequisite: As required by program.
 This is an introductory wood finishing course. Topics include sanding, filling, staining, brushing and spraying. Upon course completion, students should be able to perform basic wood finishing procedures. CORE NDC

CAB 141 WOODFINISHING 2
Prerequisite: CAB 140.
 This course is a continuation of CAB 140. Emphasis is on filling, rubbing, spraying, and building up finishes. Upon course completion, students should be able to perform wood finishing procedures. NDC

CAB 181 SPECIAL TOPIC: REFINISHING FURNITURE AND ANTIQUES 3
Prerequisite: As required by program.
 These courses are designed to allow the student to specialize in a particular area of study with minimum instruction in cabinetmaking application and with evaluation at the instructor's discretion. Emphasis is placed on a topic/project that the student is interested in any may include any automotive, furniture, or related area in cabinetmaking. Upon completion, the student should be able to work with minimum instruction and execute the necessary techniques to finish a live work project of their choice. NDC

CAB 204 CABINETMAKING AND MILLWORK 5
Prerequisite: CAB 102 and/or as required by program.
 This course focuses on design and construction of casework. Topics include study of designs, construction and installation of kitchen cabinets, vanities, shelves, and other casework and the use and installation of cabinet hardware. Upon course completion, students should be able to design, construct and install basic interior casework. CORE NDC

CAB 211 CABINET INSTALLATION AND TRIM WORK 3
Prerequisite: As required by program.
 This course introduces students to cabinet installation theories and stair construction theories. Upon completion of the course, students should be able to explain proper sequence and methods of installing kitchen and bathroom cabinets as well as figure and design interior stairs.

CAREER/TECHNICAL ENGLISH (COM)
 Course Description

COM 100 INTRODUCTORY TECHNICAL ENGLISH 3
Prerequisite(s): As required by program
 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, students should be able to identify main ideas with supporting details and produce mechanically correct short writings appropriate to the workplace.

CAREER/TECHNICAL COMPUTER SKILLS (DPT)
 Course Description

DPT 103 INTRO COMPUTER SKILLS II 3
Prerequisite(s): As required by program
 This course is designed to focus on the development of computer skills used to the needs of students in non-degree occupational programs. The course will generally use software packages appropriate to occupational programs and may include such topics as word processing, database, basic graphics, spreadsheets or other features typically needed in the field. Upon completion, the student will be able to demonstrate proficiency by the completion of appropriate assignments and occupation-specific applications.

CAREER/TECHNICAL MATHEMATICS (MAH)
 Course Description

MAH 101 INTRODUCTORY TECHNICAL MATHEMATICS 3
Prerequisite(s): As required by program
 This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include business and industry related arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific occupational areas of study. NCA

CAREER/TECHNICAL COMMUNICATION SKILLS (SPC)
 Course Description

SPC 103 CAREER TECHNICAL SPEAKING 3
Prerequisite(s): As required by program
 This course introduces the basic concepts of interpersonal communication and the oral communication skills necessary to interact with co-workers and customers, and to work effectively in teams. Topics include overcoming barriers to effective communication, effective listening, applying the principles of persuasion, utilizing basic dynamics of group discussion, conflict resolution, and positive communication patterns in the business setting. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, develop a businesslike personality, and effectively present themselves before co-workers and the public. NCA

CARPENTRY (CAR)
 Course Descriptions

CAR 111 CONSTRUCTION BASICS 3
Prerequisite: As required by program.
 This course introduces students to the opportunities in and requirements of the construction industry. Topics include economic outlook for construction, employment outlook, job opportunities, training, apprenticeship, entrepreneurship, construction tools, materials, and equipment, and job safety. Upon course completion, students should be able to identify the job market, types of training, knowledge of apprenticeship opportunities, construction tools, materials, equipment, and safety procedures. NDC CORE

CAR 112 FLOORS, WALLS, SITE PREPARATION 3
Prerequisite: CAR 111. Corequisite: CAR 113.

This course introduces the student to floor and wall layout, and construction. Topics include methods of house framing, components of floor framing, layouts, sub-flooring, connectors and fasteners, and site preparation. Upon course completion, students will be able to identify various types of floor framing systems, select the sizes of floor joists, identify types of house framing, list types of fasteners, and identify property lines, set backs, and demonstrate a working knowledge of terrain and batter boards. NDC CORE

CAR 113 FLOORS WALLS, SITE PREPARATION LAB 3
Prerequisite: CAR 111. Co-requisite: CAR 112.

The student will engage in applications of floor and wall construction, application of required tools, use of the builder transit, level rod, tape measure and grade stakes. Emphasis is placed on cutting sill plates, floor joists, girders, header bridging, sub-flooring, stud wall partitions, door and window headers, wall bracing, leveling instruments, and batter boards. Upon course completion, students should be able to layout and construct a floor, including the sill, joist bridging and openings, install sub-flooring, construct interior and exterior walls, and layout property stakes of site plans. NDC CORE

CAR 114 INTRODUCTION TO CARPENTRY TOOLS AND MATERIALS 3
Prerequisite: As required by program.

This course provides practical and safe application of hand, portable power, stationary and pneumatic tools, use of building materials, fasteners and adhesives, and job site safety. Emphasis is placed on the safe use of hand, power, and pneumatic tools, proper selection of lumber, plywood, byproducts, nails, bolts, screws, adhesives, fasteners, and other construction materials, and job safety. Upon course completion, the student should be able to identify hand, power, stationary and pneumatic tools and demonstrate their safe use; identify and properly select wood and non-wood building products, and properly use nails, fasteners and adhesives. NDC CORE

CAR 121 INTRODUCTION TO BLUEPRINT READING 3
Prerequisite: As required by program.

This course introduces the student to the basic concepts of blueprint reading. Topics include scales, symbols, site plans, and notations. Upon completion, the student should be able to identify drawings, scale various drawings, identify different types of lines, symbols, and notations. NDC CORE

CAR 122 CONCRETE AND FORMING READING 3
Prerequisite: CAR 111. Co-requisite: CAR 123.

This course introduces the student to the properties and uses of concrete and to the procedures for designing concrete forms. Topics include making and pouring concrete, constructing concrete forms, reinforcement methods, finishing concrete, and job safety. Upon course completion, students are expected to be able to list safety rules for the job site, identify components of concrete, describe how concrete forms are built, and how concrete is poured, reinforced, and finished. NDC

CAR 123 CONCRETE AND CONCRETE AND FORMING LAB 3
Prerequisite: CAR 111. Corequisite: CAR 122.

This course provides students with practical experience in concrete applications. Emphasis is placed on job site safety, concrete forming, mixing, pouring, finishing, and reinforcing. Upon completion, students should be able to safely, set forms, reinforce, mix, pour, and finish concrete. NDC

CAR 131 ROOF AND CEILING SYSTEMS 3
Prerequisite: CAR 111. Co-requisite: CAR 133.

This course focuses on the design and installation of roof and ceiling systems. Emphasis is placed on rafters, trusses, ceiling joists, roof decking, and roofing materials. Upon completion, students should be able to design a roof and ceiling system, identify proper installation methods of roofing materials, and describe applicable safety rules. NDC CORE

CAR 132 INTERIOR AND EXTERIOR FINISHING 3
Prerequisite: CAR 111.

This course introduces the student to interior and exterior finishing materials and techniques. Topics include interior trim of windows and doors, ceilings and wall moldings, exterior sidings, trim work, painting, and masonry finishes. Upon completion the students should be able to identify different types of doors, windows and moldings and describe the uses of each, identify types of exterior sidings and trim, and describe the different types of paint and their proper application. NDC CORE

CAR 133 ROOF AND CEILING SYSTEMS LAB 3
Prerequisite: CAR 111. Corequisite: CAR 131.

This course provides students with practical experience in building and installing roof and ceiling systems. Emphasis is placed on job site safety, layout and cutting of rafters and joists, cutting and building trusses, installing roof decking and roofing materials. Upon completion, the student should be able to cut and install rafters, joists and trusses, cut and apply roof decking and roofing materials, and apply safety rules for job site. NDC CORE

CAR 214 INTRODUCTION TO CABNETRY 3
Prerequisite: As required by program.

This course is an introductory cabinetry course. Emphasis is placed on design and construction of cabinetry. Upon completion, the student should be able to design and build cabinets according to specification. NDC

CAR 228 STAIRS, MOLDING, AND TRIM 3
Prerequisite: As required by program.

This course focuses on the basics of stair design, layout, and construction. Topics also include cutting and installing stair trim and molding. Upon course completion, students should be able to layout, cut, and construct stairs, and install trim and molding. NDC

CAR 230 RESIDENTIAL REPAIR AND REMODELING 3
Prerequisite: As required by program.

This course focuses on the methods used for a repair or remodeling project. Topics include design, estimation of materials, cost, time, manpower, and bid preparation. Upon completion the students should be able to demonstrate an ability to design a repair or remodeling project according to code, accurately quote materials, cost, time, and manpower requirements, and obtain all necessary permits for construction. NDC

COMMERCIAL ART & ILLUSTRATION (CAT)
 Course Descriptions

CAT 101 MODERN COMMERCIAL ART 3
Prerequisite: As required by program.

This course provides students with a basic knowledge of the current tools and practices used in the commercial art industry. Emphasis is placed on computer terms, file management, hardware components, and software applications that include image editing, illustration, and layout. Upon completion, students will have an understanding of using the computer as a design tool in today's commercial art industry.

CAT 114 ELECTRONIC GRAPHIC APPLICATIONS

3

Prerequisite: As required by program.
This course introduces students to software applications in graphic productions. Topics may include production terms, image editing, illustration, and layout software applications. Upon completion, students should be able to use industry-standard production software packages.

CAT 118 DESIGN DRAWING

3

Prerequisite: As required by program.
This is an introductory course using pencil, conte crayon, and drawing instruments. Topics include perspective, space, and relationships of design elements, light, shadow, and depth. Still life, landscape, fundamental gesture drawing and page design are introduced. Upon completion, students should be able to apply the fundamentals of drawing and area composition.

CAT 120 DIGITAL IMAGING

3

Prerequisite: As required by program.
This course introduces students to digital imaging software. Emphasis is placed on painting and editing, creating special effects, basic image corrections, photo retouching, preparing images for web publications and creating color separations. Upon completion, students should be able to identify the different tools, work with multiple layer images, retouch a photograph, create special effects and prepare an image for a web publication.

CAT 123 LAYOUT AND DESIGN

3

Prerequisite: As required by program.
This course introduces students to layout and design principles using current software. Topics include importing, combining and manipulating text, graphic elements, and images for composite layout. Upon completion, students should be able to design and layout various projects at a professional level for production.

CAT 130 PRINCIPLES OF DESIGN

3

Prerequisite: As required by program.
This course introduces students to the traditional principles and elements of design. It promotes creative thinking to solve visual communication problems. Emphasis is placed on alignment, contrast, repetition, and proximity. Design concepts include symmetrical and asymmetrical design, as well as the importance of line, shape, texture, value and color. Upon completion, students should be able to use conscious awareness of design principles to create successful projects.

CAT 132 BASIC ADVERTISING DESIGN

3

Prerequisite: As required by program.
This course focuses on design assignments related to the commercial art field and introduces students to graphic design techniques. Focus is placed on creating and producing advertising design pieces. Emphasis is placed on accuracy, sizing, and craftsmanship. Upon course completion, students should be able to apply creative thinking in design communications and should be able to produce advertising design from concept to completion.

CAT 152 DIGITAL PHOTOGRAPHY

3

Prerequisite: As required by program.
This course introduces students to digital imaging techniques. Emphasis is placed on the technical application of the camera and on digital photographic lighting methods. Upon completion, students should be able to determine the need for digital photography versus reproduction quality advertising photography and understand both concepts.

CAT 180 CURRENT TOPICS

3

Prerequisite: As required by program.
This course is a survey of current trends in the commercial art industry and provides specialized instruction in various areas using current professional techniques. Emphasis is placed on specialized areas of commercial art.

CAT 232 INTERMEDIATE ADVERTISING DESIGN

3

Prerequisite: As required by program.
This course includes mid-level design concepts and assignments. Emphasis is placed on various design elements including artistic rendering, photo illustrations, typography, and computer layout as applied to advertising campaigns. Upon completion, students should be able to use their design skills to produce professional quality graphic designs and layout. This course includes advance design

CAT 242 ADVANCED ADVERTISING DESIGN

3

Prerequisite: As required by program.
This course allows students to integrate advertising marketing and design principles to produce pieces that communicate effectively. Emphasis is placed on concepts using creative thinking coupled with design application to develop positive advertising campaigns. Upon completion, students should be able to apply their collaborative design skills to meet the needs of the advertising industry.

CAT 260 PORTFOLIO

3

Prerequisite: As required by program.
This course provides the advanced student an opportunity to use previous commercial art training to design and produce a professional and marketable portfolio for final presentation. Emphasis is placed on a completed portfolio, resume, and cover letter. Upon completion, students should be able to formulate and organize their portfolios for various design positions.

CAT 270 WEB SITE DEVELOPMENT

3

Prerequisite: As required by program.
This course focuses on the necessary technical tools and design principles used for creating and posting web sites. Emphasis is placed on software and the creation and maintenance of a web site. Upon completion, students should be able to design, implement and maintain a web site.

CAT 283 3D GRAPHICS AND ANIMATION

3

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

CAT 292 COOPERATIVE WORK EXPERIENCE

3

Prerequisite: As required by program.
This course is designed for the student to obtain work experience in the Commercial Art profession. Emphasis is placed on instruction by a qualified professional in a work situation and on producing work meeting industry standards using current technology. Upon completion, students should be able to work in a professional creative environment with little or no supervision.

**CULINARY ARTS (CFS)
Course Descriptions****CFS 101 ORIENTATION TO THE HOSPITALITY PROFESSION**

3

Prerequisite: As required by program.
This course introduces various facets and opportunities within the hospitality profession. The intent is for students to gain a broad base of information relative to the hospitality industry. Emphasis is placed on having students comprehend their role as a hospitality industry professional. Topics include an overview of the hospitality profession, knowledge and skills necessary for successful employment, the impact of the hospitality profession on society, issues that impact on various segments of the hospitality profession, and emerging trends. **CORE**

CFS 102 CATERING

2

Prerequisite: As required by program.
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.

CFS 110 BASIC FOOD PREPARATION

3

Prerequisite: CFS 101.
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. Students will develop competencies in food preparation as it relates to the food service industry. **CORE**

CFS 112 SANITATION, SAFETY, AND FOOD SERVICE

2

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

CFS 113 TABLE SERVICE

2

Prerequisite: As required by program.
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 bussing and turning the table. Upon completion of this course, students should be able to demonstrate proficiency in the art of table service.

CFS 114 MEAL MANAGEMENT

3

Prerequisite: As required by program.
This core 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 course completion, students will be able to apply efficient work habits, sanitation and safety in the kitchen.

CFS 201 MEAT PREPARATION AND PROCESSING

2

Prerequisite: As required by program.
This course focuses on meat preparation and processing. Students will be responsible for the preparing of meats including beef, pork, poultry, fish, and seafood so they can be used for final preparations in the other stations of the kitchens. Upon completion, students will be able to demonstrate an understanding of the principles in meat preparation and processing.

CFS 204 FOUNDATIONS OF BAKING

3

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

CFS 213 FOOD PURCHASING AND COST CONTROL

3

Prerequisite: As required by core program.
Emphasis is placed on procurement, yield tests, inventory control, specification, planning, forecasting, market trends, terminology, cost controls, pricing, and food service ethics. Upon completion, students should be able to apply effective purchasing techniques based on the end-use of the product. **C**

CFS 216 FOOD AND DRUG INTERACTION

1

Prerequisite: As required by program.
This course introduces the student to the planning of special diets in relation to food and drug interactions. Emphasis is placed on reviewing common medications that are often prescribed and how these medications interact with certain foods. Upon completion, students demonstrate an understanding of food and drug interaction.

CFS 222 DIETARY MANAGEMENT

3

Prerequisite: As required by program.
This course includes the basic methods of modifying diets by changing consistency, energy value, or nutrient content to meet a specific need. Topics include special diets such as liquid, soft, regular, and light. Upon completion, the student will be able to demonstrate an understanding of the principles of dietary management in food preparation and service.

**CHEMISTRY (CHM)
Course Descriptions****CHM 104 INTRODUCTION TO INORGANIC CHEMISTRY**

4

Prerequisite(s): MTH 092 or equivalent math placement score and/or as required by program

This is a survey course of general chemistry for students who do not intend to major in science or engineering and may not be substituted for CHM 111. Lecture will emphasize the facts, principles, and theories of general chemistry including math operations, matter and energy, atomic structure, symbols and formulas, nomenclature, the periodic table, bonding concepts, equations, reactions, stoichiometry, gas laws, phases of matter, solutions, pH, and equilibrium reactions. Laboratory is required.

CHM 105 INTRODUCTION TO ORGANIC CHEMISTRY

4

Prerequisite(s): As required by program
PREREQUISITE: CHM 104 (Introduction to Inorganic Chemistry) or CHM 111 (College Chemistry I)

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

CHM 111 COLLEGE CHEMISTRY I

4

Prerequisite(s): MTH 112 or equivalent math placement score and/or as required by program

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

CHM 112 COLLEGE CHEMISTRY II

4

Prerequisite(s): CHM 111 and/or as required by program

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

coordination compounds, transition compounds, and post-transition compounds. Laboratory is required.

CHM 221 ORGANIC CHEMISTRY I

4

Prerequisite(s): CHM 112 and/or as required by program
This is the first course in a two-semester sequence. Topics in this course include nomenclature, structure, physical and chemical properties, synthesis, and typical reactions for aliphatic, alicyclic, and aromatic compounds with special emphasis on reaction mechanisms, spectroscopy, and stereochemistry. Laboratory is required and will include the synthesis and confirmation of representative organic compounds with emphasis on basic techniques.

CHM 222 ORGANIC CHEMISTRY II

4

Prerequisite(s): CHM 221 and/or as required by program
This is the second course in a two-semester sequence. Topics in this course include nomenclature, structure, physical and chemical properties, synthesis, and typical reactions for aliphatic, alicyclic, aromatic, and biological compounds, polymers and their derivatives, with special emphasis on reaction mechanisms, spectroscopy, and stereochemistry. Laboratory is required and will include the synthesis and confirmation of representative organic compounds with emphasis on basic techniques.

**CHILD DEVELOPMENT (CHD)
Course Descriptions****CHD 100 INTRODUCTION TO EARLY CARE AND EDUCATION OF CHILDREN**

1-3

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

CHD 201 CHILD GROWTH AND DEVELOPMENT PRINCIPLES

3

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

CHD 202 CHILDREN'S CREATIVE EXPERIENCE

3

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

CHD 203 CHILDREN'S LITERATURE AND LANGUAGE DEVELOPMENT

1-3

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

CHD 204 METHODS AND MATERIALS FOR TEACHING CHILDREN

1-3

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

CHD 205 PROGRAM PLANNING FOR EDUCATING YOUNG CHILDREN

3

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

CHD 206 CHILDREN'S HEALTH AND SAFETY

3

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

CHD 208 ADMINISTRATION OF CHILD DEVELOPMENT PROGRAMS

3

Prerequisite(s): As required by program
This course includes appropriate administrative policies and procedures relevant to preschool programs. Topics include local, state and federal regulations; budget planning; record keeping; personnel policies and parent involvement. Upon completion, students should be able to identify elements of a sound business plan, develop familiarity with basic record-keeping techniques, and identify elements of a developmentally appropriate program.

CHD 209 INFANT AND TODDLER EDUCATION PROGRAMS

1-3

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

CHD 210 EDUCATING EXCEPTIONAL YOUNG CHILDREN

1-3

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

CHD 211 CHILD DEVELOPMENT SEMINAR 1-2*Prerequisite(s): As required by program*

A selection of topics relating to young children is addressed in this course. Subject matter will vary according to industry and student needs. Upon completion, students should demonstrate competencies designed to assess course objectives.

CHD 215 SUPERVISED PRACTICAL EXPERIENCE IN CHILD DEVELOPMENT 1-3*Prerequisite(s): As required by program*

This course provides a minimum of 90 of hands-on, supervised experience in an approved program for young children. Emphasis is placed on performance of daily duties which are assessed by the college instructor and the cooperating teacher. Upon completion, students should be able to demonstrate competency in a child care setting.

CHD 220 PARENTING SKILLS 3*Prerequisite(s): As required by program*

This course will focus on important issues in parenting education, beginning with prenatal concerns and continuing through childhood years. Particular emphasis will be placed on appropriate positive discipline methods.

**CLERICAL (CLR)
Course Descriptions****CLR 100 BASIC KEYBOARDING 3***Prerequisite: As required by program*

This course is designed to develop touch keyboarding skills for efficient use of the typewriter or microcomputer. Emphasis is on speed and accuracy in keying alphabetic, symbol, and numeric information. Upon completion, the student should be able to demonstrate proper technique while keying on a typewriter or microcomputer keyboard. **CORE NDC**

CLR 104 ADVANCED KEYBOARDING 3*Prerequisite: As required by program*

This course is designed to assist the student in continuing to develop speed and accuracy using the touch method of keyboarding. Emphasis is on the production of business documents using decision-making skills. Upon completion, the student should be able to demonstrate proficiency and an acceptable rate of speed and accuracy in the production of business documents. **CORE NDC**

CLR 110 NAVIGATING WINDOWS 3*Prerequisite: As required by program*

This course is designed to introduce the student to the Windows environment. Emphasis is on Windows as a graphical user interface and includes operations and applications that use the Windows environment. Upon completion, the student should be able to demonstrate proficiency in the operation and management of applicable hardware and software. **NDC**

CLR 116 MICROCOMPUTER APPLICATIONS 3*Prerequisite: As required by program*

This course is designed to introduce the most common software applications for microcomputers. Emphasis is on major commercial software used for business applications. Upon completion, the student should be able to demonstrate the ability to use applicable software. **NDC**

CLR 125 BASIC WORD PROCESSING 3*Prerequisite: As required by program*

This course is designed to provide the student with basic word processing skills. Emphasis is on using software features to create, edit and print common office documents. Upon completion, the student should be able to demonstrate the ability to use industry-standard software to generate appropriately formatted, accurate, and attractive business documents such as memo, letters and reports. **CORE NDC**

CLR 126 ADVANCED WORD PROCESSING 3*Prerequisite: As required by program*

This course is designed to increase student proficiency in using advanced word processing functions. Emphasis is on the use of industry-standard software to maximize productivity. Upon completion, the student should be able to demonstrate the ability to generate complex documents such as forms, newsletters, and multi-page documents. **NDC**

CLR 131 BUSINESS ENGLISH 3*Prerequisite: As required by program*

This course is designed to develop the student's ability to use proper English. Emphasis is on grammar, spelling, vocabulary, punctuation, work usage, word division, and proofreading. Upon completion, the student should be able to write and speak effectively.

CLR 133 BUSINESS COMMUNICATIONS 3*Prerequisite: As required by program*

This course is designed to provide the student with skills necessary to communicate effectively. Emphasis is on the application of communication principles to produce clear, correct, logically-organized business communications. Upon completion, the student should be able to demonstrate effective communication techniques in written, oral, and nonverbal communications. **NDC**

CLR 218 OFFICE PROCEDURES 3*Prerequisite: As required by program*

This course is designed to develop an awareness of the responsibilities and opportunities of the office professional. Emphasis is on current operating functions, practices and procedures, work habits, attitudes, oral and written communications, and professionalism. Upon completion, the student should be able to demonstrate the ability to effectively function in an office support role. **CORE NDC**

**COMPUTER SCIENCE (CIS)
Course Descriptions****CIS 110 INTRODUCTION TO COMPUTER LOGIC AND PROGRAMMING 3***Prerequisite(s): As required by program*

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

CIS 115 PRESENTATIONS GRAPHICS SOFTWARE APPLICATIONS 3*Prerequisite(s): As required by program*

This course provides students with hands-on experience using presentation graphics software. Students will develop skills common to most presentation graphics software by developing a wide variety of presentations. Emphasis is on planning, developing, and editing functions associated with presentations.

CIS 115 PRESENTATIONS GRAPHICS SOFTWARE APPLICATIONS 3*Prerequisite(s): As required by program*

This course provides students with hands-on experience using presentation graphics software. Students will develop skills common to most presentation graphics software by developing a wide variety of presentations. Emphasis is on planning, developing, and editing functions associated with presentations.

CIS 117 DATABASE MANAGEMENT SOFTWARE APPLICATIONS 3*Prerequisite(s): As required by program*

This course provides students with hands-on experience using database management software. Students will develop skills common to most database management software by developing a wide variety of databases. Emphasis is on planning, developing, and editing functions associated with database management.

CIS 121 NETWORKING I 3*Prerequisite(s): As required by program*

This course is designed to introduce basic network administration. The basics of network administration, installing and maintaining network software on a server, installation of applications on the server and how the networks are made ready for users are covered. Upon completion, students will demonstrate the ability to administer a computer network.

CIS 130 INTRODUCTION TO INFORMATION SYSTEMS 3*Prerequisite(s): As required by program*

This course is an introduction to computers that reviews computer hardware and software concepts such as equipment, operations, communications, programming and their past, present and future impact on society. Topics include computer hardware, various types of computer software, communication technologies and program development using computers to execute software packages and/or to write simple programs. Upon completion, students should be able to describe and use the major components of selected computer software and hardware.

CIS 135 INTERNET PROGRAMMING 3*Prerequisite(s): As required by program*

This course focuses on Web-Site Programming software and requires the students to create their own web site using some of the most popular web programs. Students will be required to demonstrate web-authoring proficiency through tests and programming projects. This course should be repeatable to allow for future web-authoring software releases.

