Jefferson State Community College

2022-2023 CATALOG
& STUDENT HANDBOOK

COURSE DESCRIPTIONS

COURSE ABBREVIATIONS

The following are the official catalog course abbreviations used by Jefferson State.

ACT	Accounting
ADM	Advanced Manufacturing
AFS	Aerospace Studies
ANT	Anthropology
AET	Architectural Technology
ART	Art
AST	Astronomy
ATM	Automated Manufacturing Technology
AUT	Automotive Manufacturing Technology
BFN	Banking and Finance
BIO	Biology
BET	Biomedical Equipment Technology
BUS	Business
CHM	Chemistry
CHD	Child Development
CDT	Civil Design Technology
CIS	Computer Information Systems
CMT	Construction Management Technology
CRJ	Criminal Justice
CUA	Culinary Arts
ECO	Economics
ELM	Electromechanical Technology
EMS	Emergency Medical Technology/Technician
ENG	English
ENR	English/Reading
ETP	Entrepreneurship
FSE	Funeral Service Education
GEO	Geography
HED	Health Education
HST	Histologic Technician
HIS	History
HSM	Hospitality Services Management
HMM	Hotel-Motel Management
HUM	Humanities
IDH	Interdisciplinary Honors
IET	Industrial Engineering Technology
MST	Management and Supervision Technology
MCM	Mass Communication
MTH	Mathematics
MET	Mechanical Engineering Technology
MLT	Medical Laboratory Technology
MSC	Military Science
MUL	Music Ensemble
MUS	Music
NUR	Nursing
OAD	Office Administration
ORI	Orientation to College
PHL	Philosophy
PED	Physical Education
PHS	Physical Science
PHY	Physics
PTA	Physical Therapist Assistant
POL	Political Science
PSY	Psychology
RAD	Radiologic Technology
REL	Religion
RPT	Respiratory Therapy
SOC	Sociology
SPA	Spanish
SPH	Speech
THR	Theater Arts
VET	Veterinary Technology
WDT	Welding Technology
WKO	Workplace Skills Enhancement

COURSE DESCRIPTIONS

Catalog numbers ending with the number one (as ENG 101) indicate that the course is ordinarily to be considered as the first part of a continuation course consisting of two semester's work; the catalog number of the second part of the course ends with the number two (as ENG 102). Granting credit in these courses is not necessarily dependent upon completing the sequence. However, to satisfy requirements in such subjects, it is generally necessary to take the continuation course. Courses numbered 001-099 are institutional credit courses. These courses are not designed to transfer and do not count toward graduation. Courses numbered 100 through 199 are primarily for freshmen; courses numbered 200 through 299 are primarily for sophomores. Courses requiring no prerequisites are open to all students regardless of the catalog number.

The Alabama College System Course Directory lists common course names, numbers and descriptions used by all of Alabama's two-year colleges.

Courses which satisfy Areas I-IV of the General Studies curriculum at all public Alabama colleges and universities are indicated with the appropriate Area notation. Other courses that may transfer and may meet requirements for articulated programs have the following codes.

Code A: AGSC approved transfer courses in Areas I-IV that are common to all institutions.

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

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

The following attribute codes identify AAS and transfer degree requirements. Courses which satisfy one of the following attributes are indicated with the appropriate attribute notation. The attribute codes are listed in appropriate degree program in the "Career Programs" section of this Catalog and Student Handbook.

ASCI	AAS Lab Science Elective
ASOC	AAS Social and Behavioral Science Elective
AHUM	AAS Humanities and Fine Arts Elective
AMTH	AAS Mathematics Elective (excludes MTH116)
A116	AAS Mathematics Elective

TENG	Transfer English Composition Core
TLIT	Transfer Literature Core
TFA	Transfer Arts Core
THUM	Transfer Humanities Core
TMTH	Transfer Mathematics Core
TSCI	Transfer Science Core
THIS	Transfer History Core
TSOC	Transfer Social and Behavioral Science Core

An "S" at the end of a course number indicates that the course number has previously been used.

CREDIT HOUR DEFINITIONS

Jefferson State Community College adheres to the policies and procedures of the Alabama Community College System (ACCS) and the ACCS Board of Trustees for determining credit hours awarded for courses and programs as outlined in 705.01. Jefferson State Community College operates on a semester system. A semester system is defined as having a fall semester, spring semester and summer term. Both the fall and spring semesters have 15 weeks of instruction plus an exam period, the summer term consists of 10 weeks of instruction plus an exam period.

Jefferson State adopts the Federal definition of a credit hour as being an amount of work represented in intended learning outcomes and verified as evidence of student achievement that is an institutionally established equivalency that reasonably approximates:

1. Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out of class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or
2. At least an equivalent amount of work as required in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

An hour of classroom instruction is defined as not less than 50 minutes of instructor/student contact. In courses less than 15 weeks, the weekly classroom instruction hours are increased to equal that of a traditional 15- week course. Jefferson State uses the semester credit hour as the unit of credit for all coursework. Each semester credit hour is approximate to an hour of classroom instruction per week during a 15-week semester. Distance education or hybrid formats have academic activities or other academic work that approximate the same instructor/ student contact to traditionally taught on-campus sections.

The Alabama Community College System Board Policy 705.01 outlines the following six categories of instruction: (1) Theory, (2) Experimental Laboratory, (3) Practical Application Laboratory, (4) Clinical Practice, (5) Preceptorship, and (6) Internship. The definitions for each category/type of instruction are:

Theory

Theory is instruction focused on principles, concepts, or ideas. Generally, requires extensive out-of-class preparation prior to class each week as well as follow-up assignments. "Theory" instruction is the term, which will be used to include lecture, recitation, discussion, demonstration, seminar, and other standard classroom instruction. "Theory" instruction is under the direct supervision of an instructor. Ratio: 1:1 (one hour of credit for one hour of theory instruction as defined)

Experimental Laboratory

Experimental Laboratory is instruction focused on experimentation in a classroom, laboratory, or studio through teacher-assisted, hands-on learning experiences. An experimental laboratory is generally required in conjunction with the theory of an academic course. Work is normally completed in the learning environment, but may include out-of-class assignments such as practice and/or laboratory report writing. "Experimental laboratory" instruction is generally under the direct supervision of an instructor. Ratio: 2:1 (one hour of credit for two hours of "experimental" instruction as defined) or 3:1 (one hour of credit for three hours of "experimental" instruction as defined).

Practical Application Laboratory

Practical Application Laboratory is experience-based instruction focused on "real world" activities, albeit in a simulated environment, for the purpose of developing occupational competencies related to the use of equipment, tools, machines, and other program-specific work products. A practical application laboratory is generally required in career and technical programs; requires limited out-of-class assignments per week; and emphasizes the use of equipment, tools, and machines found within the lab environment. "Practical application laboratory" involves the development of manual skills and job proficiency and is under the direct supervision of an instructor. Ratio: 2:1 or 3:1, depending on program (one hour of credit for two or three hours of "practical application" instruction as defined).

Clinical Practice

Clinical Practice is experience-based instruction focused on "real world" activities and offered in a "real-world" environment, generally in healthcare or service occupation programs, for the purpose of developing skills related to the discipline. A clinical practice laboratory is generally required in healthcare related fields. Work is normally completed in the learning environment, but may include out-of-class assignments. "Clinical Practice" is under the direct supervision of an instructor. Out-of-class assignments each week are used to prepare the student for the clinical experience. Ratio: 3:1 (one hour of credit for three hours of "clinical practice" instruction as defined).

Preceptorship

Preceptorship is advanced experience-based instruction, under the supervision of a licensed healthcare professional, for the purpose of enhancing occupational competencies. The course instructor works with the healthcare professional to determine the clinical assignments for students. The instructor must be readily available for consultation with the healthcare professionals. Ratio: 5:1 or 3:1 (one hour of credit for five hours or three hours of preceptorship instruction as defined) NOTE: programs of study for which accreditation and/or licensing bodies require a different ratio must comply with discipline-specific time-to-credit criteria.

Internship

"Internship" is the term which will be used to include cooperative education, apprenticeships, practicums, and sponsored work instruction. Internship involves the development of job skills by providing the student with a structured employment situation that is directly related to and coordinated with the educational program. Student activity in internship is planned and coordinated jointly by an institutional representative and the employer, with the employer having the responsibility for control and supervision of the student on the job. Work is normally completed in the learning environment, but may include out-of-class assignments. Ratio: 5:1 (one hour of credit for five hours of "internship" instruction as defined) NOTE: programs of study for which accreditation and/or licensing bodies require a different ratio must comply with discipline-specific time-to-credit criteria.

A complete list of the courses being offered is published each term in the class schedule. Course offerings are subject to change.

ACCOUNTING (ACT)

ACT 115 Introduction to Accounting Computer Resources. 3 hrs.
PREREQUISITE: ACT 145 or BUS 241, computer experience recommended.
This course introduces the student to the computer resources available for use with the accounting program. Emphasis is placed on accounting spreadsheets and financial accounting software packages. Upon completion of this course, the student will be able to use the computer resources in the accounting program. (F, Sp, Su)

ACT 145 Basic Accounting Procedures. 3 hrs.
PREREQUISITE: None
This course focuses on basic bookkeeping procedures and elementary accounting principles. Emphasis is on analyzing and recording financial transactions, classifying and summarizing data, and preparing financial statements. Upon completion of this course, the student will be able to apply basic bookkeeping procedures and elementary accounting principles. (F, Sp, Su)

ACT 246Q Microcomputer Accounting. 3 hrs.
(Same as OAD 137)
PREREQUISITE: BUS 241 or ACT 145
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. (F, Sp, Su)

ACT 247P Advanced Accounting Applications on the Microcomputer. 3 hrs.
PREREQUISITE: ACT 246Q or ACT 115
In the 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. Currently courses are available in P. Peachtree. (Sp, Su)

ACT 249 Payroll Accounting. 3 hrs.
PREREQUISITE: BUS 241 or ACT 145
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. (F, Sp, Su)

ACT 252 Accounting Case Studies. 3 hrs.
PREREQUISITE: BUS 242, ACT 249, ACT 115, ACT 253
This course includes a practical application of accounting knowledge through a series of case studies. The case study method of learning places emphasis on the preparation for, and classroom discussion described in the case. Upon completion of this course, the student will be able to apply accounting knowledge in a variety of situations. (F, Sp, Su)

ACT 253 Individual Income Tax. 3 hrs.
PREREQUISITE: BUS 241 or ACT 145
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. (F)

ADVANCED MANUFACTURING (ADM)

ADM 106 Quality Control Concepts. 3 hrs. (2-2)
PREREQUISITE: None
This course provides an overview of the materials and processes and quality assurance topics used in commercial and specialized manufacturing products. Emphasis is placed on process evaluation techniques that can be extrapolated to other system areas such as new products and new technology. Emphasis is also placed on quality assurance including the history of the quality movement, group problem solving, and statistical methods such as statistical process control (SPC), process capability studies, and the concepts associated with lean manufacturing.

AEROSPACE STUDIES (AFS)

AFS 101 Heritage and Values I. 1 hr.
PREREQUISITE: None
A survey course serving as an introduction to the Air and Space Forces. The course focuses on information needed to be better informed about the role of the USAF and USSF. The course allows students to examine general aspects of the Department of the Air Force, leadership fundamentals, service benefits, and opportunities for officers. Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill, and ceremonies, and military commands. Code C.

AFS 102 Heritage and Values II. 1 hr.
PREREQUISITE: None
A survey course providing a historical perspective including lessons on war and US military, AF operations, principles of war, and airpower. This course provides students with a knowledge-level understanding for the employment of air and space power, from an institutional, doctrinal, and historical perspective. The students will be introduced to the military way of life and gain knowledge on what it means to be an Air or Space professional. Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill, and ceremonies, and military commands. Code C.

AFS 201 The Air Force Way I. 1 hr.
PREREQUISITE: NONE
Historical survey of technological innovation in warfare. Focus on the emergence of air power and its significance in war and national security policy implementation. The FAS 201 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies, and military commands.

AFS 202 The Air Force Way II. 1 hr.
PREREQUISITE: None
Analysis of leadership and followership traits in the context of a modern military force. Discussion of ethical standards of military officers and Air Force core values. Introduction to total quality management. Advanced practical application of oral communications skills. Organization, research, delivery and audience analysis for briefings and presentations. Group leadership problems designed to enhance interpersonal communications. The AFS 202 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies, and military commands. Code C.

ANTHROPOLOGY (ANT)

ANT 200 Introduction to Anthropology. 3 hrs.
PREREQUISITE: None
This course covers the physical, social, and cultural development of human behavior from an anthropological perspective. Core Area IV, ASOC. (F, Sp, Su)

ANT 220 Cultural Anthropology. 3 hrs.
PREREQUISITE: ANT 200
This course is an introduction to the primitive and contemporary cultures and societies viewed through the perspective of human behavior. Core Area IV, ASOC. (Sp)

ANT 230 Introduction to Archaeology. 3 hrs.
PREREQUISITE: None
This course is an introduction to archaeology as a scientific field of study. Core Area IV, ASOC. (F, Sp)

ARCHITECTURAL TECHNOLOGY (AET)

AET 101S Architectural Drawing. 3 hrs. (2-2)
PREREQUISITE: None
The purpose of this course is to introduce students to the tools and techniques used to produce architectural drawings. This will include proper lettering and line value techniques in creating the components of architectural working drawings. Upon completion of this course, the student will know how to draw plans, elevations, schedules and details. (F, Sp, Su)

AET 103 Working Drawings. 3 hrs. (2-2)
PREREQUISITE: AET 101S and AET 291
The purpose of this course is to teach the student to create and draw a set of architectural working drawings and formalize specifications. This will include a set of architectural working drawings. Upon completion of this course, the student will be able to create a set of working drawings and specifications for a building that will include a plot plan, foundation plan, floor plans, elevations, details, and a set of written specifications. (Sp)

AET 110 Basic Architectural CAD. 3 hrs. (2-2)
PREREQUISITE: None
The purpose of this course is to introduce students to architectural computer-aided drafting (CAD). This will include zooming, snapping, coordinate schemes, copying, moving, plotting, layers, trimming, offsetting, filleting, breaking, blocking, inserting, and dimensioning. Upon completion of this course, a student will be able to draw and dimension basic floor plans and other components of architectural working drawings. (F, Sp, Su)

AET 182A (181A) Special Topics Architectural Desktop. 3 hrs. (2-2)
PREREQUISITE: AET 110
These courses provide specialized instruction in various areas related to architectural engineering. Emphasis is placed on meeting students' need. (Sp)

AET 191 Basic Building Information Modeling (BIM). 3 hrs. (2-2)
PREREQUISITE: CIS 146 or AET 110
The purpose of this course is to introduce the student to the basics of Building Information Modeling (BIM). Industry-driven BIM software will be utilized to create accurate and effective building models. Emphasis will be placed on providing the student with the fundamental tools and techniques used

to simultaneously create 2D drawings and 3D models using BIM software. Fundamental concepts include, user interface, parameters, families, massing, rendering and printing. (F, Sp)

AET 233 Structural Design of Buildings. 4 hrs.
PREREQUISITE: CDT 225
This course introduces the student to the structural components of building design and the materials used in these components. This will include the materials of wood, steel, and concrete with the emphasis on wood and concrete. Upon the completion of this course, the student will be able to design decking, joists, beams, girders, and columns. (Sp)

AET 241 Building and Zoning Code. 3 hrs.
PREREQUISITE: CMT 101S and either AET 101S or CMT 102
Students learn from the basic principles of building and zoning codes. The course includes the study of fire and life safety design and construction requirements and zoning regulations. Upon completion of this course, the tudent will be able to apply building code and requirements in planning and designing buildings. (Sp)

AET 291 Advanced Building Information Modeling (BIM). 3 hrs. (2-2)
PREREQUISITE: AET 191
The purpose of this course is to expand on the skills learned in AET 191. Industry-driven BIM software will be utilized to create accurate and useful building models while further exposing students to the power and potential of BIM and its impact on the Architecture, Engineering and Construction Industry. Emphasis will be placed on the information component of BIM. BIM software will be used to create detailed construction documents, as well as, basic 3D model presentation techniques, project phasing, managing design options, collaboration/teamwork and creating custom content. (F)

ART (ART)

Studio courses must be taken in sequence except with the permission of the department head.

ART 100 Art Appreciation. 3 hrs.
PREREQUISITE: None
This course is an introduction to the appreciation of art through an examination of the themes and purposes of art, the exploration of visual arts media and methods, and culturally significant works of art from the past and present. The course informs students about the language of art and its relevance in everyday life. Upon completion, students should understand the fundamentals of art, the materials used, and have a basic overview of the history of art. Core Area II (Arts), AHUM. (F, Sp, Su)

ART 113 Drawing I. 3 hrs. (0-6)
PREREQUISITE: None
This course provides the opportunity to develop perceptional 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. AHUM. (F, Sp)

ART 114 Drawing II. 3 hrs. (0-6)
PREREQUISITE: ART 113 or permission of Instructor or Department Head
This course advances the student's drawing skills in various art media. Emphasis is placed on communication through experimentation, composition, technique and personal expression. Upon completion, students should demonstrate creative drawing skills, the application of the fundamentals of art, and the communication of personal thoughts and feelings. AHUM. (F or Sp)

ART 121 Two Dimensional Composition. 3 hrs. (0-6)
PREREQUISITE: ART 113 or permission of Instructor or Department Head
This course introduces the basic of concepts of two-dimensional design. Topics include the elements of art and principles of design with emphasis on the arrangements and relationships among them. AHUM. (F or Sp)

ART 127 Three Dimensional Composition. 3 hrs. (0-6)
PREREQUISITE: ART 113 or ART 121 or permission of instructor or Department Head
This course introduces art materials and principles of design that acquaint the beginner with the fundamentals of three-dimensional art. Emphasis is placed on the use of art fundamentals and the creative exploration of materials in constructing three-dimensional art works. Upon completion, students should demonstrate basic technical skills and a personal awareness of the creative potential inherent in three-dimensional art forms. AHUM. (F or Sp)

ART 143 Crafts. 3 hrs. (0-6)
PREREQUISITE: None
This course is an introduction to various creative crafts, which may include work with fibers, metal, glass or other media. Emphasis is placed on processes, techniques, materials and creative expression. Upon completion, students should be able to demonstrate creative uses of materials, a knowledge of the fundamentals of art, and an understanding of craftsmanship, and aesthetic quality. Currently courses are available in: P. Pottery. AHUM. (Sp or Su)

ART 175 Digital Photography I. 3 hrs. (1-6)
PREREQUISITE: None
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. AHUM. (F, Sp)

ART 203 Art History I. 3 hrs.
PREREQUISITE: None
This course covers the chronological and global development of different forms of visual art, such as sculpture, painting, and architecture. Emphasis is placed on art history from the ancient period through the Middle Ages. Core Area II (Arts). AHUM (Sp)

ART 204 Art History II. 3 hrs.
PREREQUISITE: None
This course covers the chronological and global development of different forms of visual art, such as sculpture, painting, and architecture. Emphasis is placed on art history from the Renaissance to the present. Core Area II (Arts), AHUM. (Sp)

ART 220 Introduction to Computer Graphics. 3 hrs. (0-6)
PREREQUISITE: None
This course is designed to acquaint the student with the technology, vocabulary, and procedures used to produce artworks with computers. Emphasis is placed on the fundamentals of art, creativity, and the understanding of various graphic software. Upon completion, students should demonstrate a knowledge of computer graphics through production on a graphic program in a computer environment. AHUM. (F, Sp, Su)

ART 221 Computer Graphics I. 3 hrs. (0-6)
PREREQUISITE: ART 220
This course is designed to enhance the student's ability to produce computer generated graphics. Emphasis is on the application of original design to practical problems using a variety of hardware and software. Upon completion students should have an understanding of professional computer graphics. AHUM. (F or Sp)

ART 233 Painting I. 3 hrs. (0-6)
PREREQUISITE: ART 113
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. AHUM. (F)

ART 234 Painting II. 3 hrs. 3 hrs. (0-6)
PREREQUISITE: ART 233
This course is designed to develop the student's knowledge of the materials and procedures of painting beyond the introductory level. Emphasis is placed on the creative and technical problems associated with communicating through composition and style. Upon completion, students should be able to demonstrate the application of the fundamentals of painting and the creative process to the communication of ideas. AHUM. (as needed)

ART 253 Graphic Design I. 3 hrs. (0-6)
PREREQUISITE: ART 283
This course is designed to introduce the study of visual communication through design. Emphasis is placed on the application of design principles to projects involving such skills as illustration, layout, typography and production technology. Upon completion, students should demonstrate a knowledge of the fundamentals of art and understanding of the relationship between materials, tools and visual communication. AHUM. (Sp)

ART 254 Graphic Design II. 3 hrs. (0-6)
PREREQUISITE: ART 253
This course further explores the art of visual communication through design. Emphasis is placed on the application of design principles to projects involving such skills as illustration, layout, typography and production technology. Upon completion, students should be able to apply the knowledge to the fundamentals of art, materials, and tools to the communication of ideas. AHUM. (F)

ART 275 Digital Photography II. 3 hrs. (1-6)
PREREQUISITE: ART 175
This course explores various uses of digital Photography. Subjects may include studio, portrait, landscape and other areas of photography. Upon completion, the student should be able to apply the techniques necessary to produce professional photographs of a variety of subjects. AHUM. (Sp)

ART 283 Graphic Animation. 3 hrs. (0-6)
PREREQUISITE: None
This course is designed to teach the art or animation as a continuation of the study of visual communication. Topics include story development, drawing, layout, story boarding, directing, motion control, sound synchronization, lighting and camera operation. Upon completion, students should understand the creative process as it relates to animation and demonstrate this knowledge through various projects. AHUM. (F)

ART 284 Graphic Animation II. 3 hrs. (0-6)
PREREQUISITE: ART 283
This course advances the students' technical and aesthetic knowledge of animation beyond the introductory level. Topics include story development, drawing, layout, story boarding, directing, motion control, sound synchronizing, lighting and camera operation. Upon completion, students should advance his or her understanding of the creative process as it relates to animation and demonstrate this knowledge through various projects. AHUM. (Sp)