CIS 145 ADVANCED WEB PAGE DEVELOPMENT 3*Prerequisite(s): CIS 140 and/or as required by program*

This course is a continuation of CIS 140 and will cover such advanced topics as JavaScript, Dynamic HTML, Java Applets, style sheets, and creating interactive web pages and sites.

CIS 146 MICROCOMPUTER APPLICATIONS 3*Prerequisite(s): As required by program*

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

CIS 147 ADVANCED MICRO APPLICATIONS 3*Prerequisite(s): CIS 130, 146, and/or as required by program*

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

CIS 148 POST ADVANCED MICROCOMPUTER APPLICATIONS 3*Prerequisite(s): As required by program*

This course builds on concepts associated with various microcomputer applications with emphasis on advanced features commonly found in software applications. Advanced features of word processing, spreadsheets, database, and presentation packages are introduced. Features such as macros, Visual Basic Applications, and online features are included in the content of the course. Upon completion, the student will be able to apply the advanced features of selected software to the workplace. This course will help prepare students for the MOS certification.

CIS 149 INTRODUCTION TO COMPUTERS 3*Prerequisite(s): As required by program*

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

CIS 151 GRAPHICS FOR WORLD WIDE WEB 3*Prerequisite(s): As required by program*

Graphics are as important to the World Wide Web as is the written word. This course will provide an overview to the theory, tools, and techniques necessary for creating high quality graphics using Adobe Photoshop. *This course may be substituted with CAT 150 Imaging I: Principles of Photography and Introduction to Photoshop and CAT180 Imaging II: Techniques of Photoshop and Painter.*

CIS 160 MULTIMEDIA FOR THE WORLD WIDE WEB 3*Prerequisite(s): As required by program*

This course covers contemporary, interactive multimedia technology systems, focusing on types, applications, and theories of operation. In addition to the theoretical understanding of the multimedia technologies, students will learn how to digitize and manipulate images, voice, and video materials, including authoring a web page utilizing multimedia.

CIS 161 CISCO I 3*Prerequisite(s): As required by program*

This course is the first part of a four-part curriculum leading to Cisco Certified Network Associate (CCNA) certification. This course concentrates on the physical part of networking including basic electronics, computer basics, network basics, addressing, number conversions, cabling, and planning. After completing this course the student will be able to: identify the functions of each layer of the OSI reference model; describe data link and network addresses; define and describe the function of the MAC address; explain the five conversion steps of data encapsulation; describe the different classes of IP addresses and subnetting; identify the functions of the TCP/IP network-layer protocols.

CIS 162 CISCO II 3*Prerequisite(s): As required by program*

This course is the second part of a four-part curriculum leading to Cisco Certified Network Associate (CCNA) certification. This course concentrates on router configuration. After completing this course the student will be able to: prepare the initial configuration of a router and enable IP; control router passwords and identification; configure IP addresses; add the RIP and IGRP routing protocols to a configuration.

CIS 163 CISCO III 3*Prerequisite(s): As required by program*

This course is the third part of a four-part curriculum leading to Cisco Certified Network Associate (CCNA) certification. This course concentrates on LAN design, routing, switching, and network administration. After completing this course the student will be able to: describe LAN segmentation using bridges, routers, and

switches; distinguish between cut-through and store and forward LAN switching; describe the operation of the Spanning Tree Protocol and its benefits; describe the benefits of virtual LANs.

CIS 164 CISCO IV 3*Prerequisite(s): As required by program*

This course is the fourth part of a four-part curriculum leading to Cisco Certified Network Associate (CCNA) certification. This course concentrates on WANs and WAN design. After completing this course the student will be able to: differentiate between LAMP, Frame Relay, ISDN, HDLC, PPP, and DDR; list commands to configure Frame Relay LMI, maps, and subinterfaces; identify PPP protocols to encapsulate WAN data on Cisco routers; identify ISDN protocols, function groups, reference points, and channels; describe Cisco's implementation of ISDN BRI.

CIS 185 COMPUTER ETHICS 3*Prerequisite(s): As required by program*

This course will survey the various issues surrounding computer ethics.

CIS 187 MARKETING ON THE WORLD WIDE WEB 3*Prerequisite(s): As required by program*

Technological change has provided businesses with tremendous opportunities for increasing the efficiency and effectiveness of many activities. By using the tools of the Internet, businesses have taken information and information sharing to new levels, transforming the very core of business. This course will examine how the Internet has changed business with an emphasis on increasing a professional's ability to use and understand the tools of the Internet.

CIS 189 CO-OP FOR CIS I 3*Prerequisite(s): As required by program*

This course is part of a series wherein the student works in a degree/program related job. Emphasis is placed on student's work experience as it integrates academic knowledge with practical application through exposure to computer practices in informational technologies environment. The grade is based on the employer's evaluation of each student's productivity, content of a descriptive report submitted by the student, and student development and assessment of a learning contract.

CIS 191 INTRODUCTION TO COMPUTERS PROGRAMMING CONCEPTS 3*Prerequisite(s): College algebra and/or as required by program*

This course introduces fundamental concepts, including an algorithmic approach to problem solving via the design and implementation of programs in selected languages. Structured programming techniques involving input/output, conditional statements, loops, files, arrays and structures and simple data structures are introduced. Students are expected to write programs as part of this course.

CIS 192 ADVANCED COMPUTERS PROGRAMMING CONCEPTS 3*Prerequisite(s): As required by program*

This course covers the concepts of algorithm specifications, structured programming, data representation, searching, sorting, recursion, simple data structures, language description, and problem testing. Emphasis is placed on development of problem-solving skills. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.

CIS 191 INTRODUCTION TO COMPUTERS PROGRAMMING CONCEPTS LAB 1*Prerequisite(s): As required by program*

Programming laboratory. Students develop and apply the basic programming skills.

CIS 196 COMMERCIAL SOFTWARE APPLICATIONS 3*Prerequisite(s): As required by program*

This is a "hands-on" introduction to software packages, languages, and utility programs currently in use, with the course being able to be repeated for credit for each different topic being covered. Emphasis is placed on the purpose capabilities and utilization of each package, language or program. Upon completion, students will be able to use the features selected for the application covered.

CIS 197 ADVANCED COMMERCIAL SOFTWARE APPLICATIONS 3*Prerequisite(s): CIS 196 and/or as required by program*

This course provides the student with hands-on experience in using the advanced features of software packages, languages, and utility programs currently in use. Each offering focuses on one software package with credit being received for each different package. Upon completion, students will be able to use the features selected for the application covered.

CIS 199 NETWORK COMMUNICATIONS 3*Prerequisite(s): As required by program*

This course is designed to introduce students to the basic concepts of computer networks. Emphasis is placed on gaining an understanding of the terminology and technology involved in implementing networked systems. The course will cover the OSI and TCP/IP network models, communications protocols, transmission media, networking hardware and software, LANs (Local Area Networks) and WANs (Wide Area Networks), Client/Server technologies, the Internet, Intranets and network troubleshooting. Upon completion of the course, students will be able to design and implement a computer network. Students will create network shares, user accounts, and install print devices while ensuring basic network security. They will receive hands-on experience building a mock network in the classroom. This course will help prepare students for the CCNA and Network+ certifications. This is a CORE course for the AAT, AAS CIS programs. CIS 161 or CIS 273 may be used as a suitable substitute for this course.

CIS 202 LOCAL AREA NETWORK BASICS 3*Prerequisite(s): CIS 266, 267 and/or as required by program*

This course provides the student with an overview of personal computer networks, equipment, and networking software. Students enrolled in this course are expected to spend two practice per week in the computer laboratory.

CIS 207 INTRODUCTION TO WEB DEVELOPMENT 3*Prerequisite(s): As required by program*

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

CIS 208 INTERMEDIATE WEB DEVELOPMENT 3*Prerequisite(s): As required by program*

This course builds upon basic skills in Web authoring. Various Web authoring tools are introduced. Upon completion students will be able to use these tools to enhance Web sites.

CIS 209 ADVANCED WEB DEVELOPMENT 3*Prerequisite(s): As required by program*

This is an advanced Web design course emphasizing the use of scripting languages to develop interactive Web sites. Upon completion students will be able to create data driven Web sites. This course helps prepare students for the Certified Internet Webmaster (CIW) Foundations certification.

CIS 212 VISUAL BASIC 3
Prerequisite(s): CIS 130, 190, 211 and/or equivalent background
 This course is a continuation of CIS 211, with emphasis being on BASIC programming using a graphical user interface. The course will emphasize graphical user interfaces with additional topics on such topics as advanced file handling techniques, simulation, and other selected areas. Upon completion, the student will be able to demonstrate knowledge of the topics tough the completion of programming projects and appropriate tests.

CIS 213 ADVANCED BASIC PROGRAMMING 3
Prerequisite(s): CIS 212 and/or as required by program
 This course is a continuation of CIS 212, Basic Programming.

CIS 222 DATABASE MANAGEMENT SYSTEM 3
Prerequisite(s): As required by program
 This course will discuss database system architectures, concentrating on Structured Query Language (SQL). It will teach students how to design, normalize and use databases with SQL, and to link those to the Web.

CIS 223 TEE-DIMENSIONAL COMPUTER MODELING 3
Prerequisite(s): As required by program
 This course is a study in 3D computer modeling and 3D painting beginning with primitive shapes and creating compelling 3D objects for use in model libraries, games, print material, web sites, visual simulation, and architectural applications. Powerful operations for modeling and 3D painting are incorporated into an interface that is simple and intuitive to use.

CIS 224 TEE-DIMENSIONAL COMPUTER ANIMATION 3
Prerequisite(s): As required by program
 This course is a study in 3D computer animation. Course contents include a review of 3D modeling, rendering the 3D animations, compositing and special effects for both video and digital editing, video and film recording, storyboarding and sound design, technical testing and production estimates and scheduling.

CIS 239 NETWORKING SOFTWARE 3
Prerequisite(s): As required by program
 This course provides students with hands-on practical experience in installing computer software, operating systems, and trouble-shooting. It covers IBM compatible PC software. The class will help to prepare participants for the Network A+ Certification sponsored by CompTIA. This is a CORE course for the AAT and AAS CIS programs.

CIS 240 NETWORKING HARDWARE 3
Prerequisite(s): As required by program
 This course is a fundamental study of the systems and subsystems in a microcomputer. The class will help to prepare participants for the Network A+ Certification sponsored by CompTIA. This is a CORE course for the AAT and AAS CIS programs.

CIS 249 MICROSOFT OPERATING SYSTEMS 3
Prerequisite(s): As required by program
 This course provides an introduction to microcomputer operating systems. Topics include a description of the operating system, system commands, and effective and efficient use of the microcomputer with the aid of its system programs. Upon completion, students should understand the function and role of the operating system, its operational characteristics, its configuration, how to execute programs, and efficient disk and file management.

CIS 250 E-COMMERCE 3
Prerequisite(s): CIS 130 and Web related computer experience.
 This course is an introduction into e-commerce. Topics include marketing, building an e-commerce store, security, and electronic payment systems. Upon completion students will be able to build an e-commerce presence.

CIS 251 C PROGRAMMING 3
Prerequisite(s): CIS 130, 191, and/or as required by program
 This course is an introduction to the C programming language. Included in this course are topics in an algorithmic approach to problem solving, structured programming techniques and constructs, using functions and macros, simple data structures, and using files for input and output. Upon completion, the student will be able to demonstrate knowledge of the topics tough the completion of programming projects and appropriate tests.

CIS 252 ADVANCED C ++ PROGRAMMING 3
Prerequisite(s): CIS 251 and/or as required by program
 This course is a continuation of the CIS 251 course in C programming. Techniques for the improvement of application and systems programming will be covered and other topics may include memory management, C Library functions, debugging, portability, and reusable code. Upon completion, the student will be able to demonstrate knowledge of the topics tough the completion of programming projects and appropriate tests.

CIS 253 BASIC ROUTER TECHNOLOGY 3
Prerequisite(s): As required by program
 This course is designed to prepare students to apply the basics of networking hardware. The course covers beginning router configurations, routed and routing protocols, and an introduction to LAN switching.

CIS 254 ADVANCED ROUTER TECHNOLOGY 3
Prerequisite(s): As required by program
 This course is designed to prepare students to apply the advanced principles and applications of networking hardware. The course covers advanced router configurations, LAN switching, network management, and advanced network issues.

CIS 255 JAVA PROGRAMMING 3
Prerequisite(s): CIS 130 or equivalent.
 This course is an introduction to the Java programming language. Topics in this course include object-oriented programming constructs, Web page application development, class definitions, threads, events and exceptions. Upon completion, the student will be able to demonstrate knowledge of the topics tough the completion of programming projects and appropriate tests.

CIS 256 ADVANCED JAVA PROGRAMMING 3
Prerequisite(s): As required by program
 This course is a second course of a sequence using the Java programming language. Topics include: Sun's Swing GUI components, JDBC, JavaBeans, RMI, servlets, and Java media framework. Upon completion, the student will be able to demonstrate knowledge of the topics tough programming projects and appropriate exams.

CIS 257 NOVELL ADMINISTRATION 3
Prerequisite(s): As required by program
 This course introduces the basics of managing a Novell network. It teaches students how to use Novell tools to set up, manage, and use basic network services including file systems, networking printing, security and E-Mail. After completing this course students will be able to: add users to the network; execute network applications and share software resources; make accessing the network seem invisible to users; set up and manage the network file system; provide transparent access to information and resources anywhere on the network; use a multitenet NetWare Directory Services (NDS) environment; set up and manage network printing; create effective network

security; back up and restore NetWare server data; set up and manage Novell messaging services.

CIS 258 NOVELL ADMINISTRATION II 3
Prerequisite(s): As required by program
 This course is designed to develop advanced administration skills such as performance tuning for the network and server, and managing complex tree structures. Students will learn how to oversee a complex Novell networking environment, including Novell partitioning and replication and time synchronization strategies. After completing this course students will be able to manage a complex NDS.

CIS 259 NOVELL NETWORK ADMINISTRATION II 3
Prerequisite(s): As required by program
 This course affords opportunities to design and create a Novell implementation plan.

CIS 261 COBOL PROGRAMMING 3
Prerequisite(s):As required by program
 This course is an introduction to the COBOL programming language. Included are structured programming techniques, report preparation, arithmetic operations, conditional statements, group totals, and table processing. Upon completion, the student will be able to demonstrate knowledge of the topics tough the completion of programming projects and appropriate tests.

CIS 262 COBOL PROGRAMMING II 3
Prerequisite(s): As required by program
 This course consists of development, completion, testing, and execution of complex problems in COBOL, using various data file structures. A structured approach will be implemented as a methodological system. Upon completion, the student will be able to demonstrate knowledge of the topics tough the completion of programming projects and appropriate tests.

CIS 264 BUSINESS APPLICATIONS 3
Prerequisite(s): As required by program
 Prior programming training is put to use in implementing a practical business application such as accounts receivable, accounts payable, payroll, or other business system. A different application is selected each semester. Instructor will provide student with the necessary data and the student will create all the programs that are necessary to produce the expected results. This course will require outside laboratory time to produce programs for evaluation. Mastery of the language selected for the study, at the desired level, is required.

CIS 268 SOFTWARE SUPPORT 3
Prerequisite(s):As required by program
 This course provides students with hands-on practical experience in installing computer software, operating systems, and trouble-shooting. The class will help to prepare participants for the A+ Certification sponsored by CompTIA. This course is a suitable substitute for CIS 239, Networking Software.

CIS 269 HARDWARE SUPPORT 3
Prerequisite(s): As required by program
 This course provides students with hands-on practical experience in installation and troubleshooting computer hardware. The class will help to prepare participants for the A+ Certification sponsored by CompTIA. This is a suitable substitute for CIS 240, Networking Hardware.

CIS 273 INTRODUCTION TO NETWORKING COMMUNICATIONS 3
Prerequisite(s): As required by program
 This course is designed to introduce students to basic concepts of computer networks. Emphasis is placed on terminology and technology involved in implementing selected networked systems. The course covers various network models, topologies, communications protocols, transmission media, networking hardware and software, and network troubleshooting. Students gain hands-on experience in basic networking. This course further helps prepare students for certification. **NOTE: This course is a suitable substitute for CIS 199. Additionally, CISCO 1 may be used as a suitable substitute for this course. However, CIS 273 will not substitute for CISCO 1.**

CIS 275 WORKSTATION ADMINISTRATION 3
Prerequisite(s): As required by program
 This course provides a study of client system administration in a network environment. Topics include installing monitoring, maintaining, and troubleshooting client operating system software and managing hardware devices and shared resources. Students gain hands-on experience in client operating system installation and basic administration of network workstations.

CIS 276 SERVER ADMINISTRATION 3
Prerequisite(s): CIS 273 and/or as required by program
 This course introduces network operating system administration. Topics included in this course are network operating system software installation, administration, monitoring, and maintenance; user, group, and computer account management; shared resource management; and server hardware management. Students gain hands-on experience in managing and maintaining a network operating system environment.

CIS 277 NETWORK SERVICES ADMINISTRATION 3
Prerequisite(s): As required by program
 This course provides an introduction to the administration of fundamental networking services and protocols. Topics included in this course are implementing, managing, and maintaining essential network operating system services such as those for client address management, name resolution, security, routing, and remote access. Students gain hands-on experience performing common network infrastructure administrative tasks.

CIS 278 DIRECTORY SERVICES ADMINISTRATION 3
Prerequisite(s): As required by program
 This course provides a study of planning, implementing, and maintaining a network directory service. Topics included in this course are planning and implementing network directory organizational and administrative structures. Students gain hands-on experience using a directory service to manage user, group, and computer accounts, shared folders, network resources, and the user environment.

CIS 279 NETWORK INFRASTRUCTURE DESIGN 3
Prerequisite(s): As required by program
 This course provides a study of network infrastructure design. Topics included in this course are strategies for planning, implementing, and maintaining server availability and security, client addressing schemes, name resolution, routing, remote access, and network security. Students gain experience by designing plans for implementing common network infrastructure and protocols.

CIS 280 NETWORK SECURITY 3
Prerequisite(s): As required by program
 This course provides a study of tests to network security and methods of securing a computer network from such tests. Topics included in this course are security risks, intrusion detection, and methods of securing authentication, network access, remote access, Web access, and wired and wireless network communications. Upon completion students will be able to identify security risks and describe appropriate counter measures.

CIS 281 SYSTEM ANALYSIS AND DESIGN 3
Prerequisite(s): As required by program
 This course is a study of contemporary theory and systems analysis and design. Emphasis is placed on investigating, analyzing, designing, implementing, and documenting computer systems. Upon completion, the student will be able to

demonstrate knowledge of the topics tough the completion of programming projects and appropriate tests.

CIS 282 COMPUTER FORENSICS 3
Prerequisite(s): As required by program
 This course introduces students to methods of computer forensics and investigations. This course helps prepare students for the International Association of Computer Investigative Specialists (IACIS) certification.

CIS 284 CIS INTERNSHIP 3
Prerequisite(s): As required by program
 This course is designed to provide the student with an opportunity to work in a degree/program related environment. Emphasis is placed on the student's "real world" work experience as it integrates academics with practical applications that relate meaningfully to careers in the computer discipline. Significance is also placed on the efficient and accurate performance of job tasks as provided by the "real world" work experience. Grades for this course will be based on a combination of the employer's evaluation of the student, and the contents of a report submitted by the student. Upon completion of this course, the student should be able to demonstrate the ability to apply knowledge and skills gained in the classroom to a "real world" work experience.

CIS 285 OBJECT ORIENTED PROGRAMMING 3
Prerequisite(s): As required by program
 This course is an advanced object-oriented programming course and covers advanced program development techniques and concepts in the context of an object-oriented language. Subject matter includes object-oriented analysis and design, encapsulation, inheritance, polymorphism (operator and function overloading), information hiding, abstract data types, reuse, dynamic memory allocation, and file manipulation. Upon completion, students should be able to develop a hierarchical class structure necessary to the implementation of an object-oriented software system.

CIS 286 COMPUTERIZED MANAGEMENT INFO SYSTEM 3
Prerequisite(s): As required by program
 The nature of computerized management information systems, problems created by the computer relative to personnel, components of computer systems, programming, and application of computers to business problems.

CIS 287 SQL SERVER 3
Prerequisite(s): As required by program
 This course will provide students with the technical skill required to install, configure, administer and troubleshoot SQL Server client/server database management system. At the completion of this series students will be able to: identify the features of SQL Server and the responsibilities and challenges in system administration; identify the benefits of integrating SQL Server and setup clients for SQL Server; install and configure SQL Server; manage data storage using database devices and partition data using segments; manage the user accounts; manage user permissions; identify the various tasks scheduling and alerting abilities of SQL Executive; identify the concepts used in replication and implement replication of data between two SQL Servers; identify the types of backup and create backup devices; identify the factors effecting SQL Server performance and the need for monitoring and tuning; locate and troubleshoot problems that occur on the SQL Server.

CIS 291 CASE STUDY IN COMPUTER SCIENCE 3
Prerequisite(s): CIS 281 and/or as required by program
 This course is a case study involving the assignment of a complete system development project for analysis, programming, implementation, and documentation. Topics include planning system analysis and design, programming techniques, coding and documentation. Upon completion, students should be able to design, code, test and document a comprehensive computer information system.

CIS 292 SPECIAL TOPICS 2
Prerequisite(s): As required by program
 This course allows study of currently relevant computer science topics, with the course being able to be repeated for credit for each different topic covered. Course content will be determined by the instructor and will vary according to the topic being covered. Upon completion, the student will be able to demonstrate comprehension of the specified topics.

CIS 293 SPECIAL TOPICS 1
Prerequisite(s): As required by program
 This course allows study of currently relevant computer science topics, with the course being able to be repeated for credit for each different topic covered. Course content will be determined by the instructor and will vary according to the topic being covered. Upon completion, the student will be able to demonstrate specified skills.

CIS 294 SPECIAL TOPICS 3
Prerequisite(s): As required by program
 This course allows study of currently relevant computer science topics, with the course being able to be repeated for credit for each different topic covered. Course content will be determined by the instructor and will vary according to the topic being covered. Upon completion, the student will be able to demonstrate knowledge of the course topic tough completion of assignments and appropriate tests.

CIS 295 SPECIAL TOPICS 2
Prerequisite(s): As required by program
 This course allows study of currently relevant computer science topics, with the course being able to be repeated for credit for each different topic covered. Course content will be determined by the instructor and will vary according to the topic being covered. Upon completion, the student will be able to demonstrate specified skills.

CIS 296 SPECIAL TOPICS 3
 This course allows study of currently relevant computer science topics, with the course being able to be repeated for credit for each different topic covered. Course content will be determined by the instructor and will vary according to the topic being covered. Upon completion, the student will be able to demonstrate specified skills.

CIS 297 CO-OP FOR CIS II 3
Prerequisite(s): As required by program
 This course is part of a series wherein the student works in a degree/program related job. Emphasis is placed on student's work experience as it integrates academic knowledge with practical application tough exposure to computer practices in informational technologies environment. The grade is based on the employer's evaluation of each student's productivity, content of a descriptive report submitted by the student, and student development and assessment of a learning contract.

CIS 298 CO-OP FOR CIS III 3
Prerequisite(s): As required by program
 This course is part of a series wherein the student works in a degree/program related job. Emphasis is placed on student's work experience as it integrates academic knowledge with practical application tough exposure to computer practices in informational technologies environment. The grade is based on the employer's evaluation of each student's productivity, content of a descriptive report submitted by the student, and student development and assessment of a learning contract.

CIS 299 DIRECTED STUDIES COMPUTER SCIENCE 3
Prerequisite(s): As required by program
 This course allows independent study under the direction of an instructor. Topics to be included in the course material will be approved by the instructor prior to or at the beginning of the class. Upon completion, the student will be able to demonstrate knowledge of the topics as specified by the instructor.

CONSTRUCTION MANAGEMENT (CMT)
Course Description

CMT 101 CONSTRUCTION MATERIALS AND METHODS 3

Prerequisite: As required by program.
The purpose of this course is to introduce the student to the materials, methods, and equipment used in building construction. Emphasis will be placed on the construction process and how the various materials and equipment relate to the different stages of the process. Upon completion of this course the student will understand the total building process, know the various materials used in each stage of construction, understand the techniques and methods used with different materials, and specify materials with essential characteristics.

CMT 156 CONTRACTING AND CONSTRUCTION LAW 3

Prerequisite: As required by program.
The purpose of this course is to introduce the student to law practices pertinent to the construction industry. Emphasis will be placed on law as it relates to the contractor. Upon completion of this course the student will understand articles of incorporation, building contracts, contracts for the purchase of labor and materials, construction loans, the various types of construction agreements, permits, plans and specifications, warranties, and insurance.

CMT 204 CONCRETE CONSTRUCTION 3

Prerequisite: As required by program.
The purpose of this course is to introduce the student to the use of concrete in construction. Students are exposed to all major components of concrete construction. Upon completion of this course the student will know how to design concrete mixes, place forms for cast-in-place concrete, build with masonry units, and will know the major components in building with concrete

CMT 205 CONSTRUCTION MANAGEMENT 3

Prerequisite: As required by program.
The purpose of this course is to introduce the student to the principles and practices used in managing the various aspects of the construction process. Emphasis will be placed on pertinent business procedures. Upon completion of this course the student will know how to organize, bid, purchase, account for, plan, and schedule a construction job. **CORE**

CMT 206 CONSTRUCTION ESTIMATING 3

Prerequisite: As required by program.
The purpose of this course is to introduce the student to the principles and practices used in estimating construction costs. Emphasis will be on a methodical approach to estimating each cost element of a construction project. Upon completion of this course the student will know the methods and procedures used in estimating, making quantity surveys from working drawings, developing unit costs, developing subcontractor costs, and will be able to identify the major considerations involved in the total pricing of a construction project.