ASTRONOMY (AST)

AST 220 Introduction to Astronomy. 4 hrs. (3-2)
PREREQUISITE: None
This course covers the history of astronomy and the development of astronomical thought leading to the birth of modern astronomy and its most recent developments. Emphasis is placed on measuring techniques and the structure and evolution of the universe. Lab is required. Core Area III, ASCI. Code A. (F, Sp, Su)

AUTOMATED MANUFACTURING TECHNOLOGY (ATM)

ATM 181/281 Special Topics. 3 hrs. (3-0)
PREREQUISITE: Approval of Program Coordinator
These courses provide specialized instruction in various areas related to automated manufacturing technology. Emphasis is placed on meeting students' needs. (on demand)

ATM 181D Special Topics, Basic Die Construction. 3 hrs. (3-0)
PREREQUISITE: None
These courses provide specialized instruction in die construction, processes, and types related to automated manufacturing technology. Emphasis is placed on meeting students' needs. This is an introduction to the basic types and construction of sheet metal stamping dies. Topics include types of stamping dies and how they process sheet metal, standard die components, concepts of die clearances, die making terminology, and materials used in stamping die construction. Students will be exposed to the basic concepts, methods, and practices of die construction. (on demand)

ATM 211 Introduction to Programmable Logic Controllers. 3 hrs. (2-2)
PREREQUISITE: ELM 215 or approval of Program Coordinator
This course provides an introduction to programmable logic controllers. Emphasis is placed on, but not limited to, the following: PLC hardware and software, numbering systems, installation, and programming. Upon completion, students must demonstrate their ability by developing, loading, debugging, and optimizing PLC programs. (F, Su, on demand)

ATM 212 Advanced Programmable Logic Controllers. 3 hrs. (2-2)
PREREQUISITE: ATM 211 or approval of Program Coordinator
This course includes the advanced principals of PLC's including hardware, programming, and troubleshooting. Emphasis is placed on developing advanced working programs and troubleshooting hardware and software communication problems. Upon completion, students should be able to demonstrate their ability in developing programs and troubleshooting the system. (Sp, on demand)

ATM 220 Advanced Motor Drives. 3 hrs. (1-4)
PREREQUISITE: ELM 215 or approval of Program Coordinator
This course covers advanced AC and DC motor drives. Topics include various AC and DC drive systems and trouble-shooting, and DC motion control. Upon completion of this course, the student will have demonstrated the ability to connect and operate various AC and DC drives, measure and calculate drive parameters, trace process parameters using an oscilloscope, adjust and tune drive control systems, and troubleshoot AC and DC systems networks. (F, on demand)

ATM 281D Special Topics, Die Maintenance. 3 hrs. (2-2)
PREREQUISITE: Approval of Program Coordinator
This course provides students with knowledge of fundamentals of die maintenance commonly associated with an industrial setting. It is an advanced course to enable multicraft industrial maintenance personnel to apply knowledge and skill of die maintenance in a workplace. (on demand)

AUTOMOTIVE MANUFACTURING TECHNOLOGY (AUT)

AUT 100 Introduction to Automotive Concepts. 3 hrs. (3-0)
PREREQUISITE: None
An introduction to automotive manufacturing concepts is the focus of this course. This course reviews the history of automotive manufacturing and discusses the automotive manufacturing processes for various automotive assembly and sub-assembly plants. It outlines the historical development of automotive manufacturing in Alabama. Finally, the electro-mechanical systems and body components of a typical vehicle will be examined.

AUT 102 Lean Manufacturing and Industrial Safety. 3 hrs. (3-0)
PREREQUISITE: None
This course will introduce students to manufacturing fundamentals. It introduces various tools and techniques typically used in Lean manufacturing. It also will provide Occupational Safety and Health Administration (OSHA) certification instruction. OSHA standards will include electrical, Lock Out/Tag Out, hazardous communications, personal protective equipment, machine guarding, and walking and working surfaces.

AUT 104 Blueprint Reading for Manufacturing. 3 hrs. (3-0)
PREREQUISITE: None
This course provides the students with terms and definitions, theory of orthographic projection, and other information required to interpret drawings used in the manufacturing and industrial trade areas. Topics include multiview projection, pictorial drawings, dimensions and notes, lines and symbols, tolerances, industrial applications, scales and quality requirements. Upon completion, students should be able to interpret blueprint drawings used in the manufacturing and industrial trades. This course may be tailored to meet specific local industry needs.

AUT 116 Introduction to Robotics. 3 hrs. (2-2)
PREREQUISITE: None
This course provides instruction in concepts and theories for the operation of robotic servo motors and power systems used with industrial robotic equipment. Emphasis is on the application of the computer to control power systems to perform work. Student competencies include understanding of the functions of hydraulic, pneumatic, and electrical power system components, ability to read and interpret circuitry for proper troubleshooting and ability to perform preventative maintenance.

AUT 130 Fundamentals of Industrial Hydraulics and Pneumatics. 3 hrs. (2-2)
(Same as ELM 210)
PREREQUISITE: None
This course provides an introduction to hydraulics/pneumatics. Topics include hydraulic pumps, pneumatic compressors work and system components such as valves, filters, regulators, actuators, accumulators, and lubricators. The lab enables students to test, troubleshoot and repair hydraulic pumps, pneumatic compressors work and system components such as valves, filters, regulators, actuators, accumulators, and lubricators. Upon completion, students will be able to apply principles of hydraulic/pneumatics.

AUT 136 Principles of Refrigeration. 3 hrs. (1-4)
PREREQUISITE: None
This course emphasizes the fundamental principles for air conditioning and refrigeration. Instruction is provided in the theory and principles of refrigeration and heat transfer, 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.

AUT 144 Manufacturing Systems, Methods, and Processes. 3 hrs.
PREREQUISITE: None
This course provides an introduction to the common types of Manufacturing Systems and Manufacturing Support Systems, Production Operations, Facilities, Product/Production Relationships, while highlighting the philosophy of Lean Manufacturing and Just-in-Time (JIT) Manufacturing. This includes an introduction to Production Performance indicators including Safety, Quality, Delivery, Cost, and Morale (SQCDM). Automated techniques covering robotics, automated inspection, material handling, and logistics/ID systems will be examined. Common types of Manufacturing Systems (single station, assembly lines, automated production lines, automated assembly lines, cellular, and flexible manufacturing) will be studied. Coverage of Manufacturing Support Systems will include an overview of product design, process planning, and production planning/control. Students will be prepared to analyze production processes resulting in operational standards, including cycle time analysis to meet tact times.

AUT 166 Blueprint Reading for Machinists. 3 hrs. (3-0)
PREREQUISITE: None
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 course is aligned with NIMS certification standards.

AUT 184 Introduction to Weld Technologies and Projection Welding Applications. 3 hrs. (2-2)
PREREQUISITE: approval by Program Coordinator or AUT 186 This course provides an understanding of joint types; weld joint positions, and multi-positional weld techniques. Students will learn sound methods of fabrication, metallurgy, welding of dissimilar metals, and techniques in SMAW, GMAW, and GTAW. Upon completion of this course, students will know the safety concerns with respect to material welding and possess the knowledge and understanding to select the correct weld type and technique for job specific applications.

AUT 186 Principles of Industrial Maintenance Welding and Metal Cutting Techniques. 3 hrs. (1-4)
PREREQUISITE: None
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 and 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.

AUT 191 Special Topics (Welding). 2 hrs. (0-4)
PREREQUISITE: AUT 186 or approval of Program Coordinator
This course allows the student to plan, execute, and present results of individual projects in welding. Emphasis is placed on enhancing skill attainment in the welding field. The student will be able to demonstrate and apply competencies identified and agreed upon between the student and instructor.

AUT 208 AutomatedSystemDiagnosisandTroubleshooting. 3 hrs. (2-2)
PREREQUISITE: ATM 211 and ATM 220
This course focuses on systematically solving problems in automated systems. Emphasis is placed on safety, test equipment, basic troubleshooting techniques and hands on problem solving. Upon completion, students will be able to use a systematic process to solve complex malfunctions.

AUT 213 Robotics Project. 3 hrs. (1-4)
PREREQUISITE: AUT 116
In this course, students apply skills learned to design, fabricate, analyze, program, and/operate a robotics system under faculty supervision.

AUT 230 Preventive and Predictive Maintenance. 3 hrs. (1-4)
Prerequisites: None
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.

AUT 262 Computer Integrated Manufacturing. 3 hrs. (3-0)
PREREQUISITE: None
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 cell (center), 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.

AUT 278 Robotic Programming and Welding. 3 hrs. (1-4)
PREREQUISITE: AUT 116 and AUT 186 or approval of Program Coordinator
This program introduces students to the safety and programming associated with Robotic welding technology.

Upon completion, the student should be able to setup and program a robot to weld parts in an efficient and safe manner.

AUT 284 Robotic Mig Welding. 3 hrs. (2-2)
PREREQUISITE: None
This course is designed to teach students how to MIG weld using a robot weld cell and includes extensive hands-on training. Topics include robot programming and the inter-relationship with welding principles, programmed safety precautions utilized in robotic welding, robotic weld controls systems, troubleshooting, and utilization of multi-functional teach pendants. Upon completion students will be able to operate MIG welding industrial robots and understand the interaction between robots and MIG welding technology.

AUT 293 Automotive Cooperative Education. 3 hrs. (Int 15)
PREREQUISITE: Successful completion of at least one semester and Program Coordinator approval
This course is designed to give students practical, on-the-job experiences in all phases of automotive manufacturing under the supervision of a qualified professional. Grades are based on the successful completion of the work experience as judged by the students' work, supervisor, and faculty coordinator.

BANKING AND FINANCE (BFN)

BFN 100 Principles of Banking. 2 hrs.
PREREQUISITE: None
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. Code C. (F)

BFN 101 Law and Banking: Principles. 2 hrs.
PREREQUISITE: None
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. Code C. (Sp)

BFN 102 Law and Banking: Applications. 2 hrs.
PREREQUISITE: None
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. Code C. (Sp)

BFN 110 Marketing for Bankers. 2 hrs.
PREREQUISITE: None
This course is an introduction to basic marketing principles and how a bank develops a successful marketing plan. Topics include consumer behavior, market research, the planning process, public relations, advertising, and sales promotion. Upon completion of this course, the student will have the skills to bring in new business. Code C. (as needed)

BFN 147 Consumer Lending. 2 hrs.
PREREQUISITE: None
This course provides an introduction to the consumer credit function. Topics include a history of the consumer credit function, products and services, the consumer lending process, and credit administration. Upon completion of this course, the student will be able to work in the area of consumer lending. Code C. (as needed)

BFN 167 Supervision. 2 hrs.
PREREQUISITE: None
This course is designed to help new or potential supervisors become better managers. Topics include leadership, delegation, motivation, communication, the planning function, staffing, directing, and controlling. Upon completion of this course, the student will have the required skills to be a better manager. Code C. (as needed)

BFN 205 Money and Banking. 3 hrs.
PREREQUISITE: None
This course provides an introduction to the money supply and the role banks play in relation to money creation. Topics include financial intermediaries, the Federal Reserve, monetary policy, fiscal policy, and international banking. Upon completion of this course, the student will have the necessary skills to work in a variety of different departments within the bank. Code C. (Su)

BFN 236 Analyzing Financial Statements. 2 hrs.
PREREQUISITE: None
This course is an elaboration of BFN 130. It provides an introduction of how financial data are generated and their limitations. Topics include techniques for analyzing the flow of business's funds, methods for selecting and interpreting financial ratios, and analytical tools for predicting and testing assumptions about a firm's future performance. Upon completion of this course, the student will have the necessary skills to work with financial statements. Code C. (as needed)

BFN 280 Real Estate Finance. 2 hrs.
PREREQUISITE: None
This course provides an introductory background to the varied real estate mortgage credits operations of commercial banks. Topics include legal, the residential lending process, mortgage market, fund flows, the role of the government in mortgage financing, and important aspects of income-producing real estate. Upon completion of this course, the student will have the necessary skills to work in this area. Code C. (F)

BIOLOGY (BIO)

BIO 101 Introduction to Biology I. 4 hrs. (3-2)
PREREQUISITE: None
This is an introductory course designed for non-science majors. It includes physical, chemical, and biological principles common

to all organisms. These principles are explained through a study of the scientific method, biological organization, cellular structure, bioenergetics of a cell, cell reproduction, gene theory, inheritance, and evolution. A 120-minute laboratory per week is required. Core Area III. ASCI. (F, Sp, Su)

BIO 102 Introduction to Biology II. 4 hrs. (3-2)
PREREQUISITE: BIO 101
This is an introductory course designed for non-science majors. It includes evolutionary principles and relationships, environmental and ecological topics, phylogenetics and classification, and a survey of biodiversity. A 120-minute laboratory is required. Core Area III. ASCI. (F, Sp, Su)

BIO 103 Principles of Biology I. 4 hrs. (3-2)
PREREQUISITE: None
This is an introductory course for both science and non-science majors. It covers physical, chemical, and biological principles common to all organisms. These principles are explained through the 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 survey of viruses, prokaryotes, and the protists. A 120-minute laboratory is required. Core Area III. ASCI. (F, Sp, Su)

BIO 104S Principles of Biology II. 4 hrs. (3-3)
PREREQUISITE: BIO 103
This course is an introduction to the basic ecological and evolutionary relationships of plants, fungi, and animals and a survey of plant, fungi, and animal diversity including classification, morphology, physiology, and reproduction. A 180-minute laboratory is required. Core Area III. ASCI. (Sp, Su)

BIO 111 Survey of Human Biology. 4 hrs. (3-2)
PREREQUISITE: Funeral Service Majors only
This course is for the non-science majors and covers an overview of human body functions with an emphasis on major organ systems. Currently open to Funeral Service majors only. Code C. (F)

BIO 201 Human Anatomy and Physiology I. 4 hrs. (3-2)
PREREQUISITE: None, Recommended BIO 103
This course covers the structure and function of the human body. Included is an orientation of the human body; a study of cells and tissues, 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. ASCI. (F, Sp, Su)

BIO 202 Human Anatomy and Physiology II. 4 hrs. (3-2)
PREREQUISITE: BIO 201
This course covers the structure and function of the human body. Included is the study of basic nutrition and metabolism; basic principles of fluids, electrolytes, and acid-base balance; and the endocrine, respiratory, digestive, urinary, cardiovascular, lymphatic, and reproductive systems. Dissection, histological studies, and physiology are featured in the laboratory experience. A 120-minute laboratory is required. ASCI. (F, Sp, Su)

BIO 220 General Microbiology. 4 hrs. (2-4)
PREREQUISITE: BIO 103, Recommended: 4 hrs. of chemistry
This course covers the fundamental principles of microbiology, which includes the characteristics of bacteria, archaea, eukaryotes, and viruses; cell functions; chemical and physical control methods of microbial growth; and interactions between microbes and humans in relation to pathology, immunology, and the role of normal biota. The laboratory experience focuses on microbiological techniques including culturing, microscopy, staining, identification, and control of microorganisms. Two 120-minute laboratories are required. ASCI. (F, Sp, Su)

BIO 230 Human Pathophysiology. 4 hrs. (3-2)
PREREQUISITE: BIO 201, BIO 202, and BIO 220
Human Pathophysiology covers the nature, etiology, prognosis, prevention, and therapeutics of human disease. ASCI. (F)

BIO 250S Directed Studies in Biology I. 1-3 hrs.
PREREQUISITE: Permission of department head
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, students will be able to demonstrate knowledge of the topics as specified by the instructor. Code C. (on demand)

BIO 251 Directed Studies in Biology II. 1-3 hrs.
PREREQUISITE: BIO 250
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, students will be able to demonstrate knowledge of the topics as specified by the instructor. Code C. (on demand)

BIOMEDICAL EQUIPMENT TECHNOLOGY (BET)

BET 211 Biomedical Electronic Systems I. 3 hrs. (3-0)
PREREQUISITE: Admission to program
This course is an introduction into theory and patient safety. Included in the course are rules and regulations associated with mechanical and electrical equipment. Upon completion of the course, the student will be able to test and measure for unsafe potentials and currents in medical devices. (F)

BET 222 Medical Communications Systems. 3 hrs.
PREREQUISITE: Admission to program
Included in this study are many of the medical devices that are used in the medical profession. Upon completion of this course, the student will be able to troubleshoot basic communications systems currently used in hospitals. (Sp)

BET 233 Pulse and Computer Circuits. 3 hrs.
PREREQUISITE: Admission to program
The purpose of this course is to acquaint the student with the concepts necessary to troubleshoot microprocessor-based circuits found in medical devices. Students will construct

and use basic database programs for medical equipment management. Upon completion of this course, the student will be able to repair and troubleshoot computer circuits found in medical devices. (Sp)

BET 234 Biomedical Electronic Systems III. 3 hrs. (2-2)
PREREQUISITE: Admission to program
This course is a continuation of BET 232. Included in this course is the technical information needed to safely operate an assortment of medical monitoring equipment. The student upon completion of this course will be able to repair and troubleshoot problems associated with various medical devices. (Su)

BET 240 Clinical On-Site Study. 4 hrs. (Clin 12)
PREREQUISITE: Admission to program
The purpose of this course is to assign each student to a local hospital facility working as a trainee. Students will work with qualified individuals in the field. The student upon completion of this course will be qualified as an entry-level employee for a hospital or vendor. (Su)

BET 241 The Law and Legal Issues in Biomed. 3 hrs.
PREREQUISITE: Admission to program
The purpose of this course is to acquaint the student with current law and news as it relates to Biomed. The student will research current and past legal decisions related to Biomed. Upon completion of this course, each student will be able to research and know how to find any and all legal and safety procedures that are related to the handling of medical devices and search periodicals for current legal issues. (Su)

BUSINESS (BUS)

BUS 100 Introduction to Business. 3 hrs.
PREREQUISITE: None Code C
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. (F, Sp, Su)

BUS 146 Personal Finance. 3 hrs.
PREREQUISITE: None
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. Code C. (Sp, F)

BUS 215 Business Communication. 3 hrs.
PREREQUISITE: None
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. Code C. (F, Sp, Su)

BUS 241 Principles of Accounting I. 3 hrs.
PREREQUISITE: None
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 and analysis. Code B. (F, Sp, Su)

BUS 242 Principles of Accounting II. 3 hrs.
PREREQUISITE: BUS 241
This course is a continuation of BUS 241. In addition to a study of financial accounting, this course also places emphasis upon managerial accounting, with coverage of corporations, statement analysis introductory cost accounting, and use of accounting information for planning, control, and decision making. Code B. (F, Sp, Su)

BUS 248 Managerial Accounting. 3 hrs.
PREREQUISITE: BUS 242
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. Code B. (F, Sp, Su)

BUS 263 The Legal and Social Environment of Business. 3 hrs
PREREQUISITE: None
This course provides an overview of the legal and social environment for business operations with emphasis on contemporary issues and their subsequent impact on business. Topics include Constitution, the Bill of Rights, the legislative process, civil and criminal law, administrative agencies, trade regulations, consumer protection, contracts, employment and personal property. Code B. (F, Sp, Su)

BUS 271 Business Statistics I. 3 hrs.
PREREQUISITE: MTH 112
This is an introductory study of basic statistical concepts applied to economic and business problems. Topics include the collection, classification, and presentation of data, statistical description and analysis of data, measures of entral tendency and dispersion, elementary probability, sampling, estimation and introduction to hypothesis testing. Code B. (F, Sp, Su)

BUS 272 Business Statistics II. 3 hrs.
PREREQUISITE: BUS 271
This course is a continuation of BUS 271. Topics include sampling theory, statistical inference, regression and correlation, chi square, analysis of variance, time series index numbers, and decision theory. Code B. (F, Sp, Su)

BUS 275 Principles of Management. 3 hrs.
PREREQUISITE: None
This course provides a basic study of the principles of management. Topics include planning, organizing, staffing, directing, and controlling with emphasis on practical business applications. Code B. (F, Sp, Su)

BUS 285 Principles of Marketing. 3 hrs.
PREREQUISITE: None
This course provides a general overview of the field of marketing. Topics include marketing strategies, channels of distribution, marketing research, and consumer behavior. Code B. (F, Sp, Su)

CHEMISTRY (CHM)

CHM 104 Introduction to Chemistry I. 4 hrs. (3-3)
PREREQUISITE: A minimum of MTH 098 (Elementary Algebra) or equivalent placement score.
This is a survey course of general chemistry for students who do not intend to major in science or engineering, and the course 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, and acids and bases. Laboratory is required. Core Area III. ASCI. Code A. (F, Sp, Su)

CHM 105 Introduction to Chemistry II. 4 hrs. (3-3)
PREREQUISITE: Grade of "C" or higher in CHM 104 (Introduction to Chemistry I) 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, and this course will not substitute for CHM 112. Topics include basic nomenclature, classification of organic compounds, typical organic reactions, reactions involved in life processes, and the function of biomolecules. Laboratory is required. Core Area III. ASCI. Code A. (Su and on demand)

CHM 111 College Chemistry I. 4 hrs. (3-3)
PREREQUISITE or COREQUISITE: MTH 112 (Precalculus Algebra) or equivalent math placement score.
This is the first course in a two-semester sequence designed for the science or engineering major who is expected to have a strong background in mathematics. Topics in this course include measurement, nomenclature, stoichiometry, atomic structure, equations and reactions, basic concepts of thermochemistry, chemical and physical properties, bonding, molecular structure, gas laws, kinetic molecular theory, condensed matter, and some descriptive chemistry topics. Laboratory is required. Core Area III. ASCI. Code A. (F, Sp, Su)

CHM 112 College Chemistry II. 4 hrs. (3-3)
PREREQUISITE: Grade of "C" or higher in both CHM 111 and MTH 112
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 solutions and colloids, chemical kinetics, chemical equilibria, acids and bases, ionic equilibria of weak electrolytes, chemical thermodynamics, electrochemistry, oxidation-reduction, nuclear chemistry, and selected topics in descriptive chemistry including an introduction to organic chemistry and biochemistry, atmospheric chemistry, coordination compounds, transition compounds, post-transition compounds, metals, nonmetals, and semi-metals. Laboratory is required. Core Area III. ASCI. Code A. (F, Sp, Su)

CHM 221 Organic Chemistry I. 4 hrs. (3-3)
PREREQUISITE: CHM 112
This is the first course in a two-semester sequence. Topics in this course include nomenclature, structure, physical and chemical properties, synthesis, and typical reactions for aliphatic compounds with special emphasis on reaction mechanisms and stereochemistry. Laboratory is required and will include common organic chemistry techniques. ASCI. Code B. (F and on demand)

CHM 222 Organic Chemistry II. 4 hrs. (3-3)
PREREQUISITE: CHM 221
This is the second course in a two-semester sequence. Topics in this course include nomenclature, structure, physical and chemical properties, synthesis, and typical reactions for aliphatic and aromatic compounds and their derivatives, with special emphasis on reaction mechanisms, spectroscopy, and stereochemistry. Laboratory is required and will include common organic chemistry techniques. ASCI. Code B. (Sp and on demand)

CHILD DEVELOPMENT (CHD)

CHD 100 Introduction of Early Care and Education of Children. 3 hrs.
PREREQUISITE: None
This course introduces students to the child education and care profession. It is designed to increase understanding of the basic concepts of child development and the developmental characteristics of children from birth through age 8/9 years. This course is the foundation for planning appropriate activities for children and establishing appropriate expectations of young children. This class also offers an opportunity to study the developmental domains (social, emotional, cognitive/language and physical). Course includes observations of the young child in early childhood settings.