CMT 208 PROJECT PLANNING AND SCHEDULING 3

Prerequisite: As required by program.
The purpose of this course is to introduce the student to the tools and techniques used to plan, schedule and control a construction project. Students will learn how to prepare Gantt Charts and schedules using the Critical Path Method, Precedence Networks, PERT, GERT and the Linear Scheduling Method. Special emphasis will be placed on using scheduling software. Upon completion, the student will be able to prepare project schedules using various scheduling tools and technology, allocate and level resources, maintain and update a project schedule, and resolve construction delay claims.

CMT 220 SUSTAINABLE PROJECT DELIVERY 3

Prerequisite: As required by program.
The purpose of this course is to introduce the student to green project delivery from the contractor's point of view. This course will focus on the green building process and the potential impact of green construction on building projects and on the contractor's business. Students will know how to evaluate green requirements, document a green project and evaluate risk associated with green project delivery. Upon completion, the student will be able to bid, contract and subcontract green projects, facilitate green procurement, manage green construction and perform green project commissioning and closeout.

COSMETOLOGY (COS)
Course Descriptions

COS 111 INTRODUCTION TO COSMETOLOGY 3

Prerequisite: As required by program.
COREQUISITE: COS 112.
This course is designed to provide students with an overview of the history and development of cosmetology and standards of professional behavior. Students receive basic information regarding principles and practices of infection control, diseases, and disorders. Additionally students receive introductory information regarding hair design. The information presented in this course is enhanced by hands-on application performed in a controlled lab environment. Upon completion, students should be able to apply safety rules and regulations and write procedures for skills identified in this course. **CORE**

COS 112 INTRODUCTION TO COSMETOLOGY LAB 3

Prerequisite: As required by program.
COREQUISITE: COS 111.
In this course, students are provided the practical experience for sanitation, shampooing, hair shaping, and hairstyling. Emphasis is placed on disinfection, shampooing, hair shaping, and hairstyling for various types of hair for men and women. This course offers opportunities for students to put into practice concepts learned in the theory component from COS 111. **CORE**

COS 113 THEORY OF CHEMICAL SERVICES 3

Prerequisite: As required by program.
COREQUISITE: COS 114.
During this course students learn concepts of theory of chemical services related to the chemical hair texturing. Specific topics include basics of chemistry and electricity, properties of the hair and scalp, and chemical texture services. Safety considerations are emphasized throughout this course. This course is foundational for other courses providing more detailed instruction on these topics. **CORE**

COS 114 CHEMICAL SERVICES LAB 3

Prerequisite: As required by program.
COREQUISITE: COS 113.
During this course students perform various chemical texturing activities. Emphasis is placed on cosmetologist and client safety, chemical use and handling, hair and scalp analysis, and client consulting. **CORE**

COS 115 HAIR COLOR THEORY 3

Prerequisite: As required by program.
COREQUISITE: COS 116.
In this course, students learn the techniques of hair coloring and hair lightening. Emphasis is placed on color application, laws, levels and classifications of color and problem solving. Upon completion, the student will be able to identify all classifications of hair coloring and the effects on the hair. This is a **CORE** course.

COS 116 HAIR COLORING LAB 3

Prerequisite: As required by program.
COREQUISITE: COS 115.
In this course, students apply hair coloring and hair lightening techniques. Topics include consultation, hair analysis, skin test and procedures and applications of all

classifications of hair coloring and lightening. Upon completion, the student will be able to perform procedures for hair coloring and hair lightening. **CORE**

COS 117 BASIC SPA TECHNIQUES 3

COREQUISITE: COS 118.
This course is the study of cosmetic products, massage, skin care, and hair removal, as well as identifying the structure and function of various systems of the body. Topics include massage skin analysis, skin structure, disease and disorder, light therapy, facials, facial cosmetics, anatomy, hair removal, and nail care. Upon completion, the student will be able to state procedures for analysis, light therapy, facials, hair removal, and identify the structures, functions, disorders of the skin, and nail care. **CORE**

COS 118 BASIC SPA TECHNIQUES LAB 3

Prerequisite: As required by program.
COREQUISITE: COS 117.
This course provides practical applications related to the care of the skin and related structure. Emphasis is placed on facial treatments, product application, skin analysis, massage techniques, facial make-up, hair removal, and nail care. Upon completion, the student should be able to prepare clients, assemble sanitized materials, follow procedures for product application, recognize skin disorders, demonstrate facial massage movement, cosmetic application, and hair removal using safety and sanitary precautions, and nail care. **CORE**

COS 119 BUSINESS OF COSMETOLOGY 3

Prerequisite: As required by program.
This course is designed to develop job-seeking and entry-level management skills for the beauty industry. Topics include job seeking, leader and entrepreneurship development, business principles, business laws, insurance, marketing, and technology issues in the workplace. Upon completion, the student should be able to list job-seeking and management skills and the technology that is available for use in the salon.

COS 143 SPECIALTY HAIR PREPARATION TECHNIQUES 3

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

COS 144 HAIR SHAPING AND DESIGN 3

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

COS 151 NAIL CARE 3

Prerequisite: As required by program.
This course focuses on all aspects of nail care. Topics include salon conduct, professional ethics, sanitation, nail structure, manicures, pedicures, nail disorders, and anatomy and physiology of the arm and hand. Upon completion, the student should be able to demonstrate professional conduct, recognize nail disorders and diseases, and identify the procedures for sanitation and nail care services.

COS 152 NAIL CARE APPLICATIONS 3

Prerequisite: As required by program.
This course provides practice in all aspects of nail care. Topics include salon conduct, professional ethics, bacteriology, sanitation and safety, manicure and pedicure. Upon completion, the student should be able to perform nail care procedures.

COS 153 NAIL ART 3

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

COS 154 NAIL ART APPLICATIONS 3

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

COS 167 STATE BOARD REVIEW 3

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

COS 191A COOPERATIVE WORK EXPERIENCE 1

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

CRIMINAL JUSTICE (CRJ)
Course Descriptions

CRJ 100 INTRODUCTION TO CRIMINAL JUSTICE 3

Prerequisite(s): As required by program
This course surveys the entire criminal justice process from law enforcement to the administration of justice through corrections. It discusses the history and philosophy of the system and introduces various career opportunities.

CRJ 116 POLICE PATROL 3

Prerequisite(s): As required by program
This course studies the duties and responsibilities of the uniformed police patrol. It emphasizes the importance of patrol functions and includes principles, methods, procedures and resources used in police patrol operations.

CRJ 130 INTRODUCTION TO LAW AND JUDICIAL PROCESS 3

Prerequisite(s): As required by program
This course provides an introduction to the basic elements of substantive and procedural law, and the stages in the judicial process. It includes an overview of state and federal court structure.

CRJ 150 INTRODUCTION TO CORRECTIONS 3

Prerequisite(s): As required by program
This course provides an introduction to the philosophical and historical foundations of corrections in America. Incarceration and some of its alternatives are considered.

CRJ 177 CRIMINAL AND DEVIANT BEHAVIOR 3

Prerequisite(s): As required by program
This course analyzes criminal and deviant behavior systems. An emphasis is placed on sociological and psychological theories of crime causation.

CRJ 208 INTRODUCTION TO CRIMINOLOGY 3

Prerequisite(s): As required by program
This course delves into the nature and extent of crime in the United States, as well as criminal delinquent behavior and theories of causation. This study includes criminal personalities, principles of prevention, control, and treatment.

CRJ 209 JUVENILE DELINQUENCY 3

Prerequisite(s): As required by program
This course examines the causes of delinquency. It also reviews programs of prevention, and control of juvenile delinquency as well as the role of the courts.

CRJ 212 CORRECTIONAL COUNSELING TECHNIQUES 3

Prerequisite(s): As required by program
This course focuses on the basic concepts of influencing human behavior. Theories of individual and group counseling are emphasized, as well as some of the barriers faced in dealing with the public offender.

CRJ 216 POLICE ORGANIZATION AND ADMINISTRATION 3

Prerequisite(s): As required by program
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

Prerequisite(s): As required by program
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

Prerequisite(s): As required by program
This course involves the history, classification, and current procedures of handling latent fingerprints. Latent print examination, filing, and courtroom presentations are considered.

CRJ 230 CRIMINALITIES 3

Prerequisite(s): As required by program
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 237 FORENSIC PHOTOGRAPHY 3

Prerequisite(s): As required by program
This course analyzes the principles, techniques, and uses of forensic photography in criminal investigation. Emphasis is placed on basic camera operation and mechanics, crime scene photography, and rules of photographic evidence.

CRJ 238 CRIME SCENE INVESTIGATION 3

Prerequisite(s): As required by program
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 239 ISSUES IN LAW ENFORCEMENT 3

Prerequisite(s): As required by program
This course involves research, writing, and discussion of selected subjects relating to law enforcement. An analysis of contemporary police problems is provided.

CRJ 256 CORRECTIONAL REHABILITATION 3

Prerequisite(s): As required by program
This course surveys the different methods used in the rehabilitation of public offenders. Topics include individual and group counseling, education, recreation, religion, drug treatment, and vocational programs.

CRJ 259 ISSUES IN CORRECTIONS 3

Prerequisite(s): As required by program
This course involves research, writing, and discussion of selected subjects relating to corrections. An analysis of contemporary problems in corrections is provided.

CRJ 280 INTERNSHIP IN CRIMINAL JUSTICE 1-3

Prerequisite(s): As required by program
This course involves practical experience with a criminal justice agency under faculty supervision. Permission of the instructor is required. This course may be repeated with the approval of the department head.

DENTAL ASSISTANT
Course Descriptions

DAT 100 INTRODUCTION TO DENTAL ASSISTING 2

Prerequisite: As required by program
This course is designed to provide an introduction to dentistry. Topics include history of dentistry, dental equipment, dental auxiliaries, psychology as it applies to dentistry, professional organization, certification requirements, legal and ethical considerations, work ethics, and communication skills. Emphasis is placed on the Alabama Dental Practice Act and OSHA Standards. Upon completion, students should be able to discuss basic aspects of dentistry. **CORE**

DAT 101 PRE-CLINICAL PROCEDURES I 3

Prerequisite: As required by program
This course is designed to introduce chair-side assisting techniques, including concepts of four-handed dentistry, sterilization techniques, dental instruments, anesthesia, operative dentistry. Emphasis will be placed on preparation of a student for clinical dental assisting. Upon course completion, the student should be able to perform dental assisting skills in a clinical setting. **CORE**

DAT 102 DENTAL MATERIALS 3

Prerequisite: As required by program
This course is designed to study the characteristics, manipulation, and application of dental materials ordinarily used in the dental office. Students will be given intra- and extra-oral technical tasks to perform. Upon course completion, students should be able to take and pour preliminary impressions, trim study models, construct custom trays and temporary crowns, prepare and place restorative material, and manipulate cements and impression materials.

DAT 103 ANATOMY AND PHYSIOLOGY FOR DENTAL ASSISTING 3

Prerequisite: As required by program
This course is designed to provide study of anatomy and physiology of the head and neck and a basic understanding of body structure and function. Emphasis will be placed on tooth and root morphology, and embryological and histological correlations. It provides a foundation essential to an understanding of dental health. Upon completion, students should be able to discuss and identify the basic structure and function of the human body, specifically the head, neck, and dentition. **CORE**

DAT 104 BASIC SCIENCES FOR DENTAL ASSISTING 2

Prerequisite: As required by program

This course is designed to study basic microbiology, pathology, pharmacology, and medical emergencies. Emphasis is placed on the correlation of these sciences to the practice of dentistry. Upon completion, students should be able to apply basic science to the dental field.

DAT 111 Clinical Practice I 5

Prerequisite: As required by program

This course is designed to allow the student the opportunity for clinical observation and practical work experience in clinical settings under the supervision of a licensed dentist. Emphasis will be placed on the basic skills of chair-side assisting. Upon completion, students should be able to demonstrate basic skills in the area of chair-side assisting. **CORE**

DAT 112 DENTAL RADIOLOGY 3

Prerequisite: As required by program

This course is designed to cover the essential knowledge of radiographic technique for the practice of dentistry. Students will be taught to produce diagnostically acceptable intra- and extra-oral radiographs with emphasis being placed on x-ray properties, generation of x-rays, film processing, operator and patient safety, infection control, quality assurance, intra-oral radiographic technique, and image characteristics. Upon completion, students should be able to expose, process, and mount radiographs for diagnostic purposes under the direct supervision of a licensed dentist. **CORE**

DAT 113 DENTAL HEALTH EDUCATION 2

Prerequisite: As required by program

This course is designed to introduce the student to the basic principles of nutrition, preventive dentistry, and dental health education. Emphasis will be placed on philosophy of preventive dentistry including oral hygiene, patient motivation and management, and methods of oral health education. Upon completion, students should be able to apply the basic principles of nutrition and preventive dentistry.

DAT 115 CLINICAL PRACTICUM I 5

Prerequisite: As required by program

This course is designed to provide the student the opportunity for practical work experience in clinical settings. Emphasis is placed on the basic skills of dental assisting. Upon completion, students should be able to demonstrate basic skills in the area of chair-side assisting.

DAT 116 PRE-CLINICAL PROCEDURES II 3

Prerequisite: DAT/ DNT 101 or equivalent

This course is a continuation of Pre-Clinical Procedures I. Emphasis is placed on dental specialties. Upon completion, the student should be able to discuss and identify dental specialty procedures and instrumentation.

DAT 122 CLINICAL PRACTICE II 4

Prerequisite: Successful completion of DAT/DNT 111

This course is designed to provide the student the opportunity to develop advanced dental assisting skills in chair-side dental assisting procedures, radiology, teamwork, communication skills, and administrative duties. Emphasis will be placed on clinical procedures. Upon completion, students should be able to demonstrate proficiency in the area of chair-side assisting.

DAT 123 DENTAL ASSISTING SEMINAR 4

Prerequisite: As required by program

This course is designed to discuss the students' clinical experiences resume and interview process. Emphasis will be placed on new technology in dental practices as related to dental assisting and the certification exam review. Upon completion, students should be able to successfully complete the Dental Assisting National Board Examination to become a Certified Dental Assistant.

DAT 124 CLINICAL APPLIED INFECTION CONTROL AND OSHA STANDARDS 1

Prerequisite: DAT 111

This course is designed for the integration of previously acquired knowledge of OSHA Standards and Infection Control in a clinical setting. Emphasis will be placed on clinical application of Infection Control and compliance of OSHA Standards as it relates to dental chair-side assisting. Upon completion, students should be able to demonstrate skills in the area of Infection Control and OSHA Guidelines.

DAT 131 BUSINESS AND INDUSTRIAL PSYCHOLOGY FOR DENTAL ASSISTING 1

Prerequisite: As required by program

This course is a study of interpersonal relations in the working environment, interpersonal communications, and techniques for supervision of personnel. The course is held one day per week to accommodate students enrolled in the Dental Assisting program.

**DRAFTING AND DESIGN (DDT)
Course Descriptions**

DDT 104 INTRO TO CADD 3

Prerequisite: As required by college.

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. **CORE**

DDT 111 FUNDAMENTALS OF DRAFTING AND DESIGN TECHNOLOGY 3

Prerequisite: As required by college.

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, and drawing. **CORE**

DDT 114 INDUSTRIAL BLUEPRINT READING 3

Prerequisite: As required by college.

This course provides students with basic blueprint reading for various industrial applications. Topics include orthographic projection, dimensions and tolerances, symbols, industrial application, scales and notes. This course may be tailored to meet a specific industry need.

DDT 116 BLUEPRINT READING FOR CONSTRUCTION 3

Prerequisite: As required by college.

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, students should be able to interpret blueprint drawings used in the machine trades.

DDT 117 MANUFACTURING PROCESSES 3

Prerequisite: As required by college.

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

DDT 122 ADVANCED TECHNICAL DRAWING 3

Prerequisite: As required by college.

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

DDT 124 INTRO TO TECHNICAL DRAWING 3

Prerequisite: As required by college.

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. **CORE**

DDT 127 INTERMEDIATE CADD 3

Prerequisite: DDT 104, DDT 111, DDT 124 or permission of instructor

This course covers intermediate-level concepts and applications of CADD. Emphasis will be placed on intermediate-level features, commands, and applications of CADD software. **CORE**

DDT 128 INTERMEDIATE TECHNICAL DRAWING 3

Prerequisite: DDT 111, DDT 124 or instructor approval

This course is designed to develop a strong foundation in common drafting and design practices and procedures. Topics include dimensioning concepts and pictorial drawings. **CORE**

DDT 131 MACHINE DRAFTING BASICS 3

Prerequisite: As required by college.

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, students 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 133 BASIC SURVEYING 2 3

Prerequisite: As required by college.

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, students should be able to recognize benchmarks and measure, specify, and record field notes.

DDT 181 SPECIAL TOPICS: FIRE PROTECTION 3

Prerequisite: As required by college.

This course provides specialized instruction in Fire Sprinkler Codes for Construction.

DDT 182 SPECIAL TOPICS: FIRE PROTECTION 3

Prerequisite: As required by college.

This course provides specialized instruction in Fire Sprinkler Codes for Construction.

DDT 212 INTERMEDIATE ARCHITECTURAL DRAFTING 3

Prerequisite: As required by college.

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, students should be able to draw and specify advanced-level plans including various architectural details.

DDT 213 CIVIL DRAFTING, PLAT MAPS 3

Prerequisite: As required by college.

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, students 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.

DDT 217 BUILDING CODES, ORDINANCES, ZONING RESTRICTIONS AND THE A.D.A. 3

Prerequisite: As required by college.

This course provides an in-depth study of building codes, municipal ordinances, zoning restrictions, and compliance with the Americans With Disability act as related to commercial drafting and design. Emphasis is placed upon working understanding of these topics.

DDT 222 ADVANCED ARCHITECTURAL DRAFTING 3

Prerequisite: As required by college.

This third course in architectural design and drafting continues with advanced architectural plans, including a slant toward light commercial construction. Topics include climate control plans, application of building codes, building materials and finish specifications, cost estimating, and bid specifications. Upon completion, students should be able to apply current techniques in producing advanced-level architectural plans, including residential and light commercial applications.

DDT 225 STRUCTURAL STEEL DRAFTING 3

Prerequisite: As required by college.

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, students 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 231 ADVANCED CAD 3

Prerequisite: As required by college.

This course covers the advanced applications of CAD software to engineering projects in various applications, including architectural, civil, mechanical, and environmental engineering, with consideration for advanced physical and psychological principle of CAD. These principles will be applied toward CAD customization and programming principles, for the expressed purpose of increasing productivity and improving the performance of the CAD operator, thereby, making CAD much more productive in an engineering environment. Emphasis will be placed on using intelligent CAD techniques to increase the quality of output. And, 3D modeling and rendering will be introduced. Upon completion, students should be able to apply advanced CAD techniques in solving complex problems related to all engineering applications.

DDT 232 CAD CUSTOMIZATION 3

Prerequisite: As required by college.

This course introduces the various methods of customizing CAD software to meet individual or company needs. Topics include menu customizing, programming, custom command macros, script files, slides, and slide libraries. Upon completion, students should be able to customize and write menus, write programming routines, and write script files for the purpose of increasing the efficiency of the CAD operator.

DDT 233 SOLIDS MODELING 3

Prerequisite: As required by college.

This course provides instruction in 3D Design Modeling utilizing the 3D capabilities of CAD software. Emphasis is placed on 3D wire-frame, surface and solids modeling along with the development of 2D detail drawings from 3D models. Upon completion, students should be able to generate 3D surface and solid models and 2D orthographic production drawings from created solid models.

DDT 234 3D GRAPHICS AND ANIMATION 3

Prerequisite: As required by college.

This course is designed to challenge the imagination of the student in a 3-dimensional problem solving environment. The student will be given a basic introduction to the concepts of 3D design and animation, then apply those concepts to a design project. Upon completion, students should be able to create and animate objects in a 3-dimensional environment.

DDT 235 SPECIALIZED CAD 3

Prerequisite: As required by college.

This course introduces alternative CAD application software and alternative platforms, and can serve as a means of introducing third party programs that work in conjunction with a specific CAD application. Topics include various Graphical User Interfaces (GUIs) and how to navigate them, as well as how to use a third party application to make working in a specific CAD package easier and more productive. Upon completion, students should be able to use more than one CAD software package to produce hardcopy and use third party software to make certain tasks easier with a specific CAD program.

DDT 236 DESIGN PROJECT 3

Prerequisite: As required by college.

This course is designed for advanced students who aspire to more advanced and specialized skills in one certain drafting area. Emphasis will be placed on the student's ability to apply the principles learned in previous drafting classes in one special area, as approved by the instructor. The required project must be agreed upon by the instructor and the student, as well as how the work is to be accomplished. Upon completion, students will further reinforce previously learned concepts by applying engineering principles and controls to a personal design project.

DDT 237 SPECIAL TOPIC: RAPID PROTOTYPING 3

Prerequisite: As required by college.

The Rapid Prototyping and Additive Manufacturing Community's focus is on the technologies and processes that help conceive, test, improve and manufacture new products to bring them to market faster and most cost effectively. In this course students will utilize software to design a product and then create a scale model of the item.

DDT 238 SPECIAL TOPIC: FIRE SPRINKLER DESIGN 3

Prerequisite: As required by college.

This course will introduce students to software used to design fire sprinkler systems. Students will also apply Fire Sprinkler Code to both new and renovated construction.

DDT 250 THEORY OF COMMERCIAL DRAWING AND DESIGN 3

Prerequisite: As required by college.

This course provides the theory of commercial drawing and design. Topics include legal issues, job expectations, the architect and the architectural office, the contractor and the office of the contractor, building officials, construction materials and process, fire resistance design, C.S.I. format, and contract documents. Emphasis is placed upon a thorough understanding of these topics.

DDT 255 DRAWING FOR COMMERCIAL CONSTRUCTION 4

Prerequisite: As required by college.

This course is a direct applications lab to the topics covered within DDT 250. Emphasis is placed upon the production of quality construction document.

DDT 267 CO-EXPERIENCE 1

Prerequisite: As required by college.

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.

**MEDIUM/HEAVY TRUCK TECHNICIAN - (DEM)
Course Descriptions**

DEM 104 BASIC ENGINES 3

Prerequisite: As required by program.

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 students should be able to measure, diagnose problems, and repair diesel engines.

DEM 105 PREVENTIVE MAINTENANCE 3

Prerequisite: As required by program.

This course provides instruction 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, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

DEM 111 SAFETY, TOOLS MANAGEMENT 3

Prerequisite: As required by program.

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, students should be able to demonstrate knowledge of preventive maintenance and applicable general safety in vehicle repair.

DEM 117 DIESEL AND GAS TUNE-UP 3

Prerequisite: As required by program.

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, students should be able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment.

DEM 122 HEAVY VEHICLE BRAKES 3

Prerequisite: As required by program.

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, students should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles. **CORE**

DEM 123 PNEUMATICS AND HYDRAULICS 3

Prerequisite: As required by program.

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, students should be able to diagnose, adjust, and repair hydraulic system components.

DEM 124 ELECTRONIC ENGINE SYSTEMS 3
Prerequisite: As required by program.
 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, students should be able to diagnose, test, and calibrate electronically controlled diesel engines.

DEM 125 HEAVY VEHICLE DRIVE TRAINS 3
Prerequisite: As required by program.
 This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, slider idler clutches, and friction clutches, mechanical transmission power components, and hydraulics. Upon completion, students should be able to diagnose, inspect, and repair mechanical transmissions. **CORE**

DEM 126 ADVANCED ENGINES 3
Prerequisite: As required by program.
 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, students should be able to disassemble, inspect, and rebuild engines according to the manufacturer's specifications. **CORE**

DEM 127 FUEL SYSTEMS 3
Prerequisite: As required by program.
 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, students should be able to diagnose, service, and repair fuel systems and governors.

DEM 130 ELECTRICAL/ELECTRONIC FUNDAMENTALS 3
Prerequisite: As required by program.
 This course introduces the student to basic Electrical / Electronic concepts and fundamentals. It 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. Troubleshooting and repair of wiring harnesses, starting motors, charging systems, and accessories are included along with the computerized monitoring of vehicle systems. Upon completion, students should be able to identify components, test systems, and repair minor electrical problems according to manufacturer's literature. **CORE**

DEM 135 HEAVY VEHICLE STEERING AND SUSPENSION 3
Prerequisite: As required by program.
 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, students should be able to troubleshoot, adjust, and repair suspension and steering components on medium and heavy duty vehicles.

DEM 137 HEATING AND A/C SYSTEMS 3
Prerequisite: Electrical Systems.
 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 156 CDL LICENSE TEST PREPARATION 3
Prerequisite: As required by program.
 This is a course 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.

This course is the hands-on practice of the theory taught in EET 108 or concurrent enrollment.

EET 226 CABLE SPLICING AND INSTALLATION 3
Prerequisite: As required by college.
 This course provides instruction in splicing and installing low and medium voltage power cable, hi-voltage cable, fiber optic cable, communication and voltage wiring systems. Emphasis is placed on sizes conductors and use of proper connectors and materials used in splicing and connecting. Upon completion, students should be able to properly size, splice, connect and insulate all types of cables.

EET 235 NATIONAL ELECTRIC CODE 3
Prerequisite: As required by college.
 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, students should be able to locate, with the NEC code requirements for a specific electrical installation.

For Electronics Industrial, See ILT Course Listings

ELECTRICAL TECHNOLOGY – (ELT) Course Descriptions

ELT 108 DC FUNDAMENTALS 3
Prerequisite: As required by college.
 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 on 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. **CORE**

ELT 109 AC FUNDAMENTALS 3
Prerequisite: As required by college.
 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. **CORE**

ELT 110 WIRING METHODS 3
Prerequisite: As required by college.
 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. **CORE**

ELT 116 RESIDENTIAL WIRING 6
Prerequisite: As required by college.
 This course is a study of residential wiring practices and methods, the NEC requirements and residential blueprint interpretations

ELT 117 AC/DC MACHINES 3
Prerequisite: As required by college.
 This course covers the theory and operation of DC motors single and tee phase AC motors and the labs will reinforce this knowledge. Emphasis is placed on the various types of single and tee phase motors, wiring diagrams, starting devices, and practical application in the lab. This is a **CORE** course. This course supports CIP code 46.0302.

ELT 118 COMMERCIAL/INDUSTRIAL WIRING I 3
Prerequisite: As required by college.
 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. **CORE**

ELT 206 OSHA SAFETY AND STANDARDS 3
Prerequisite: As required by college.
 This course provides the student with the knowledge of OSHA safety standards as required by this organization, and as it related 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, students should be able to understand the requirements of OSHA as it relates to general and specific construction sites.

ELT 225 SMART HOUSE WIRING 3
Prerequisite: As required by program.
 This course introduces the newest technology available for Smart House wiring equipment and wiring methods to include control of whole-house electrical equipment and home entertainment produces. Emphasis is placed on specialized skills and tools required for wiring Smart Houses. Upon completion, students should be able to install special devices and automated equipment in a high-technology Smart House.

ELT 242 JOURNEYMAN MASTER PREP EXAM 3
Prerequisite: As required by college.
 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, students should be able to pass the Journeyman/Masters Certifying Exam.

ELT 244 CONDUIT BENDING AND INSTALLATION 3
Prerequisite: As required by college.
 This course provides students 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, students should be able to get measurements, layout, and successfully bend conduit using hand type, mechanical, and hydraulic benders.

EMERGENCY MEDICAL TECHNOLOGY Emergency Medical Services (EMS) Course Descriptions

EMS 100 CARDIOPULMONARY RESUSCITATION - I 1
Prerequisite(s): As required by program.
 This course provides students with concepts as related to areas of basic life support to include coronary artery disease, prudent heart living, symptoms of heart attack, adult one-and-two rescuer CPR, first aid for choking, pediatric basic life support, airway adjuncts, EMS system entry access, automated external defibrillator (AED), and special situations for CPR. Upon course completion, students should be able to identify situations requiring action related to heart or breathing conditions and effectively implement appropriate management for each condition. Students successfully completing this course will receive appropriate documentation of course completion.

EMS 140 EMT PREPARATORY AND PRE-HOSPITAL EMS OPERATIONS 2
Prerequisite(s): 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
Prerequisite(s): 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
Prerequisite(s): 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
Prerequisite(s): 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.

ENGLISH DEVELOPMENTAL (ENG) Course Descriptions

ENG 092 BASIC ENGLISH I 4
Prerequisite(s): Placement score and/or as required by program.
 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. Students will demonstrate these skills chiefly through the writing of well-developed, multi-sentence paragraphs.

ENG 093 BASIC ENGLISH II 4
Prerequisite(s): Placement recommended on the ASSET/COMPASS and/or as required by program.
 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 on standard American written English usage. Students will demonstrate these skills chiefly through the writing of paragraph blocks and short essays.

ENGLISH (ENG) Course Descriptions

ENG 101 ENGLISH COMPOSITION I 3
Prerequisite(s): Grade of "C" or higher in ENG093 or appropriate Compass score or ACT 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
Prerequisite(s): A grade of "C" or better in ENG 101 or the equivalent
 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 246 CREATIVE WRITING I 3
Prerequisite(s): ENG 102 and/or as required by program.
 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. Students will compose a significant body of imaginative literature, which may be read by or to the class.

ENG 247 CREATIVE WRITING II 3
Prerequisite(s): ENG 246 and/or as required by program.
 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. Students will compose a significant body of imaginative literature, which may be read by or to the class.

ENG 251 AMERICAN LITERATURE I 3
Prerequisite(s): ENG 102 or equivalent
 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 and in written compositions, students 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
Prerequisite(s): ENG 102 or equivalent
 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 and in written compositions, students 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
Prerequisite(s): ENG 102 or equivalent and/or as required by program.
 This course is a survey of English literature from its 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, students 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.

ECONOMICS (ECO) Course Descriptions

ECO 231 PRINCIPLES OF MACROECONOMICS 3
Prerequisite(s): As required by program.
 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
Prerequisite(s): As required by program.
 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.

EDUCATION (EDU) Course Descriptions

EDU 100 EXPLORING TEACHING AS A PROFESSION 2
Prerequisite(s): As required by program.
 This course provides students with an opportunity to explore teaching as a career. The role of the teacher, the benefits of teaching and the steps to becoming a teacher are some of the topics that will be explored. Students will be exposed to examples of good teaching and self-assess their personal and professional qualities.

ELECTRONIC ENGINEERING (EET) Course Descriptions

EET 100 INTRODUCTION TO ENGINEERING TECHNOLOGIES 3
Prerequisite: As required by college.
 This course is designed to introduce the student to the basic concepts, terminology, and procedures associated with applied analytical skills needed to succeed in higher level courses. This includes areas such as: engineering notation, use of the scientific calculator, triangulation methods, and the basic laws of electricity.

EET 108 RESIDENTIAL WIRING 3
Prerequisite: As required by college.
COREQUISITE: EET 154.
 This is an introduction to the National Electrical Code, wiring plans, specifications, and installation methods as they apply to residential wiring, electrical telephone, and sound systems.

EET 111 COMMERCIAL/INDUSTRIAL WIRING I 3
Prerequisite: As required by college.
 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.

EET 154 RESIDENTIAL WIRING LAB 3
Prerequisite: As required by college.
COREQUISITE: EET 108.

ENG 262 ENGLISH LITERATURE II 3
Prerequisite(s): ENG 102 or equivalent and/or as required by program
 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, students 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
Prerequisite(s): ENG 102 or equivalent and/or as required by program
 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 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, students 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
Prerequisite(s): ENG 102 or equivalent and/or as required by program
 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, students 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 297 AFRICAN AMERICAN LITERATURE 3
Prerequisite(s): ENG 102 or the equivalent; or as required by program.
 This course is a study of literature produced by representative African Americans from the eighteenth century to the present. The course emphasizes the diversity of themes and techniques found in these works and examines the historical, cultural, literary, and philosophical forces that shaped these works and that are reflected in them. Students will demonstrate the ability to interpret literature and to relate the works to their historical and literary contexts.

ELECTRONIC TECHNOLOGY CIRCUITS (ETC) Course Descriptions

ETC 101 DC FUNDAMENTALS 3
Prerequisite: As required by college.
 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 on DC circuits are examined. Students are prepared to analyze complex DC circuits, solve for unknown circuit variables and to use basic electronic test equipment. This course also provides hands on laboratory exercises to analyze, construct, test, and troubleshoot direct current circuits. Emphasis is placed on the use of scientific calculator and the operation of common test equipment used to analyze and troubleshoot DC and to prove the theories taught during classroom instruction. **CORE**

ETC 102 AC FUNDAMENTALS 3
Prerequisite: As required by college.
 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 describe AC circuits and explain the function of A.C. such as R.L.C. impedance, phase relationships and power factor. This course also provides hands on laboratory exercises to analyze alternating current using a variety of circuit configurations with resistors, capacitors, and inductors in series and parallel combinations. Emphasis is placed on the operation of common test equipment used to analyze and troubleshoot AC circuits to prove the theories taught. **CORE**

ETC 107 ELECTRICAL BLUEPRINT READING I 3
Prerequisite: As required by college.
 This course will enable the student to obtain to a working knowledge of the elements of blueprint reading; the ability to interpret electrical, mechanical, and architectural drawing; and the ability to visualize the entire building structure in relationship to the electrical system.

ETC 108 MOTOR CONTROLS 3
Prerequisite: As required by college.
 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.

ETC 127 CONCEPTS OF DIGITAL ELECTRONICS 3
Prerequisite: As required by college.
 This course provides instruction in digital electronics. Topics include: number systems and codes, a review of Boolean algebra, logic elements, digital circuits, programmable logic circuits, and memory and computing circuits. This course provides laboratory exercises to analyze, construct, test and troubleshoot digital circuits.

FASHION MERCHANDISING (FMD) Course Descriptions

FMD 101 INTRODUCTION TO APPAREL TRADES 3
Prerequisite: As required by program.
 This course provides an introduction to the terminology, regulations, operations, and usage of the tools and equipment of the apparel industry. Topics include history of apparel industry, terminology, regulations, operations of apparel industry with emphasis on tools and equipment, and shop management and organization. Upon completion, the students should be able to discuss terminology, regulations, and operations as well as identify tools and equipment used in the apparel industry.

FMD 102 ELEMENTS OF COLOR AND DESIGN 3
Prerequisite: Regular admission status.
 This course is designed to provide the student with a working knowledge of the basic elements of color and design and their application to all aspects of fashion and clothing. Topics include the psychology of color, color groups, color pigment, color systems, three dimensions of color, and the creation of wearable color schemes. Upon completion, students should be able to demonstrate creative capacities and awareness of aesthetic and fashion application.

FMD 122 VISUAL MERCHANDISING 3
Prerequisite: As required by program.
 This course introduces the visual aspects of merchandising, including the elements, techniques, and equipment used in developing successful displays and their impact on the potential customer. Topics include visual merchandising concepts, careers, and exterior, interior, and window display construction, emphasis is placed on the application of principles and elements of design using materials, mannequins and other display items. Upon completion, students should be able to plan, prepare, select, and setup any type of display for a specific promotion or setting.

FMD 123 MERCHANDISING MANAGEMENT 3
Prerequisite: As required by program.

This course is designed to provide the principles, terminology, and procedures of buying, retailing, merchandising, wholesaling and managing of clothing, fashion and interior accessories, and furnishings. Topics include financial aspects of merchandising, pricing, planning, purchasing retail or wholesale inventories, merchandise control, management, and presentation. Upon completion, students should be able to price, sell, buy, control, and develop merchandise plans as they relate to fashion markets.

FMD 130 INTRODUCTION TO TEXTILES 3
Prerequisite: As required by program.
 This course introduces students to the essential concepts and principles of the textile industry, and the development of textile fabrics. Topics include basic terminology, fundamental fabric analysis, natural and manufactured fibers, general textile properties, yarns, construction, preparation, coloration, finishing, laws and regulations. Upon completion, students should know and be able to apply terminology, regulations, textile characteristics and operations of the textile industry as well as identify fabrics for end use.

FMD 131 TEXTILE TESTING AND ANALYSIS 3
Prerequisite: As required by program.
 In this course, students test and analyze apparel and home furnishings textiles. Topics include semi-technical tests to determine the composition and other properties of fabrics and examine fabrics. Upon completion, students should be able to identify the face and back of fabric, the fabric content and construction, the end use of fabric, and the fabric characteristics and suitability.

FMD 140 CONSUMER/CULTURAL ASPECTS OF CLOTHING 3
Prerequisite: As required by program.
 This course provides an overview of consumer aspects of clothing selection, as well as the psychological, cultural, historical, and aesthetic factors of clothing and textiles. Emphasis is placed on evolution of fashion, advertising, and promotion in retail marketplace, cultural perspectives, psychology of color, and design style analysis. Upon completion, students should be able to make decisions in clothing selection and construction aesthetics pertaining to the function of the end product.

FMD 148 ACCESSORIES AND RELATED MERCHANDISING 3
Prerequisite: As required by program.
 This course introduces students to fashion accessories and related materials, manufacturing and merchandising. Topics include buying functions, supporting services, fashion entrepreneurship, auxiliary services, retailing and wholesaling. Upon completion, students should understand concepts and practices applicable to different levels of the fashion industry.

FIRE SCIENCE (FSC) Course Descriptions

FSC 100 ORIENTATION AND TERMINOLOGY OF THE FIRE SERVICES 3
Prerequisite: As required by program.
 This course provides the student with basic information on the organization and function of paid and volunteer fire services, the role of the firefighter in the department, firefighter safety, the science of fire, and fire behavior. Specific course topics surveyed include: Orientation and Safety, Apparatus Familiarization, Fire Behavior, Personal Protective Equipment, Rescue, and Forcible Entry.

FSC 101 INTRODUCTION TO THE FIRE SERVICE 3
Prerequisite: As required by program.
 This course teaches the many functions of the fire service, its importance and origins. It is designed to acquaint the student with the philosophy and history of the fire service and fire protection, the exacting loss of life and property, and the organization and function of public and private fire protection agencies. Emphasis is placed on the organization and function of federal, state, county, city, and private fire protection. **CORE**

FSC 105 CHEMISTRY FOR THE FIRE SERVICE 3
Prerequisite: As required by program.
 This is a survey of general chemistry as applied to the fire service. Emphasis is on fundamental facts, principles, theories, and applications. Course will include study of states of matter, energy, common substances, laws that govern the movement of gases, chemical formulas and structure, the study of atoms and molecules, chemical reactions related to firefighting, and hazardous materials.

FSC 110 BUILDING CONSTRUCTION PRINCIPLES 3
Prerequisite: As required by program.
 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. Emphasis is placed on construction principles: wood, ordinary, steel, concrete, and truss construction. **CORE**

FSC 130 INTRODUCTION TO FIRE SUPPRESSION 3
Prerequisite: As required by program.
 This course is a study of organizational structure, fire suppression, fire suppression equipment, characteristics and behavior of fire, and fire hazard properties of ordinary materials. Emphasis is placed on the most common structural, vehicle, and urban interface fires. **CORE**

FSC 131 FIRE EXTINGUISHMENT PRINCIPLES 3
Prerequisite: As required by program.
 This is a study of water supplies and services, fire extinguishing chemicals, and the selection and use of extinguishing agents. Emphasis is placed on dry chemical, dry powder, foam and halogenated agents.

FSC 160 HAZARD AWARENESS 3
Prerequisite: As required by program.
 This course includes the basic awareness of characteristics and behavior of solids, liquids, and gases when involved in fire. Emphasis is placed on characteristics, storage, and handling of various materials.

FSC 161 HAZARDOUS MATERIALS AWARENESS AND OPERATIONS 3
Prerequisite: As required by program.
 This course is for emergency response personnel who may be first on the scene of a hazardous materials emergency. First responders at the awareness level are expected to recognize the presence of hazardous materials, protect themselves, secure the area, and call for trained personnel. At the operational level, the first responder uses the knowledge gained from the awareness level to act in a defensive posture to protect people, the environment, or property from the effects of an unplanned hazardous materials release. This course meets the requirements of the mandatory Awareness/Operational training in hazardous materials required by Title III - Emergency Planning and Community Right-to-Know Act of 1986 and NFPA 472, Standard on Professional Competence of Responders to Hazardous Materials Incidents current edition.

FSC 208 FIRE COMBAT TACTICS AND STRATEGY 3
Prerequisite: As required by program.
 This course is designed to offer the advanced firefighter or beginning fire officer the necessary information and related techniques to ensure effective fire scene operations. Topics of study include: Pre-Fire Planning, Tactical Operations, and Scene Management Techniques. Students are given the opportunity to participate in group activities, discussions, and practical exercises to further enhance the learning experience and reinforce methodology discussed.

FSC 230 RESCUE TECHNICIAN: ROPE 3
Prerequisite: As required by program.
 This course in rope rescue techniques includes a classroom review of equipment, knots and rope safety. Instruction events include: establishing need for rope rescue; uses and limitations of equipment; knot craft; safety aspects; anchoring systems; rescue rappelling; third man rescue; lowering systems and other aspects of rope rescue.

FSC 291 FIRE OFFICER I 3
Prerequisite: As required by program.
 The Fire Officer I curriculum identifies the requirements necessary to perform the duties of a first line supervisor. This course introduces the student to the basic concepts of management and supervision by concentration on such topics as: Organizational Structure, Communication skills, Human Resource Management, Public Relations, Planning, Emergency Service Delivery, and Safety.

FSC 292 FIRE OFFICER II 3
Prerequisite: As required by program.
 This course is structured for the fire officer who is ready to assume a leadership role by moving into the middle management level of his/her department. This course gives the officer more knowledge of management and supervision so that he/she can make basic evaluations of employee relations and assume a proactive role in their department. This course expands on the knowledge base attained in Fire Officer I by revisiting some of the same subjects and adding additional material. Some new subject areas include information management, government structure, and department budget planning and management.

FSC 293 FIRE OFFICER III 3
Prerequisite: As required by program.
 This course is specialized for the chief officer who is ready to advance into the upper management level of his/her department. This course consists of subjects designed to give the officer more knowledge of management and administration so that he/she can make basic evaluations of employee relations and assume a more proactive role in their department. This is a projects-based class.

FSC 294 FIRE OFFICER IV 3
Prerequisite: As required by program.
 This course meets executive management level needs. The course is designed to meet the elements of NFPA 1021, Chapter 7. Fire Officer IV will emphasize management of fire protection services to include human resource management, multi-agency emergency service delivery with horizontal/vertical communication requirements and risk management. There will be group interactive exercises, which will reinforce class lectures.

FSC 297 SELECTED TOPICS IN FIRE SERVICE OPERATIONS 3
Prerequisite: As required by program.
 This course provides directed reading and discussion of selected topics related to fire service operations. Emphasis is placed on student needs. Upon completion, students should be able to demonstrate skills developed to meet specific needs.

FSC 299 LEGAL ASPECTS OF THE FIRE SERVICES 3
Prerequisite: As required by program.
 This course introduces students to the legal obligations and responsibilities within the fire service along with the limitations and restrictions placed on emergency responders. Students will discuss and apply federal and state laws, codes, regulations and standards relevant to the fire service. Both civil and criminal law will be addressed. **CORE**

FRENCH (FRN) Course Descriptions

FRN 101 INTRODUCTORY FRENCH I 4
Prerequisite(s): As required by program
 This course provides an introduction to French. Topics include the development of basic communication skills and the acquisition of basic knowledge of the cultures of French-speaking areas.

FRN 102 INTRODUCTORY FRENCH II 4
Prerequisite(s): FRN 101 or Equivalent and/or as required by program
 This course includes the development of basic communication skills and the acquisition of basic knowledge of the cultures of French-speaking areas.

FRN 201 INTERMEDIATE FRENCH I 3
Prerequisite(s): FRN 102 or Equivalent and/or as required by program
 This course includes a review and further development of communication skills. Topics include readings of literary, historical, and/or cultural texts.

FRN 202 INTERMEDIATE FRENCH II 3
Prerequisite(s): FRN 201 or Equivalent and/or as required by program
 This continuation course includes a review and further development of communication skills. Topics include readings of literary, historical, and/or cultural texts.

GEOGRAPHY (GEO) Course Descriptions

GEO 101 PRINCIPLES OF PHYSICAL GEOGRAPHY 4
Prerequisite(s): As required by program
 Physical Geography I is the first in a two-part sequence including topics such as weather and climate relative to the earth and relationships between the earth and sun. Laboratory is required. Students enrolled must enroll in GEO101L.

GEO 101L PRINCIPLES OF PHYSICAL GEOGRAPHY (LAB) 0
Prerequisite(s): As required by program
 Physical Geography Lab is the laboratory component which supports the Principles of Physical Geography. Students enrolled must enroll in GEO 101.

GEOGRAPHIC INFORMATION SYSTEMS (GIS) Course Descriptions

GIS 201 GIS FUNDAMENTALS 3
Prerequisite: As required by program.
 This course introduces students to the concepts, techniques, and tools of Geographic Information Systems (GIS), which is a computer-based data processing tool used to manage and analyze spatial information. Topics covered include data acquisition, management, manipulation, and analysis, and cartographic output for applications of GIS in scientific and technological operations such as environmental assessment, analysis or natural hazards, site analysis for business and industry, resource management, and land-use planning. Tough hands-on exercises with ArcGIS and/or projects with other related software packages, students will acquire basic skills in GIS.

GIS 202 CARTOGRAPHIC DESIGN FOR GIS 3
Prerequisite: GIS 201
 This course provides a comprehensive study of GIS-applicable cartography including cartographic principles, data acquisition techniques, and methods of base map development. The course will include map projections, map scales, types of thematic maps, and map accuracy. Scanning, digitizing and coordinate geometry techniques used in GIS base map development will be introduced through hands-on exercises and computer-assisted mapping projects.

GIS 203 REMOTE SENSING, SPATIAL ANALYSIS AND MODELING GIS 3**Prerequisite:** GIS 202

The students will gain a theoretical background in remote sensing, covering such topics as remote sensing physics, data sources, visual images, image enhancement and filtering; geo-referencing; multi-spectral classification; data import and export; and GIS integration. Additionally, this course will provide the fundamentals of spatial information systems and quantitative techniques applicable to spatial data, including measures of central tendency, dispersion, and density. The course will also focus on the functionality of GIS as an effective tool for modeling and analyzing complex spatial relationships.

GIS 204 GIS APPLICATIONS AND PROGRAMMING 3**Prerequisite:** As required by program.

This course introduces students to GIS programming by utilizing Visual Basic programming skills. Students will utilize ArcObjects and System Query Language (SQL) to design and/or modify GIS tools and commands, create new GIS tools, automate GIS operations, and integrate ArcGIS software with other software applications. *Pending Approval.

GEOLOGY Course Descriptions**GLY 100 SURVEY OF GEOLOGY 3**

This course provides an introductory survey of physical and historical geology. Laboratory is not required.

GRAPHICS AND PRINTING (GPC) Course Descriptions**GPC 111 INTRODUCTION TO COMPUTERS 3****Prerequisite:** As required by program.

This course provides students with a basic knowledge of computer operations, software applications, and the role and impact of computers in graphic design and communications. Topics include computer terms, hardware components, drawing, image editing and page layout software applications. Upon completion, student should be able to perform basic computer operations, internet navigation, file management, and should be able to demonstrate an understanding of page layout software applications. **CORE**

GPC 112 INTRODUCTION TO THE GRAPHIC COMMUNICATIONS INDUSTRY 3**Prerequisite:** As required by program.

This course provides an introduction to the graphic arts and printing industry. Emphasis is placed providing students an overview of all aspects of the industry. Upon completion, students should be able to use industry terminology, understand current and emerging trends in technology, and make decisions about career options.

GPC 114 INTRODUCTION TO COMPUTER GRAPHICS 3**Prerequisite:** As required by program.

This course introduces students to software applications in graphic productions. Topics may include production terms, drawing, image editing, illustration, and layout software applications. Upon completion, students should be able to use industry-standard production software packages.

GPC 120 COMPUTER GRAPHICS 3**Prerequisite:** As required by program.

This course introduces students to digital imaging software. Emphasis is placed on painting and editing, creating special effects, basic image corrections, photo retouching, preparing images for web publications and creating color separations. Upon completion, students should be able to name and identify the different tools, work with multiple layer images, retouch a photograph, create special effects and prepare an image for a web publication.

GPC 122 TECHNICAL PROCESSES 3**Prerequisite:** As required by program.

This course introduces students to the basic concepts and skills of image and page production and assembly necessary for commercial printing. Topics include graphic industry equipment, materials, and techniques used to produce comprehensives and mechanicals, digital camera operations, scanner operation, and digital image creation. Upon completion, students should be able to recognize and evaluate quality line, halftone images, and four-color print pieces. **CORE**

GPC 124 COMPUTER DRAWING 3**Prerequisite:** As required by program.

This course provides students with a technical background in computer graphics. Emphasis is placed on the different drawing and editing tools associated with industry standard software. Upon completion, students should be able to identify the different tools associated with the software, render computer illustrations, create corporate identity pieces and images, edit and manipulate text.

GPC 128 ELECTRONIC PAGE LAYOUT AND ASSEMBLY 3**Prerequisite:** As required by program.

This course introduces students to electronic page layout. Topics include importing, combining and manipulating text and graphic elements for composite page layout and production. Upon completion, students should be able to produce single-page, spread-page, and continuous-page digital documents suitable for low- or high- resolution output as well as electronic prepress file submissions. **CORE**

GPC 130 INTERMEDIATE ELECTRONIC PAGE PRODUCTION 3**Prerequisite:** As required by program.

This course provides students an opportunity to expand their knowledge and technical expertise in electronic page production. Topics include production of magazines, newspapers, books, catalogues and other high volume, multi-page productions. Upon completion, students should be able to complete multi-page projects as members of production teams, and have enhanced organization, communication and problem-solving skills.

GPC 132 ADVANCED ELECTRONIC PAGE PRODUCTION 3**Prerequisite:** As required by program.

This course is a continuation of GPC 130. Topics include advanced page layout and composition, style sheets, house styles, and style manuals. Upon completion, students should be able to maintain graphic consistency, use typographic techniques, color and should be able to create and maintain production-oriented components.

GPC 134 DIGITAL PREPRESS 3**Prerequisite:** As required by program.

This course provides an in-depth study of electronic production techniques for printing and prepress applications. Topics include file preparation in compliance with industry standards; troubleshooting, correct and preflight files; correct line art and grayscale images and trap color images. Upon completion, students should be able to troubleshoot and resolve technical prepress problems associated with software applications, fonts and font management, cross-platform conversions, digital imaging and page layout and imposition.

GPC 136 ESTIMATING COSTS IN PRINTING AND GRAPHICS COMMUNICATIONS 3**Prerequisite:** As required by program.

This course provides students with a thorough understanding of the costs and dynamics of running a profitable graphics and printing business. Emphasis is placed on estimating

jobs and producing competitive bids with or without computer software. Upon completion, students should be able to estimate the cost of producing a variety of projects, apply essential problem-solving techniques, exercise self-management techniques and be able to work in a group or team environment.

GPC 160 PORTFOLIO 3**Prerequisite:** As required by program.

This course provides the advanced student an opportunity to use previous graphic art training to design and produce a professional and marketable portfolio for final presentation. Emphasis is placed on a completed portfolio, resume, and cover letter. Upon completion, students should be able to formulate and organize their portfolios for various design positions.