CHD 201 Child Growth and Development Principles. 3 hrs.
PREREQUISITE: None
This course is a systematic study of child growth and development from conception through early childhood. Emphasis is on principles underlying physical, mental, emotional and social development, and methods of child study and practical implications. Upon completion, students will be able to use knowledge of how young children differ in development and approaches to learning to provide opportunities that supports physical, social, emotional, language, cognitive, and aesthetic development.

CHD 202 Children's Creative Experiences. 3 hrs.
PREREQUISITE: None
This course focuses on fostering creativity in preschool children and developing a creative attitude in teachers. Topics include selecting and developing creative experiences in language arts, music, art, science, math and movement with observation and participation with young children required.

On completion, students will be able to select and implement creative and age-appropriate experiences for young children.

CHD 203 Children's Literature and Language Development. 3 hrs.
PREREQUISITE: None
This course surveys appropriate literature and language arts activities designed to enhance young children's speaking, listening, pre-reading and writing skills. Emphasis is placed on developmental appropriateness as related to language. Upon completion, students should be able to create, evaluate and demonstrate activities which support a language-rich environment for young children.

CHD 204 Methods and Materials for Teaching Children. 3 hrs.
PREREQUISITE: None
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 will be able to demonstrate basic methods of creating learning experiences using developmental appropriate techniques, materials, and realistic expectations. Course includes observations of young children in a variety of childcare environments.

CHD 205 Program Planning for Educating Young Children. 3 hrs.
PREREQUISITE: None
This course provides students with knowledge to develop programs for early child development. Specific content includes a review of child development concepts and program contents. Upon completion students will be able to develop and evaluate effective programs for the education of young children.

CHD 206 Children's Health and Safety. 3 hrs.
PREREQUISITE: Current First Aid Certificate
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.

CHD 208 Administration of Child Development Programs. 3 hrs.
PREREQUISITE: None
This course includes appropriate administrative policies and procedures relevant to preschool programs. Topics include local, state and federal regulations, budget planning, record keeping, personnel policies and parent involvement. On 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. 3 hrs.
PREREQUISITE: None
This course focuses on child development from infancy through thirty-five 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 Children with Exceptional Needs. 3 hrs.
PREREQUISITE: None
This course explores the many different types of exceptionalities found in young children. Topics include speech, language, hearing and visual impairments; gifted and talented children; mental retardation; emotional, behavioral, and neurological handicaps. Upon completion, students should be able to identify appropriate strategies for working with children.

CHD 212 Special Topics in Child Development. 2 hrs.
PREREQUISITE: CHD 230
This course provides students with knowledge of a variety of issues and trends related the childcare profession. Subject matter will vary according to industry and student needs. Upon completion students should be able to discuss special topics related to current trends and issues in child development.

CHD 213 Child Development Trends Seminar. 3 hrs.
PREREQUISITE: CHD 230
This course includes current topics in the child development field as an update to the professional caregiver industry needs determined by course topics. Upon completion of this class, students will demonstrate the competency needed in meeting the course objectives.

CHD 214 Families and Communities in Early Care and Education Programs. 3 hrs.
PREREQUISITE: None
This course provides students with information about working with diverse families and communities. Students will be introduced to family and community settings, the important relationships with children, and the pressing needs of today's society. Students will study techniques for developing these important relationships and effective communication skills.

CHD 215 Supervised Practical Experience in Child Development. 3 hrs. (Int 15)
PREREQUISITE: Permission of Program Coordinator, meet DHR standards. This course provides a minimum of 135 hours of hands-on, supervised experience in an approved program for young children. Students will develop a portfolio documenting experiences gained during this course.

CHD 219 Supervised Practical Experience. 2 hrs. (Int 10)
PREREQUISITE: Permission of Program Coordinator, meet DHR standards This course provides 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 will be able to demonstrate competency in a child care setting.

CHD 230 Introduction to Afterschool Programs. 3 hrs.
PREREQUISITE: None
This course will introduce and discuss the unique aspects of quality afterschool programs and the roles of the adult staff. Topics will include a brief view of child development, positive guidance techniques, administrative consideration, beginning program planning and adaptations for a variety of program settings. Upon completion, students should be able to understand the staff's role, create and modify unique program settings, use positive guidance, and implement a quality program.

CHD 231 Afterschool Programming. 3 hrs.
PREREQUISITE: None
This course focuses on the specialized variety of needs for a quality afterschool program. Topics will include program planning and material considerations for a variety of quiet/active, indoor/outdoor activities, health/safety/nutrition needs, parent and community information and involvement. Upon completion, students should be able to select a variety of age-appropriate activities, implement a safe, healthy, quality program, and effectively communicate with parents and the community.

CIVIL DESIGN TECHNOLOGY (CDT)

CDT 205 Fundamentals of Surveying. 3 hrs. (2-2)
PREREQUISITE: Eligible for MTH 100
The purpose of this course is to introduce the student to the basic principles of surveying. This will include the use of the tape, the transit, and the level. Upon completion of this course, the student will know how to measure distances, angles, and elevations; analyze errors in measurements; compute positions, areas, and volumes, and develop a site plan. (Su)

CDT 221 Structural Drafting for Technicians. 3 hrs. (2-2)
PREREQUISITE: AET 101S and AET 110
The purpose of this course is to introduce the student to structural detailing. This will include wood, steel, and concrete detailing. Upon completion of this course, the student will be able to detail in wood, steel, and reinforced concrete. (Sp)

CDT 225 Mechanics and Strength of Structures. 4 hrs.
PREREQUISITE: PHY 115
The purpose of this course is to introduce the student to the study of mechanics and strength of structures. This will include the study of statics and strength of materials involving the use of algebra and trigonometry without the use of calculus. Upon completion of this course, the student will become familiar with the trigonometry used in statics; understand the concepts of resultant and equilibrium of concurrent and nonconcurrent forces, center of gravity, moment of inertia, and radius of gyration; and understand the relationship between applied and internally induced stresses in various types of structural members. (F)

COMPUTER INFORMATION SYSTEMS (CIS)

CIS 113 Spreadsheet Software Applications. 3 hrs
PREREQUISITE: Grade of "C" or higher in CIS 146 or spreadsheet experience
This course provides students with hands-on experience using spreadsheet software. Students will develop skills common to most spreadsheet software by developing a wide variety of spreadsheets. Emphasis is on planning, developing, and editing functions associated with spreadsheets. Code C. (F, Sp, Su)

CIS 117 Database Management Software Applications. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 146 or database experience
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. Code C. (F, Sp)

CIS 130 Introduction to Information Systems. 3 hrs.
PREREQUISITE: None
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. Code B. (F, Sp, Su)

CIS 146 Microcomputer Applications. 3 hrs.
PREREQUISITE: Keyboarding skills recommended
This course is an introduction to computer software applications, including word processing, spreadsheets, database management, and presentation software. This course will prepare students for professional certifications. Upon completion, students will be able to utilize selected features of these packages. Code B. (F, Sp, Su)

CIS 150 Introduction to Computer Logic and Programming. 3 hrs.
PREREQUISITE: None
This course includes logic, design and problem-solving techniques used by programmers and analysts in addressing and solving common programming and computing problems. The most commonly used techniques of flowcharts, structure charts, and pseudocode will be covered, and students will be expected to apply the techniques to designated situations and problems. Code C. (F, Sp, Su)

CIS 157 Introduction to App Development with Swift. 3 hrs. (1-4)
PREREQUISITE: Grade of "C" or higher in CIS 150
This introductory one-semester course is designed to help students build a solid foundation in programming fundamentals using Swift as the language. Students get practical experience with the tools techniques, and concepts needed to build a basic iOS system. Code C. (F, Sp)

CIS 202 Python Programming. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 150
This course is an introduction to the Python programming language. Topics include input and output, decision structures, repetition structures, functions, working with files, strings, object-oriented programming and inheritance. Upon completion, students will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. Code C (F, Sp)

CIS 206 Web Design. 3 hrs.
PREREQUISITE: None
This course introduces principles of artistic expression in Web page design. Web editor apps are used to create basic Web sites from templated layouts without working directly on the underlying code. Concepts in user experience, search engine optimization, and metrics are included to promote brand identity. Students will design and publish web sites for personal and business applications.

CIS 207 Web Development. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 206
This course introduces basic Web page development techniques. Topics include HTML, scripting languages, and commercial software packages used in the development of Web pages. At the conclusion of this course, students will be able to use specified markup languages to develop basic Web pages. Code C. (F, Sp)

CIS 209 Advanced Web Development. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 150, 207
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. Code C. (Su)

CIS 211S Principles of Information Assurance. 3 hrs.
PREREQUISITE: None
This course is designed to introduce students to information security principles. Topics covered in this course will include the need for security, risk management, security technology, cryptography, and physical security. Security policies and legal/ethical issues will also be covered . Code C. (Sp, Su)

CIS 214 Security Analysis (PEN Testing). 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 244 or as determined by instructor
This course introduces students to the concept of security analysis, or penetration testing, of information systems. Students will evaluate the security of a computer system or network, assessing security risks from the position of a potential attacker. Emphasis is on identifying security flaws and providing technical solutions. Code C. (Su)

CIS 215 C# Programming. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 150
This course is an introduction to the C# programming language. The goal of this course is to provide students with the knowledge and skills they need to develop C# applications for the Microsoft.NET Platform. Topics include program structure, language syntax, and implementation details. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. Code C. (Sp)

CIS 220 App Development with Swift I. 3 hrs. (1-4)
PREREQUISITE: Grade of "C" or higher in CIS 157
This is the first of two courses designed to teach specific skills related to app develop using Swift language. Code C. (F)

CIS 222 Database Management Systems. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 150 or database experience
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. Code C. (F, Sp)

CIS 227 App Development with Swift II. 3 hrs. (1-4)
PREREQUISITE: Grade of "C" or higher in CIS 220
This course focuses on building specific features for iOS apps. Students apply their knowledge and skills to developing new apps. Code C. (F)

CIS 237 Virtual Infrastructure: Installation and Configuration. 4 hrs. (3-2)
PREREQUISITE: None
Students explore concepts and capabilities of virtual architecture with a focus on the installation, configuration, and management of a virtual infrastructure, an ESX Server, and a Virtual Center. Covers fundamentals of virtual network design and implementation, fundamentals of storage area networks, virtual switching, virtual system management and engineering for high availability. (Sp)

CIS 238 Cloud Computing: Infrastructure and Services. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 237
This course focuses on cloud infrastructure, deployment, security models, and the key considerations in migrating to cloud computing. Coverage includes the technologies and processes required to build traditional, virtualized and cloud data center environments, including computation, storage, networking, desktop and application virtualization, business continuity, security and management. (Su)

CIS 239 Information Storage & Management. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 238
This course focuses on advanced storage systems, protocol, and architectures, including Storage Area Networks (SAN),

Network Attached Storage (NAS), Fibre Channel Networks, Internet Protocol SANS (IPSAN), iSCSI, and Content Addressable Storage (CAS). (F)

CIS 244 Introduction to Cybersecurity. 3 hrs.
PREREQUISITE: None
This course will introduce students to cybersecurity, while they gain additional insight into the challenges companies face today. Students will develop an understanding of cybercrime, security principles, technologies, and procedures and techniques used to defend networks. Code C. (F, Sp, Su)

CIS 245 Cyber Defense. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 244 or as determined by instructor
The course provides students with information on the concept of cyber defense. Topics include information relative to legal aspects of cyber-attacks, threats to various levels of national and local social infrastructure, financial systems, personal data, and other direct and indirect threats. As part of this course, students explore current and historical cyber threats and U.S. policy regarding infrastructure protection. Code C. (F)

CIS 246 Ethical Hacking. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 244 or as determined by instructor
This course emphasizes scanning, testing, and securing computer systems. The lab-intensive environment provides opportunities to understand how perimeter defenses work and how hackers are able to compromise information systems. With awareness of hacking strategies, students learn to counteract those attempts in an ethical manner. Code C. (Sp)

CIS 248 Introduction to IoT (Internet of Things). 3 hrs.
PREREQUISITE: None
This course will introduce students to the fundamentals of IoT. Emphasis will be on understanding how the IoT is bridging the gap between operational and information technology systems and the security concerns that must be considered, when implementing IoT solutions. (F, Sp)

CIS 250 E-Commerce. 3 hrs.
PREREQUISITE: None
This course is an introduction to e-commerce. Topics include marketing, building an electronic commerce store, security, and electronic payment systems. Upon completion student will be able to build an e-commerce presence. Code C. (Su)

CIS 251 C++ Programming. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 150
This course is an introduction to the C++ programming language including object-oriented programming. Topics include: problem solving and design; control structures; objects and events; user interface construction; and document and program testing. Code B. (F, Sp, Su)

CIS 255 Java Programming. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 150
This course is an introduction to the Java programming language.
Topics in this course include object-oriented programming constructs, Web page applet development, class definitions, threads, events and exceptions. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. Code B. (F, Sp)

CIS 260 Network Security and Risk Management. 3 hrs. (2-2)
PREREQUISITE: None
This course exposes students to essential concepts of networking security and IT risk management. Topics include design, protocols and administrative principles of secure networks, identification and elimination of threats and vulnerabilities, compliance and operational security, access control and identity management, application, data, and host security, cryptography and current and evolving issues in network security. Upon successful completion of this course, students will be able to demonstrate the knowledge and skills necessary to identify security issues, to mitigate and deter threats, to apply security controls and to implement and maintain an organization's security policies. This course prepares students to sit for the CompTIA Security+ certification exam. Code B. (F)

CIS 263 Computer Maintenance. 3 hrs.
PREREQUISITE: None
This course provides students with hands-on practical experience in installing software, operating systems, trouble-shooting, and maintaining systems. The class will help to prepare participants for the A+ Certification sponsored by CompTIA. Code C. (F, Sp, Su)

CIS 270 Cisco CCNA I. 3 hrs.
PREREQUISITE: None
This course is the first part of a four-part curriculum leading to Cisco Certified Network Associate (CCNA) certification. The content of this course is based on current requirements from the CISCO Networking Academy certification standards. Code C. (F, Sp, Su)

CIS 271 Cisco CCNA II. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 270
This course is the second part of a four-part curriculum leading to Cisco Certified Network Associate (CCNA) certification. The content of this course is based on current requirements from the CISCO Networking Academy certification standards. Code C. (Sp)

CIS 272 Cisco CCNA III. 3 hrs.
PREREQUISITE: Grade of "C" or higher in CIS 271
This course is the third part of a four-part curriculum leading to Cisco Certified Network Associate (CCNA) certification. The content of this course is based on current requirements from the CISCO Networking Academy certification standards. Code C. (Su)

CIS 282 Computer Forensics. 3 hrs.
PREREQUISITE: None
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. Code C. (F)

CIS 285 Object Oriented Programming. 3 hrs.
PREREQUISITE: CIS 255 or equivalent
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. Currently, courses are available in 285. Code B. (F, Sp)

CIS 287 SQL Server. 3 hrs.
PREREQUISITE: CIS 222
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 task scheduling and alerting abilities of SQL Executive; identify the concepts used in replication and implement replication of data between two SQL Services; 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. Code C. (Su)

CONSTRUCTION MANAGEMENT TECHNOLOGY (CMT)

CMT 101S Construction Materials and Methods. 3 hrs.
PREREQUISITE: None
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. (F)

CMT 102 Construction Blueprint Reading. 3 hrs.
PREREQUISITE: None
The purpose of this course is to introduce the student to blueprint reading pertinent to the construction industry. Emphasis will be placed on object visualization, symbols, abbreviations, and terminology. Upon completion of this course, the student will be able to visualize in three-dimensions the building from its working drawings, identify the various parts of the building, and understand the specification documents. (Su)

CMT 114 10 Hour OSHA Construction Safety. 1 hr.
PREREQUISITE: None
The purpose of this course is to introduce the student to OSHA and the regulations present within the construction industry. Upon completion of this course the student will be able to identify the primary safety rules established by OSHA, know reporting procedures, as well as, being able to use the OSHA manual. Emphasis will be placed on the importance of safety, OSHA, safety programs, and safety procedures. Students completing this course will receive their ten-hour OSHA certification. (F)

CMT 120 Construction Problem Solving. 1 hr.
PREREQUISITE: None
The purpose of this course is to introduce the student to the construction related problem solving using spreadsheets and construction calculators. Emphasis is on using the various functions of the construction calculator and developing the skills necessary to estimate elements of a construction project, and developing spreadsheets used for estimating various construction applications. (F)

CMT 140 Concrete Testing. 1 hr.
PREREQUISITE: None
The purpose of this course is to introduce the student to the properties of concrete and to provide an understanding of the precautions that must be taken during the curing process. Emphasis will be placed on hands on activities to understand how concrete hardens and gains strength. How freezing damages concrete during the curing period and understanding the precautions necessary to prevent concrete from drying during the curing period. (F)

CMT 156 Contracting and Construction Law. 3 hrs.
PREREQUISITE: None
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. (Sp)

CMT 161 Introduction to Sustainable Construction. 1 hr.
PREREQUISITE: None
The purpose of this course is to introduce the student to the Green Building movement in response to the growing demand for sustainable, healthy, and energy-efficient construction methods. Students will study the proven methods of new and remodeled green construction. Emphasis will be placed on teaching the hard science and the commonsense solutions to building sustainable, healthy and energy-efficient structures. Upon completion of this course a student will be aware of the building science theory of green construction. (F)

CMT 205S Construction Management. 3 hrs.
PREREQUISITE: CMT 217
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. (F)

CMT 206S Construction Estimating. 3 hrs.
PREREQUISITE: Eligible for MTH 100, CMT 101S, CMT 120 and either CMT 102 or AET 101S
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. (Sp)

CMT 209 Electrical and Mechanical Equipment in Buildings. 4 hrs.
PREREQUISITE: AET 101S or CMT 102
The purpose of this course is to introduce the student to the plumbing, HVAC, electrical, and lighting systems used in buildings. Upon completion of this course, the student will understand the basic principles and hardware requirements in designing plumbing, HVAC, electrical and lighting systems. (F)

CMT 217 Software Applications in Construction. 3 hrs. (2-2)
PREREQUISITE: Eligible for MTH 100, CMT 101S, and either CMT 102 or AET 101S
The purpose of this course is to introduce the student to software used in a construction office. This will include scheduling, financial management, and construction records. Upon completion of this course, the student will know how to organize, bid, purchase, account for, plan, and schedule a construction job using various computer software packages. (Sp)

CRIMINAL JUSTICE (CRJ)

The following introductory courses are offered each term online: CRJ 100, 110, 150, 208. A traditional section of CRJ 100 is offered each term. At least one pre-law course (CRJ 130, 140, 147) will be offered each term. Other major requirements may be offered only once per year so it is incumbent upon students to appropriately schedule classes.

CRJ 100 Introduction to Criminal Justice. 3 hrs.
PREREQUISITE: None
This course surveys the entire criminal justice process from law enforcement to the administration of justice through corrections. It discusses the history and philosophy of the system and introduces various career opportunities. Code B. (F, Sp, Su)

CRJ 110 Introduction to Law Enforcement. 3 hrs.
PREREQUISITE: None
This course examines the history and philosophy of law enforcement, as well as the organization and jurisdiction of local, state, and federal agencies. It includes the duties and function of law enforcement officers. Code B. (F, Sp)

CRJ 130 Introduction to Law and Judicial Process. 3 hrs.
PREREQUISITE: None
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. Code C. (F, Sp)

CRJ 140 Criminal Law and Procedure. 3 hrs.
PREREQUISITE: None
This course examines both substantive and procedural law. The legal elements of various crimes are discussed, with attention to the Alabama Code. Areas of criminal procedure essential to the criminal justice professional are covered. Code C. (F or Sp)

CRJ 146 Criminal Evidence. 3 hrs.
PREREQUISITE: None
This course considers the origins of the law of evidence and current rules of evidence. Types of evidence, their definitions and uses are covered, as well as the functions of the court regarding evidence. Code C. (as needed)

CRJ 147 Constitutional Law. 3 hrs.
PREREQUISITE: None
This course involves constitutional law as it applies to criminal justice. It includes recent Supreme Court decisions affecting criminal justice professionals, such as right to counsel, search and seizure, due processional, such as right to counsel, search and seizure, due process and civil rights. Code C. (F or Sp)

CRJ 150 Introduction to Corrections. 3 hrs.
PREREQUISITE: None
This course provides an introduction to the philosophical and historical foundations of corrections in America. Incarceration and some of its alternatives are considered. Code B. (F, Sp)

CRJ 160 Introduction to Security. 3 hrs.
PREREQUISITE: None
This course surveys the operation, organization and problems in providing safety and security to business enterprises. Private, retail, and industrial security are covered. Code B. (F or Sp)

CRJ 178 Narcotics/Dangerous Drugs. 3 hrs.
PREREQUISITE: None
This course surveys the history and development of drug abuse in society. Theories of drug abuse, identification and classification of drugs are covered. Strategies for combating the drug problem are discussed. Code B. (F or Sp)

CRJ 208 Introduction to Criminology. 3 hrs.
(Same as SOC 208)
PREREQUISITE: None
This course delves into the nature and extent of crime in the United States, as well as criminal delinquent behavior and theories of causation. The study includes criminal personalities, principles of prevention, control and treatment. Code B. (F, Sp, Su)

CRJ 209 Juvenile Delinquency. 3 hrs.
(Same as SOC 209)
PREREQUISITE: None
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. Code B. (F, Sp)

CRJ 216 Police Organization and Administration. 3 hrs.
PREREQUISITE: None
This course examines the principles of organization and administration of law enforcement agencies. Theories of management, budgeting, and various personnel issues are covered. Code C. (F or Sp)

CRJ 220 Criminal Investigation. 3 hrs.
PREREQUISITE: None
This course explores the theory and scope of criminal investigation. The duties and responsibilities of the investigator are included. The techniques and strategies used in investigation are emphasized.
Code C. (F or Sp)

CRJ 227 Homicide Investigation. 3 hrs.
PREREQUISITE: None
This course covers the principles, techniques and strategies of homicide investigation. Topics emphasized include ballistics, pathology, toxicology, immunology, jurisprudence, and psychiatry. Code C. (as needed)

CRJ 230 Criminalistics. 3 hrs.
PREREQUISITE: None
This course surveys the different techniques of scientific investigation. Emphasis is given to ballistics, photography, fingerprints, DNA, trace evidence, body fluids, casts, and the like. Code C. (as needed)

CRJ 236 Advanced Criminalistics. 3 hrs.
PREREQUISITE: None
This course covers the collection, handling, and analysis of evidence from crime scene to laboratory to courtroom. Topics include hair fibers, body fluids, firearms, glass, paint, drugs, documents, etc. Laboratory experiences may be utilized. Code C. (as needed)

CRJ 280 Internship in Criminal Justice. 3 hrs.
PREREQUISITE: Sophomore status, 2.0 GPA, and permission of Program Coordinator.
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. Code C. (as needed)

CRJ 290 Selected Topics - Seminar in Criminal Justice. 3 hrs.
PREREQUISITE: None
This course involves reading, research, writing, and discussion of selected subjects relating to criminal justice. Various contemporary problems in criminal justice are analyzed. This course may be repeated with approval from the department head. Code C. (as needed)

CULINARY ARTS (CUA)

CUA 101 Orientation to the Hospitality Profession. 3 hrs.
PREREQUISITE: None
This course is an introduction to the food service industry and employment opportunities. This course focuses on the different types of food service/ hospitality outlets. Upon completion of this course, the student will be knowledgeable of business and career opportunities within the food service industry. (F, Sp)

CUA 110 Basic Food Preparation. 3 hrs.
Corequisite: CUA 120
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. (F, Sp, Su)

CUA 111 Foundations in Nutrition. 3 hrs.
PREREQUISITE: None
This course focuses on nutrition and meal planning in relation to the food preparation industry. Topics include the science of food and nutrition, essential nutrients and their relation to the growth, maintenance and functioning of the body, nutritional requirements of different age levels and cultural influences on food selection. Upon completion of this course, students will be able to apply the basic principles of meal planning. (F,Sp)

CUA 112S Sanitation, Safety and Food Service. 2 hrs.
PREREQUISITE: None
This course introduces the basic principles of sanitation and safety to food handling including purchasing, storing, preparing, and serving. Specific topics Include the dangers of microbial contaminants, food allergens and foodborne illness, safe handling of food, the flow of food, and food safety management systems, At the conclusion of this course students will be prepared to test for ServSafe© certification. The content of this course is foundational for all culinary arts classes. (F, Sp, Su)

CUA 115 Advanced Food Preparation. 3 hrs. (1-6)
PREREQUISITE: CUA 110, 112S, 120, 201, 204 or Instructor Approval
In this course, students apply food preparation and meal management skills in all areas of food service. Emphasis is placed on management and technical skills needed to operate a restaurant. Upon completion of this course, students will develop advanced skills in food preparation and meal management. (F, Sp, Su)

CUA 120 Basic Food Preparation Lab. 2 hrs. (0-6)
Corequisite: CUA 110
In this course students apply fundamental knowledge and skills in preparing a variety of basic foods. Specific topics include safety, the history of food service, professional standards of conduct and ethics, credentialing, the kitchen brigade, tools, and techniques for preparing various types of food items. At the conclusion of this course students will demonstrate basic food preparation skills. (F, Sp, Su)

CUA 130 Chocolate and Truffles. 3 hrs. (1-6)
PREREQUISITE: CUA 204 or permission of instructor
This course is a specialty hands-on course in chocolate, focusing on tempering, chocolate candy making and the use of chocolate as a centerpiece medium. The student will have competency in chocolate to apply to the industry. (F)

CUA 142 Specialty Breads. 3 hrs. (2-3)
PREREQUISITE: CUA 204 or permission from instructor
The student will have a complete analysis of the different types of flour and types of leavening agents, as well as of the old, original method of making bread with naturally developed yeast present in pieces of previously fermented dough. Also, have a full understanding of the basic process of making bread, water, kneading, fermentation, temperature, and proofing. The student will also explore the art of fantasy breads, appliqués, presentation assemblages, and decorative breads. The student will develop competencies in stockroom, scully and supervision. (Su)

CUA 163 Foundations of Healthy Cooking Techniques. 2 hrs. (1-3)
PREREQUISITE: CUA 101, 112S, 110, 120, 111
This course is designed to provide students with a foundation in preparing foods based on healthy cooking principles and techniques. Topics covered include: healthy eating patterns, healthy ingredients, healthy cooking techniques, and developing healthy menus. This course will primarily focus on applications of healthy cooking techniques in lab format. Upon completion, students will be able to apply the learned techniques. (F, Sp)

CUA 165 Cake Decorating and Design. 3 hrs. (2-3)
PREREQUISITE: CUA 204 or permission of instructor
This course focuses on preparing cakes, tortes, individual Viennese cakes, and piping skills. Emphasis is placed on piping different mediums such as chocolate, buttercream, royal icing; assembling cakes with different batters or doughs such genoise, Japonaise, Bavarian, mousse and marzipan. Upon completion students should be able to plan, execute, and evaluate whole cakes, dessert platters, and a show piece. (Sp)

CUA 180 Special Topics in Commercial Food Service. 1 hr. (0-3)
PREREQUISITE: None
This course introduces students to the concepts of hospitality and customer service. Topics include greeting guest, developing proper phone skills, and restaurant host/hostess greeting responsibilities to include laying the cover, taking the order, surveying of different styles of table service from the casual to the very formal, tabulating and presenting the bill, and busing and turning the table. Upon completion of this course, students should be able to demonstrate proficiency in the art of providing hospitality and related functions of providing service. (Su)

CUA 201 Meat Preparation and Processing. 3 hrs. (1-4)
PREREQUISITE: CUA 110, 120 with a grade of C or better
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. (F, Sp)

CUA 204 Foundations of Baking. 3 hrs. (1-6)
PREREQUISITE: CUA 110, 112, 120 with a grade of C or better 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. (F, Sp, Su)

CUA 205 Introduction to Garde Manger. 3 hrs. (1-6)
PREREQUISITE: CUA 110, 120
This course is designed to develop skills in the art of Garde Manger. Topics include pates, terrines, galantines, ice and tallow carving, chaud-froid/ aspic work, charcuterie, smoking, canapés, hor d'oeuvres, and related food items. Upon completion, students should be able to design, set up, and evaluate a catering function to include a classical cold buffet with appropriate show pieces. (F, Sp)

CUA 208 Advanced Baking. 3 hrs. (1-4)
PREREQUISITE: CUA 204
This course is a continuation of CUA 204. Topics include specialty breads, pastillage, marzipan, chocolate, pulled-sugar, confections, classic desserts, pastries, and cake decorating. Upon completion, students should be able to demonstrate pastry preparation and plating, cake decorating, and showpiece production skills. (Sp)

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

CUA 213 Food Purchasing and Cost Control. 3 hrs.
PREREQUISITE: None
Emphasis is placed on procurement, yield tests, inventory control, specification, planning, forecasting, market trends, terminology, cost controls, pricing, and food service ethics. Upon completion, students should be able to apply effective

purchasing techniques based on the end-use of the product. (F, Sp)

CUA 216 Plated Dessert Design. 2 hrs. (2-3)
PREREQUISITE: CUA 204 or permission of instructor
This course focuses on plated dessert designs. Upon completion, students should be able to plate and serve attractive presentations of desserts with appropriate sauces and garnishes. (Su)

CUA 253 Field Experience Pastry. 3 hrs. (0-20)
PREREQUISITE: Foodservice majors, CUA 101, 112S, 110, 120, 204
A minimum of 200 hours of supervised practical experience in an approved food service system assigned by the Coordinator. Students are supervised jointly by director on the job and by the college instructor. Students gain practical experience in food services. This course may be repeated for a total of 6 hours credit.

CUA 255 Field Experience Savory. 3 hrs. (0-20)
PREREQUISITE: Foodservice majors, CUA 101, 112S, 110, 120
A minimum of 200 hours of supervised practical experience in an approved food service system assigned by the Coordinator. Students are supervised jointly by director on the job and by the college instructor. Students gain practical experience in food services. This course may be repeated credit.

CUA 260 Internship for Culinary Apprentice.
1 hr. (Intern 5 hrs.)
PREREQUISITE: Culinary Arts majors
This course is designed to give students practical, on-the-job experiences in all phases of food service operations under the supervision of a qualified chef and coordinated with the college instructor. May be repeated for a maximum of six hours. (F, Sp, Su)

CUA 261 Culinary Apprenticeship Practicum. 1 hr.
PREREQUISITE: Permission of Program Coordinator
The student will complete the final practical exam required by the American Culinary Federation to complete a formal chef apprenticeship. The student will demonstrate knowledge of an entry-level culinary professional within a commercial foodservice operation responsible for preparing and cooking sauces, cold foods, fish, soups and stocks, meats, vegetables, eggs and other bakery items. The student will demonstrate a basic knowledge of food safety and sanitation, culinary nutrition, and supervisory management. This course must be taken during the last semester of apprenticeship. Currently courses are available in P. Pastry and S. Savory. (F, Sp, Su)

ECONOMICS (ECO)

ECO 231 Principles of Macroeconomics. 3 hrs.
PREREQUISITE: None
This course is an introduction to macroeconomic theory, analysis, and policy applications. Topics include the following: scarcity, demand and supply, national income analysis, major economic theories concerning monetary and fiscal policies as stabilization measures, the banking system, and other economic issues or problems including international trade. Core Area IV, ASOC. (F, Sp, Su)

ECO 232 Principles of Microeconomics. 3 hrs.
PREREQUISITE: None
This course is an introduction of the microeconomic theory, analysis, and applications. Topics include scarcity, the theories of consumer behavior, production and cost, markets, output and resource pricing, and international aspects of microeconomics. Core Area IV, ASOC. (F, Sp, Su)

ELECTROMECHANICAL TECHNOLOGY (ELM)

ELM 181 Special Topics in Electromechanical Technology. 1-3 hrs.
PREREQUISITE: Permission of Program Coordinator
This course provides specialized instruction in various areas related to electromechanical technology. Emphasis is placed on meeting student's needs. (on demand)

ELM 200 Electric Circuits I. 3 hrs. (2-2)
PREREQUISITE: Eligible for MTH 100, appropriate score on placement test, permission of Program Coordinator, or equivalent This course provides an in-depth study of direct current (DC) electronic theory. Topics include atomic theory, magnetism, properties of conductors and insulators, and 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 DC 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. (F, Sp, Su)

ELM 201S Electric Circuits II. 3 hrs. (2-2)
PREREQUISITE: ELM 200 or equivalent
This course provides an in-depth study of alternating current (AC) electronic theory. Students are prepared to analyze complex AC circuit configurations with resistors, capacitors, and inductors in series and parallel combinations. Topics include electrical safety and lockout procedures, specific AC theory functions such as RLC, impedance, phase relationships, and power factor. Students will be able to define terms, identify waveforms, solve complex mathematical problems, construct circuits, explain circuit characteristics, identify components, and make accurate circuit measurements using appropriate measurement instruments. They should also be able to perform fundamental tasks associated with troubleshooting, repairing, and maintaining industrial AC systems. (Sp, on demand)

ELM 202 Digital Circuits I. 3 hrs. (2-2)
PREREQUISITE: None
This course covers digital logic and digital networks. Topics

include introductory concepts, number systems, codes, logic gates, Boolean algebra, combinational logic, flip-flop and related devices, arithmetic operations and arithmetic networks. Upon completion of this course, a student will be able to add, subtract, and multiply with digital electronic components. (F, Su)

ELM 205 Electronics I. 3 hrs. (2-2)
PREREQUISITE: ELM 201S
This course examines the conventional flow treatment 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. (F, on demand)

ELM 206S Electronics II. 3 hrs. (2-2)
PREREQUISITE: ELM 205
Topics include analog integrated circuits, amplifiers, buffers, filters, inverters, and oscillators. Upon completion of this course, a student will be able to analyze an integrated circuit electronic network. (Sp, on demand)

ELM 210 Fluid Power I. 3 hrs. (2-2)
PREREQUISITE: None
This course offers an introduction into fluid power systems. Topics include hydraulic and pneumatic power, pressure, flow, speed and pressure control, relief valves, and directional control valve (DCV) applications. Upon completion of this course, the student will have demonstrated the ability to read gages, design, draw, and connect hydraulic and pneumatic circuits, measure and calculate circuit parameters, connect and operate DCVs and relief valves. (F, on demand)

ELM 215 Industrial Controls I. 4 hrs. (2-4)
PREREQUISITE: ELM 200 or equivalent
This course offers an introduction into electrical motor control systems and industrial wiring. Topics include transformers, ladder logic, relays, motor starters, timers and counters, blueprints, conduit selection and forming, raceways, wire sizing, termination, splicing, and installation, circuit protection, and disconnects. Upon completion of this course, the student will have demonstrated the ability to: perform lockout/tagout, connect and operate motors and control circuits, calculate transformer voltages, size, connect and operate control transformers, interpret electrical blueprints, splice, run, and terminate control wiring, bend and install conduit and wiring. (Sp, on demand)

ELM 281 Special Topics in Electromechanical Technology. 3 hrs.
PREREQUISITE: Permission of the Program Coordinator
This course provides specialized instruction for various areas related to electromechanical technology. Emphasis is placed on meeting student's needs.

EMERGENCY MEDICAL TECHNOLOGY/ TECHNICIAN (EMS)

EMS 118 Emergency Medical Technician. 9 hrs. (6-6)
PREREQUISITE: Admission to EMP Basic Courses
This course is required to apply for certification as an Emergency Medical Technician. This course provides students with insights into the theory and application of concepts related to the profession of emergency medical services. Specific topics include: EMS preparatory, airway maintenance, patient assessment, management of trauma patients, management of medical patients, treating infants and children, and various EMS operations. This course is based on the NHTSA National Emergency Medical Services Education Standards.

EMS 119 Emergency Medical Technician Clinical. 1 hr. (Clin 3)
PREREQUISITE: Admission to EMP Basic Courses
This course is required to apply for certification as an EMT. This course provides students with clinical education experiences to enhance knowledge and skills learned in the EMS 118, Emergency Medical Technician Theory and Lab. This course helps students prepare for the National Registry Exam.

EMS 155 Advanced Emergency Medical Technician. 8 hrs. (5-6)
PREREQUISITE: Admission to the EMS Program and a valid Alabama EMT License or finished an accredited EMT course within 30 days of the first day of class.
This course is required to apply for certification as an Advanced Emergency Medical Technician (AEMT). This course introduces the theory and application of concepts related to the profession of the AEMT. The primary focus of the AEMT is to provide basic and limited advanced emergency medical care and transportation for critical and emergent patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Topics include: extending the knowledge of the EMT to a more complex breadth and depth, intravenous access and fluid therapy, medication administration, blind insertion airway devices, as well as the advanced assessment and management of various medical illnesses and traumatic injuries. This course is based on the NHTSA National Emergency Medical Services Education Standards. Requires licensure or eligibility for licensure at the EMT level and EMS 156 must be taken as a corequisite.

EMS 156 Advanced Emergency Medical Technician Clinical. 2 hrs. (Clin 6)
PREREQUISITE: Admission to the EMS Program and a valid Alabama EMT License or finished an accredited EMT course within 30 days of the first day of class.
This course is required to apply for certification as an Advanced Emergency Medical Technician (AEMT). This course provides students with clinical education experiences to enhance knowledge and skills learned in EMS 155. This course helps prepare students for the National Registry AEMT Exam. The student will have the opportunity to use the basic and advanced skills of the AEMT in the clinical and field

settings under the direct supervision of licensed healthcare professionals. Requires licensure or eligibility for licensure at the EMT level and EMS 155 must be taken as a corequisite.

EMS 189 Applied Anatomy and Physiology for the Paramedic. 4 hrs. (4-0)
PREREQUISITE: Enrolled at JSCC
Note: EMS 189 or BIO 201 is a prerequisite for the first Paramedic course.
This course introduces human anatomy and physiology and includes concepts related to basic chemistry; fluid, electrolyte, and acid-base balance; functions of cells, tissues, organs, and systems; pathophysiology; and associated medical terminology. Emphasis is placed on applying content to signs, symptoms, and treatments; and situations commonly seen by paramedics. Upon course completion, students should be able to demonstrate a basic understanding of the structure and function of the human body.

EMS 240 Paramedic Operations. 2 hrs. (1-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course focuses on the operational knowledge and skills neededforsafe and effectivepatientcarewithin the paramedic's scope of practice. Content areas include: research, paramedic roles and responsibilities, well-being of the paramedic, illness and injury prevention, medical-legal-ethical issues, therapeutic communications, medical terminology, life span development, ambulance operations, medical incident command, rescue awareness and operations, hazardous materials incidents, crime scene awareness, and Alabama EMS laws and rules.

EMS 241 Paramedic Cardiology. 3 hrs. (2-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course introduces the cardiovascular system, cardiovascular electrophysiology, and electrocardiographic monitoring. This course further relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific cardiovascular conditions. Content areas include: cardiovascular anatomy and physiology, cardiovascular electrophysiology, electrocardiographic monitoring, rhythm analysis, and prehospital 12-lead electrocardiogram monitoring and interpretation, assessment of the cardiovascular patient, pathophysiology of cardiovascular disease and techniques of management including appropriate pharmacologic agents and electrical therapy.

EMS 242 Paramedic Patient Assessment. 3 hrs. (2-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course provides the knowledge and skills needed to perform a comprehensive patient assessment, make initial management decisions, and to communicate assessment findings and patient care verbally and in writing. Content areas include: airway management, history taking, techniques of the physical examination, patient assessment, clinical decision making, communications, documentation, and assessment-based management.

EMS 243 Paramedic Pharmacology. 1 hr. (0-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course introduces basic pharmacological agents and concepts, with an emphasis on drug classifications and the knowledge and skills required for safe, effective medication administration. Content areas include: general principles of pharmacology and pharmacologic pathophysiology; venous and intraosseous access techniques, the metric and apothecary system; computation of dosage and solution problems, administration of pharmacologic agents; and nasogastric tube placement.

EMS 244 Paramedic Clinical I. 1 hr. (Clin 3)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course is directed toward the application of knowledge and skills developed in didactic and skills laboratory experiences to the clinical setting. Theory and skills are applied to a variety of patient situations in the clinical setting, with a focus on patient assessment and management, advanced airway management, electro-therapy, I.V./I.O. initiation and medication administration.

EMS 245 Paramedic Medical Emergencies. 3 hrs. (2-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This courserelates pathophysiology and assessment findings to the formulation of field impressions and implementation treatment plans for specific medical conditions. Content areas include: pulmonology, neurology, gastroenterology, renal/urology, toxicology, hematology, environmental conditions, infectious and communicable diseases, abuse and assault, patients with special challenges, and acute interventions for the chronic care patient.

EMS 246 Paramedic Trauma Management. 3 hrs. (2-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for trauma patients. Content areas include the pathophysiology, assessment, and management of trauma as related to: trauma systems; mechanisms of injury; hemorrhage and shock; soft tissue injuries; burns; and head, facial, spinal, thoracic, abdominal, and musculoskeletal trauma.

EMS 247 Paramedic Special Populations. 2 hrs. (1-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced

EMT course within 30 days of the first day of class.
This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific medical conditions. Content areas include: endocrinology, allergies and anaphylaxis, behavioral/psychiatric conditions, gynecology, obstetrics, neonatology, pediatrics, and geriatrics. In the clinical setting, theory and skills are applied to a variety of medical situations across the life span of the patient, with a focus on communication with and management of cardiac, acute care, psychiatric/behavioral, obstetrical, newborn, pediatric, geriatric, and acute interventions for chronic care patients, and patients with special challenges.

EMS 248 Paramedic Clinical II. 3 hrs. (Clin 9)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course is directed toward the application of knowledge and skills developed in didactic and skills laboratory experiences to the clinical setting. Theory and skills are applied to a variety of medical situations across the life span of the patient, with a focus on communication with and management of cardiac, acute care, psychiatric/behavioral, obstetrical, newborn, pediatric, geriatric, and acute interventions for chronic care patients, and patients with special challenges.

EMS 253 Paramedic Transition to the Workforce. 2 hrs. (1-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course is designed to meet additional state and local educational requirements for paramedic practice. Content may include: prehospital protocols, transfer medications, topics in critical care and transport, systems presentation, and/or national standard certification courses as dictated by local needs or state requirement.

EMS 254 Advanced Competencies for the Paramedic. 2 hrs. (1-2)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course is designed to assist students in preparation for the paramedic licensure examination. Emphasis is placed on validation of knowledge and skills through didactic review, skills lab performance, and/or computer simulation and practice testing. Upon course completion, students should be sufficiently prepared to sit for the paramedic licensure examination.