GPC 170 ON-LINE GRAPHICS COMMUNICATIONS 3**Prerequisite:** As required by program.

This course focuses on the Internet and design principles for web uses. Emphasis is placed on software necessary for the creation and maintenance of a web site. Upon completion, students should be able to design, and maintain on-line communications.

GPC 180 CURRENT TOPICS 3**Prerequisite:** As required by program.

This course is a survey of current trends in the graphics, communications and printing industry. Topics include typography and font management, advanced computer graphics or drawings, digital imaging, computer animation and presentation graphics. Upon completion, students should be able to use current industry technology.

GPC 182 3D GRAPHICS AND ANIMATION 3**Prerequisite:** As required by program.

This course is designed to tap the imagination of the student in a three dimensional problem solving environment. Topics include a basic introduction to the concepts of 3D design and animation as applied to a design project. Upon completion, students should be able to create and animate graphics in a three-dimensional environment.

GPC 191 COOPERATIVE WORK EXPERIENCE 1**Prerequisite:** As required by program.

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

GPC 192 COOPERATIVE WORK EXPERIENCE 2**Prerequisite:** As required by program.

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

HEALTH EDUCATION (HED) Course Descriptions**HED 221 PERSONAL HEALTH 3****Prerequisite(s):** As required by program

This course introduces principles and practices of personal and family health; it includes human reproduction, growth and development, psychological dimensions of health, human sexuality, nutrition and fitness, aging, death and dying.

HED 224 PERSONAL AND COMMUNITY HEALTH 3**Prerequisite(s):** As required by program

This course covers health problems for the individual and for the community. Areas of study include mental health, family life, physical health, conic and degenerative diseases, control of communicable diseases, and the understanding of depressants and stimulants. Healthful living habits will be emphasized.

HED 230 SAFETY AND FIRST AID 3**Prerequisite(s):** As required by program

HED 230 is divided into two parts. The first part concerns itself with the development of a safety education program within an organization (i.e., school, office, shop, etc.). The second part deals with physical injuries, emergency care, and treatment of those injuries. CPR certification and Standard Red Cross Cards are given upon successful completion of American Red Cross requirements.

HED 231 FIRST AID 3**Prerequisite(s):** As required by program

This course provides instruction to the immediate, temporary care which should be given to the victims of accidents and sudden illness. It also includes standard and advanced requirements of the American Red Cross, and/or the American Heart Association. CPR training also is included.

HED 232 CARE AND PREVENTION OF ATHLETIC INJURIES 3**Prerequisite(s):** As required by program

This course provides a study of specific athletic injuries, their treatment, and preventive measures.

HED 267 DRUG EDUCATION 3**Prerequisite(s):** As required by program

This course provides an examination of the drug scene with emphasis on the following: pharmacological, and sociological aspects of drug use; rehabilitation and treatment resources; and the law enforcement procedures.

For Heavy/Medium Truck, See DEM Course Listings**HISTORY (HIS) Course Descriptions****HIS 101 WESTERN CIVILIZATION I 3****Prerequisite(s):** As required by program

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**Prerequisite(s):** As required by program

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 3**Prerequisite(s):** As required by program

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 3**Prerequisite(s):** As required by program

This course is a continuation of HIS 201; it surveys United States history from the Reconstruction era to the present.

HIS 216 HISTORY OF WORLD RELIGIONS 3**Prerequisite(s):** As required by program

This course presents a comparison of the major religions of the world from a historical perspective. Emphasis is placed on the origin, development, and social influence of Christianity, Judaism, Islam, Hinduism, Buddhism, and others.

HIS 256 AFRICAN-AMERICAN HISTORY 3**Prerequisite(s):** As required by program

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 260 ALABAMA HISTORY 3**Prerequisite(s):** As required by program

This course surveys the development of the state of Alabama from pre-historic times to the present. The course presents material on the discovery, exploration, colonization, territorial period, ante-bellum Alabama, Reconstruction, and modern history.

HIS 299 DIRECTED STUDIES IN HISTORY 1-3**Prerequisite(s):** As required by program

This course affords students opportunities 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.

HUMANITIES (HUM) Course Descriptions**HPS 103 Foundations of Competencies for Health Science 3**

This (pre-nursing) course is designed to assist the student in developing the knowledge, skills, and abilities necessary to be successful in health-related fields. Content focuses on development of effective study and test-taking skills, assertiveness training, stress management, values clarification, diversity, ethical-legal concepts, problem solving and communication skills.

HUMANITIES (HUM) Course Descriptions**HUM 101 INTRODUCTION TO HUMANITIES I 3****Prerequisite(s):** As required by program

This is the first course in a two-semester sequence that offers the student an introduction to the humanities using selections from art, music, literature, history, and philosophy that relates to a unifying theme.

HUM 102 INTRODUCTION TO HUMANITIES II 3**Prerequisite(s):** HUM 101 and/or as required by program

This course is a continuation of HUM 101. This is the second course in a two-semester sequence that offers the student an introduction to the humanities using selections from art, music, literature, history, and philosophy that relates to a unifying theme.

HUMAN SERVICES (HUS) Course Descriptions**HUS 2111 INTRODUCTION TO ALCOHOL AND DRUG PREVENTION 3****Prerequisite(s):** As required by program

This course is designed to provide students with the introduction to the causes and preventions of alcohol and drug abuse. Upon completion of this course, students should have gained a working knowledge of the disease and use such knowledge in the field.

HUS 222 GROUP COUNSELING TECHNIQUES 3**Prerequisite(s):** As required by program

This course provides the techniques used for facilitating and assisting individuals to seek a variety of social experiences and interests. Emphasis is placed on outlets for such needs as status, security and other emotional feelings and problems to be expressed in a non-teasing atmosphere. Upon completion of this course the student will have attained leadership techniques and skills that enable him/her to effectively work through the different stages of the group process.

HUS 224 CLINICAL INTERNSHIP 3**Prerequisite(s):** As required by program

This is an on-site internship geared towards providing students with practical field experience in the Social work environment. See advisor for more specifics or Social Sciences Department Chair.

INTERIOR DESIGN (IND) Course Descriptions**IND 102 ELEMENTS OF COLOR AND DESIGN 3****Prerequisite:** As required by program.

This course is designed to provide the student with a working knowledge of the basic elements of color and design and their application to all aspects of an interior environment. Topics include the psychology of color, color groups, color pigment, color systems, tee dimensions of color, and creation of livable color schemes. Upon completion, students should be able to demonstrate creative capacities and awareness of aesthetic appreciation.

IND 110 INTERIOR DESIGNS 3**Prerequisite:** As required by program.

This course covers the study of manufacturers' products for interior design, construction materials, finishes, furniture, accessories, walls, and ceiling and floor treatments. Topics include period decoration, furniture, contemporary design, design materials, accessories, interior planning, floor plans, elements and principles of design, color, fabrics, floors, walls, ceilings, windows, doors, stairways, fireplaces, future trends, and careers. Upon completion, students should be able to plan and design residential and nonresidential interiors, coordinate elements of design, and create functional living and working environments appropriately utilizing space. **CORE**

IND 114 TEXTILES 3**Prerequisite:** As required by program.

This course provides fundamental concepts and principles of the textile industry and the analysis of the development of textile fabrics as they relate to interior furnishings. Topics include basic terminology, fabric testing, analysis of natural and manufactured fibers, the identification of textile properties, yarns, constructions, colorations, finishing, laws, and regulations. Upon completion, students should be able to discuss terminology, regulations, textile characteristics, and operations of the textile industry as well as identify fabrics for end use.

IND 122 VISUAL MERCHANDISING 3**Prerequisite:** As required by program.

This course introduces the visual aspects of merchandising, including the elements, techniques, and equipment used in developing successful displays and their impact on the potential customer. Topics include visual merchandising concepts, careers, and exterior, interior and window display construction, emphasis is placed on the application of principles and elements of design using materials, mannequins and other display items. Upon completion, students should be able to plan, prepare, select, and setup any type of display for a specific promotion or setting.

IND 127 RESIDENTIAL DESIGN 3
Prerequisite: As required by program.
 This course includes a studio/lecture on the design of residential environments. Emphasis is placed on basic interior planning, decorative terminology, space planning, furniture arrangement, color theory, floor coverings, wallpapers, paints, painting, decorative textiles, windows treatments, slip covers, upholstery, lighting, and design. Upon completion, students should be able to completely design the interior of a newly constructed house.

IND 132 INTERIOR COMPUTER DESIGN 3
Prerequisite: As required by program.
 This course introduces updated equipment and techniques in interior design and decorating through the hands-on use of interior design computers and software. Topics include the use of computers and software related to interior design, decorating, and construction. Upon completion, students should be able to operate a computer with interior design and decorating software to plan, organize, and display room decor using principles and elements of design.

IND 161 INTERIOR FINISHES 3
Prerequisite: As required by program.
 This course is designed to provide the student with a comprehensive practical knowledge of how to measure, specify, and oversee the application of various wall and floor coverings. Topics include floors and floor coverings, walls and wall treatments, and ceilings. Upon completion, students should be able to plan and apply various wall and floor coverings.

IND 163 SPACE PLANNING 3
Prerequisite: As required by program.
 This course is designed to train the student in solving problems involving the use of residential and commercial interior space. Topics include use of space, basic principles of handicapped accessibility, and planning for special needs. Upon completion, students should be able to solve space and access problems in designing interiors.

IND 181 SPECIAL TOPICS IN INTERIOR DESIGN 3
Prerequisite: As required by program.
 This course provides specialized instruction in various areas related to the interior design industry. Emphasis is placed on meeting students' needs.

ELECTRONICS – INDUSTRIAL (ILT) Course Descriptions

ILT 194 PROGRAMMABLE LOGIC CONTROLLERS I 3
Prerequisite: As required by college.
 This course focuses on the use of PLCs. Topics include operations, programming procedures, fault isolation procedures, and methods of entering, executing, debugging, and changing programs. This lab enables students to practice operations, programming procedures, fault isolation procedures, and methods of entering, executing, debugging, and changing programs. Upon completion, students should be able to apply principles of operations and programming of programmable logic controllers.

ILT 195 TROUBLESHOOTING TECHNIQUES I 3
Prerequisite: As required by college.
 This course focuses on the systematic approach to solving problems. Emphasis is placed on the instrument failures and their interaction with process downtime. Upon completion, students will be able to solve problems on a process simulator or in an actual setting.

ILT 196 ADVANCED PROGRAMMABLE LOGIC CONTROLLERS II 3
Prerequisite: As required by college.
 This course includes the principles of state-of-the-art programmable logic controls (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.

ILT 216 INDUSTRIAL ROBOTICS 3
Prerequisite: As required by college.
 This course covers principles of electro-mechanical devices. Topics include the principles, concepts, and techniques involved in interfacing microcomputers to various electro-mechanical devices to produce geographical movement. Upon completion, students should be able to apply the principles of electro-mechanical devices.

INDUSTRIAL MAINTENANCE (INT) Course Descriptions

INT 117 PRINCIPLES OF INDUSTRIAL MECHANICS 3
Prerequisite: As required by program.
 This course provides instruction in basic physics concepts applicable to mechanics of industrial production equipment. Topics include the basic application of mechanical principles with emphasis on power transmission, specific mechanical components, alignment, and tension. Upon completion, students will be able to perform basic troubleshooting, repair and maintenance functions on industrial production equipment. **CORE**

INT 118 FUNDAMENTALS OF INDUSTRIAL HYDRAULICS/PNEUMATICS 3
Prerequisite: As required by program.
 This course includes the fundamental concepts and theories for the safe operation of hydraulic and pneumatic systems used with industrial production equipment. Topics include the physical concepts, theories, laws, air flow characteristics, actuators, valves, accumulators, symbols, circuitry, filters, servicing safety, and preventive maintenance and the application of these concepts to perform work. Upon completion, students should be able to service and perform preventive maintenance functions on hydraulic and pneumatic systems. **CORE**

INT 124 PRODUCTION EQUIPMENT LAYOUT AND INSTALLATIONS 3
Prerequisite: As required by program.
 This course provides instruction in the layout and installation of production equipment and the use of rigging and installation tools. Topics include the use of wire rope, chain and metal-mesh, and fiber rope and webbing slings, industrial hoists and cranes, crane operation, scaffolds and ladders, machine anchoring for vibration control, moving and setting new equipment, leveling and alignment, preparing equipment for test run, test run guidelines, and safety precautions. Upon course completion, students will be able to install production equipment.

INT 126 PREVENTIVE MAINTENANCE 3
Prerequisite: As required by program.
 This course focuses on the concepts and applications of preventive maintenance. Topics include the introduction of alignment equipment, job safety, tool safety, preventive maintenance concepts, procedures, tasks, and predictive maintenance concepts. Upon course completion, students will demonstrate the ability to apply proper preventive maintenance and explain predictive maintenance concepts. **CORE**

INT 127 PRINCIPLES OF INDUSTRIAL PUMPS AND PIPING SYSTEMS 3
Prerequisite: As required by program.
 This course provides instruction in the fundamental concepts of industrial pumps and piping systems. Topics include pump identification, operation, and installation, maintenance and troubleshooting, and piping systems, and their installation. Upon course completion, students will be able to install, maintain, and troubleshoot industrial pumps and piping systems. **CORE**

INT 134 PRINCIPLES OF INDUSTRIAL MAINTENANCE WELDING AND METAL CUTTING 3
Prerequisite: As required by program.

This course provides instruction in the fundamentals of acetylene cutting and the basics of welding needed for the maintenance and repair of industrial production equipment. Topics include oxy-fuel safety, choice of cutting equipment, proper cutting angles, equipment setup, cutting plate, pipe, hand tools, types of metal welding machines, rod and welding joints, and common welding passes and beads. Upon course completion, students will demonstrate the ability to perform metal welding and cutting techniques necessary for repairing and maintaining industrial equipment. **CORE**

INT 192 CO-OP 3
Prerequisite: As required by program.
 In this series of courses, students work on a part-time basis in a job directly related to Industrial Maintenance Technology. The employer evaluates the student's performance and the student submits a descriptive report of his or her work experiences. Upon completion, the student will demonstrate skills learned in an employment setting.

MAJOR APPLICANCE REPAIR Course Descriptions

MAR 121 PRINCIPLES OF ELECTRICITY 3
Prerequisite: As required by program.
 This course is designed to provide the student with the basic knowledge of electrical theory and circuitry as it pertains to major appliances, and air conditioning and refrigeration. This course emphasizes safety, definitions, symbols, laws, circuits, and electrical test instruments. Upon completion students should understand and be able to apply the basic principles of circuits and circuit components. **NDC CORE**

MAR 124 RANGES, COOK-TOPS, AND OVENS 3
Prerequisite: As required by program.
 This course is designed to provide the student with the knowledge to install, or repair gas and electric ranges, cook-tops and ovens including microwave ovens. This course is designed to provide an In Home Service Professional with the skills and knowledge to correctly and efficiently diagnose, and repair residential ranges and microwaves. Upon completion of the course students should be able to trace wiring diagrams, understand the sequence of operation, properly use test equipment, and disassemble and reassemble ranges, cook-tops, and ovens. **NDC**

MAR 125 CLOTHES WASHERS AND DISHWASHERS 3
Prerequisite: As required by program.
 This course is designed to provide the student with the basic knowledge of electric clothes washers and dishwashers. This course emphasizes the proper service, repair and installation of these two major household appliances. Upon completion students should understand and be able to apply correctly and efficiently diagnose and repair residential clothes washers and dishwashers. **NDC**

MAR 126 ELECTRIC AND GAS DRYERS 3
Prerequisite: As required by program.
 Dryer Repair is an appliance specific training course designed to provide an In-Home Service Professional with the skills and knowledge to correctly and efficiently diagnose and repair residential electric and gas dryers. Upon completion of the course students should be able to trace wiring diagrams, understand the sequence of operation, properly use test equipment, and disassemble and reassemble dryers. **NDC**

MAR 127 REFRIGERANT TRANSITION/RECOVERY THEORY 3
Prerequisite: As required by program.
 This course is EPA-approved and covers material relating to the requirements necessary for type I, II, and III universal certifications. Upon completion, students should be prepared to take the EPA 608 certification examination. **NDC**

MAR 128 REFRIGERATORS AND FREEZERS 3
Prerequisite: As required by program.
 Refrigerator Repair is an appliance specific training course designed to provide an In-Home Service Professional the skills and knowledge to correctly and efficiently diagnose, and repair residential refrigerators and freezers. Upon completion of the course students should be able to trace wiring diagrams, understand the sequence of operation, properly use test equipment, and disassemble and reassemble refrigerators and freezers. **NDC**

MICROELECTRONICS (ITS) Course Descriptions

ITS 250 SEMICONDUCTOR MANUFACTURING TECH. 3
Prerequisite: Permission of instructor.
 A study of the processes, materials, and equipment used in the manufacturing of semiconductors, including an overview of the semiconductor industry, related technology, and standard safety practice.

ITS 251 SEMICONDUCTOR MANUFACTURING TECH. II 3
Prerequisite: Semiconductor Manufacturing Technology I.
 The continuation of Semiconductor Manufacturing I covering the processes, materials, and equipment used in the manufacturing of semiconductors. Topics include process-yield analysis, process technologies, and troubleshooting of process equipment.

ITS 255 3 VACUUM/RF PRINCIPLES 3
Prerequisite: Permission of instructor.
 A study of vacuum principles and RF plasma systems in the semiconductor manufacturing industry. Vacuum topics include principles, components, systems, leak detection, and safety practices, RF plasma topics include plasma physics, FR power amplification and oscillators, transmission lines, impedance matching, safety.

ITS 259 ELECTRO-MECHANICAL SYSTEMS 3
Prerequisite: Permission of instructor.
 A study of devices and components that translate electrical energy into mechanical motion. Emphasis on the semiconductor industry. Topics include DC and AC motors and controllers, servo motors, stepping motors, solenoids, linear motors, and actuators. Introduction to pneumatic principles, components, control systems, and mass flow controllers. Principles of robotics, types of robots, and common applications. Programmable logic controllers and ladder logic. Open and closed control principles, PID controllers

MASONRY (MAS) Course Descriptions

MAS 111 MASONRY FUNDAMENTALS 3
Prerequisite: As required by program.
 This course is designed as an introduction and orientation to masonry construction, specifically to brick and block construction. Topics include the identification and safe use of tools, equipment, and masonry materials. Upon completion, the students should have a general knowledge of masonry. **CORE NDC**

MAS 121 BRICK/BLOCK MASONRY FUNDAMENTALS I 3
Prerequisite: MAS 111.
 This course is designed to provide the student with basic fundamental skills for working with brick and block. Emphasis is placed on the importance of proper work site set up, dry bonding, head and bed joints, leveling, plumbing, and straight edging. Upon completion the students should have requisite skills meeting entry level standards. **CORE NDC**

MAS 131 BRICK/BLOCK MASONRY FUNDAMENTALS II 3
Prerequisite: MAS 111.

This course is designed to provide the student with a working knowledge of laying bricks and blocks. Emphasis is placed on set up, layout, building corners, and laying to the line. Upon completion the students should have entry level skills in brick and block masonry. **CORE NDC**

MAS 151 BRICK/BLOCK MASONRY FUNDAMENTALS III 3
Prerequisite: As required by program.
 This course is designed to provide the student with a working knowledge of the various methods of laying bricks and blocks. Emphasis is placed on hanging a speed pole, layout, building corners, and laying to a line. Upon completion the students should have entry level skills in basic bonds, tooling and finishing joints, toothing corners, and cutting masonry units. **CORE NDC**

MAS 161 BLOCK MASONRY LAB 3
Prerequisite: MAS 111.
 This course provides practical application of block laying techniques. Emphasis is placed on developing skill in laying block, constructing and reinforcing walls, joints, and sample panels. Upon completion, the student should be able to construct block walls to entry-level standards. **CORE NDC**

MAS 162 BRICK MASONRY LAB 3
Prerequisite: MAS 111.
 This course provides practical application of advanced brick laying techniques. Emphasis is placed on developing skill in laying brick, constructing and reinforcing walls, joints, and sample panels. Upon completion, the student should be able to construct brick walls to entry-level standards. **CORE NDC**

MAS 171 RESIDENTIAL/COMMERCIAL MASONRY 3
Prerequisite: MAS 111.
 This course provides application of residential and commercial techniques for reading plans, estimating costs, and constructing composite walls. Emphasis is placed on estimating material and labor cost based on specifications contained in working drawings or blueprints and on bonding composite walls. Upon completion, the student should be able to demonstrate entry level skills in print reading and cost estimation as well as composite wall construction and bonding. **CORE NDC**

MAS 211 STONE MASONRY 3
Prerequisite: As required by program.
 This course provides an introduction to stone and decorative masonry techniques, fireplace construction, and repair and restoration of brick structures. Topics include brick arches, fireplace construction, stone materials, laying techniques, moisture control, wall supports, joints, coping, sample panels, and cultured stone. Upon completion, the student should be able to identify appropriate materials and techniques for the stated topics. **NDC**

MAS 231 BASIC CEMENT MASONRY 3
Prerequisite: As required by program.
 This course is designed to introduce the various types of cement masonry, concrete requirements, flat work, estimating, and finishing methods. Emphasis is placed on estimating concrete for small to medium size projects, flat work, form work, footings, and the correct tools and methods of finishing and placing. **NDC**

MASS COMMUNICATION (MCM) Course Descriptions

MCM 100 INTRODUCTION TO MASS COMMUNICATION 3
 This course provides the student with general study of mass communication and journalism. This course includes theory, development, regulation, operation, and effects upon society.

MCM 102 WRITING FOR MASS MEDIA 3
 Introduction to the technique, form, style, and content of writing for the mass media, with attention to the various formats used in journalism, telecommunications, advertising, public relations and Internet communications.

MATHEMATICS—DEVELOPMENTAL (MTH) Course Descriptions

MTH 090 BASIC MATHEMATICS 4
Prerequisite(s): Appropriate mathematics placement score.
 This is a developmental course reviewing arithmetical principles and computations designed to help the student's mathematical proficiency for selected curriculum entrance.

MTH 091 DEVELOPMENTAL ALGEBRA I (PRE-ALGEBRA) 3
Prerequisite(s): MTH 090 or appropriate mathematics placement score and/or as required by program.
 This sequence of developmental courses provides the student with a review of arithmetic and algebraic skills designed to provide sufficient mathematical proficiency necessary for entry into Elementary Algebra.

MTH 098 ELEMENTARY ALGEBRA 4
Prerequisite(s): MTH 091 or appropriate mathematics placement score and/or as required by program.
 This course is a review of the fundamental arithmetic and algebra operations. The topics include the numbers of ordinary arithmetic and their properties; integers and rational numbers; the solving of equations; polynomials and factoring; and an introduction to systems of equations and graphs.

MATHEMATICS (MTH) Course Descriptions

MTH 100 INTERMEDIATE COLLEGE ALGEBRA 3
Prerequisite(s): MTH 092 or MTH 098 or appropriate mathematics placement score.
 This course provides a study of algebraic techniques such as linear equations and inequalities, quadratic equations, systems of equations, and operations with exponents and radicals. Functions and relations are introduced and graphed with special emphasis on linear and quadratic functions. This course does not apply toward the general core requirement for mathematics.

MTH 103 INTRO TO TECHNICAL MATH 3
Prerequisite(s): MTH 092 or MTH 098 or appropriate placement score.
 This course is designed for the student in technology needing simple arithmetic, algebraic, and right triangle trigonometric skills.

MTH 104 PLANE TRIGONOMETRY 3
Prerequisite(s): MTH 100 and/or as required by program.
 This course emphasizes such topics as the solution of triangles, vectors, geometric concepts and complex numbers.

MTH 110 FINITE MATHEMATICS 3
Prerequisite(s): All core mathematics courses in Alabama must have as a minimum prerequisite high school Algebra I, Geometry, and Algebra II with an appropriate mathematics placement score. An alternative to this is that the student should successfully pass with a C or higher (S if taken as pass/fail) Intermediate College Algebra.
 This course is intended to give an overview of topics in finite mathematics together with their applications, and is taken primarily by students who are not majoring in science, engineering, commerce, or mathematics (i.e., students who are not required to take Calculus). This course will draw on and significantly enhance the student's arithmetic and algebraic skills. The course includes sets, counting, permutations, combinations, basic probability (including Baye's Theorem), and introduction to statistics (including

work with Binomial Distributions and Normal Distributions), matrices and their applications to Markov chains and decision theory. Additional topics may include symbolic logic, linear models, linear programming, the simplex method and applications.

MTH 112 PRECALCULUS ALGEBRA 3
Prerequisite(s): All core mathematics courses in Alabama must have as a minimum prerequisite high school Algebra I, Geometry, and Algebra II with an appropriate mathematics placement score. An alternative to this is that the student should successfully pass with a "C" or higher (S if taken as pass/fail) Intermediate College Algebra.
 This course emphasizes the algebra of functions - including polynomial, rational, exponential, and logarithmic functions. The course also covers systems of equations and inequalities, quadratic inequalities, and the binomial theorem. Additional topics may include matrices, Cramer's Rule, and mathematical induction.

MTH 113 PRECALCULUS TRIGONOMETRY 3
Prerequisite(s): A minimum prerequisite of high school Algebra I, Geometry, and Algebra II with an appropriate mathematics placement score is required. An alternative to this is that the student should successfully pass with a "C" or higher (S if taken as pass/fail) MTH 112.
 This course includes the study of trigonometric (circular functions) and inverse trigonometric functions, and includes extensive work with trigonometric identities and trigonometric equations. The course also covers vectors, complex numbers, DeMoivre's Theorem, and polar coordinates. Additional topics may include conic sections, sequences, and using matrices to solve linear systems.