EMS 255 Paramedic Field Preceptorship. 5 hrs. (Clin 15)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course provides field experiences in the prehospital setting with advanced life support EMS units. Under the direct supervision of a field preceptor, students synthesize cognitive knowledge and skills developed in the skills laboratory and hospital clinical to provide safe and effective patient care in the pre-hospital environment. Upon course completion, students should have refined and validated their patient care practices to provide safe and effective patient care over a broad spectrum of patient situations and complaints.

EMS 256 Paramedic Team Leadership. 1 hr. (Clin 3)
PREREQUISITE: EMS 189 or BIO 201 and a valid Alabama Advanced EMT License or finished an accredited Advanced EMT course within 30 days of the first day of class.
This course is designed to evaluate students' ability to integrate didactic, psychomotor skills, clinical, and field internship instruction to serve as a competent entry-level paramedic. This final evaluative (rather than instructional) course focuses on students' professional attributes and integrative competence in clinical decision-making and team leadership in the pre-hospital setting. Upon course completion, students should have demonstrated adequate knowledge and skills, professional attitudes and attributes, clinical decision-making and team leadership abilities to effectively function as a competent entry-level paramedic.

ENGLISH (ENG)

ENG 099 Introduction to College Writing. 1 institutional hr.
PREREQUISITE: None. COREQUISITE: ENG 101
This course places emphasis on providing students with additional academic and non-cognitive support with the goal of success in the students' paired ENG 101 class. The material covered or practiced in the ENG 099 course is complementary to and supportive of material taught in ENG 101 and the needs of the ENG 099 student. (F, Sp, Su)

ENG 101 English Composition I. 3 hrs.
PREREQUISITE: Successful completion ENR 098, or a score of 5 or higher on the WritePlacer section of Accuplacer, or a score of 18 or higher on the ACT (or equivalent SAT score).
This course provides instruction and practice in the writing of at least four extended compositions and the development of rhetorical strategies, 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 and information literacy. Core Area I. (F, Sp, Su)

ENG 102 English Composition II. 3 hrs.
PREREQUISITE: A grade of "C" or higher in ENG 101 or the equivalent. English Composition II provides continued instruction and practice in the writing of at least four extended compositions or equivalent assignments of which at least one 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 and information literacy. Core Area I. (F, Sp, Su)

ENG 246-247-248-249 Creative Writing. 3 hrs.
PREREQUISITE: Consent of instructor
These courses provide 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 these courses may include instruction on publishing. Students will compose a significant body of imaginative literature, which may be read by or to the class. Code C. (on demand)

ENG 251 American Literature I. 3 hrs.
PREREQUISITE: ENG 102 or equivalent
This course is a survey of American literature from its beginnings to the mid-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. Core Area II, AHUM. (F, Sp, Su)

ENG 252 American Literature II. 3 hrs.
PREREQUISITE: ENG 102 or equivalent
This course is a survey of American literature from the mid-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. Core Area II, AHUM. (F, Sp, Su)

ENG 261 English Literature I. 3 hrs.
PREREQUISITE: ENG 102 or equivalent
This course is a survey of English/British literature from its inception to the end of the eighteenth 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. Core Area II, AHUM. (F, Sp, Su)

ENG 262 English Literature II. 3 hrs.
PREREQUISITE: ENG 102 or equivalent
This course is a survey of English/British literature from the late eighteenth 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. Core Area II, AHUM. (F, Sp, Su)

ENG 271 World Literature I. 3 hrs.
PREREQUISITE: ENG 102 or equivalent
This course is a survey of world literature from its inception to the mid-seventeenth 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. Core Area II, AHUM. (F, Sp, Su)

ENG 272 World Literature II. 3 hrs.
PREREQUISITE: ENG 102 or equivalent
This course is a survey of world literature from the mid-seventeenth 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. Core Area II, AHUM. (F, Sp, Su)

ENGLISH/READING (ENR)

ENR 098 Writing and Reading for College.
4 institutional hrs.
PREREQUISITE: None
This course integrates reading and writing skills students need to comprehend and interact with college-level texts and to produce original college-level writing. Reading skills will center on processes for literal and critical comprehension, as well as the development of vocabulary skills. Writing skills will focus on using an effective writing process including generating ideas, drafting, organizing, revising and editing to produce competent essays using standard written English. This course may include a one-hour lab component.

ENTREPRENEURSHIP (ETP)

ETP 265 Entrepreneurial Marketing. 3 hrs.
PREREQUISITE: None
This course is designed to help students learn about best practices in Entrepreneurial Marketing. Topics include the analysis of marketing opportunities, identification of the target audience, and the development of a marketing strategy, brand positioning and an integrated marketing plan. Upon completion, students should be able to demonstrate an understanding of marketing issues that are unique to new ventures and small businesses. Code C. (Sp)

ETP 266 Entrepreneurial Finance. 3 hrs.
PREREQUISITE: None
This course is designed to teach students the accounting issues that are important to the business owner, not the accounting practitioner. Topics include start-up funding, sources of financing, identifying and preventing fraud, buying and valuing ventures, and harvesting the value created in business ventures. This course also covers the creation of personal financial statements and pro forma financial statements, which are crucial components of a business plan. Code C. (Su)

ETP 279 Small Business Management. 3 hrs.
PREREQUISITE: None
This course provides an overview of the creation and operation of a small business. Topics include buying a franchise, starting a business, identifying capital resources, understanding markets, managing customer credit, managing accounting systems, budgeting systems, inventory systems, purchasing insurance, and the importance of appropriate legal counsel. Code C. (F,Sp)

FUNERAL SERVICE EDUCATION (FSE)

FSE 101 Funeral Directing. 3 hrs.
PREREQUISITE: Admission to program
This course is a study relating to general information on religious practices, fraternal and military funerals, the shipping of remains, cremation, and aftercare. It surveys the history of funeral service including social, cultural, mourning, and religious customs associated with funerals and final dispositions. A major focus is on the role and growth of the funeral service

profession and affiliated organizations as an American social institution with emphasis on individuals and events that have influenced contemporary funeral principles and practices. (F)

FSE 110 Law and Ethics for Funeral Service. 3 hrs.
PREREQUISITE: Admission to program
This course is designed to introduce students to law and ethics as it relates to general small businesses and to the funeral profession. Major topics of funeral law include: sources of law, the legal status of the dead human body, the duty of burial, right to control funeral arrangements, final disposition, liability for funeral expenses, and torts involving the dead human body and the funeral director. Further areas of discussion include cemeteries, crematories, state and federal laws and regulations pertaining to funeral service, and the legal aspects of being a licensed funeral director and/or embalmer. General law topics discussed include wills, estates, probate and related matters. Students will focus on the bodies of law and the judicial system in the United States to understand types of contracts, sale of goods, characteristics related to bailments (including common and private carriers), commercial paper, legal issues regarding agencies, employment, basic forms of business organization and methods of acquiring and transferring real and personal property. Ethical discussions will include how to facilitate higher ethical decisions, actions in proper treatment of the deceased and professional services to the bereaved. (F)

FSE 145 Basic Accounting Procedures for Funeral Services. 3 hrs.
PREREQUISITE: Admission to Program
This course explores requirements for those interested in franchising, starting, or acquisitioning a mortuary or other death care-related small business as an entrepreneurial endeavor. This course gives an introduction to basic principles of accounting theory. This subject covers financial statements and their analysis, journalizing concepts, receivables, payables, deferrals and accruals. Inventory costing methods, depreciation methods and payroll accounting are included. Applications to funeral home operations are made throughout the subject material. It is not the aim of this course to develop accounting proficiencies which would enable the graduating student to handle all accounting tasks without the aid of a consulting accountant.

FSE 201 Embalming I. 3 hrs.
PREREQUISITE: Admission to program
This course is a study of the process of chemically treating the dead human body to reduce the presence and growth of microorganism's temporarily inhibiting organic decomposition, and restoring an acceptable appearance. Topics include fundamental practices associated with pre-embalming, embalming, and post-embalming. It includes the study of the phenomenon of death in the human body and government regulations applicable to the embalming process. Details of arterial, cavity, hypodermic, and surface embalming treatments are covered. Disinfection, sanitation, and compliance with OSHA requirements are stressed as methods to protect the embalmer, the environment, and the public. Additionally, this course discusses new technology, procedures, theories, and applications as they relate to the embalming process. (Sp)

FSE 202 Embalming II. 3 hrs.
PREREQUISITE: FSE 201
This course builds upon theory and application as learned in FSE 201 with descriptions, embalming concerns, and treatments for general and selected embalming conditions. Additionally, this course studies pathological disease conditions and how they affect various parts of the body, with particular emphasis on those conditions which relate to or affect the embalming or restorative art process. Specific embalming problems and procedures will be discussed and student embalming reports help develop logic and awareness of embalming as a scientific process. (Su)

FSE 203 Embalming Laboratory. 3 hrs. (0-9)
PREREQUISITE: Admission to program
In this course students demonstrate the knowledge, skills, and abilities needed to function as an embalmer. Emphasis will be placed on the student's ability to demonstrate proper practical embalming techniques, including posing of features, raising of vessels, mixing embalming fluids, injecting fluids, aspiration and suturing of incisions. Embalming reports will be completed to document cognitive processes used to plan, prescribe, apply, and evaluate, embalming treatments used. Students must be certified as being proficient by a Qualified Instructor on those techniques before a grade will be issued for completion of the course. Students will be required to obtain insurance as required by program. Apprentice Certification is required from the State in which the embalming laboratory is conducted. (F, Sp, Su)

FSE 206 Principles of Mortuary Sciences. 3 hrs.
PREREQUISITE: Admission to program
This course is designed to encourage the basic principles of microbiology as related to funeral service. Major topics include sanitation, personal and environmental disinfection, public health and embalming practices. The course identifies basic microbial morphology/physiology, interprets host parasite relationships/interaction, decontamination procedures by proper use of chemical disinfection and sterilization procedures. Emphasis will be placed on defense mechanisms; microorganisms, transmission of infectious diseases, and pathogens and/or opportunists causing disease commonly associated with the human host and dead human remains. (Sp)

FSE 207 Thanatochemistry. 3 hrs.
PREREQUISITE: Admission to program
This course is a basic study of inorganic, organic, biological, and embalming chemistry as it relates to the funeral profession. In particular, this course stresses the chemical principles and precautions involved in sanitation, disinfection, public health, and embalming. Specific chemicals related to embalming and treatment of the dead human body and government regulations for these chemicals are also discussed. (Su)

FSE 213 Restorative Art. 3 hrs.
PREREQUISITE: Admission to program
This course covers the basic principles of Restorative Art as it relates to Funeral Service. Major topics include: name and location of major muscles and bony structures of the skull,

anatomical terminology, natural and acquired facial markings, facial proportions, parts and variations of the four major facial features, head and facial profiles, frontal and bilateral views, restorative tools and treatments, and importance of obtaining permission to perform any restorative procedures. A major emphasis is placed on wax modeling techniques, cosmetics, lighting, and non-wax techniques used to restore natural shape, form, and color. (Sp)

FSE 214 Advanced Restorative Art. 3 hrs.
PREREQUISITE: FSE 213
This course is a continuation of FSE 213. Color theory is emphasized using mortuary or ordinary cosmetics and special lighting. Students will be able to demonstrate proper techniques of restorative art in an on-campus laboratory setting. (Su)

FSE 223 Funeral Service Social Science. 3 hrs.
PREREQUISITE: Admission to program
This course applies principles of various social science disciplines to the study of dying, death, and bereavement from multiple perspectives. Theoretical and practical viewpoints addressing the processes of grief, bereavement, mourning, aftercare, crisis intervention, and ego defense mechanisms that may be encountered by funeral professionals. In the area of sociology, emphasis is placed upon family structures, social structures, factors of change, religion, and learning styles as they relate to the funeral profession and to funeralization. A special emphasis is placed on the role of the funeral director as a facilitator of these processes. (F)

FSE 225 Funeral Service Management I. 3 hrs.
PREREQUISITE: Admission to program
This course is a study of funeral home operations and management. Major topics of discussion will include: site selection, financing, recruitment and training of personnel, establishment of management policies, conducting and arrangement conference, selection-room planning, marketing, merchandising, small business, cremation, cemetery operations, prearrangement, and compliance with governmental regulations. Factors that influence change in funeral patterns, practices, and trends are also discussed. (Sp)

FSE 226 Funeral Service Management II. 3 hrs.
PREREQUISITE: FSE 225
This course explores requirements for those interested in franchising, starting, or acquisitioning a mortuary or other death care-related small business as an entrepreneurial endeavor. Marketing strategies and management strategies used in a technologically rich global market are addressed. Sustainability of the business is assessed through quantitative measures and qualitative factors that serve as foundations to implement effective asset and risk management strategies, with an emphasis on collecting, analyzing, interpreting, and reporting financial data. Determining the need for, use of, and production of a business plan is discussed, with an emphasis on preparing a business plan as an action plan supporting the needs of the entrepreneur. (Su)

FSE 227 Computer Principles and Funeral Service Applications. 3 hrs.
PREREQUISITE: Admission to program
This is a basic course specifically intended to enhance the understanding of the application of computers to the funeral profession. The course is designed to instill an appreciation for computers as an effective funeral home management tool. Topics include computer hardware, various types of computer software, spreadsheets, presentation software, cemetery software and word processing. Students will be able to apply principles of computer assisted funeral home operation to actual practice. (F)

FSE 228 Funeral Service Internship. 3 hrs. (Intern 15)
PREREQUISITE: Admission to program
This course is based upon experiences in funeral home under the supervision of a licensed funeral director and/or embalmer. Supervisors will assist faculty with practical work-based experiences and direct client care. Professional duties are supervised and evaluated for progress. Students will be able to demonstrate proper techniques of funeral directing and funeral home operation. (F, Sp, Su)

FSE 230 Funeral Service Comprehensive Review. 3 hrs.
PREREQUISITE: Admission to program
This course is a survey of the professional expectations in each major area of Funeral Service Education. Emphasis is placed on specific problem areas and the requirements for licensure by state and national boards. Students will demonstrate competency in theoretical knowledge by completing a battery of tests. This course must be taken the last semester before graduation. If the student is enrolled in other courses while taking FSE 230 those courses must be at this college. (F, Sp, Su)

GEOGRAPHY (GEO)

GEO 100 World Regional Geography. 3 hrs.
PREREQUISITE: None
This course surveys various countries and major regions of the world with respect to location and landscape, world importance, political status, population, type of economy, and its external and internal organization problems and potentials. Core Area IV, ASOC. (F, Sp, Su)

HEALTH EDUCATION (HED)

HED 221 Personal Health. 3 hrs.
PREREQUISITE: None
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. Code B. (F, Sp, Su)

HED 222 Community Health. 3 hrs.
PREREQUISITE: None
This course introduces the principles and practices of community health; it includes drug use and abuse,

communicable diseases, cardiovascular diseases, cancer, consumer, health, health organization, and environmental concerns. Code C. (F, Sp, Su)

HED 231 First Aid. 3 hrs.
PREREQUISITE: None
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 requirement of the American Red Cross. CPR and AED training are also included. Code B. (F, Sp, Su)

HED 277 CPR Recertification. 1 hr.
PREREQUISITE: Valid CPR Certification
In this course, instruction and review of updated information concerning cardiopulmonary resuscitation (CPR) is presented. The student must satisfactorily execute skills needed to meet requirements for recertification in Basic Life Support (BLS) as required by the American Heart Association. Code C. (F, Sp, Su)

HISTOLOGIC TECHNICIAN (HST)

HST 110 Introduction to Histotechnology. 3 hrs.
PREREQUISITE: Admission to Program
This course provides an introduction to histology laboratory operation and the professional responsibilities of the histologic technician. Emphasis is placed on organization, terminology, specimen accession, record keeping, quality assurance, OSHA regulations, quality improvement, principles and concepts of medical ethics, and legal issues. Upon completion, students will be able to meet the requirements and responsibilities of the daily operation of a histology laboratory.

HST 120 Histology. 5 hrs. (3-4)
PREREQUISITE: Admission to Program
This course provides an overview of the microscopic arrangement and identification of cells and tissues in the human body. Emphasis is placed on classification and relationships of the structure and function of microscopic systems. Upon completion, students should be able to microscopically identify cells, tissues, and organs of the human body.

HST 130 Histotechniques. 5 hrs. (3-4)
PREREQUISITE: Admission to Program
This course provides an introduction to basic histological techniques. Emphasis is placed on dissection, fixation, tissue processing, embedding, decalcification, sectioning, and applied laboratory techniques. Upon completion, students should be able to dissect, process, embed and section high quality tissue sections.

HST 140 Histochemistry. 5 hrs. (3-4)
PREREQUISITE: Admission to Program
This course provides an introduction to basic histological techniques. Emphasis is placed on special staining, immunohistochemical techniques, cytology preparation techniques and frozen sections. Upon completion, students should be able to perform special stains and understand advanced and emerging techniques.

HST 210 Histopathology. 4 hrs.
PREREQUISITE: Admission to Program
This course provides an introduction to histology laboratory operations and the professional responsibilities of the histologic technician. Emphasis is placed on changes in tissue associated with the various disease states and the use of selected special stains and techniques in identifying disease processes. Upon completion, students should be able to apply the special stains and other assays to the disease and help identify the stain under the microscope.

HST 220 Clinical Rotation. 8 hrs. (Clin 24)
PREREQUISITE: HST 110, 120, 130, 140, and 210
This course provides entry level histotechnician clinical experience in an approved histology laboratory. Emphasis is placed on learning and performing routine laboratory operations and the production of a microscopic slide for diagnosis. Upon completion, the student should be able to demonstrate proficiency in histologic techniques and be prepared to take the HT certification exam.

HST 230 Professional Issues. 3 hrs.
PREREQUISITE: HST 110, 120, 130, 140, and 210
This course provides the practical application and integration of histology theory and practice using case studies. Topics include laboratory operations and accreditation processes, professional and ethical issues, laboratory management principles and preparation for certification examination. Upon completion, students should be able to demonstrate level skills as a histotechnician and be prepared to sit for the histotechnician certification examination.

HISTORY (HIS)

HIS 101 Western Civilization I. 3 hrs.
PREREQUISITE: None
This course is a survey of social, intellectual, economic, and political developments, which have molded the modern western world. This course covers the ancient and medieval periods and concludes in the era of the Renaissance and Reformation. Core Area IV, ASOC. (F, Sp, Su)

HIS 102 Western Civilization II. 3 hrs.
PREREQUISITE: None
This survey course examines the social, intellectual, economic, cultural, and political developments which have shaped the modern Western world. It covers the history of the West from the early modern era to the present. Core Area IV, ASOC. (F, Sp, Su)

HIS 121 World History I. 3 hrs.
PREREQUISITE: None
This course surveys social, intellectual, cultural, economic, and political developments, which have molded the modern world. Focus is on both non-western and western civilizations from the prehistoric to the early modern era. Core Area IV, ASOC.

HIS 122 World History II. 3 hrs.
PREREQUISITE: None
The course surveys social, intellectual, cultural, economic, and

political developments which have molded the modern world. It covers world history, both western and nonwestern, from the Early Modern Era through the Post-Modern Era. Core Area IV, ASOC.

HIS 201 United States History I. 3 hrs.
PREREQUISITE: None
This course surveys United States history from the pre-Columbian period to the Civil War era. Core Area IV, ASOC. (F, Sp, Su)

HIS 202 United States History II. 3 hrs.
PREREQUISITE: None
This course is a continuation of HIS 201. It surveys United States history from the Reconstruction era to the present. Core Area IV, ASOC. (F, Sp, Su)

HIS 216 History of World Religions. 3 hrs.
PREREQUISITE: None
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. Code C. ASOC.

HIS 220 Contemporary Studies. 3 hrs.
PREREQUISITE: None
This course provides a survey of contemporary problems and issues within a historical context. Topics might include nationalism, the rise of Islam as a powerful influence in the post-Cold War environment, environmental issues, and the impact of colonialism on modern, Third World Society. Code C. ASOC.

HOSPITALITY SERVICES MANAGEMENT (HSM)

HSM 123 Hospitality Field Experience I. 3 hrs. (0-15)
PREREQUISITE: None
The supervised field experience program puts student's classroom knowledge into practical use. It provides a balance between theory and practice, allowing the student to experience various facets of the industry that are not always available in the classroom. This experience provides the opportunity to clarify career goals, assess strengths and weaknesses, and obtain, develop, and practice skills necessary for future success. This experience is also crucial to job placement. Any weaknesses in the program of the student can be identified and corrected to insure better job placement and salaries. (F, Sp, Su)

HSM 133 Hospitality Field Experience II. 3 (0-15)
PREREQUISITE: None
This second level of field experience encourages the student to make definite career/employment decisions. While the first level field experience was used to determine a general direction of employment, it is suggested that this field experience should lead to permanent employment in the broad scope of hospitality management. Since it is a supervised placement, our staff would be working closely with the student to provide the final specific training for the chosen hospitality career. (F, Sp, Su)

HSM 240 Housekeeping Administration. 3 hrs.
PREREQUISITE: None
This course introduces students to housekeeping functions in the hospitality industry and analyzes the management of the housekeeping department, including staffing, work scheduling, and duties of the executive housekeeper. Emphasis is on the training of housekeepers and assistants including the operations of in-house laundries as well as commercial operation. Upon completion, students will understand the management of housekeeping functions in the hospitality industry. (Su)

HOTEL/MOTEL MANAGEMENT (HMM)

HMM 105S Principles of Hospitality Management. 3 hrs.
PREREQUISITE: None
This course is a study of the principles of management and their applications to the hospitality industry. Emphasis is placed on the functions of management, the newest principles of management, and tools of the modern manager. Upon completion, students will be able to relate the basic principles of management to the hospitality field. (Sp, Su)

HMM 183 Business Plan Development for Hospitality. 1 hr.
PREREQUISITE: CUA 101 or permission from instructor
This course is an introduction to the basics of writing a business plan as it applies to the hospitality industry. The student will gain an understanding of creating a business plan for a hospitality related business.

HMM 240 Hospitality Managerial Accounting. 3 hrs.
PREREQUISITE: None
This course is designed to explain the standard hospitality accounting practices, financial statements, budgets, and financial planning. Emphasis is placed on applying the subject matter to the hospitality industry. Upon completion, students will be able to use managerial accounting to plan and protect an operation's finances. (Su)

HMM 241 Restaurant Service Management I. 3 hrs.
PREREQUISITE: None
This course is designed to introduce students to planning, organization, control, and evaluation of restaurant operations. Topics covered will be menu planning, restaurant layout and design, marketing and sales promotion, food and beverage control procedures, and managing reservations and group bookings. Upon completion, students will be able to apply the learned techniques. (Su)

HMM 251 Front Office Management. 3 hrs.
PREREQUISITE: None
This course is a study of front office management and of total hotel and condominium organization as it relates to the front office. Emphasis is placed on the methods of statistical analysis as applied to the front office in areas of price structure,

occupancy patterns, and income using computer applications. Upon completion, students will be able to identify front office functions in hotel management. (Su)

HUMANITIES (HUM)

HUM 106 Humanities Through the Arts. 3 hrs.
PREREQUISITE: None
This course is an integrated survey of film, drama, music, literature, painting, and sculpture, and architecture. AHUM. (as needed)

HUM 120 International Studies. 3 hrs.
PREREQUISITE: None
This course offers a survey of art, music, and culture of foreign countries. This may involve travel abroad and may be repeated for credit. AHUM.

HUM 298 Directed Studies in the Humanities. 1-3 hrs.
PREREQUISITE: None
This course provides an opportunity for the student to study selected topics in the area of the humanities under the supervision of a qualified instructor. The specific topics will be determined by the interests of the students and faculty and the course may be repeated for credit. Currently courses are available in A. College Scholars Bowl Team (see Student Handbook for requirements) (F, Sp, Su), B. Ambassadors, C. Concert Series (as needed), I. International (Su), M. Classic Movie Series (F, Sp, Su), S. Sigma Kappa Delta (F, Sp). AHUM.

HUM 299 PTK Honors Course. 1 hr.
PREREQUISITE: None
This course provides an opportunity for the student to study selected topics in the area of the humanities under the supervision of a qualified instructor. The specific topics will be determined by the interests of the students and faculty, and the course may be repeated for credit. Currently this course is available in S. PTK Honors Course II Service, P. PTK Honors Course I Leadership, and L. PTK Honors Course III Leadership. Core Area II, AHUM.

INDUSTRIAL ENGINEERING TECHNOLOGY (IET)

IET 114 Basic Electricity. 3 hrs. (2-2)
PREREQUISITE: None
This course provides an introduction to direct current (DC) and alternating current (AC) electrical theory. Topics include atomic theory, magnetism, properties of conductors and insulators, and characteristics of series, parallel, and series-parallel circuits. Inductors and capacitors are introduced and their effects on DC and AC circuits are examined. Students are prepared to analyze complex circuits, solve for unknown circuit variables and use basic electronic test equipment. This course also provides hands on laboratory exercises to analyze, construct, test, and troubleshoot electrical circuits. Emphasis is placed on the use of a scientific calculator, the operation of common test equipment, and the physical wiring of electrical circuits.

INTERDISCIPLINARY HONORS (IDH)

IDH 206 Political and Intellectual Forces in the 20th Century. 3 hrs.
PREREQUISITE: Permission of instructor; completion of ENG 101 and 102. Completion of first semester western civilization is recommended.
This course is a historical approach to an integrated study of the major ideologies and their influences on the 20th century. Included are the rise of nationalism, fascism, and communism and the development of the human rights movements. ASOC,

MASS COMMUNICATIONS (MCM)

MCM 100 Introduction to Mass Communication. 3 hrs.
PREREQUISITE: None
This course provides the student with general study of mass communication and journalism. This course includes theory, development, regulation, operation, and effects upon society. Code B. (F, Sp)

MCM 102 Writing for the Mass Media. 3 hrs.
PREREQUISITE: None
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. Code B. (F, Sp)

MANAGEMENT AND SUPERVISION TECHNOLOGY (MST)

MST 111 Elements of Supervision. 3 hrs.
PREREQUISITE: None
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. Code C. (F, Sp)

MST 201 Human Resource Management. 3 hrs.
PREREQUISITE: None
This course provides an overview of the responsibilities of the supervisor of human resources. Topics include the selection, placement, testing, orientation, training, rating, promotion, and transfer of employees. Code C. (Sp)

MST 215 Small Business Management. 3 hrs.
PREREQUISITE: None
This course provides an overview of the creation and operation of a small business. Topics include buying a franchise, starting a business, identifying capital resources, understanding markets, managing customer credit, managing accounting systems, budgeting systems, inventory systems, purchasing insurance, and the importance of appropriate legal course. Code C. (Sp)

MATHEMATICS (MTH)

MTH 098 Elementary Algebra. 4 institutional hrs.
PREREQUISITE: None
This course provides a study of the fundamentals of algebra. Topics include the real number system, linear equations and inequalities, graphing linear equations and inequalities in two variables and systems of equations. This course does not apply toward the general core requirement for mathematics.
(F, Sp, Su)

MTH 099 Support for Intermediate College Algebra. 1 institutional hr.
PREREQUISITE: Appropriate mathematics placement score (MTH 098 is not a prerequisite for MTH 099. A student who successfully completes MTH 098 is eligible for MTH 100 without the support course.)
COREQUISITE: MTH 100
This learning support course provides corequisite support in mathematics for students enrolled in MTH 100. The material covered in this course is parallel to and supportive of the material taught in MTH 100. Emphasis is placed on providing students with additional academic and noncognitive support with the goal of success in the students' paired MTH 100 class. This course does not apply toward the general core requirement for mathematics. Code C. (F, Sp, Su)

MTH 100 Intermediate College Algebra. 3 hrs.
PREREQUISITE: Grade of "C" or higher in MTH 098 or appropriate mathematics placement score.
COREQUISITE: MTH 099 Support for Intermediate College Algebra, if required.
This course provides a study of algebraic concepts such as laws of exponents, polynomial operations, factoring polynomials, radical and rational expressions and equations and quadratic equations. Functions and relations are introduced and graphed. This course does not apply toward the general core requirement for mathematics. AMTH. A116. Code B. (F, Sp, Su)

MTH 109S Support for Finite Mathematics. 1 hr.
PREREQUISITE: Appropriate mathematics placement score (MTH 098 is not a prerequisite for MTH 109S. A student who successfully completes MTH 098 is eligible for MTH 110 without the support course.)
COREQUISITE: MTH 110
This learning support course provides corequisite support in mathematics for students enrolled in MTH 110. The material covered in this course is parallel to and supportive of the material taught in MTH 110. Emphasis is placed on providing students with additional academic and noncognitive support with the goal of success in the students' paired MTH 110 class. This course does not apply toward the general core requirement for mathematics. Code C. (F, Sp, Su)

MTH 110 Finite Mathematics. 3 hrs.
PREREQUISITE: 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 in MTH 098.
COREQUISITE: MTH 109S Support for Finite Mathematics, if required.
This course provides an overview of topics in finite mathematics together with their applications and is intended for students who are not majoring in science, engineering, commerce, or mathematics (i.e., students who are not required to take calculus). The course introduces logic, set theory, counting techniques, basic probability, statistics, and personal finance. Core Area III. AMTH. A116. Code A. (F, Sp, Su)

MTH 111S Support for Precalculus Algebra. 1 hr.
PREREQUISITE: Appropriate mathematics placement score (MTH 100 is not a prerequisite for MTH 111S. A student who successfully completes MTH 100 is eligible for MTH 112 without the support course.)
COREQUISITE: MTH 112
This learning support course provides corequisite support in mathematics for students enrolled in MTH 112. The material covered in this course is parallel to and supportive of the material taught in MTH 112. Emphasis is placed on providing students with additional academic and noncognitive support with the goal of success in the students' paired MTH 112 class. This course does not apply toward the general core requirement for mathematics. Code C. (F, Sp, Su)

MTH 112 Precalculus Algebra 3 hrs.
PREREQUISITE: 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 in MTH 100.
COREQUISITE: MTH 111S Support for Precalculus Algebra, if required.
This course emphasizes the algebra of functions – including polynomial, rational, exponential, and logarithmic functions. In addition, the course covers non-linear inequalities as well as systems of linear and non-linear equations and inequalities. Core Area III. AMTH. A116. Code A. (F, Sp, Su)

MTH 113 Precalculus Trigonometry. 3 hrs.
PREREQUISITE: 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 in MTH 112.
This course includes the study of trigonometric (circular) functions and inverse trigonometric functions, as well as extensive work with trigonometric identities, equations, and formulas. The course also covers vectors, complex numbers, DeMoivre's Theorem, and polar graphs. Additional topics may include conic sections and product-sum formulas. Core Area III. AMTH. A116. Code A. (F, Sp, Su)

MTH 116 Mathematical Applications. 3 hrs.
PREREQUISITE: None
This course provides practical applications of mathematics and includes selected topics from consumer math, algebra, and geometry. The course covers integers, percent, interest, ratio

and proportion, measurement systems, linear equations, and problem solving. A116. Code C. (F, Sp, Su)

MTH 120 Calculus and its Applications. 3 hrs.
PREREQUISITE: 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 in MTH 112 or MTH 113.
This course is intended to give a broad overview of calculus. It includes limits, differentiation, and integration of algebraic, exponential, logarithmic, and multi-variable functions with applications to business, economics, and other disciplines. This course may also include LaGrange multipliers, extrema of functions of two variables, method of least squares, linear approximation, and linear programming. Core Area III. AMTH. A116. Code A. (F, Sp, Su)

MTH 125S Calculus I. 4 hrs.
PREREQUISITE: 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 in MTH 113.
This is the first of three courses in the basic calculus sequence taken primarily by students in science, engineering, and mathematics. Topics include the limit of a function; the derivative of algebraic, trigonometric, exponential, and logarithmic functions; and the definite integral and its basic applications to area problems. Applications of the derivative are covered in detail, including approximations of error using differentials, maximum and minimum problems, and curve sketching using calculus. Core Area III. AMTH. A116. Code A. (F, Sp, Su)

MTH 126S Calculus II. 4 hrs.
PREREQUISITE: 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 in MTH 125S.
This is the second of three courses in the basic calculus sequence. Topics include applications of integration, techniques of integration, infinite series, polar coordinates, and parametric equations, lines and planes in space, and vectors in the plane and in space. Core Area III. AMTH. A116. Code A. (F, Sp, Su)

MTH 227 Calculus III. 4 hrs.
PREREQUISITE: Grade of "C" or higher in MTH 126S.
This is the third of three 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). Core Area III. AMTH. A116. Code A. (Sp, Su)

MTH 231 Math for the Elementary Teacher I. 3 hrs.
PREREQUISITE: Grade of "C" or higher in MTH 100 or appropriate mathematics placement score.
This course is designed to develop a deeper understanding of elementary school mathematics content needed for teaching. The course is designed to develop conceptual understanding of number systems and operations by focusing on basic concepts and principles, exploring multiple representations and strategies, and illuminating connections among concepts and procedures. Topics include whole numbers and integers, fractions, ratio, percent, decimals, and arithmetic operations within these systems. A116. Code B. (on demand)

MTH 232 Math for the Elementary Teacher II. 3 hrs.
PREREQUISITE: Grade of "C" or higher in MTH 100 or appropriate mathematics placement score.
This course is designed to provide mathematical insights into measurement and geometry for students majoring in elementary education. Topics include geometric shapes (two- and three-dimensional), measurement, congruence and similarity, symmetry, and transformations. A116. Code B. (on demand)

MTH 237 Linear Algebra. 3 hrs.
PREREQUISITE: Grade of "C" or higher in MTH 126S.
This course introduces the basic theory and application of the following topics: systems of linear equations and matrices, (finite-dimensional) vector spaces, linear transformations and matrices, determinants, eigenvalues and eigenvectors, inner product and orthogonality, Gram-Schmidt, least squares, and the diagonalization of symmetric matrices. Core Area III. AMTH. A116. Code A. (on demand)

MTH 238 Applied Differential Equations I. 3 hrs.
COREQUISITE: MTH 227.
This course is an introduction to techniques for solving differential equations with applications. Topics include solving first order differential equations, applications to various models (e.g. populations, motion, chemical mixtures, etc.), solving higher order linear differential equations with constant coefficients (general theory, undetermined coefficients, reduction of order and the method of variation of parameters, and Laplace transform). Series solutions and solutions to systems are also covered. Core Area III. AMTH. A116. Code A. (Su)

MTH 265 Elementary Statistics. 3 hrs.
PREREQUISITE: Grade of "C" or higher in MTH 100 or appropriate mathematics placement score.
This course provides an introduction to methods of statistics and includes the following topics: sampling, frequency distributions, measures of central tendency and variation, probability, discrete and continuous distributions, graphic representation, hypothesis testing, confidence intervals, regression, and applications. AMTH. A116. Code B. (F, Sp, Su)

MECHANICAL ENGINEERING TECHNOLOGY (MET)

MET 190 Mechanical Tools I. 4 hrs. (2-4)
PREREQUISITE: None
This course offers an introduction into basic hand tools, machining, shop safety, quality measurement devices (e.g. tape measures, calipers, micrometers) control charts, tolerancing and use of gages. (F, Sp, on demand)

MET 191 Mechanical Tools II. 4 hrs. (2-4)
PREREQUISITE: MET 190 or equivalent experience or approval of program coordinator
This course offers continued emphasis on shop safety, quality measurement devices, and expands total quality management techniques such as control charts and SPC (statistical process control). Students will gain actual experience in processing work, selecting cutting tools, and setting feeds and speeds using manually operated machines. In addition, students will learn how to program and operate CNC (computerized numerical control) equipment. (on demand)

MET 192 Machinery's Handbook Functions. 3 hrs.
PREREQUISITE: None
This course covers the use of the Machinery's Handbook. Topics include mechanics, feeds and speeds, horsepower, dimensioning, machine operations, manufacturing processes, machine elements, measuring units, and mathematics. (on demand)

MET 201 Basic Computer-Aided Drafting. 3 hrs. (1-4)
PREREQUISITE: None
The purpose of this course is to introduce the student to mechanical computer-aided drafting (CAD). This will include zooming, snapping, coordinate schemes, copying, moving, plotting, layers, trimming, offsetting, filleting, breaking, blocking, inserting, and dimensioning. Upon completion of this course, a student will be able to draw and dimension basic floor plans and other components of mechanical working drawings. (F, Sp, on demand)

MET 202 Advanced Computer-Aided Drafting. 3 hrs. (1-4)
PREREQUISITE: MET 201 or equivalent experience Continuation of MET 201. Topics include dimensioning, reflecting, polygons, arrays, utilities, sectioning, hatching, arcs, isometrics, rotating, attributes, filing, and enhanced lines. Upon completion of this course, a student will be able to draw and dimension isometric views, sectional views, and other views as necessary to clearly and completely describe an object using two- dimensional microcomputer techniques. (Sp, on demand)

MET 204 Basic Computer-Aided Modeling. 3 hrs. (1-4)
PREREQUISITE: MET 201 or equivalent experience Introduction to computer-aided modeling (CAM). Topics include three-dimensional drawing, filters, three-dimensional coordinates, view ports, meshes, surfaces, projections, model space, and model ports. Upon completion of this course, a student will be able to draw and dimension the wire-frame model of an object using three-dimensional microcomputer techniques. (F, on demand)

MET 211 Advanced Computer-Aided Modeling. 3 hrs. (1-4)
PREREQUISITE: MET 204 or equivalent experience Continuation of MET 204. Topics include projecting, model space, paper space, model views, external references, and solid modeling. Upon completion of this course a student will be able to draw and dimension the diagrams necessary to clearly and completely describe an electronic network. (F, Sp on demand)

MET 213 Manufacturing Methods. 3 hrs.
PREREQUISITE: None
An introduction to manufacturing methods and process. Topics include casting, molding, forming, machining, and welding. Upon completion of this course, a student will be able to identify, define, and describe the methods listed above. (on demand)

MET 220 Mechanical Systems I. 3 hrs. (2-2)
PREREQUISITE: None
This course offers an introduction into mechanical systems. Topics include mechanical power transmission, motor mounting, shaft alignment, light weight belt and chain drives, torque, efficiency, gearings, gaskets, seals, gear drive maintenance, and safety. Upon completion of this course, the student will have demonstrated the ability to perform lockout/tagout, measure motor parameters, and install, align, remove, and maintain mechanical drive components. (F, on demand)

MET 233 Materials. 3 hrs.
PREREQUISITE: PHY 115 and MET 213
An introduction to the nature and properties of materials. Topics include atomic bonding, material structures, phase diagrams, heat treatments, metals, ceramics, plastics, and composites. Upon completion of this course, a student will be able to identify, classify, and/or describe a material and to solve for a single unknown material variable. (on demand)

MET 237 Inspection Principles. 3 hrs. (2-2)
PREREQUISITE: None
This course introduces students to inspection processes including the use of a CMM (Coordinate Measurement Machine). Topics include inspection procedures, measuring devices, inspection techniques, and coordinate measurement machine techniques. (on demand)

MET 239 Geometric Dimensioning & Tolerancing. 2 hrs.
PREREQUISITE: None
This course serves as an introduction to GD & T (Geometric Dimensioning and Tolerancing) for students who are pursuing careers in manufacturing technology and other related fields. Topics include fundamentals of symbols, terms used in application, positional tolerance applications, data frame and conversion tables. (Sp, on demand)

MEDICAL LABORATORY TECHNOLOGY (MLT)

MLT 100S Phlebotomy. 2 hrs. (1-3)
COREQUISITE: MLT 131S
This Course covers the basic techniques used in the collection

of blood specimens. Presentation includes equipment and additives, basic anatomy, and techniques for safe and effective venipuncture. Upon completion, students should be able to correctly perform venipuncture.

MLT 111S Urinalysis and Body Fluids. 3 hrs. (3-2)
PREREQUISITE: Admission to program
This course focuses on the theory and techniques in the examination of urine. The student is introduced to physical and chemical properties as well as microscopic examination of sediment and the identification of cells and crystals. Upon completion, students should be able to perform basic urinalysis and correlate laboratory results to renal disorders and other disease states. (F)

MLT 121S MLT Hematology. 5 hrs. (3-4)
PREREQUISITE: Admission to program
In this course the theory and techniques of hematology and other body fluids are covered. The student is presented with blood components, normal and abnormal cell morphology, hemostasis, selected automated methods, as well as body fluid physical and chemical properties, microscopic examination, and identification of cells and crystals. Upon completion, students should be able to perform various procedures including preparation and examination of hematologic slides and relate results to specific disorders. (F, Sp)

MLT 131S Laboratory Techniques. 4 hrs. (3-2)
COREQUISITE: MLT 100S
This course covers the basic principles and techniques used in the clinical laboratory. Emphasis is placed on terminology, basic microscopy, safety, and computations. Upon completion, students should be able to perform various basic laboratory analyses and utilize basic theories of laboratory principles. (F, Su)

MLT 141S MLT Microbiology I. 5 hrs. (3-4)
PREREQUISITE: Admission to program
The student is presented with the theories, techniques, and methods used in basic bacteriology. Focus is on bacterial isolation, identification, and susceptibility testing. Upon completion, students should be able to select media, isolate and identify microorganisms, and discuss modern concepts of epidemiology. (Sp)

MLT 142S MLT Microbiology II. 3 hrs. (2-2)
PREREQUISITE: Admission to program
The student is presented with the theories, techniques, and methods used in basic parasitology, mycology, and virology. Emphasis is placed on special bacteria, identification, life cycles, culture growth, and pathological states of infection and infestation. Upon completion, students should be able to identify certain parasites, demonstrate various staining and culture procedures, and discuss the correlation of certain microorganisms to pathological conditions. (Su)

MLT 151S MLT Clinical Chemistry. 5 hrs. (3-4)
PREREQUISITE: Admission to program
This course emphasizes theories and techniques in basic and advanced clinical chemistry. Coverage includes various methods of performing biochemical analyses on clinical specimens. Upon completion, students should be able to apply the principles of clinical chemistry, evaluate quality control, and associate abnormal test results to clinical significance. (Sp)

MLT 161S Integrated Laboratory Simulation. 2 hrs. (0-4)
PREREQUISITE: Admission to program
This course provides an opportunity for the student to perform medical laboratory procedures from all phases of laboratory testing as a review of previous laboratory courses. Emphasis is placed on case studies, organization of tasks, timing, accuracy, and simulation of routine operations in a clinical laboratory. Upon completion, students should be able to organize tasks and perform various basic laboratory analyses with accuracy and precision. (F, Su)

MLT 181S MLT Immunology. 2 hrs. (1-2)
PREREQUISITE: Admission to program
Theory and techniques in immunology are presented to the student. Emphasis is placed on the basic principles of the immune system, serologic testing, the production of specific antibodies and their use in the identification of infectious organisms. Upon completion, students should be able to relate basic principles of immunology, describe techniques for analytical methods utilizing immunological concepts, and correlate results of analysis to certain disease states. (F, Su)

MLT 191S MLT Immunohematology. 5 hrs. (3-4)
PREREQUISITE: Admission to program
Theory and techniques in immunohematology are presented to the student. In this course coverage includes antigen and antibody reactions including blood typing, antibody detection and identification, and compatibility testing. Upon completion, students should be able to apply theories and principles of immunohematology to procedures for transfusion and donor services, and correlate blood banking practices to certain disease states and disorders. (Sp, Su)

MLT 288S Special Topics. 2 hrs. (0-4)
PREREQUISITE: Admission to program
This is a seminar course in which students work independently on a project related to medical lab technology.

MLT 293S MLT Seminar. 2 hrs.
PREREQUISITE: Admission to program
This course is a cumulative review of medical laboratory science theory. The seminar consists of an on-campus summation of previous classes emphasizing recall, application of theory, correlation, and evaluation of all areas of medical laboratory science. Upon completion, students should be able to apply theory of analytical methods, recognize normal, abnormal, and erroneous results, and relate laboratory results to pathological conditions. (F, Su)

MLT 294S Medical Laboratory Practicum Hematology and Urinalysis. 2 hrs. (Prec 6)
PREREQUISITE: Admission to program
This supervised practicum is within the medical lab setting and provides laboratory practice in hematology and urinalysis.