MTH 115 PRE-CALCULUS ALGEBRA & TRIG. 4
Prerequisite(s): A minimum prerequisite of high school Algebra I, Geometry, Algebra II along with an appropriate mathematics placement score is required. An alternative to this is that the students should successfully pass with a "C" or higher("S", if taken as pass/fail) MTH 100 and receive permission from the department chairperson.
 This course is a one semester combination of Pre-calculus Algebra and Pre-calculus Trigonometry intended for superior students. The course covers the following topics: the algebra of functions (including polynomial, rational, exponential, and logarithmic functions), systems of equations and inequalities, quadratic inequalities, and the binomial theorem, as well as the study of trigonometric (circular functions) and inverse trigonometric functions, and includes extensive work with trigonometric identities and trigonometric equations, vectors, complex numbers, DeMoivre's Theorem, and polar coordinates.

MTH 116 MATHEMATICAL APPLICATIONS 3
Prerequisite(s): MTH 090 or appropriate mathematics placement score
 This course provides practical applications of mathematics and includes selected topics from consumer math and algebra. Some types included are integers, percent, interest, ratio and proportion, metric system, probability, linear equations, and problem solving. This is a terminal course designed for students seeking an AAS degree and does not meet the general core requirement for mathematics.

MTH 117 COLLEGE MATHEMATICS WITH APPLICATIONS 3
Prerequisite(s): MTH 092 or MTH098 or appropriate placement score.
 This is an applied course designed to meet mathematics requirements for some students in certificate and two-year terminal programs. Emphasis is placed on percent, interest, proportions, functions, graphing, systems of equations, logarithmic and exponential functions, quadratics, and linear programming as used to solve applied problems in selected programs of study. This course does not meet the general core requirements for mathematics.

MTH118 TECHNICAL MATHEMATICS 3
Prerequisite(s): MTH 100 or appropriate mathematics placement score.
 This course includes selected topics from algebra, analytic geometry, and trigonometry with emphasis on applications to engineering technology. Topics may include variation, determinants, conic sections, exponential and logarithmic functions, and solutions of right triangles. This course does not apply toward the general education core requirement for mathematics.

MTH 120 CALCULUS AND ITS APPLICATIONS 3
Prerequisite(s): A minimum prerequisite of high school Algebra I, Geometry, Algebra II along with an appropriate mathematics placement score is required. An alternative to this is that the students should successfully pass with a "C" or higher MTH 112.
 This course is intended to give a broad overview of calculus and is taken primarily by students majoring in Commerce and Business Administration. It includes differentiation and integration of algebraic, exponential, and logarithmic functions and applications to business and economics. The course should include functions of several variables, partial derivatives (including applications), Lagrange multipliers, L'Hopital's Rule, and multiple integration (including applications).

MTH 125 CALCULUS I 4
Prerequisite(s): A minimum prerequisite of high school Algebra I, Geometry, Algebra II along with an appropriate mathematics placement score is required. An alternative to this is that the students should successfully pass with a "C" or higher MTH 113 or MTH 115.
 This is the first of two courses in the basic calculus sequence taken primarily by students in science, engineering, and mathematics. Topics included, but are not limited to, the derivative of algebraic, trigonometric, exponential, and logarithmic functions; the limits of a function; and the definite integral and its basic applications to areas problems. Applications of the derivative are covered in detail, including approximations of error using differentials, maximum and minimum problems, and curve sketching using calculus.

MTH 126 CALCULUS II 4
Prerequisite(s): A minimum prerequisite of high school Algebra I, Geometry, and Algebra II with an appropriate mathematics placement score is required. An alternative to this is that the student should successfully pass with a "C" or higher MTH 125.
 This is the second of two courses in the basic calculus sequence. Topics include vectors in the plane and in space, lines and planes in space, applications of integration (such as volume, arc length, work and average value), techniques of integration, infinite series, polar coordinates, and parametric equations.

MTH 131 MATHEMATICS IN GENERAL EDUCATION 3
Prerequisite(s): As required by program.
 This course is designed for general education and for all students in education programs except those who are concentrating in science or mathematics. Emphasis is on the structure of the number system from integers to real numbers, logic, numeration systems, prime numbers, basic concepts of algebra, elementary probability and statistics, graphs, informal geometry, and the metric system. This course does not apply toward the general core requirement for mathematics.

MTH 132 MATHEMATICS IN GENERAL EDUCATION 3
Prerequisite(s): MTH 131 or appropriate mathematics placement score.
 This course is a continuation of MTH 131. This course does not apply toward the general core requirement for mathematics.

MTH156 MATHEMATICS COMPUTER PROGRAMMING 3
Prerequisite(s): MTH 125 and/or as required by program.
 This course is a balance between C++ programming, Windows programming, and applications to engineering and mathematics. This course is designed primarily for pre-engineering students as a first course in computer programming and applications. This course does not meet the general core requirements for mathematics.

MTH186 MEDICAL DOSAGE CALCULATION 3
Prerequisite(s): MTH 090 or suitable placement score
 This course explains mathematical applications to the following dosage calculations: oral dosages, injectable drugs, intravenous fluids, insulin, heparin, pediatric dosages, geriatric dosages, and electrolyte solutions. This course does not apply toward the general core requirement for mathematics.

MTH 227 CALCULUS III 4
Prerequisite(s): MTH 126 and/or as required by program
 This is the third of two courses in the basic calculus sequence. Topics include vector functions, functions of two or more variables, partial derivatives (including applications), quadric surfaces, multiple integration, and vector calculus (including Green's Theorem, Curl and Divergence, surface integrals, and Stokes' Theorem.

MTH 237 LINEAR ALGEBRA 3
Prerequisite(s): MTH 126 and/or as required by program
 This course introduces the basic theory of linear equations and matrices, real vector spaces, bases and dimension, linear transformations and matrices, determinants, eigenvalues and eigenvectors, inner product spaces, and the diagonalization of symmetric matrices. Additional topics may include quadratic forms and the use of matrix methods to solve systems of linear differential equations.

MTH 238 APPLIED DIFFERENTIAL EQUATIONS I 3
Co-requisite(s): MTH 227S and/or as required by program
 An introduction to numerical methods, qualitative behavior of first order differential equations, techniques for solving separable and linear equations analytically, and applications to various models (e.g. populations, motion, chemical mixtures, etc.); techniques for solving higher order linear differential equations with constant coefficients (general theory, undetermined coefficients, reduction of order and the method of variation of parameters), with emphasis on interpreting the behavior of the solutions, and applications to physical models whose governing equations are of higher order; the Laplace transform as a tool for the solution of initial value problems whose inhomogeneous terms are discontinuous.

MTH250 DISCRETE MATH 3
Prerequisite(s): MTH126 or higher
 This course provides an introduction to combinatorics and graph theory. Topics include, but are not limited to, sets, logic, relations and function, mathematical induction, algorithmic processes, recurrence relations, counting techniques, asymptotic growth, Boolean algebra, graphs and network algorithms. This course is offered on a demand basis only.

MTH 265 ELEMENTARY STATISTICS 3
Prerequisite(s): MTH 100 or appropriate mathematics placement score and/or as required by program
 This course provides an introduction to methods of statistics, including the following topics: sampling, frequency distributions, measures of central tendency, graphic representation, reliability, hypothesis testing, confidence intervals, analysis, regression, estimation, and applications. Probability, permutations, combinations, binomial theorem, random variables, and distributions may be included.

MTH270 PROBABILITY AND STATISTICS CONCEPTS 3
Prerequisite(s): MTH126 or higher
 This course provides an examination of the theory and applications of probability and statistics based on topics from calculus. It includes probability, sample spaces, random variables, probability distribution, estimations, confidence intervals, hypotheses testing, experimental analysis, moments and moment-generating functions, and computer-assisted data analysis using appropriate computer software. This course is offered on a demand basis only.

MACHINE TOOL TECHNOLOGIST (MTT) Course Descriptions

MTT 100 MACHINING TECHNOLOGY I 6
Prerequisite: As determined by college.
 This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students will be able to perform the basic operations of measuring, layout, drilling, sawing, turning, and milling. This is a CORE course and is aligned with NIMS certification standards.

MTT 103 MACHINING TECHNOLOGY II 6
Prerequisite: As determined by college.
 This course provides additional instruction and practice in the use of measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection of work holding devices, speeds, feeds, cutting tools and coolants. Upon completion, students should be able to perform basic procedures of precision grinding and advanced operations of measuring, layout, drilling, sawing turning and milling. This is a CORE course and is aligned with NIMS certification standards.

MTT 107 MACHINING CALCULATIONS 3
Prerequisite: As determined by college.
 This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations. This course is aligned with NIMS certification standards.

MTT 121 BASIC BLUEPRINT READING FOR MACHINISTS 3
Prerequisite: As determined by college.
 This course covers the basic principles of print reading and sketching. Topics include multi-view drawings; interpretation of conventional lines; and dimensions, notes, and thread notations. Upon completion, students should be able to interpret basic drawings, visualize parts, and make pictorial sketches. This is a CORE course and is aligned with NIMS certification standards.

MTT 127 METROLOGY 3
Prerequisite: As determined by college.
 This course introduces the use of precision measuring instruments. Emphasis is placed on the inspection of machine parts and use of a wide variety of measuring instruments. Upon completion students should be able to demonstrate correct use of measuring instruments. This is a CORE course and is aligned with NIMS certification standards.

MTT 139 INTRODUCTION TO COMPUTER NUMERICAL CONTROL 3
Prerequisite: As determined by college.
 This course introduces the concepts and capabilities of computer numeric control machine tools. Topics include setup, operation, and basic applications. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage. This course is aligned with NIMS certification standards.

MTT 212 ADVANCED CNC TURNING 3
Prerequisite: As determined by college.
 This course details the use of canned cycles and subprograms in computer numerical control (CNC) turning programs. Upon completing this course, the student should be able to write CNC turning programs using canned cycles and subprograms.

MTT 213 ADVANCED CNC MILLING 3
Prerequisite: As determined by college.

This course details the use of canned cycles and subprograms in computer numerical control (CNC) turning programs. Upon completing this course, the student should be able to write CNC turning programs using canned cycles and subprograms.

MTT 218 COMPUTER INTEGRATED MANUFACTURING (CIM) 3
Prerequisite: As determined by college.
 This course is a basic introduction to concepts related to the computer integrated manufacturing (CIM) process. Students cover the design requirements associated with such a center (cell), how a center is integrated into the full system, and the technician's role in the process improvement of not only the cell but the full CIM system. Related safety and inspection and process adjustment are also covered.

MTT 219 CNC GRAPHICS: TURNING 3
Prerequisite: As determined by college.
 This course covers techniques involved in writing a program for a multi-axis computerized numeric control (CNC) turning machine using computer assisted manufacturing (CAM) software. In addition, CNC turning machine setup, programming, and operation are detailed. Upon completion, the student should be able to set up, program, and operate a 3-axis CNC turning machine to produce a 2½-axis part using CAM software. This course is aligned with NIMS certification standards.

MTT 220 CNC GRAPHICS: MILLING 3
Prerequisite: As determined by college.
 This course covers techniques involved in writing a program for a multi-axis computerized numeric control (CNC) milling machine using computer assisted manufacturing (CAM) software. In addition, CNC milling machine setup, programming, and operation are detailed. Upon completion, the student should be able to set up, program, and operate a 3-axis CNC milling machine to produce a 2½-axis part using CAM software. This course is aligned with NIMS certification standards.

MTT 241 CNC MILLING LAB I 3
Prerequisite: As determined by college.
 This course covers basic (3-axis) computer numeric control (CNC) milling machine setup and operating procedures. Upon completion, the student should be able to load a CNC program and setup and operate a 3-axis CNC milling machine to produce a specified part. Related safety, inspection, and process adjustment are also covered.

MTT 242 CNC MILLING LAB II 3
Prerequisite: As determined by college.
 This course covers advanced (including 4-axis) computer numeric control (CNC) milling machine setup and operating procedures. Upon completion, the student should be able to load a CNC program and setup and operate a CNC milling machine (including 4-axis) to produce a specified part. Related safety and inspection and process adjustment are also covered.

MTT 243 CNC TURNING LAB I 3
Prerequisite: As determined by college.
 This course covers basic computer numeric control (CNC) turning machine setup and operating procedures (inner diameter and outer diameter). Upon completion, the student should be able to load a CNC program and setup and operate a CNC turning machine to produce a simple part. Related safety and inspection and process adjustment are also covered.

MTT 244 CNC TURNING LAB II 3
Prerequisite: As determined by college.
 This course covers advanced computer numeric control (CNC) turning machine setup and operating procedures. Upon completion, the student should be able to load a CNC program and setup and operate a CNC turning machine to produce a specified part. Related safety and inspection and process adjustment are also covered.

MTT 281 SPECIAL TOPICS IN MACHINE TOOL TECHNOLOGY 3
Prerequisite: As determined by college.
 This course is a guided independent study of special projects in machine tool technology. Emphasis is placed on student needs. Upon completion, students should be able to demonstrate skills developed to meet specific needs.

MUSIC (MUS) Course Descriptions

MUS 101 MUSIC APPRECIATION 3
Prerequisite(s): As required by program
 This course is designed for non-music majors and requires no previous musical experience. It is a survey course that incorporates several modes of instruction including lecture, guided listening, and similar experiences involving music. The course will cover a minimum of tee (3) stylistic periods, provide a multi-cultural perspective, and include both vocal and instrumental genres. Upon completion, students should be able to demonstrate a knowledge of music fundamentals, the aesthetic/stylistic characteristics of historical periods, and an aural perception of style and structure in music.

MUS 111 MUSIC THEORY I 3
Prerequisite(s): MUS 110 or suitable placement score or and/or as required by program. Co-requisite: MUS 113, if ear training lab is a separate course
 This course introduces the student to the diatonic harmonic practices in the Common Practice Period. Topics include fundamental musical materials (rhythm, pitch, scales, intervals, diatonic harmonies) and an introduction to the principles of voice leading and harmonic progression. Upon completion, students should be able to demonstrate a basic competency using diatonic harmony through analysis, writing, sight singing, dictation and keyboard skills.

MUS 112 MUSIC THEORY II 1-4
Prerequisite(s): MUS 111 and/or as required by program. Co-requisite: MUS 114, if ear training lab is a separate course
 This course completes the study of diatonic harmonic practices in the Common Practice Period and introduces simple musical forms. Topics include principles of voice leading used in tee- and four-part triadic harmony and diatonic seventh chords, non-chord tones, cadences, poses and periods. Upon completion, students should be able to demonstrate competence using diatonic harmony through analysis, writing, sight singing, dictation and keyboard skills.

MUS 113 MUSIC THEORY LAB I 1
Prerequisite(s): MUS 110 or suitable placement score and/or as required by program. Co-requisite (s): MUS 111, if ear-training lab is a separate course
 This course provides the practical application of basic musical materials through sight singing; melodic, harmonic and rhythmic dictation; and keyboard harmony. Topics include intervals, simple triads, diatonic stepwise melodies, basic rhythmic patterns in simple and compound meter and four-part triadic progressions in root position. Upon completion, students should be able to write, sing and play intervals, scales, basic rhythmic patterns, diatonic stepwise melodies, simple triads and short four-part progressions in root position.

MUS 114 MUSIC THEORY 1
Prerequisite(s): MUS 113 and/or as required by program. Co-requisite(s): MUS 112, if ear training lab is a separate course
 This course continues the practical application of diatonic musical materials through sight singing; melodic, harmonic and rhythmic dictation; and keyboard harmony. Topics include intervals, scales, diatonic melodies with triadic arpeggiations, more complex rhythmic patterns in simple and compound meter and four-part diatonic progressions in all inversions. Upon completion, students should be able to write, sing and play all intervals, rhythmic patterns employing syncopations and beat divisions, diatonic melodies and four-part diatonic progressions.

MUS 115 FUNDAMENTALS OF MUSIC 3
Prerequisite(s): As required by program

This course is designed to teach the basic fundamentals of music and develop usable music skills for the classroom teacher. Topics include rhythmic notation, simple and compound meters, pitch notation, correct singing techniques, scales, keyboard awareness, key signatures, scales, intervals and harmony using I, IV, and V with a chordal instrument. Upon completion, students should be able to sing a song, harmonize a simple tune, demonstrate rhythmic patterns and identify musical concepts through written documentation.

MUS 211 MUSIC THEORY III 1-4
Prerequisite(s): MUS 112 and/or as required by program
Co-requisite(s): MUS 213, if ear training lab is a separate course
 This course introduces the student to the common harmonic practices in the Common Practice Period. Topics include secondary functions, modulatory techniques, and binary and ternary forms. Upon completion, students should be able to demonstrate competence using common harmony through analysis, writing, sight singing, dictation and keyboard skills.

MUS 212 MUSIC THEORY IV 1-4
Prerequisite(s): MUS 211 and/or as required by program
Co-requisite(s): MUS 214, if ear training lab is a separate course
 This course completes the study of common harmonic practices in the Common Practice Period and introduces the student to twentieth-century practices. Topics include the Neapolitan and augmented sixth chords, sonata form, late nineteenth-century tonal harmony and twentieth-century practices and forms. Upon completion, students should be able to demonstrate competence using common harmony and basic twentieth century techniques through analysis, writing, sight singing, dictation and keyboard skills.

MUS 213 MUSIC THEORY LAB III 1
Prerequisite(s): MUS 114 and/or as required by program
Co-requisite(s): MUS 211, if ear-training lab is a separate course
 This course provides the practical application of common musical materials through sight singing; melodic, harmonic and rhythmic dictation; and keyboard harmony. Topics include melodies with simple modulations, complex rhythms in simple and compound meter, and secondary function chords. Upon completion, students should be able to write, sing and play modulating melodies, rhythmic patterns with beat subdivisions and four-part common harmony.

MUS 214 MUSIC THEORY LAB IV 1
Prerequisite(s): MUS 213 and/or as required by program
Co-requisite(s): MUS 212, if ear-training lab is a separate course
 This course provides the practical application of common musical materials and simple twentieth-century practices through sight singing; melodic, harmonic and rhythmic dictation; and keyboard harmony. Topics include common and atonal melodies; complex rhythmic patterns in simple, compound and asymmetric meters; common chords and twentieth-century harmony. Upon completion, students should be able to write, sing and play common and atonal melodies, complex rhythms and meters, four-part common harmony and simple twentieth-century chord structures.

MUSIC ENSEMBLE (MUL)
 Course Description

MUL 101 CLASS PERFORMANCE INSTRUCTION 1
Prerequisite(s): As required by program
 Group instruction is available in voice, piano, strings, woodwinds, brass, percussion and fretted instruments for students with little or no previous training. Emphasis is placed on the rudiments of music, basic performance technique and general musicianship skills. Upon completion of one or a sequence of courses, students should be able to demonstrate a basic proficiency in singing or playing and a knowledge of music fundamentals.

NURSE ASSISTANT/AIDE (NAS) (HHA)
 Course Descriptions

NAS 100 LONG TERM CARE NURSING ASSISTANT 4
Prerequisite(s): As required by program
 This course fulfills the seventy-five (75) Omnibus Budget Reconciliation Act (OBRA) requirements for training of long-term care nursing assistants in preparation for certification through competency evaluation. Emphasis is placed on the development of the knowledge, attitudes, and skills required of the long-term care nursing assistant. Upon completion of this course, the student should demonstrate satisfactory performance on written examinations and clinical skills.

NAS 111 FUNDAMENTALS OF LONG TERM CARE 5
Prerequisite(s): As required by program
 This course provides the student with necessary theory and laboratory experiences for the development of skills required of the long term care nursing assistant. Emphasis is placed on infection control, safety, body mechanics, communications, observation and personal and restorative care. Upon completion of this course, students should be able to apply theoretical concepts to care of the resident/client and perform skills in accordance with the Omnibus Budget Reconciliation Act 1987 (OBRA) guidelines.

NAS 112 FUNDAMENTALS OF LONG TERM CARE CLINICAL 2
Prerequisite(s): As required by program
Co-requisite: NAS 111 and/or as required by program
 This course is designed to assist the student to develop the knowledge, attitudes and skills needed to perform basic nursing care safely and efficiently in a supervised long term care clinical setting. Emphasis is placed on the application of knowledge, attitudes and skills appropriate for the long term care nursing assistant. Upon completion of this course, the student should demonstrate beginning competence in the delivery of care to the client in a long-term care facility.

NAS 113 FUNDAMENTALS OF HOME HEALTH CARE 5
Prerequisite(s): As required by program
 This course provides the student with the necessary theory and laboratory experiences for the development of skills required to qualify as a Home Health Aide. Emphasis is placed on the acquisition of skills in communication, observation, mobility, personal care, and infection control necessary to care for the home-bound client of all ages. Upon completion of this course, the student should be able to apply concepts and skills in areas required by the Omnibus Budget Reconciliation Act (OBRA) and the National Association of Home Care.

NAS 114 HOME HEALTH AID CLINICAL 2
Prerequisite(s): As required by program
Co-requisite: NAS 113 and/or as required by program
 This course is designed to assist the student to develop knowledge, attitudes and skills needed to perform basic nursing care safely and efficiently in a supervised home health care clinical setting. Emphasis is placed on application of knowledge, attitudes and skills appropriate for the home health care aide. Upon completion of this course, the student will demonstrate beginning competence in care of the client in the home care setting.

NAS 115 CPR & BASIC FIRST AID 2
Prerequisite(s): As required by program
 This course is designed to help the student feel more confident and act appropriately in an emergency situation. Emphasis is placed on providing the student with theoretical concepts to develop skills in basic first aid and cardiopulmonary resuscitation. Upon successful course completion, which includes specific competencies in basic life support the student will receive appropriate course completion documentation.

NURSING (NUR)
 Course Descriptions

NUR 101 BODY STRUCTURE AND FUNCTION 4
Prerequisite(s): As required by program
 This course provides students with basic knowledge of the normal structure and function of the human body. Major content focuses on the interrelations among the organ systems and the relationship of each organ system to homeostasis. Medical terminology is integrated throughout course content. Upon completion of this course, students will be able to demonstrate basic knowledge of body systems, their interrelationships and associated medical terminology.

NUR 102 FUNDAMENTALS OF NURSING 6
Prerequisite(s): As required by program
 This course provides opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Students learn concepts and theories basic to the art and science of nursing. The role of the nurse as a member of the healthcare team is emphasized. Students are introduced to the concepts of client needs, safety, communication, teaching/learning, critical thinking, ethical-legal, cultural diversity, nursing history, and the program's philosophy of nursing. Additionally, this course introduces psychomotor nursing skills needed to assist individuals in meeting basic human needs. Skills necessary for maintaining microbial, physical, and psychological safety are introduced along with skills needed in therapeutic interventions. At the conclusion of this course students demonstrate competency in performing basic nursing skills for individuals with common health alterations.

NUR 103 HEALTH ASSESSMENT 1
Prerequisite(s): As required by program
 This course is designed to provide students the opportunity to learn and practice history taking and physical examination skills with individuals of all ages, with emphasis on the adult. The focus is on symptom analysis along with physical, psychosocial, and growth and development assessments. Students will be able to utilize critical thinking skills in identifying health alterations, formulating nursing diagnoses and documenting findings appropriate to nursing.

NUR 104 INTRODUCTION TO PHARMACOLOGY 1
Prerequisite(s): As required by program
 This course provides opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. This course introduces students to basic principles of pharmacology and the knowledge necessary to safely administer medication. Course content includes legal implications, pharmacokinetics, pharmacodynamics, calculations of drug dosages, medication administration, and an overview of drug classifications. Students will be able to calculate and administer medications.

NUR 105 ADULT NURSING 8
Prerequisite(s): As required by program
 This course provides opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Emphasis is placed on providing care to individuals undergoing surgery, fluid and electrolyte imbalance, and common alterations in respiratory, musculoskeletal, gastro-intestinal, cardiovascular, endocrine, and integumentary systems. Nutrition, pharmacology, communication, cultural, and community concepts are integrated.

NUR 106 MATERNAL AND CHILD NURSING 5
Prerequisite(s): As required by program
 This course focuses on the role of the nurse in meeting the physiological, psychosocial, cultural and developmental needs of the maternal and child client. Course content includes antepartal, intrapartal, and postpartal care, complications of pregnancy, newborn care, human growth and development, pediatric care, and selected pediatric alterations. Nutrition, pharmacology, cultural diversity, use of technology, communication, anatomy and physiology review, medical terminology, critical thinking, and application of the nursing process are integrated throughout this course. Upon completion of this course students will be able to provide and manage care for maternal and pediatric clients in a variety of settings.

NUR 107 ADULT/CHILD NURSING 8
Prerequisite(s): As required by program
 This course provides students with opportunities to develop competencies necessary to meet the needs of individuals throughout the life span in a safe, legal, and ethical manner using the nursing process in a variety of settings. Emphasis is placed on providing care to individuals experiencing complex alterations in: sensory/perceptual reproductive, endocrine, genitourinary, neurological, immune, cardiovascular, and lower gastrointestinal systems. Additional instruction is provided for care for clients experiencing burns, cancer, and emergent conditions. Nutrition, pharmacology, therapeutic communication, community, cultural diversity, health promotion, error prevention, critical thinking, impacts on maternal and child clients are integrated throughout the course.

NUR 108 PSYCHOSOCIAL NURSING 3
Prerequisite(s): As required by program
 This course is designed to provide an overview of psychosocial adaptation and coping concepts used when caring for clients with acute and chronic alterations in mental health in a variety of settings. Topics include therapeutic communication skills, normal and abnormal behaviors, treatment modalities, and developmental needs. Upon completion of this course, students will demonstrate the ability to assist clients in maintaining psychosocial integrity through the use of the nursing process.

NUR 109 ROLE TRANSITION FOR THE PRACTICAL NURSE 3
Prerequisite(s): As required by program
 This course provides students with opportunities to gain knowledge and skills necessary to transition from student to practicing nurse. Content includes a discussion of current issues in health care, practical nursing leadership and management, professional practice issues, and transition into the workplace. Emphasis is placed on NCLEX-PN test-taking skills, computer-assisted simulations and practice tests, development of a prescriptive plan for remediation, and review of selective content, specific to the practice of practical nursing.

NUR 200 NURSING CAREER MOBILITY ASSESSMENT 6
Prerequisite(s): As required by program
 This course is designed to provide LPN mobility students self-directed opportunities to prepare for placement into the third semester of the ADN program. Emphasis is on assessment and validation of selected theory, process, and skills covered in NUR 102, 103, 104, 105, and 106. Upon successful completion of assessments, students are eligible for entry into NUR 201. Students who successfully complete this course are awarded 15 non-traditional at the completion of the LPN mobility curriculum.

NUR 201 NURSING TOUGH THE LIFESPAN I 5
Prerequisite(s): As required by program
 This course provides opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Students manage and provide collaborative care to clients who are experiencing selected alterations in gastrointestinal, reproductive, sensory, and endocrine systems in a variety of settings. Additional instruction is provided for oncology, mental health, teaching/learning concepts, and advanced dosage calculations. Nutrition, pharmacology, communication, cultural, and community concepts are integrated.

NUR 202 NURSING TOUGH THE LIFESPAN II 7
Prerequisite(s): As required by program
 This course builds upon previous instruction and provides additional opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Students manage and provide collaborative care to clients who are experiencing selected alterations in cardiovascular, hematologic, immune, and genitourinary systems in a variety of settings. Additional instruction is provided for psychiatric disorders, and high-risk obstetrics. Teaching/learning concepts, advanced dosage calculations, nutrition, pharmacology, communication, cultural, and community concepts are integrated.

NUR 203 NURSING TOUGH THE LIFESPAN III 6
Prerequisite(s): As required by program
 This course builds upon previous instruction and provides additional opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Students manage and provide collaborative care to clients who are experiencing selected alterations in cardiovascular, respiratory, and neurological systems in a variety of settings. Additional instruction is provided care for selected mental health disorders, selected emergencies, multiple organ dysfunction syndrome and related disorders. Teaching/learning concepts, advanced dosage calculations, nutrition, pharmacology, communication, cultural, and community concepts are integrated.

NUR 204 ROLE TRANSITION FOR THE REGISTERED NURSE 6
Prerequisite(s): As required by program
 This course provides students with opportunities to gain knowledge and skills necessary to transition from student to registered nurse. Content includes current issues in health care, nursing leadership and management, professional practice issues for registered nurses, and transition into the workplace. Additional instruction is provided for preparing for the NCLEX-RN.

OFFICE ADMINISTRATION (OAD)
 Course Descriptions

OAD 100 BASIC KEYBOARDING 3
Prerequisite(s): As required by program
 This course is designed to enable the student to develop touch-keyboarding skills for efficient use of the typewriter or microcomputer through classroom instruction and outside lab. Emphasis is on speed and accuracy in keying alphabetic, symbol, and numeric information. Upon completion, the student should be able to demonstrate proper technique while keying on a typewriter or microcomputer keyboard.

OAD 101 BEGINNING KEYBOARDING 3
Prerequisite(s): As required by program
 This course is designed to enable the student to use the touch method of keyboarding through classroom instruction and outside lab. Emphasis is on speed and accuracy in keying alphabetic, symbol, and numeric information using the typewriter or microcomputer keyboard. Upon completion, the student should be able to demonstrate proper technique and an acceptable rate of speed and accuracy, as defined by the course syllabus, in the production of basic business documents such as, letters, reports, and tables, etc.

OAD 102 KEYBOARDING SKILL BUILDING 3
Prerequisite(s): OAD 101 and/or as required by program
 This course is designed to develop speed and accuracy in the use of the keyboard through classroom instruction and outside lab. Emphasis is on identification of deficiencies and incorrect technique through the use of individualized prescriptive practice. Upon completion the student should be able to demonstrate improved speed and accuracy.

OAD103 INTERMEDIATE KEYBOARDING 3
Prerequisite(s): OAD 101 and/or as required by program
 This course is designed to assist the student in increasing speed and accuracy using the touch method of keyboarding through classroom instruction and outside lab. Emphasis is on the production of business documents such as memoranda, letters, reports, tables, and outlines. Upon completion, the student should be able to demonstrate proficiency and an acceptable rate of speed and accuracy, as defined by the course syllabus, in the production of business documents.

OAD104 ADVANCED KEYBOARDING 3
Prerequisite(s): OAD 103 and/or as required by program
 This course is designed to assist the student in continuing to develop speed and accuracy using the touch method of keyboarding through classroom instruction and outside lab. Emphasis is on the production of business documents using decision-making skills. Upon completion, the student should be able to demonstrate proficiency and an acceptable rate of speed and accuracy, as defined by the course syllabus, in the production of high-quality business documents.

OAD 110 NAVIGATING WINDOWS 3
Prerequisite(s): As required by program
 This course is designed to introduce the student to the Windows environment through classroom instruction and outside lab. Emphasis is on Windows as a graphical user interface and includes operations and applications that use the Windows environment. Upon completion, the student should be able to demonstrate proficiency in the operation and management of hardware and software as defined by the course syllabus.

OAD 125 WORD PROCESSING 3
Prerequisite(s): OAD 101 and/or as required by program
 This course is designed to provide the student with basic word processing skills through classroom instruction and outside lab. Emphasis is on the utilization of software features to create, edit and print common office documents. Upon completion, the student should be able to demonstrate the ability to use industry-standard software to generate appropriately formatted, accurate, and attractive business documents such as memo, letters and reports.

OAD 126 ADVANCED WORD PROCESSING 3
Prerequisite(s): OAD 125 and/or as required by program
 This course is designed to increase student proficiency in using the advanced word processing functions through classroom instruction and outside lab. Emphasis is on the use of industry-standard software to maximize productivity. Upon completion, the student should be able to demonstrate the ability to generate complex documents such as forms, newsletters, and multi-page documents.

OAD130 ELECTRONIC CALCULATIONS 3
Prerequisite(s): As required by program
 This course is designed to teach the touch system and problem-solving. Emphasis is on basic mathematical functions. Upon completion, the student should be able to demonstrate an acceptable rate of speed and accuracy, as defined by the course syllabus, to solve problems based on typical business applications.

OAD 200 MACHINE TRANSCRIPTION 3
Prerequisite(s): OAD 103 and/or as required by program
 This course is designed to develop marketable skills in transcribing various forms of dictated material through classroom instruction and outside lab. Emphasis is on the use of microcomputers and a commercial word processing package. Upon completion, the student should be able to accurately transcribe documents from dictated recordings.

OAD 201 LEGAL TERMINOLOGY 3
Prerequisite(s): As required by program
 This course is designed to familiarize the student with commonly used legal terms. Emphasis is on the word root building system combining Greek and Latin prefixes,

suffixes, word roots, and forms that make medical terms easy to use. Upon completion, the student should be able to understand and use medical legal terminology.

OAD 202 LEGAL TRANSCRIPTION 3
Prerequisite(s): OAD 125 and/or as required by program
 This course is designed to familiarize students with legal terms and provide transcription skill development in the production of legal correspondence, forms, and court documents through classroom instruction and outside lab. Emphasis is on transcribing legal documents from dictated recordings. Upon completion, students should be able to demonstrate the ability to transcribe accurately appropriately formatted legal documents.

OAD 203 LEGAL OFFICE PROCEDURES 3
Prerequisite(s): OAD 125 and/or as required by program
 This course is designed to provide an awareness of the responsibilities and opportunities of professional support personnel in a legal environment through classroom instruction and outside lab. Emphasis is on legal terminology, the production of appropriate forms and reports, and the importance of office procedures and practices. Upon completion, the student should be able to perform office support tasks required for employment in a legal environment.

OAD 211 MEDICAL TERMINOLOGY 3
Prerequisite(s): As required by program
 This course is designed to familiarize the student with medical terminology. Emphasis is on the spelling, definition, pronunciation, and usage of legal terms. Upon completion, the student should be able to communicate effectively using medical terminology.

OAD 212 MEDICAL TRANSCRIPTION 3
Prerequisite(s): OAD 103 and/or as required by program
 This course is designed to orient students to standard medical reports, correspondence, and related documents transcribed in a medical environment through classroom instruction and outside lab. Emphasis is on transcribing medical records and operating a transcribing machine efficiently. Upon completion, the student should be able to accurately transcribe medical documents from dictated recordings.

OAD 213 ADVANCED MEDICAL TRANSCRIPTION 3
Prerequisite(s): OAD 212 and/or as required by program
 This course is designed to develop skill in the transcription of documents generated in the medical office through classroom instruction and outside lab. Emphasis is on diagnostic studies, and laboratory, radiology, and pathology reports. Upon completion, the student should be able to demonstrate proficiency in the preparation of a variety of reports and forms used in the medical environment.

OAD 214 MEDICAL OFFICE PROCEDURES 3
Prerequisite(s): OAD 101 and/or as required by program
 This course is designed to provide an awareness of the responsibilities and opportunities of professional support personnel in a medical environment through classroom instruction and outside lab. Emphasis is on medical terms, the production of appropriate forms and reports, and the importance of office procedures and practices. Upon completion, the student should be able to perform office support tasks required for employment in a medical environment.

OAD 215 HEALTH INFORMATION MANAGEMENT 3
Prerequisite(s): As required by program
 This course is designed to promote an understanding of the structure, analysis and management of medical records through classroom instruction and outside lab. Emphasis is on filing and managing medical records; coding of diseases, operations and procedures; and the legal aspects of medical records. Upon completion, the student should be able to maintain medical records efficiently.

OAD 217 OFFICE MANAGEMENT 3
Prerequisite(s): As required by program
 This course is designed to develop skills necessary for supervision of office functions. Emphasis is on issues relating to the combination of people and technology in achieving the goals of business in a culturally diverse workplace, including the importance of office organization, teamwork, workplace ethics, office politics, and conflict-resolution skills. Upon completion, the student should be able to demonstrate use of the tools necessary for effective supervision of people and technology in the modern office.

OAD 218 OFFICE PROCEDURES 3
Prerequisite(s): OAD 101 and/or as required by program
 This course is designed to develop an awareness of the responsibilities and opportunities of the office professional through classroom instruction and outside lab. Emphasis is on current operating functions, practices and procedures, work habits, attitudes, oral and written communications, and professionalism. Upon completion, the student should be able to demonstrate the ability to effectively function in an office support role.

OAD 227 INFORMATION PROCESSING CONCEPTS 3
Prerequisite(s): OAD 101 and/or as required by program
 This course is designed to introduce the basic concepts and applications of office information systems. Emphasis is on components and capabilities of systems used to produce, communicate and manage information and career paths for office professionals. Upon completion, the student should be able to demonstrate knowledge of office information systems.

OAD 230 ELECTRONIC PUBLISHING 3
Prerequisite(s): As required by program
 This course is designed to introduce the student to the elements and techniques of page design, layout and typography through classroom instruction and outside lab. Emphasis is on the use of current commercial desktop publishing software, graphic tools, and electronic input/output devices to design and print high-quality publications such as newsletters, brochures, catalogs, forms, and flyers. Upon completion, the student should be able to utilize proper layout and design concepts in the production of attractive desktop published documents.

OAD 231 OFFICE APPLICATIONS 3
Prerequisite(s): As required by program
 This course is designed to provide the student with a foundation in the use of computerized equipment and application software as tools in the performance of a variety of office tasks through classroom instruction and outside lab. Emphasis is on the role of the office professional in the selection and application of appropriate technology to the specific task or combination of tasks. Upon completion, the student should be able to demonstrate proficiency in the selection of appropriate computerized tools to complete designated tasks.

OAD 232 THE ELECTRONIC OFFICE 3
Prerequisite(s): As required by program
 This course is designed to enable the student to develop skill in the use of integrated software through classroom instruction and outside lab. Emphasis is on the use of computerized equipment, software, networking, and communications technology. Upon completion, the student should be able to satisfactorily perform a variety of office tasks using current technology.

OAD 233 TRENDS IN OFFICE TECHNOLOGY 3
Prerequisite(s): As required by program
 This course is designed to address current trends in office technology through classroom instruction and outside lab. Emphasis is on technology relevant to the office environment such as electronic mail, multimedia interaction, presentation hardware and software, and Internet use. Upon completion, the student should be able to demonstrate an awareness of current technological applications for the modern office.

OAD 240 CPS REVIEW 3
Prerequisite(s): As required by program
 This course, Certified Professional Secretary Review, is designed to provide skills and knowledge in behavioral science, office administration and technology, accounting and business, business law, economics, management, and communication. Emphasis is on the knowledge and skills required of those who qualify as professional administrative support. Upon completion, the student should be able to demonstrate knowledge and successful performance of skills in a variety of business-related areas.

OAD 241 OFFICE CO-OP 3
Prerequisite(s): As required by program
 This course is designed to provide the student with an opportunity to work in an office environment. Emphasis is on the integration of classroom learning with on-the-job experiences that relate meaningfully to office careers. Upon completion, the student should be able to demonstrate the ability to apply knowledge and skills gained in the classroom to an actual work situation.

OAD 242 OFFICE INTERNSHIP 3
Prerequisite(s): As required by program
 This course is designed to provide the students with an opportunity to work in an office environment. Emphasis is on the efficient and accurate performance of job tasks. Upon completion, the student should be able to demonstrate successful performance of skills required in an office support position.

OAD 243 SPREADSHEET APPLICATIONS 3
Prerequisite(s): As required by program
 This course is designed to provide the student with a firm foundation in the use of computerized equipment and appropriate software in performing spreadsheet tasks through classroom instruction and outside lab. Emphasis is on spreadsheet terminology and design, common formulas, proper file and disk management procedures. Upon completion, the student should be able to use spreadsheet features to design, format, and graph effective spreadsheets.

OAD 244 DATABASE CONCEPTS 3
Prerequisite(s): OAD 101 and/or as required by program
 This course is designed to provide the student with an understanding of the concepts of database management through classroom instruction and outside lab. Emphasis is on the use of database software for business applications. Upon completion, the student should be able to create and manipulate data files and format output as documents and reports.

OAD 245 DATA ENTRY 3
Prerequisite(s): OAD 101 and/or as required by program
 This course is designed to provide the student with a firm foundation in the use of computerized equipment and appropriate software in performing data-entry tasks through classroom instruction and outside lab. Emphasis is on the basic features of data-entry software, terminology, and proper file and disk management procedures. Upon completion, the student should be able to demonstrate a basic understanding of data-entry applications.

OAD 246 OFFICE GRAPHICS AND PRESENTATIONS 3
Prerequisite(s): OAD 125 and/or as required by program
 This course is designed to provide the student with a foundation in the use of the computer and appropriate application software in the production of business slides and presentations through classroom instruction and outside lab. Emphasis is on available software tools, presentation options and design as well as such presentation considerations as the make-up of the target audience. Upon completion, the student should be able to demonstrate the ability to design and produce a business presentation.

OAD 247 SPECIAL PROJECTS 3
Prerequisite(s): OAD 125 and/or as required by program
 This course is designed to provide the student with an opportunity for the expansion of knowledge in an area of special interest under the direct supervision of instructor. Emphasis is on the student's use of modern technology to study, research and/or accumulate additional knowledge or improve skills in a specialized office support area. Upon completion, the student should be able to demonstrate enhanced knowledge and/or skill gained through an individualized project.

PHYSICAL EDUCATION (PED) Course Descriptions

PED 100 FUNDAMENTALS OF FITNESS 3
Prerequisite(s): As required by program
 This lecture course includes the basic principles of physical education and physical fitness. It explores psychological and physiological effects of exercise and physical fitness, including effects on the human skeleton, muscle development, respiration, and coordination. It is viewed as an introduction to such laboratory courses as climaticness, weight training, and conditioning. The course may also include fitness evaluation, development of individual fitness programs, and participation in fitness activities.

PED 101 SLIMNASTICS BEGINNING 1
 This course provides an individualized approach to physical fitness, wellness, and other health-related factors. Emphasis is placed on the scientific basis for setting up and engaging in personalized physical fitness programs. Upon completion, students should be able to set up and implement and individualized physical fitness program.

PED 103 BEGINNING WEIGHT TRAINING 1
Prerequisite(s): As required by program
 This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight-training program.

PED 104 INTERMEDIATE WEIGHT TRAINING 1
Prerequisite(s): As required by program
 This course covers advanced levels of weight training. Emphasis is placed on meeting individual training goals and addressing weight training needs and interests. Upon completion, students should be able to establish and implement an individualized advanced weight-training program.

PED 105 PERSONAL FITNESS 1
 This course is designed to provide the student with information allowing him/her to participate in a personally developed fitness program. Topics include cardiovascular, strength, muscular endurance, flexibility and body composition.

PED 107 BEGINNING AEROBICS DANCE 1
Prerequisite(s): PED 106 and/or as required by program
 This course introduces the fundamentals of step and dance aerobics. Emphasis is placed on basic stepping up, basic choreographed dance patterns, and cardiovascular fitness; and upper body, floor, and abdominal exercises. Upon completion, students should be able to participate in basic dance aerobics.

PED 108 INTERMEDIATE AEROBICS DANCE 1
Prerequisite(s): PED 107 and/or as required by program
 This course provides a continuation of step aerobics. Emphasis is placed on a wide variety of choreographed step and dance patterns; cardiovascular fitness; and upper body, abdominal, and floor exercises. Upon completion, students should be able to participate in and design an aerobics routine.

PED 123 BEGINNING GOLF 1
Prerequisite(s): As required by program
 This course emphasizes the fundamentals of golf. Topics include the proper grips, stance, alignment, swings for the short and long game, putting, and the rules and etiquette of golf. Upon completion, students should be able to perform the basic golf shots and demonstrate a knowledge of the rules and etiquette of golf.

PED 124 INTERMEDIATE GOLF 1
Prerequisite(s): PED 123 and/or as required by program
 This course covers the more advanced phases of golf. Emphasis is placed on refining the fundamental skills and learning more advanced phases of the games such as club selection, trouble shots, and course management. Upon completion, students should be able to demonstrate the knowledge and ability to play a recreational round of golf.

PED 131 BEGINNING BADMINTON 1
Prerequisite(s): As required by program
 This course covers the fundamentals of badminton. Emphasis is placed on the basics of serving, clears, drops, drives, smashes, and the rules and strategies of singles and doubles. Upon completion, students should be able to apply these skills in playing situations.

PED 132 INTERMEDIATE BADMINTON 1
Prerequisite(s): As required by program
 This course provides the student to participate in intermediate level competition in badminton. Emphasis is placed on advanced skills and strategies in badminton.

PED 133 BEGINNING TENNIS 1
Prerequisite(s): As required by program
 This course emphasizes the fundamentals of tennis. Topics include basic strokes, rules, etiquette, and court play. Upon completion, students should be able to play recreational tennis.

PED 140 BEGINNING SWIMMING 1
Prerequisite(s): As required by program
 This course is designed for non-swimmers and beginners. Emphasis is placed on developing confidence in the water, learning water safety, acquiring skills in floating, and learning elementary strokes. Upon completion, students should be able to demonstrate safety skills and be able to tread water, back float, and use the crawl stroke for 20 yards.

PED 141 INTERMEDIATE SWIMMING 1
Prerequisite(s): PED 140 and/or as required by program
 This course is designed for those who have mastered basic swimming skills. Emphasis is placed on refining basic skills and learning new swim strokes. Upon completion, students should be able to demonstrate the four basic strokes, the scissor kick, the underwater swim, and other related skills.

PED 143 AQUATIC EXERCISE 1
 This course introduces rhythmic aerobic activities and aquatic exercises performed in water. Emphasis is placed on increasing cardiovascular fitness levels, muscular strength, muscular endurance, and flexibility. Upon completion, students should be able to participate in an individually-paced exercise program.

PED 171 BEGINNING BASKETBALL 1
Prerequisite(s): As required by program
 This course covers the fundamentals of basketball. Emphasis is placed on skill development, knowledge of the rules, and basic game strategy. Upon completion, students should be able to participate in recreational basketball.

PED 176 BEGINNING VOLLEYBALL 1
Prerequisite(s): As required by program
 This course covers the fundamentals of volleyball. Emphasis is placed on the basics of serving, passing, setting, spiking, blocking, and the rules and etiquette of volleyball. Upon completion, students should be able to participate in recreational volleyball.

PED 188 YOGA 1
 This course introduces basic instructions in yoga for beginners. Emphasis is placed on instruction in gentle stretching, breathing practices, progressive deep relaxation, and posture. Upon completion, students should be able to practice in and appreciate the benefits of the activity.

PED 200 FOUNDATIONS OF PHYSICAL EDUCATION 3
Prerequisite(s): As required by program
 In this course, the history, philosophy, and objectives of health, physical education, and recreation are studied with emphasis on the physiological, sociological, and psychological values of physical education. It is required of all physical education majors.

PED 216 SPORTS OFFICIATING 3
Prerequisite(s): As required by program
 This course surveys the basic rules and mechanics of officiating a variety of sports, including both team and individual sports. In addition to class work, students will receive at least 3 of practical experience in officiating.

PHILOSOPHY (PHL) Course Descriptions

PHL 206 ETHICS AND SOCIETY 3
Prerequisite(s): As required by program
 This course involves the study of ethical issues which confront individuals in the course of their daily lives. The focus is on the fundamental questions of right and wrong, of human rights, and of conflicting obligations. The student should be able to understand and be prepared to make decisions in life regarding ethical issues.

PHYSICAL SCIENCE (PHS) Course Descriptions

PHS 111 PHYSICAL SCIENCE 4
Prerequisite(s): As required by program
 This course provides the non-technical student with an introduction to the basic principles of geology, oceanography, meteorology, and Astronomy. Laboratory is required.

PHS 112 PHYSICAL SCIENCE II 4
Prerequisite(s): As required by program
 This course provides the non-technical student with an introduction to the basic principle of chemistry and physics. Laboratory is required.

PHS 120 ENVIRONMENTAL SCIENCE 4
Prerequisite(s): As required by program
 This course is an interdisciplinary course designed to give the non-science major an introductory survey of the environment. The environment will be studied with an emphasis on topics such as air, soil, water, wild life, forestry and solid waste pollution. Laboratory is required and will emphasize field studies and experimentation.

PHS 121 APPLIED PHYSICAL SCIENCE I 4
Prerequisite(s): As required by program
 This course introduces the general principles of physics and chemistry. Topics include measurement, motion, Newton's laws of motion, momentum, energy, work, power, heat, thermodynamics, waves, sound, light, electricity, magnetism, and chemical principles. Upon completion, students should be able to demonstrate an understanding of the

physical environment and be able to apply the scientific principles to observations experienced.

PHS 122 APPLIED PHYSICAL SCIENCE II 4

Prerequisite(s): As required by program

This course introduces the principles of nuclear energy, modern physics, geology, oceanography, meteorology, and astronomy. Topics include nuclear chemistry, relativity, composition of the earth, geologic processes and time, ocean currents and tides, eroding beaches, climate, weather, atmospheric influences, and the solar system. Upon completion, students should be able to apply the scientific principles to observations experienced.

PHS 230 INTRODUCTION TO METEOROLOGY 4

Prerequisite(s): As required by program

This course is an introductory survey of meteorology emphasizing the hydrologic cycle, cloud formation, weather maps, forecasting, and wind systems. Local weather systems will be given detailed study. Laboratory is required.

**PHYSICS (PHY)
Course Descriptions**

PHY 201 GENERAL PHYSICS I —TRIG BASED 4

Prerequisite(s): MTH 113 or equivalent and/or as required by program

This course is designed to cover general physics at a level that assures previous exposure to college algebra, basic trigonometry. Specific topics include mechanics, properties of matter and energy, thermodynamics, and periodic motion. A laboratory is required.

PHY 202 GENERAL PHYSICS II —TRIG BASED 4

Prerequisite(s): PHY 201 and/or as required by program

This course is designed to cover general physics using college algebra and basic trigonometry. Specific topics include wave motion, sound, light optics, electrostatics, circuits, magnetism, and modern physics. Laboratory is required.

PHY 213 GENERAL PHYSICS WITH CAL I 4

Prerequisite(s): MTH 125 and/or as required by program

This course provides a calculus-based treatment of the principle subdivisions of classical physics: mechanics and energy, including thermodynamics. Laboratory is required.

PHY 214 GENERAL PHYSICS WITH CALCULUS II 4

Prerequisite(s): PHY 213 and/or as required by program

This course provides a calculus-based study in classical physics. Topics included are: simple harmonic motion, waves, sound, light, optics, electricity and magnetism. Laboratory is required.

PHY 218 MODERN PHYSICS 4

Prerequisite(s): PHY 214 and MTH 227

The focus of this course is the development of the theory of relativity, the old quantum theory of Planck, Einstein, Bo and Sommerfeld, and the new quantum physics of Scoedinger, Heisenberg, Dirac and Pauli. Laboratory experiments illustrate the principles discussed and included, but are not limited to, determination of speed of light, charge and mass ratio of the electron, the Planck constant and the Rydberg constant. Laboratory is required. This course is offered on a demand basis only.

**PLUMBING (PLB)
Course Descriptions**

PLB 111 INTRODUCTION TO PLUMBING 3

Prerequisite: As required by program.

This course covers fundamental plumbing principles, practices, and history. Topics include basic plumbing principles, safety, job seeking skills, blueprint reading, plumbers' math, shop orientation, and school policy. Upon completion, students will be able to seek employment, understand basic plumbing principles, read and interpret blueprints, work safely, and use formulas to solve plumbing problems involving measurement and layouts. **CORE NDC**

PLB 112 PLUMBING APPLICATIONS 3

Prerequisite: As required by program. Corequisite: PLB 111.