Emphasis is placed on medical lab skills and performance in areas such as specimen preparation and examination, instrumentation, reporting of results, management of data and quality control. Upon completion, students should be able to process specimens, perform analyses utilizing various methods including instrumentation, report results, manage data and quality control using information systems. (F, Sp)

MLT 295S Medical Laboratory Practicum Microbiology. 2 hrs. (Prec 6)
PREREQUISITE: Admission to program
This supervised practicum is within the medical lab setting and provides laboratory practice in microbiology. Emphasis is placed on medical lab skills and performance in areas such as recovery, isolation, culturing and identification of microorganisms. Upon completion, students should be able to isolate, culture, analyze microorganisms utilizing various methods, report results, manage data and quality control using information systems. (F, Sp)

MLT 296S Medical Laboratory Practicum Immunohematology. 2 hrs. (Prec 6)
PREREQUISITE: Admission to program
This supervised practicum is within the medical lab setting and provides laboratory practice in serology and immunohematology. Emphasis is placed on medical lab skills and performance in areas such as the detection and identification of antibodies, the typing of blood, and compatibility testing of blood and blood components. Upon completion, students should be able to perform the screening for and identification of antibodies, compatibility testing, record and manage data and quality control using information systems. (F, Sp)

MLT 297S Medical Laboratory Practicum Chemistry and Immunology. 2 hrs. (Prec 6)
PREREQUISITE: Admission to program
This supervised practicum is within the medical laboratory setting and provides laboratory practice in medical chemistry and immunology. Emphasis is placed on medical laboratory skills and performance in areas such as computerized instrumentation and the ability to recognize technical problems. Upon completion, students should be able to perform biochemical analyses by various methods, including testing utilizing computer-oriented instrumentation, report test results, and manage patient data and quality control statistics using information systems. (F, Sp)

MILITARY SCIENCE (MSC)

MSC 101 Military Leadership. 2 hrs.
PREREQUISITE: None
Students examine the unique duties and responsibilities of officers. Students discuss organization and role of the Army; in addition, students learn basic life skills pertaining to fitness and communications; students analyze Army values and expected ethical behavior. Code C. (F)

MSC 101A Adventure Training. 2 hrs.
PREREQUISITE: None
Action-oriented alternative to MSC 100-level military science classes. Helps students meet everyday adversity and shows students how resourcefulness can help them survive in an emergency, ensuring a safe and enriching adventure in the wilderness. Includes first aid, map reading, orienteering, rifle marksman, water survival, rappelling, and outdoor wilderness training. Code C. (on demand)

MSC 102 Military Science I. 2 hrs.
PREREQUISITE: None
Students present fundamental leadership concepts and doctrine; students practice basic skills that underlie effective problem solving; students apply active listening and feedback skills; students examine factors that influence leader and group effectiveness students examine the officer experience. Code C. (Sp)

MSC 201 Military Leadership. 2 hrs.
PREREQUISITE: None
Students develop knowledge of self, self-confidence, and individual leadership skills; students develop problem solving and critical thinking skills; students apply communication, feedback, and conflict resolution skills. Code C. (on demand)

MSC 202 Military Science II. 2 hrs.
PREREQUISITE: None
Students focus on self-development guided by knowledge of self and group processes; students challenge current beliefs, knowledge, and skills; student provides equivalent preparation for the ROTC Advanced Course as the Leader's Training course. Code C. (on demand)

MSC 204 Rangers. 1 hr.
PREREQUISITE: None
Develop leadership qualities, small unit tactics, physical training, patrolling techniques. Students may participate in a two-day competition involving 27 other varsity Ranger Challenge teams from other universities in the Southeast Invitational Conference. Code C. (on demand)

MUSIC (MUS)

MUS 101 Music Appreciation. 3 hrs.
PREREQUISITE: None
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 three 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. Core Area II (Arts), AHUM. (F, Sp, Su)

MUS 110 Basic Musicianship. 3 hrs.
PREREQUISITE: None
This course is designed to provide rudimentary music knowledge and skills. Topics include a study of notation, rhythm, scales, keys, intervals, chords, and basic sight singing and/or ear training skills. AHUM (F)

MUS 111S Music Theory I. 4 hrs.
PREREQUISITE: MUS 110 or suitable placement score or permission of instructor
This course introduces the student to the diatonic harmonic practices in the Common Practice Period. Topics include fundamental music 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. Laboratory included. AHUM. (as needed)

MUS 112S Music Theory II. 4 hrs.
PREREQUISITE: MUS 111S or permission of instructor
This course completes the study of diatonic harmonic practices in the Common Practice Period and introduces simple music forms. Topics include principles of voice leading used in three-and four-part triadic harmony and diatonic seventh chords, non-chord tones, cadences, phrases and periods. Upon completion, students should be able to demonstrate competence using diatonic harmony through analysis, writing, sight singing, dictation and keyboard skills. Laboratory included. AHUM. (as needed)

MUSIC ENSEMBLE (MUL)

Music Ensembles
MUL 180 181 Chorus I, II. 2 hrs.
PREREQUISITE: none
This course provides an opportunity for students to participate in a performing ensemble. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. Upon completion, students should be able to effectively participate in performances presented by the ensemble. (F, Sp)

MUL 182 183 Vocal Ensemble I and II. 1 hr.
PREREQUISITE: Successful audition with instructor
This course provides an opportunity for students to participate in a performing ensemble. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. Upon completion, students should be able to effectively participate in performances presented by the ensemble. (F, Sp)

MUL 190 191 Concert Band I and II. 1 hr. (0-2)
PREREQUISITE: Successful audition with UAB band director
This course provides an opportunity for students to participate in a performing ensemble. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. Upon completion, students should be able to effectively participate in performances presented by the ensemble.

MUL 198 199 298 299 Marching Band I, II, III, IV. 1-2 hrs.
PREREQUISITE: Permission of UAB Department Head
This course is offered through UAB and requires participation in UAB's marching band. Code C. (F)

NURSING (NUR)

NUR 112 Fundamental Concepts of Nursing.
7 hrs. (4-6-Clin 3)
PREREQUISITE: Admission the program
This course teaches foundational knowledge of nursing concepts and clinical decision making to provide evidence-based nursing care. Content includes, but not limited to: healthcare delivery systems, professionalism, health promotion, psychological well- being, functional ability, gas exchange, safety, pharmacology, and coordinator/manager of care.

NUR 113 Nursing Concepts I. 8 hrs. (4-3-Clin 9)
PREREQUISITE: Admission to Program
This course teaches foundational knowledge of nursing concepts and clinical decision making to provide evidence-based nursing care. Content includes, but is not limited to: coordinator/manager of care, perfusion, oxygenation, infection, inflammation, tissue integrity, nutrition, elimination, mobility/immobility, cellular regulation, acid/base balance, and fluid/ electrolyte balance.

NUR 114 Nursing Concepts II. 8 hrs. (5-Clin 9)
PREREQUISITE: Admission to program
This course teaches foundational knowledge of nursing concepts and clinical decision making to provide evidence-based nursing care. Content includes but is not limited to: coordinator/manager of care, sexuality, reproduction and childbearing, infection, inflammation, sensory perception, perfusion, cellular regulation, mood disorders and affect, renal fluid/ electrolyte balance, and medical emergencies.

NUR 115 Evidence Based Clinical Reasoning.
2 hrs. (1-Prec 3)
PREREQUISITE: Admission to program
This course provides students with opportunities to collaborate with various members of the health care team in a family and community context. Students utilize clinical reasoning to assimilate concepts within the individual, health, and nursing domain.

NUR 211 Advanced Nursing Concepts. 7 hrs. (4-Clin 9)
PREREQUISITE: Admission to program
This course provides opportunities for students to integrate advanced nursing care concepts within a family and community context. Content includes but is not limited to: manager of care for advanced concepts in safety, fluid/ electrolyte balance, cellular regulation, gas exchange, psychosocial well- being, growth and development, perfusion and medical emergencies.

NUR 221 Advanced Evidence Based Clinical Reasoning. 7 hrs. (3-Clin 6-Prec 6)
PREREQUISITE: Admission to program
This course provides students with opportunities to demonstrate graduate competencies through didactic and preceptorship experiences necessary to transition to the profession of nursing. Content in nursing and health care domain includes management of care, professionalism, and healthcare delivery systems.

OFFICE ADMINISTRATION (OAD)

OAD 101 Beginning Keyboarding. 3 hrs.
PREREQUISITE: None
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 memos, letters, reports, and tables. Code C. (F, Sp, Su)

OAD 103 Intermediate Keyboarding. 3 hrs.
PREREQUISITE: None
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. Code C. (F, Sp, Su)

OAD 125W Word Processing. 3 hrs.
PREREQUISITE: None
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 memos, letters and reports. Code C. (F, Sp, Su)

OAD 133 Business Communications. 3 hrs.
PREREQUISITE: None
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. Code C. (F, Sp, Su)

OAD 137 Computerized Financial Recordkeeping (Quickbooks). 3 hrs.
(Same as ACT 246Q)
PREREQUISITE: BUS 241 or ACT 145
This course is designed to provide the students with skills in using the microcomputer to enter financial data through classroom instruction and outside lab. Emphasis is on the use of appropriate software in the preparation of journals, financial statements, and selected payroll records. Upon completion, the student should be able to demonstrate the ability to use a microcomputer system to record financial data. Code C. (F, Sp, Su)

OAD 138 Records/Information Management. 3 hrs.
PREREQUISITE: None
This course is designed to give the student knowledge about managing office records and information. Emphasis is on basic filing procedures, methods, systems, supplies, equipment, and modern technology used in the creation, protection, and disposition of records stored in a variety of forms. Upon completion, the student should be able to perform basic filing procedures. Code C. (F, Sp, Su)

OAD 211 Medical Terminology. 3 hrs.
PREREQUISITE: None
This course is designed to familiarize the student with medical terms. Emphasis is on the spelling, definition, pronunciation and usage of medical terms. Upon completion, the student should be able to understand and use medical terminology. Code C. (F, Sp, Su)

OAD 214 Medical Office Procedures. 3 hrs.
PREREQUISITE: None
This course focuses on the responsibilities of professional support personnel in a medical environment. Emphasis is on medical terms, the production of appropriate forms and reports, and office procedures and practices. Upon completion, the student should be able to perform office support tasks required for employment in a medical environment. Code C. (F, Sp)

OAD 215 Health Information Management (ICD-10, CPT-4 Coding). 3 hrs.
PREREQUISITE: None
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. Code C. (F)

OAD 216 Advanced Health Information Management (ICD-10, CPT-4 Coding). 3 hrs.
PREREQUISITE: OAD 215
This course is a continuation of OAD 215. It is designed to promote an advanced understanding of the structure, analysis, and management of medical records through classroom instruction. 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 efficiently maintain medical records. Code C. (Sp)

OAD 218 Office Procedures. 3 hrs.
PREREQUISITE: None
This course is designed to develop an awareness of the responsibilities and opportunities of the office professional through classroom instruction. 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. Code C. (F, Sp, Su)

OAD 230 Computerized Desktop Publishing. 3 hrs.
PREREQUISITE: None
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. Code C. (F)

OAD 232 The Computerized Office. 3 hrs.
PREREQUISITE: None
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. Code C. (F, Sp, Su)

OAD 242 Office Internship. 3 hrs. (Intern 15 hrs.)
PREREQUISITE: Permission of instructor
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. Code C. (F, Sp, Su)

OAD 246 Office Graphics and Presentations. 3 hrs.
PREREQUISITE: None
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 lab exercises. Emphasis is on available software tools, presentation options and design. Upon completion, the student should be able to demonstrate the ability to design and produce a business presentation. (F, Sp, Su)

ORIENTATION (ORI)

ORI 101 Orientation to College. 1 hr.
PREREQUISITE: None
This course aids new students in their transition to the institution; exposes new students to the broad educational opportunities of the institution; and integrates new students into the life of the institution. (F, Sp, Su)

ORI 110 Freshman Seminar. 1 hr.
PREREQUISITE: None
This course is designed to provide students the opportunity to develop and enhance their technology skills, explore careers and majors, and develop a personalized program of study that will map out their educational and career goals. Primary focus will be placed on: Meeting and working with the student's advisor to develop a strong plan of study, enhancing their skills in locating and gathering information, and engaging in critical thinking.

PHILOSOPHY (PHL)

PHL 106 Introduction to Philosophy. 3 hrs.
PREREQUISITE: None
This course is an introduction to the basic concepts of philosophy. The literary and conceptual approach of the course is balanced with emphasis on approaches to ethical decision making. The student should have an understanding of major philosophical ideas in an historical survey from the early Greeks to the modern era. Core Area II, THUM, AHUM. (F, Sp, Su)

PHL 116 Logic. 3 hrs.
PREREQUISITE: None
This course is designed to help students assess information and arguments. The focus of the course is on logic and reasoning. The student should be able to understand how inferences are drawn, be able to recognize ambiguities and logical/illogical reasoning. AHUM. (Su)

PHL 206 Ethics and Society. 3 hrs.
PREREQUISITE: None
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. Core Area II, THUM. (F, Sp, Su)

PHYSICAL EDUCATION (PED)

PED 100 Fundamentals of Fitness. 3 hrs.
PREREQUISITE: None
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 weight training, aerobics, and conditioning. The course may also include fitness evaluation, development of individual fitness programs, and participation in fitness activities. Code B. (F, Sp, Su)

PED 200 Foundations of Physical Education. 3 hrs.
PREREQUISITE: None
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. Code B. (F)

PED 224 Principles of Nutrition. 3 hrs.
PREREQUISITE: None
This course introduces students to the principles of nutrition and the role and functions of nutrients to man's food. Basic information concerning food selection and nutrition as a factor in health, ecology, and economy is included.

PED 295 Practicum in Physical Education. 1 hr. (Pract 4)
PREREQUISITE: None
This course is designed to provide field experience in observation and assistance in the student's area of specialization. Students will work under the supervision of trained physical education teachers. Code C. (F)

PHYSICAL SCIENCE (PHS)

PHS 111 Physical Science I. 4 hrs. (3-2)
PREREQUISITE: None
This course provides the non-technical student with an introduction to the basic principles of geology, oceanography, meteorology, and astronomy. Laboratory is required. Core Area III. ASCI. Code A. (F, Sp, Su)

PHS 112 Physical Science II. 4 hrs. (3-2)
PREREQUISITE: None
This course provides the non-technical student with an introduction to the basic principles of chemistry and physics. Laboratory is required. Core Area III, ASCI. Code A. (F, Sp, Su)

PHYSICAL THERAPIST ASSISTANT (PTA)

PTA 120 Introduction to Kinesiology. 3 hrs. (2-3)
PREREQUISITE: None
This course is an introduction to the clinically oriented study of functional anatomy. Emphasis is placed on a beginning level of understanding of the musculoskeletal system and nervous system as they relate to human movement. Upon completion of the course, the student should be able to identify basic anatomical structures involved in human movements. (Sp, F)

PTA 200S P.T. Issues and Trends. 2 hrs.
PREREQUISITE: Admission to program
This is an introductory course to the trends and issues in physical therapy. Emphasis is placed on areas such as: history, practice issues, psychosocial aspects of illness and cultural diversity. Upon completion, the student should be able to discuss trends and issues relevant to physical therapy. (F)

PTA 201 PTA Seminar. 2 hrs.
PREREQUISITE: Admission to program and PTA 200
This course is a continuing study of issues and trends in physical therapy practice. Emphasis is placed on issues such as: licensure, job skills, board exam review, practitioner roles, legal and ethical issues. Upon completion, the student should have acquired necessary skills for transition from student to practitioner. (Sp)

PTA 202 PTA Communication Skills. 2 hrs.
PREREQUISITE: Admission to program
This course is the study of verbal and nonverbal communication and documentation in health care. Emphasis will be placed on terminology, format, computer usage, reimbursement, interpersonal communication, and legal issues. Upon completion, the student should be able to discuss and demonstrate communication methods for achieving effective interaction with patients, families, the public and other health care providers. (Su)

PTA 220 Functional Anatomy and Kinesiology. 3 hrs.
PREREQUISITE: Admission to program, Corequisite: PTA 222 This course provides an in-depth, clinically oriented study of functional anatomy. Emphasis is placed on musculoskeletal system, nervous system, and study of human movement. Upon completion of the course, the student should be able to identify specific anatomical structures and analyze human movements. (Su)

PTA 222 Functional Anatomy and Kinesiology Lab. 2 hrs. (0-6)
PREREQUISITE: Admission to program, Corequisite: PTA 220
This laboratory course allows for a hands on appreciation of anatomical structures and kinesiological concepts as they relate to therapeutic exercise. Emphasis may include muscle and joint function, testing applications and therapeutic exercise. Upon completion, the student should be able to integrate content areas into an understanding of normal human movement. (Su)

PTA 230 Neuroscience. 2 hrs.
PREREQUISITE: Admission to program, Corequisite: PTA 231
This course provides students with an overview of the neuroanatomy of the CNS and PNS, as it relates to the treatment necessary for patients with dysfunctions of these systems. Emphasis may include the structure and function of the nervous system, neurophysiological concepts, human growth and development, neurologic dysfunctions. Upon completion of this course, the student should be able to identify and discuss specific anatomical structures and function of the nervous system and basic concepts of human growth and development and identify neurologic pathologies. (F)

PTA 231 Rehabilitation Techniques. 2 hrs. (0-6)
PREREQUISITE: Admission to program, PTA 222, and PTA 250, Corequisite: PTA 230 and PTA 232.
This course allows for hands on appreciation of advanced rehabilitation techniques. Emphasis is on orthopedic and neurologic treatment techniques, therapeutic exercise procedures and analysis and treatment of pathologic gait.
Upon completion, the student should be able to demonstrate an understanding of advanced rehabilitation techniques appropriate to orthopedic and neurologic dysfunctions. (F)

PTA 232 Orthopedics for the PTA. 2 hrs.
PREREQUISITE: Admission to program, PTA 220, and PTA 222, Corequisite: PTA 231
This course provides the student with an overview of orthopedic conditions seen in physical therapy. Emphasis is on the study of orthopedic conditions and appropriate physical therapy intervention and a review of related anatomical structures. Upon completion of the course, the student should be able to discuss PT interventions for common orthopedic conditions. (F)

PTA 240 Physical Disabilities I. 2 hrs.
PREREQUISITE: Admission to program
This course presents the student with a body systems approach to the etiology, pathology, signs/symptoms and treatment of conditions seen in PT. Emphasis may include conditions most commonly treated in physical therapy. Upon completion of the course, the student should be able to discuss basic pathological processes, treatment options and prognoses of conditions studies. (F)

PTA 241 Physical Disabilities II. 2 hrs.
PREREQUISITE: Admission to program and PTA 240
This course continues a body systems study of common PT pathologies. Emphasis may include various neurological pathologies with additional focus on the needs of special populations. Upon completion of the course, the student should be able to discuss the PT intervention appropriate to a variety of diagnoses. (Sp)

PTA 250 Therapeutic Procedures I. 4 hrs. (2-6)
PREREQUISITE: Admission to program, Corequisite: PTA 252S
This laboratory course provides a hands on introduction to the principles and procedures of therapeutic physical therapy intervention. Emphasis is on basic patient care skills and procedures utilized in physical therapy. Upon completion of the course, the student should be able to demonstrate safe and effective delivery of those procedures with an in-depth understanding of the rationale for each treatment. (Su)

PTA 251S Therapeutic Procedures II. 4 hrs. (2-6)
PREREQUISITE: Admission to program, PTA 222, and PTA 250, Corequisite: PTA 230 and 232
This laboratory course is a continued study of the principles and procedures of therapeutic PT intervention. Emphasis is on advanced physical therapy interventions and procedures and their rationale. Upon completion of the course, the student should be able to demonstrate safe and effective delivery with an in-depth understanding of each. (F)

PTA 252S Physical Agents and Therapeutic Modalities. 2 hrs.
PREREQUISITE: Admission to program, Corequisite: PTA 250
This course provides the student with the theoretical basis for the use of physical agents such as heat, cold, electricity, light, water and therapeutic modalities utilized in physical therapy. Emphasis is placed on modalities such as hydrotherapy, various forms of electrical stimulation, ultrasound, traction and diathermy. Upon completion of the course, the student will understand the physiological effects, indications and contraindication, advantage and disadvantage of utilizing these modalities in physical therapy. (Su)

PTA 260 Clinical Education I. 1 hr. (Prec 5)
PREREQUISITE: Admission to program
This clinical experience is designed to introduce the student to the practice of physical therapy through interaction in the health care environment. The course entails on-going communication between the clinical instructor, student and course coordinator. Upon completion of the course, the student should be able to safely and effectively apply procedures and techniques previously attained in the classroom. (F)

PTA 263 Clinical Affiliation I. 3 hrs. (Prec 15)
PREREQUISITE: Admission to program and PTA 260
This clinical class will provide clinical interaction in the health care environment. The course entails on-going communication between the clinical instructor, student, and course coordinator. Upon completion, the student should be able to safely and effectively apply procedures and techniques previously attained in the classroom. (Sp)

PTA 268 Clinical Practicum. 5 hrs. (Prec 25)
PREREQUISITE: Admission to program and PTA 263
This clinical education experience allows the student to practice in the health care environment, using entry level skills attained in previous classroom instruction. The course entails on-going communication between the clinical instructor, students, and course coordinator. Upon completion of the course, the student should be able to demonstrate entry-level competency in those skills necessary for functioning as a physical therapist assistant. (Sp)

PHYSICS (PHY)

PHY 115 Technical Physics. 4 hrs. (3-2)
PREREQUISITE: MTH 100
Technical physics is an algebra-based physics course designed to utilize modular concepts to include: motion, forces, torque, work energy, heat wave/sound, and electricity. Results of physics education research and physics applications in the workplace are used to improve the student's understanding of physics in technical areas. Upon completion, students will be able to: define motion and describe specific module concepts; utilize microcomputers to generate motion diagrams; understand the nature of contact forces and distinguish passive forces; work cooperatively to set up laboratory exercises; and demonstrate applications of module-specific concepts. ASCI. Code C. (Sp, Su)

PHY 201 General Physics I - Trig Based. 4 hrs. (3-2)
PREREQUISITE: MTH 113 or equivalent
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. Laboratory is required. Core Area III. ASCI. Code A. (F, Sp)

PHY 202 General Physics II - Trig Based. 4 hrs. (3-2)
PREREQUISITE: PHY 201
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. Core Area III. ASCI. Code A. (Sp, Su)

PHY 213S General Physics with Calculus I. 4 hrs. (3-2)
PREREQUISITE: MTH 125S or permission
This course provides a calculus-based treatment of the principle subdivisions of classical physics: mechanics and energy, including thermodynamics. Laboratory is required. Core Area III. ASCI. Code A. (F, Sp, Su)

PHY 214S General Physics with Calculus II. 4 hrs. (3-2)
PREREQUISITE: PHY 213S
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. Core Area III. ASCI. Code A. (Sp, Su)

PHY 299 Directed Studies in Physics. 1 hr.
PREREQUISITE: Permission of instructor
This course is designed for independent study in specific areas of physics chosen by the student in consultation with a faculty member and carried out under faculty supervision. Code C. (on demand)

POLITICAL SCIENCE (POL)

POL 211 American National Government. 3 hrs.
PREREQUISITE: None
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. Core Area IV, ASOC. (F, Sp, Su)

POL 220 State and Local Government. 3 hrs.
PREREQUISITE: None
This course is a study of 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. ASOC. (as needed)

PSYCHOLOGY (PSY)

PSY 200 General Psychology. 3hrs.
PREREQUISITE: None
The course is a survey of the scientific study of psychological, biological, and socio-cultural factors that influence behavior and mental processes. Core Area IV, ASOC. (F, Sp, Su)

PSY 207 Psychology of Adjustment. 3 hrs.
PREREQUISITE: PSY 200
This course provides an understanding of the basic principles of mental health and an understanding of the individual modes of behavior. ASOC. (on demand)

PSY 210 Human Growth and Development. 3 hrs.
PREREQUISITE: PSY 200
This course is a study of the physical, cognitive, social, and emotional factors that affect human growth and development from conception to death. Core Area IV, ASOC. (F, Sp, Su)

PSY 220 Human Sexuality. 3 hrs.
PREREQUISITE: PSY 200
This course is a comprehensive and integrated approach to human sexuality emphasizing biological, psychological, social and emotional aspects. ASOC. (on demand)

PSY 230 Abnormal Psychology. 3 hrs.
PREREQUISITE: PSY 200
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. ASOC. (F, Sp, Su)

PSY 250 Social Psychology. 3 hrs.
PREREQUISITE: PSY 200
This course is a study of social factors and how they influence individual behavior. ASOC

RADIOLOGIC TECHNOLOGY (RAD)

RAD 111 Introduction to Radiography. 2 hrs. (2-0)
PREREQUISITE: Admission to program
This course provides students with an overview of radiography and its role in health care delivery. Topics include the history of radiology, professional organizations, legal and ethical issues, health care delivery systems, introduction to radiation protection, and medical terminology. Upon completion students will demonstrate foundational knowledge of radiologic science.