This course is an application of PLB 111. Topics include, orientation, basic plumbing principles, safety, history, plumber's math, job seeking skills, interpreting drawings, making drawings using rough-in sheets, and measurements. Upon completion students will be able to apply basic plumbing principles. **CORE NDC**

PLB 113 PIPES AND FITTINGS 3

Prerequisite: As required by program.

This course includes the theory of joining pipe and fittings. Topics include, methods of joining pipe and fittings, selecting and using power tools, and methods of securing piping. Upon completion students will be able to identify pipe and fittings, identify tools, properly care for tools and identify various types of pipe securing devices. **CORE NDC**

PLB 115 PRESSURE AND NON-PRESSURE SYSTEMS 3

Prerequisite: As required by program.

This course covers pressure and non-pressure systems including piping for potable water, drainage, waste, vent, gas, air, and water. Topics include types of plumbing systems, and system design and size. Upon completion, students will be knowledgeable of system functions. **CORE NDC**

PLB 116 PRESSURE AND NON-PRESSURE SYSTEMS APPLICATIONS 3

Prerequisite: As required by program. Corequisite: PLB 115.

This course is an application of PLB 115. Emphasis is on the different kinds of plumbing systems, their design, installation and function. Upon completion, students will be able to rough-in plumbing systems. **CORE NDC**

PLB 117 PLUMBING CODES 3

Prerequisite: As required by program.

This course includes reading and interpreting the Southern Standard Code (SBCCI), local codes and general regulations. Emphasis is on basic principles, definitions, material, facility requirements, and technical review. Upon completion, students will be able to read and interpret state and local codes. **CORE NDC**

PLB 118 CODE APPLICATION 3

Prerequisite: As required by program. COREQUISITE: PLB 117.

This course is an application of PLB 117. Emphasis is on fixture unit value, sizing systems, minimum plumbing requirements and construction of pressure and non-pressure systems according to code. Upon completion students will be able to calculate and construct pressure and non-pressure systems. **CORE NDC**

PLB 211 PLUMBING AND REPAIR AND INSTALLATION 3

Prerequisite: As required by program.

This course enables students to read and follow schematics/diagrams/rough-in sheets to install or repair plumbing fixtures, to troubleshoot and make repairs. Topics include removing, replacing and repairing plumbing fixtures, new installations and troubleshooting. Upon completion, students will be able to make plumbing repairs and install plumbing fixtures. **NDC**

PLB 212 PLUMBING REPAIR AND INSTALLATION LABORATORY 3

Prerequisite: As required by program. Co-requisite: PLB 211.

This course is an application of PLB 211. Topics include repairing and installing plumbing fixtures, and choosing appropriate fixtures for the job. Upon completion, students will be able to install new fixtures and remove, repair, and replace existing plumbing fixtures. **NDC**

**POLITICAL SCIENCE (POL)
Course Descriptions**

POL 200 INTRODUCTION TO POLITICAL SCIENCE 3

Prerequisite(s): As required by program

This course is an introduction to the field of political science tough examination of the fundamental principles, concepts, and methods of the discipline, and the basic political processes and institutions of organized political systems. Topics include approaches to political science, research methodology, the state, government, law, ideology, organized political influences, governmental bureaucracy, problems in political democracy, and international politics. Upon completion, students should be able to identify, describe, define, analyze, and explain relationships among the basic principles and concepts of political science and political processes and institutions of contemporary political systems.

POL 211 AMERICAN NATIONAL GOVERNMENT 3

Prerequisite(s): As required by program

This course surveys the background, constitutional principles, organization, and operation of the American political system. Topics include the U. S. Constitution, federalism, civil liberties, civil rights, political parties, interest groups, political campaigns, voting behavior, elections, the presidency, bureaucracy, Congress, and the justice system. Upon completion, students should be able to identify and explain relationships among the basic elements of American government and function as more informed participants of the American political system.

POL 220 STATE AND LOCAL GOVERNMENT 3

Prerequisite(s): As required by program

This course is a study of the forms of organization, functions, institutions, and operation of American state and local governments. Emphasis is placed on the variety of forms and functions of state and local governments, with particular attention to those in Alabama and to the interactions between state and local government and the national government. Upon completion, students should be able to identify elements of and explain relationships among the state, local, and national governments of the U.S., and function as more informed participants of state and local political systems.

**PSYCHOLOGY (PSY)
Course Descriptions**

PSY 100 ORIENTATION 1

Prerequisite(s): As required by program

This course is designed to introduce the student to college life, responsibilities, rules, and regulations.

PSY 200 GENERAL PSYCHOLOGY 3

Prerequisite(s): As required by program

This course is a survey of behavior with emphasis upon psychological processes. This course includes the biological bases for behavior, thinking, emotion, motivation, and the nature and development of personality.

PSY 210 HUMAN GROWTH AND DEVELOPMENT 3

Prerequisite(s): PSY 200 and/or as required by program

This course is the study of the psychological, social, and physical factors that affect human behavior from conception to death.

PSY 211 CHILD GROWTH AND DEVELOPMENT 3

Prerequisite(s): PSY 200 and/or as required by program

This course is a systematic study of the behavior and psychological development of the child from conception to adolescence. Emphasis will be placed on principles underlying physical, mental, emotional and social development, methods of child study, and practical implications.

PSY 217 PSYCHOLOGY OF DEATH AND DYING 3

Prerequisite(s): As required by program

This course is a study of the special psychological adjustments surrounding the issue of death and dealing with the terminally ill.

PSY 220 HUMAN SEXUALITY 3

Prerequisite(s): As required by program

This course is a comprehensive and integrated approach to human sexuality emphasizing biological, psychological, social and emotional aspects.

PSY 230 ABNORMAL PSYCHOLOGY 3

Prerequisite(s): PSY 200 and/or as required by program

This course is a survey of abnormal behavior and its social and biological origins. The anxiety related disorders, psychoses, personality disorders and mental deficiencies will be covered.

PSY 276 HUMAN RELATIONS 3

Prerequisite(s): As required by program

This course focuses on readings, inter- and intrapersonal experiences, individual testing, employer visits and open discussions. Its goal is to assist the student in making a successful transition from classroom to the world of work.

**READING—DEVELOPMENTAL (RDG)
Course Descriptions**

RDG 085 DEVELOPMENTAL READING III 4

Prerequisite(s): RDG 084 or equivalent placement score and/or as required by program

This course is designed to assist students whose placement test scores indicate serious difficulty with decoding skills, comprehension, vocabulary, and study skills.

RDG 114 & RDG114A CRITICAL READING FOR COLLEGE 2-3

Prerequisite(s): College test score placement or permission of the instructor and/or as required by program

This course is designed to enhance critical reading skills. Topics include vocabulary enrichment, reading flexibility, metacognitive strategies, and advanced comprehension skills, including analysis and evaluation. Upon completion, students should be able to demonstrate comprehension and analysis and respond effectively to material across disciplines. *RDG114 is for Career Tech. students and RDG114A is for college transfer students.

**RELIGION (REL)
Course Descriptions**

REL 151 SURVEY OF THE OLD TESTAMENT 3

Prerequisite(s): As required by program

This course is an introduction to the content of the Old Testament with emphasis on the historical context and contemporary theological and cultural significance of the Old Testament.

REL 152 SURVEY OF THE OLD TESTAMENT 3

Prerequisite(s): As required by program

This course is a survey of the books of the New Testament with special attention being focused on the historical and geographical settings. The student should have an understanding of the books of the New Testament and the cultural and historical events associated with these writings.

**REAL ESTATE (RLS)
Course Descriptions**

RLS 101 REAL ESTATE PRINCIPLES 4

Prerequisite: As required by program.

This is an introductory real estate course providing the necessary terminology, background, and understanding of real estate principles. Topics include history of property ownership, real estate finance, real estate law, and the mechanics of listing and closing the sale. It is designed to assist those preparing for the real estate salesman's licensing examination in Alabama.

RLS 108 REAL ESTATE MATH 3

Prerequisite: RLS 101.

This course is a study of the mathematics used in real estate. It includes mortgage lending calculations, tax calculations, interest calculations, insurance calculations, and all types of land measurements.

RLS 110 REAL ESTATE FINANCE 3

Prerequisite: As required by program.

This course provides an analysis of money markets with special emphasis on real estate financing. Topics include interest rates, lending policies, problems and rules in real estate financing of real property.

RLS 116 REAL ESTATE APPRAISAL CERTIFICATION 4

Prerequisite: As required by program.

This is an introductory course providing the foundation of real estate appraisal. Topics include site and physical factors; effects of the money and capital markets; methodologies used to value property; and how to present and evaluate the appraisal report.

RLS 125 REAL ESTATE LAW 3

Prerequisite: As required by program.

This course deals with the Alabama real estate law. Emphasis is placed on areas as real property and zoning easements, titles, deeds, recording practices, contracts, mortgages, and law.

RLS 130 LIGHT RESIDENTIAL 3

Prerequisite: As required by program.

This course provides the non-technical student with an introduction to the basic principles of light and residential construction. Topics include terminology, importance of project planning, and importance of special building requirements and environmental concerns.

RLS 135 REAL ESTATE OPERATIONS 3

Prerequisite: As required by program.

This course provides an overview of the administrative practices involved in operating a real estate firm. Topics include leadership; recruiting, selecting, and training employees; market analysis; financial system and records.

RLS 140 INDEPENDENT STUDY IN REAL ESTATE 3

Prerequisite: As required by program.

This course allows a student to pursue independent studies in the real estate field. Projects and/or topics may be assigned by the instructor or designed by the student, with instructor's approval.

RLS 190 REAL ESTATE WORKSHOP 3

Prerequisite: As required by program.

These workshops consist of presentations of current topics of interest to those employed in the real estate industry. They can be developed to meet the continuing education requirements of the real estate professional. They are offered upon demand.

RLS 204 REAL ESTATE SALES 3

Prerequisite: RLS 101.

This course covers all phases of the various ethical techniques used in selling real estate. It includes fundamental concepts concerning human relationships and various methods used in advertising and promoting the sale of real estate.

RLS 205 PROPERTY MANAGEMENT 3

Prerequisite: As required by program.

This course includes principles and practices of property management. Emphasis is placed on residential, business, industrial, and investment properties.

RLS 211 COMMERCIAL AND INVESTMENT PROPERTY 3

Prerequisite: RLS 101.

This course deals with the sales of apartment buildings, hotels, lot and mercantile buildings, motels, office buildings, regional shopping centers, retail stores, and special purpose properties. Also examined are sales and leaseback plans, percentage leases, investing, and income tax considerations.

RLS 281 REAL ESTATE BROKERAGE 3

Prerequisite: RLS 101.

This course offers an exposure to the principles and techniques of mortgage financing and brokerage operations. It is designed to assist those preparing for the real estate broker's licensing examination in Alabama. Upon completion, the student should have a basic understanding of real estate brokerage.

RLS 285 REAL ESTATE INVESTMENTS 3

Prerequisite: As required by program.

RLS 285 is an introduction to investment real estate. It examines the advantages, disadvantages, and tax implications. Feasibility studies are included dealing with real estate to be held for appreciation and income producing real estate.

**RADIO/TV AUDIO AND VIDEO PRODUCTION (RTV)
Course Descriptions**

RTV 115 AUDIO PRODUCTION I 3

Prerequisite: As required by program.

This course provides a foundation to the basic concepts that apply to all aspects of audio production. It is an introduction to basic audio techniques for film, radio, and television production. Emphasis is placed on effective use of words, music and/or sound effects in the production of audio. Audio production and post-production are covered, with a focus on production. The development of sound technology and its influence on various media, as well as radio history are examined.

RTV 118 MEDIA PRE-PRODUCTION I 3

Prerequisite: As required by program.

This course is a study of and practice in techniques and skills used in planning for various types of media projects. The class explores all aspects of preproduction planning for media projects. A focus is placed on the role of producer, and the process of taking a concept from inception to completion through the development phase of the media production process. A special emphasis is placed on scriptwriting.

RTV 119 VIDEO PRODUCTION I 3

Prerequisite: As required by program.

This class provides demonstrations and practice regarding the basics of the video production process. The course introduces students to basic video production techniques and provides a basic overview of film and television theory and criticism. It provides a combination of theory and hands-on exercises in order for students to learn the equipment and techniques used in media production and editing. Basic shooting and editing techniques are introduced.

RTV 120 MEDIA POST PRODUCTION I 3

Prerequisite: As required by program.

This class focuses on both the technical and theoretical aspects of videotape editing. Students are provided with hands-on training and are required to produce various nonlinear editing exercises, exploring various editing techniques and approaches in a digital environment.

RTV 125 DIGITAL PHOTOGRAPHY FOUNDATION 3

Prerequisite: As required by program.

This course introduces students to digital imaging techniques. Emphasis is placed on the technical application of the camera, digital photographic lighting methods, and overall composition. Upon completion, students should be able to take digital images and understand the technical aspects of producing high quality photos.

RTV 190 MULTI-MEDIA/WEB CONTENT PRODUCTION 3

Prerequisite: As required by program.

This course introduces the student to the production concepts for multi-media and web media. Aspects covered will include video/audio capture, production, editing and presentation in multi-media and web based formats.

RTV 215 AUDIO PRODUCTION II 3

Prerequisite: As required by program.

This class provides a further exploration of concepts that apply to all aspects of audio production. It is an examination of basic audio techniques for film, radio, and television production. Audio production and post-production are covered, with a focus on audio editing/post-production.

RTV 219 VIDEO PRODUCTION II 3

Prerequisite: As required by program.

This class provides further demonstrations and practice regarding the video production process. Students are further introduced to basic video production techniques and the course provides an overview of film and television theory and criticism. It provides a combination of theory and hands-on exercises in order for students to learn the equipment and techniques used in media production. Advanced instruction in video production is provided through this hands-on, production-intensive course.

RTV 220 MEDIA POST PRODUCTION II 3

Prerequisite: As required by program.

This course includes further instruction in nonlinear editing with emphasis on visual effects, transitions, editing shortcuts and text. The course explores current postproduction techniques, examining various editing styles and current video technology. Concepts related to edit decisions and the management of media are developed through exercises and assignments. Specific issues relating to aesthetics of editing are also discussed.

RTV 268 SPECIAL TOPICS IN MEDIA 3

Prerequisite: As required by program.

The topic of this course varies from semester to semester. Each course focuses on various issues in the field of media production and allows students to pursue specific projects related to the subject of the course. Covered topics may include specific genre production and study (such as horror, musical, and film noir) specific topic and style related project work, cinematic eras and trends and focuses on particular directors and related styles.

**SOCIAL WORK TECHNICIAN (SWT)
Course Descriptions**

SWT 109 TECHNIQUES OF BEHAVIOR MODIFICATION I 3

Prerequisite(s): As required by program

In this course the student will demonstrate the ability to decrease inappropriate behaviors and to shape appropriate behavior through the use of behavior modification techniques.

SWT 130 THE COMMUNITY AND THE SOCIAL WORKER 3

Prerequisite(s): As required by program

This course is designed to acquaint the student with the demographic, economic and cultural composition of the community. The student will develop technical skills for making practical application of available resources for enhancing the quality of life within the community.

SWT 131 PROBLEMS OF CHILDREN AND YOUTH 3

Prerequisite(s): As required by program

This course develops an understanding of the emotional, social, psychological and physical needs of children and youth. This course presents the influences and responsibilities of natural and surrogate parents. The student becomes familiar with the nature and causes of the more common problems and develops skills for assisting with the prevention and/or improvement of problems common among children and youth.

SWT 133 GERIATRICS 3

Prerequisite(s): As required by program

This course includes the study of the needs of making adjustments to retirement, activities and hobbies of the older person, and community agencies available for the aged. This course will include common psychological and physical problems of the aging. Actual experience will be provided in helping the elderly accept the changes in later life and teaching them of the many services available to them.

**SOCIOLOGY (SOC)
Course Descriptions**

SOC 200 INTRO TO SOCIOLOGY 3

Prerequisite(s): As required by program

This course is an introduction to the vocabulary, concepts, and theory of sociological perspectives of human behavior.

SOC 209 JUVENILE DELINQUENCY 3

Prerequisite(s): SOC 200 and/or as required by program

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

SOC 210 SOCIAL PROBLEMS 3

Prerequisite(s): SOC 200 and/or as required by program

This course examines the social and cultural aspects, influences, incidences and characteristics of current social problems in light of sociological theory and research.

SOC 247 MARRIAGE AND THE FAMILY 3

Prerequisite(s): SOC 200 and/or as required by program

This course is a study of family structures and families in a modern society. It covers preparation for marriage, as well as sociological, psychological, biological, and financial factors relevant to success in marriage and family life.

**SPANISH (SPA)
Course Descriptions**

SPA 101 INTRODUCTORY SPANISH I 4

Prerequisite(s): As required by program

This course provides an introduction to Spanish. Topics include the development of basic communication skills and the acquisition of basic knowledge of the cultures of Spanish-speaking areas.

SPA 102 INTRODUCTORY SPANISH II 4

Prerequisite(s): SPA 101 or Equivalent

This continuation course includes the development of basic communication skills and the acquisition of basic knowledge of the cultures of Spanish-speaking areas.

SPA 201 INTERMEDIATE SPANISH I 3

Prerequisite(s): SPA 102 or Equivalent

This course includes a review and further development of communication skills. Topics include readings of literary, historical, and/or cultural texts.

SPA 202 INTERMEDIATE SPANISH II 3

Prerequisite(s): SPA 201 or Equivalent

This continuation course includes a review and further development of communication skills. Topics include readings of literary, historical, and/or cultural texts.

**SPEECH (SPH)
Course Descriptions**

SPH 107 FUNDAMENTALS OF PUBLIC SPEAKING 3

Prerequisite(s): As required by program

This course explores principles of audience and environment analysis as well as the actual planning, rehearsing and presenting of formal speeches to specific audiences. Historical foundations, communication theories and student performances are emphasized.

SPH 116 INTRODUCTION TO INTERPERSONAL COMMUNICATION 3

Prerequisite(s): As required by program

This course is an introduction to the basic principles of interpersonal communication.

**TRUCK DRIVING (TRK)
Course Descriptions**

TRK 112 SAFE OPERATING PRACTICES 3

Prerequisite: As required by college.

This course offers proper defensive driving techniques applicable to the commercial motor vehicle driver and involves the interaction between the student/vehicle and the highway traffic environment. Topics include visual search, communication, speed and space management, night operation, extreme driving conditions, and proficiency development. Upon completion, the student should demonstrate basic operating skills that ensure safety of the driver and other vehicle operators to Commercial Drivers License standards.

**WELDING TECHNOLOGY (WDT)
Course Descriptions**

WDT 108 SMAW FILLET/OFC 3

Prerequisite: As required by college.

This course provides the student with instruction on safety practices and terminology in the Shielded Metal Arc Welding (SMAW) process. Emphasis is placed on safety, welding terminology, equipment identification, set-up and operation, and related information in the SMAW process. This course also covers the rules of basic safety and identification of shop equipment and provides the student with the skills and knowledge necessary for the safe operation of oxy-fuel cutting. **CORE**

WDT 109 SMAW FILLET PAC/CAC 3

Prerequisite: As required by college.

This course provides the student with instruction on safety practices and terminology in the Shielded Metal Arc Welding (SMAW) process. Emphasis is placed on safety, welding terminology, equipment identification, set-up and operation, and related information in the SMAW process. This course also covers the rules of basic safety and identification of shop equipment and provides the student with the skills and knowledge necessary for the safe operation of carbon arc cutting and plasma arc cutting. **CORE**

WDT 110 INDUSTRIAL BLUEPRINT READING 3

Prerequisite: As required by college.

This course provides students with the understanding and fundamentals of industrial blueprint reading. Emphasis is placed on reading and interpreting lines, views, dimensions, weld joint configurations and weld symbols. Upon completion students should be able to interpret welding symbols and blueprints as they apply to welding and fabrication. **CORE**

WDT 119 GMAW FILLET THEORY 3

Prerequisite: As required by college.

This course introduces the student to the gas metal arc and flux cored arc welding process. Emphasis is placed on safe operating practices, handling and storage of compressed gases, process principles, component identification, various welding techniques and base and filler metal identification. **CORE**

WDT 120 SMAW GROOVE THEORY 3

Prerequisite: As required by college.

This course provides the student with instruction on joint design, joint preparation, and fit-up of groove welds in accordance with applicable welding codes. Emphasis is placed on safe operation, joint design, joint preparation, and fit-up. Upon completion, students should be able to identify the proper joint design, joint preparation and fit-up of groove welds in accordance with applicable welding codes. **CORE**

WDT 124 GMAW WELDING LAB 3

Prerequisite: As required by college.

This course provides instruction and demonstration using the various transfer methods and techniques to gas metal arc and flux cored arc welds. Topics included are safety, equipment set-up, joint design and preparation, and gases.

WDT 125 SMAW 3 GROOVE LAB

Prerequisite: As required by college.

This course provides instruction and demonstrations in the shielded metal arc welding process on carbon steel plate with various size F3 and F4 group electrodes in all positions. Emphasis is placed on welding groove joints and using various F3 and F4

group electrodes in all positions. Upon completion, the student should be able to make visually acceptable groove weld joints in accordance with applicable welding codes.

WDT 158 CONSUMABLE WELDING 3

Prerequisite: As required by program.

This course is designed to provide the student with the skills in welding carbon steel pipe with gas tungsten arc welding techniques in various pipe weld positions. Upon completion, students should be able to perform gas tungsten arc welding on carbon steel pipe with the prescribed filler metals in various positions in accordance with the applicable code.

WDT 166 FCAW THEORY 3

Prerequisite: As required by college.

This course provides instruction and demonstration with the flux core arc welding process to produce groove and fillet welds in all positions, according to applicable welding codes. Topics include safe operating practices, equipment identification, equipment set-up, correct selection of filler metals, current/polarity, shielding gas and base metals. Upon completion, the student should be able to produce groove and fillet welds using the FCAW welding process, according to AWS Codes and Standards.

WDT 167 FCAW LAB 3

Prerequisite: As required by college.

This course provides instruction and demonstration with the flux core arc welding process to produce groove and fillet welds in all positions, according to applicable welding codes. Topics include safe operating practices, equipment identification, equipment set-up, correct selection of filler metals, current/polarity, shielding gas and base metals. Upon completion, the student should be able to produce groove and fillet welds using the FCAW welding process, according to AWS Codes and Standards.

WDT 218 CERTIFICATION THEORY 3

Prerequisite: As required by college.

This course is designed to provide the student with the knowledge needed to perform welds using the prescribed welding process. Emphasis is placed on the welding test joints in accordance with the prescribed welding code. Upon completion, students should be able to pass an industry standard welding test in accordance with various applicable welding code requirements.

WDT 219 WELDING INSPECTION AND TESTING 3

Prerequisite: As required by college.

This course provides the student with inspection skills and knowledge necessary to evaluate welded joints and apply quality control measures as needed. Emphasis is placed on interpreting welding codes, welding procedures, and visual inspection methods. Upon completion, students should be able to visually identify visual acceptable weldments as prescribed by the code or welding specification report.

WDT 221 PIPEFITTING AND FABRICATION 3

Prerequisite: As required by college.

This course provides the student with skills and practices necessary for fabricating pipe plans using pipe and fittings. Emphasis is placed on various pipe fittings to include various degree angles. Upon completion, students should be able to fit various pipe fittings, and cut and fabricate tees, and assorted angles.

WDT 223 BLUEPRINT READING FOR FABRICATION 3

Prerequisite: As required by college.

This course provides a student with advanced skills in identifying and interpreting lines, views, dimensions, notes, bill of materials, and the use of tools of the trade. Emphasis is placed on figuring dimensional tolerances, layout and fitting of different component parts. Upon course completion, a student should be able to interpret, layout, and fabricate from blueprints to given tolerances.

WDT 228 GTAW THEORY 3

Prerequisite: As required by college.

This course provides student with knowledge needed to perform gas tungsten arc welds using ferrous and/or non-ferrous metals, according to applicable welding codes. Topics include safe operating practices, equipment identification and set-up, correct selection of tungsten type, polarity, shielding gas and filler metals. Upon completion, a student should be able to identify safe operating practices, equipment identification and setup, correct selection of tungsten type, polarity, shielding gas, filler metals, and various welds on ferrous and/or non-ferrous metals, using the gas tungsten arc welding process according to applicable welding codes.

WDT 257 SMAW CARBON PIPE LAB 3

Prerequisite: As required by college.

This course is designed to provide the student with the skills in welding carbon steel pipe with shielded metal arc welding techniques in various pipe welding positions. Upon completion, students should be able to perform shielded metal arc welding on carbon steel pipe with the prescribed electrodes in various positions in accordance with the applicable codes.

WDT 258 CERTIFICATION LAB 3

Prerequisite: WDT 218 and/or as required by college.

This course is designed to provide the student with the skills needed to perform welds using the prescribed welding process. Emphasis is placed on the welding test joints in accordance with the prescribed welding code. Upon completion, students should be able to pass an industry standard welding test in accordance with various welding code requirements.

WDT 268 GAS TUNGSTEN ARC LAB 3

Prerequisite: WDT 228 and/or as required by college.

This course provides student with skills needed to perform gas tungsten arc welds using ferrous and/or non-ferrous metals, according to applicable welding codes. Topics include safe operating practices, equipment identification and set-up, correct selection of tungsten type, polarity, shielding gas and filler metals. Upon completion, a student should be able to identify safe operating practices, equipment identification and setup, correct selection of tungsten type, polarity, shielding gas, filler metals, and various welds on ferrous and/or non-ferrous metals, using the gas tungsten arc welding process according to applicable welding codes.

WDT 281 SPECIAL TOPICS 3

Prerequisite: As required by college.

This course provides specialized instruction in various areas related to the welding industry. Emphasis is placed on meeting students' needs.