RAD 112 Radiography Procedures I. 4 hrs. (3-3)
PREREQUISITE: Admission to program
This course provides the student with instruction in anatomy and positioning of the chest and thorax, upper and lower extremities and abdomen. Theory and laboratory exercises will cover radiographic positions and procedures. Upon completion of the course the student will demonstrate knowledge of anatomy and positioning skills, oral communication and critical thinking in both the didactic and laboratory settings.

RAD 113 Patient Care. 2 hrs. (1-3)
PREREQUISITE: Admission to program
This course provides the student with concepts of patient care and pharmacology and cultural diversity. Emphasis in theory and lab is placed on assessment and considerations of physical and psychological conditions, routine and emergency. Upon completion, students will demonstrate/explain patient care procedures appropriate to routine and emergency situations.

RAD 114 Clinical Education I. 2 hrs. (Clin 6)
PREREQUISITE: Successful completion of all required previous semester courses
This course provides the student with the opportunity to correlate instruction with applications in the clinical setting. The student will be under the direct supervision of a qualified practitioner. Emphasis is on clinical orientation, equipment, procedures, and department policies. Upon completion of the course, the student will demonstrate practical applications of specific radiographic procedures identified in RAD 112.

RAD 122 Radiographic Procedures II. 4 hrs. (3-3)
PREREQUISITE: Admission to program
This course provides the student with instruction in anatomy and positioning of spine, cranium, body systems and special procedures. Theory and laboratory exercises will cover radiographic positions and procedures with applicable contrast media administration. Upon completion of the course the student will demonstrate knowledge of anatomy and positioning skills, oral communication and critical thinking in both the didactic and laboratory settings.

RAD 124S Clinical Education II. 5 hrs. (Clin 15)
PREREQUISITE: Successful completion of all required previous semester courses
This course provides students with the opportunity to correlate previous instruction with applications in the clinical setting. Students will be under the direct supervision of a qualified practitioner. Practical experience in a clinical setting enables students to apply theory presented thus far and to practice radiographic equipment manipulation, radiographic exposure, routine radiographic positioning, identification, and patient care techniques. Upon completion of the course, students will demonstrate practical applications of radiographic procedures presented in current and previous courses.

RAD 125 Imaging Equipment. 3 hrs. (3-0)
PREREQUISITE: As required by program
This course provides students with knowledge of basic physics and the fundamentals of imaging equipment. Topics include information on x-ray production, beam characteristics, units of measurement, and imaging equipment as well as provide a basic explanation of the principles associated with image production.

RAD 134 Clinical Education III. 5 hrs. (Clin 15)
PREREQUISITE: Successful completion of all required previous semester course
This course provides students with the opportunity to correlate previous instruction with applications in the clinical setting. Students will be under the direct supervision of a qualified practitioner. Practical experience in a clinical setting enables students to apply theory presented thus far and to practice radiographic equipment manipulation, radiographic exposure, routine radiographic positioning, identification and patient care techniques. Upon completion of the course, students will demonstrate practical applications of radiographic procedures presented in current and previous courses.

RAD 135 Exposure Principles. 3 hrs. (2-3)
PREREQUISITE: Admission to program
This course provides students with the knowledge of factors that govern and influence the production of radiographic images and assuring consistency in the production of quality images. Topics include factors that influence density, contrast and radiographic quality as well as quality assurance, image receptors, intensifying screens, processing procedures, artifacts, and state and federal regulations.

RAD 136 Radiation Protection and Biology. 2 hrs. (2-0)
PREREQUISITE: Admission to program
This course provides the student with principles of radiation protection and biology. Topics include radiation protection responsibility of the radiographer to patients, personnel and the public, principles of cellular radiation interaction and factors affecting cell response. Upon completion the student will demonstrate knowledge of radiation protection practices and fundamentals of radiation biology.

RAD 212S Image Evaluation and Pathology. 2 hrs. (1-3)
PREREQUISITE: Admission to program
This course provides a basic understanding of the concepts of disease and provides the knowledge to evaluate image quality. Topics include evaluation criteria, anatomy demonstration and image quality with emphasis placed on a body system approach to pathology. Upon completion students will identify radiographic manifestations of disease and the disease process. Students will evaluate images in the classroom, laboratory and clinical settings.

RAD 214 Clinical Education IV. 8 hrs. (Clin 24)
PREREQUISITE: Successful completion of all required previous semester courses.
This course provides students with the opportunity to correlate previous instruction with applications in the clinical setting. Students will be under the direct supervision of a qualified practitioner. Practical experience in a clinical setting enables students to apply theory presented thus far and to practice radiographic equipment manipulation, radiographic exposure, routine radiographic positioning, identification, and patient care techniques. Principles of computed tomography and cross-sectional anatomy will be presented. Upon completion of the course, students will demonstrate practical applications of radiographic procedures presented in current and previous courses.

RAD 224B Clinical Education V. 8 hrs. (Clin 24)
PREREQUISITE: Successful completion of all required previous semester courses
This course provides students with the opportunity to correlate previous instruction with applications in the clinical setting. Students will be under the direct supervision of a

qualified practitioner. Practical experience in a clinical setting enables students to apply theory presented thus far and to practice radiographic equipment manipulation, radiographic exposure, routine radiographic positioning, identification, and patient care techniques. Principles of the imaging modalities will be presented. Upon completion of the course, students will demonstrate practical applications of radiographic procedures presented in current and previous courses.

RAD 227 Review Seminar. 2 hrs.
PREREQUISITE: Admission to program
This course provides a consolidated and intensive review of the basic areas of expertise needed by the entry level technologist. Topics include basic review of all content areas, test taking techniques and job seeking skills. Upon completion the student will be able to pass comprehensive tests of topic covered in the Radiologic Technology Program.

RELIGION (REL)

REL 151 Survey of the Old Testament. 3 hrs.
PREREQUISITE: None
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. The student should have an understanding of the significance of the Old Testament writings upon completion of this course. Core Area II, AHUM. (F, Sp, Su)

REL 152 Survey of the New Testament. 3 hrs.
PREREQUISITE: None
This course is a survey of the books of the New Testament with special attention focused on the historical and geographical setting. The student should have an understanding of the books of the New Testament and the cultural and historical events associated with these writings. Core Area II, AHUM. (F, Sp, Su)

RESPIRATORY THERAPY (RPT)

RPT 210 Clinical Practice I. 2 hrs. (Prec 10)
PREREQUISITE: As required by program
This clinical course provides for initial hospital orientation and development of general patient assessment and communication skills required for safe and effective patient care. Emphasis is placed upon application of classroom and laboratory experiences within the clinical environment. Upon completion, students should demonstrate adequate psychomotor skills and cognitive abilities necessary for initial patient contact and safe and effective performance of basic respiratory care procedures.

RPT 211 Introduction to Respiratory Care. 2 hrs. (2-0)
PREREQUISITE: As required by program
This course is designed to acquaint the student with responsibilities of the Respiratory Care Practitioner (RCP) as a member of the health care team. Areas of emphasis include: history of the profession, credentialing mechanism, licensure, medical ethics, communication skills, basic medical terminology, and patient assessment. Upon completion, students should be able to demonstrate effective communication skills, proper use of aseptic technique, deference to appropriate professional ethics and behavior, and be able to perform basic patient assessment.

RPT 212 Fundamentals of Respiratory Care I. 4 hrs. (2-4)
PREREQUISITE: As required by program
A fundamental course which presents the scientific basis for respiratory care procedures and application of basic chemistry and physics as related to compressed gases and respiratory care equipment operation. Experimental laboratory is required and emphasis includes: design, functional characteristics, and operation of commonly encountered respiratory care equipment, use of medical gases and applied chemistry, physics, and mathematics. Upon completion, the student should be able to demonstrate an adequate knowledge base concerning function and troubleshooting of respiratory care equipment and concepts of applied physics, chemistry, and mathematics.

RPT 213 Anatomy and Physiology for the RCP. 3 hrs. (3-0)
PREREQUISITE: As required by program
This course provides detailed lecture and audio-visual presentations which concentrate on the cardiopulmonary and renal systems. Emphasis is placed on structure, function, and physiology of the cardiopulmonary and renal systems and the role each plays in the maintenance of homeostasis. Upon completion, the student should be able to demonstrate adequate knowledge of the structure, function, and physiology of the cardiopulmonary and renal systems.

RPT 214 Pharmacology for the RCP. 2 hrs. (2-0)
PREREQUISITE: As required by program
This course is a detailed study of drugs encountered in respiratory care practice and the function of the autonomic nervous system. Areas of emphasis include: determination of drug dosage, applied mathematics, clinical pharmacology, indications, hazards, intended actions, and side-effects of agents used in respiratory care. Upon completion, the student should be able to complete a dosage calculation test with 90% proficiency and demonstrate an adequate understanding of the clinical pharmacology of respiratory care drugs, and the general principles of pharmacology.

RPT 220 Clinical Practice II. 2 hrs. (Prec 10)
PREREQUISITE: As required by program
This course is a continuation of clinical practice and allows the student to further integrate classroom and laboratory instruction into the practice of respiratory care. Areas of emphasis include: bedside patient assessment techniques, airway management, hyperinflation therapy, protocol implementation, development of patient care plans, oxygen, humidity and aerosol administration, and an introduction to management of the mechanical ventilation of the adult. Upon completion, the student should be able to demonstrate appropriate psychomotor skills and cognitive abilities necessary to successfully function as primary care giver for routine respiratory care procedures.

RPT 221 Pathology for the RCP I. 3 hrs. (2-2)
PREREQUISITE: As required by program
This course is a survey of commonly encountered diseases and disorders, which may affect the function of the cardiopulmonary system, and the clinical manifestations and treatment rationales as related to respiratory care practice.
Practical laboratory is required and course emphasis is placed upon the application of sound diagnostic techniques in the gathering of data in support of diagnosis of specific disease entities as well as progression of pathological changes in cardiopulmonary function. Upon completion, the student should be able to demonstrate the ability to gather appropriate information from various sources in support of diagnosis of specific cardiopulmonary disease as well as an adequate understanding of cardiopulmonary pathology.

RPT 222 Fundamentals of Respiratory Care II. 4 hrs. (2-4)
PREREQUISITE: As required by program:
This course continues to present the fundamental scientific basis for selected respiratory care procedures. Experimental laboratory is required and areas of emphasis include: therapeutic techniques utilized in bronchial hygiene, hyperinflation therapy, mechanical ventilation of the adult, manual resuscitation equipment, the equipment utilized in bedside assessment, and mechanical ventilation. Upon completion, the student should be able to demonstrate the cognitive abilities and psychomotor skills required to perform the procedures presented.

RPT 223 Acid Based Regulation and Arterial Blood Gas Analysis. 2 hrs. (1-2)
PREREQUISITE: As required by program
This course provides the student with lecture and audiovisual presentation of material essential to the understanding of acid/base physiology and arterial blood gas interpretation. Emphasis is placed upon Arterial Blood Gas (ABG) sampling technique, quality assurance, basic chemistry as related to acid/ base balance, evaluation of oxygen transport, and the role of the respiratory and renal systems in maintenance of homeostasis. Upon completion, the student should be able to demonstrate appropriate psychomotor skills and cognitive abilities for the fundamental concepts of acid/base balance and regulation of homeostasis by the respiratory and renal systems.

RPT 230 Clinical Practice III. 2 hrs. (Prec 10)
PREREQUISITE: As required by program
This is the third course in the clinical sequence, and is designed to allow the student to function in the role of primary care giver. Emphasis is placed upon mastery of basic respiratory care procedures, administration of aerosol drugs, and care of the patient receiving mechanical ventilation. Upon completion, the student should be able to demonstrate psychomotor skills and cognitive abilities necessary to function safely and effectively in the role of primary care giver.

RPT 231 Pathology for the RCP II. 3 hrs. (2-2)
PREREQUISITE: As required by program
This course continues to present specific disease entities which may impair cardiopulmonary function. Laboratory study is directed toward diagnostic techniques and decision making. Course emphasis is placed upon etiology, diagnosis, prognosis, and treatment rationale for each medical problem presented. Upon completion, the student should be able to demonstrate the cognitive abilities necessary to integrate clinical and laboratory data obtained from various sources in support of the diagnosis and treatment of the specific disease entities presented.

RPT 232 Diagnostic Procedures for the RCP. 2 hrs. (1-2)
PREREQUISITE: As required by program.
This course is designed to present the value of various procedures as an aid to diagnosis in cardiopulmonary disease. Course emphasis is placed upon procedures such as complete pulmonary function testing, bronchoscopy, cardiac diagnostic procedures, and ventilation/perfusion studies. Upon completion, the student should be able to demonstrate the psychomotor and cognitive abilities necessary to perform routine diagnostic procedures.

RPT 233 Special Procedure for the RCP. 2 hrs. (2-0)
PREREQUISITE: As required by program:
This course identifies and presents special procedures and medical specialties for various tasks required of the RCP, while functioning in an assistive role to the physician. Course emphasis is placed upon phlebotomy, bronchoscopy, hemodynamic assessment, and advanced cardiopulmonary monitoring techniques. Upon completion, the student should be able to demonstrate cognitive abilities and understand the psychomotor skills necessary to perform assistive functions during the various procedures presented.

RPT 234 Mechanical Ventilation for the RCP. 4 hrs. (2-4)
PREREQUISITE: As required by program
This course continues and expands the presentation of material concerning mechanical ventilation as previously introduced including indications, modification, and discontinuance of mechanical ventilation. Laboratory is required, and course emphasis is placed upon the application of scientific principles to the clinical use of various modes of mechanical ventilation. Upon completion, the student should be able to demonstrate the cognitive and psychomotor skills required to effectively institute and maintain various methods of mechanical ventilation.

RPT 240 Clinical Practice IV. 4 hrs. (Prec 20)
PREREQUISITE: As required by program
This course, the last in the required clinical sequence, provides opportunities for the student to further refine clinical skills. Course emphasis is placed upon critical care, neonatal mechanical ventilation, home care and discharge planning. Upon completion, the student should be able to demonstrate the cognitive and psychomotor skills required to function in the role of advanced respiratory care practitioner.

RPT 241 Rehabilitation and Home Care for the RCP. 2 hrs. (2-0)
PREREQUISITE: As required by program
This course presents special considerations which apply

to rehabilitation and home care of the patient with cardiopulmonary disorders. Emphasis is placed upon the role of the RCP within the home care medical community and modification of techniques and procedures necessary for effective pulmonary management. Upon completion, the student should be able to demonstrate an understanding of discharge planning and disease management protocols as applied to rehabilitation and the continuation of effective respiratory care outside of an acute care facility.

RPT 242 Perinatal/Pediatric Respiratory Care. 3hrs. (2-2)
PREREQUISITE: As required by program
This course presents the unique requirement for appropriate delivery of respiratory care to the neonatal and pediatric patient. Laboratory is required and course emphasis is placed upon a detailed outline of fetal lung development, fetal circulation, neonatal cardiopulmonary disorders, and specialized equipment and techniques, as well as general considerations of provision of care to neonatal and pediatric patients. Upon completion, the student should be able to demonstrate the cognitive and psychomotor skills required for safe and effective delivery of respiratory care to the neonatal and pediatric patient.

RPT 243 Computer Applications for the RCP. 2 hrs. (0-4)
PREREQUISITE: As required by program
This course is designed to allow the student practice in utilizing computer assisted clinical simulation software as well as allow for a general program review in preparation for credentialing examinations. Emphasis is placed on development of critical thinking skills, specific to the discipline, and development of computer literacy. Upon completion, students should be able to demonstrate computer literacy and satisfactory performance on nationally standardized comprehensive self-assessment examinations.

RPT 244 Critical Care Considerations for the RCP. 2 hrs. (1-2)
PREREQUISITE: As required by program
This course provides for continued discussion concerning the monitoring and maintenance of patients who are treated in the critical care area of an acute care hospital. Course emphasis is placed upon advanced monitoring and assessment techniques employed in the treatment of the critical care patient. Upon completion, the student should be able to demonstrate increased psychomotor and cognitive abilities as pertaining to critical care.

RPT 254 Patient Assessment Techniques for the RCP. 2 hrs. (1-2)
PREREQUISITE: As required by program
This course is designed for the respiratory therapy student or respiratory care practitioner who desires to augment previous instruction in patient assessment techniques and further refine clinical assessment abilities. Emphasis is placed on physician interaction and development of discrete clinical assessment skills. Upon completion, of this course the student/practitioner should be able to demonstrate improved assessment skills pertaining to evaluation of patients with cardiopulmonary disorders.

RPT 266 Seminar in Respiratory Medicine I. 1 hr. (1-0)
PREREQUISITE: As required by program
This course is a series of physician and/or guest lecturers designed to present topics of special interest to the student or practitioner. Emphasis is placed upon current medical practice within the field of pulmonary medicine and cardiology. Upon completion, the student should be able to demonstrate an increased knowledge base concerning the topics of special interest presented.

SOCIOLOGY (SOC)

SOC 200 Introduction to Sociology. 3 hrs.
PREREQUISITE: None
This course is an introduction to the vocabulary, concepts, and theoretical perspectives of sociology. Core Area IV, ASCI. (F, Sp, Su)

SOC 208 Introduction to Criminology. 3 hrs.
(Same as CRJ 208)
PREREQUISITE: None
This course delves into the nature and extent of crime in the United States as well as criminal delinquent behavior and theories of causation. The study includes criminal personalities, principles of prevention, control and treatment. ASOC. (F, Sp, Su)

SOC 209 Juvenile Delinquency. 3 hrs.
(Same as CRJ 209)
PREREQUISITE: SOC 200
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. ASOC. (F, Sp)

SOC 210 Social Problems. 3 hrs.
PREREQUISITE: SOC 200
This course examines the social and cultural aspects, influences, incidences and characteristics of current social problems in light of sociological theory and research. Core Area IV, ASOC. (Sp)

SOC 247 Marriage and the Family. 3 hrs.
PREREQUISITE: SOC 200
This course is a study of family structures and families and their evolution. It explores the sociological, psychological, biological, and economic factors relevant to marriage and family life. ASOC. (F)

SPANISH (SPA)

SPA 101 Introductory Spanish I. 4 hrs.
PREREQUISITE: None
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. Core Area II. (F, Su)

SPA 102 Introduction to Spanish II. 4 hrs.
PREREQUISITE: 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. Core Area II. (Sp)

SPA 201 Intermediate Spanish I. 3 hrs.
PREREQUISITE: SPA 102 or equivalent
This course includes an overview and further development of communication skills. Topics include readings of literary, historical, and/or cultural texts. Core Area II, AHUM. (as needed)

SPA 202 Intermediate Spanish II. 3 hrs.
PREREQUISITE: 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. Core Area II, AHUM. (as needed)

SPEECH (SPH)

SPH 106 Fundamentals of Oral Communication. 3 hrs.
PREREQUISITE: None
This course is a performance course that includes the principles of human communication: intrapersonal, interpersonal, and public. The course surveys current communication theory and provides practical application for workforce readiness. Core Area II. (F, Sp, Su)

SPH 107 Fundamentals of Public Speaking. 3 hrs.
PREREQUISITE: None
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. Core Area II, HUM. (F, Sp, Su)

SPH 116 Introduction to Interpersonal Communication. 3 hrs.
PREREQUISITE: None
This course focuses on communication in interpersonal settings. The course surveys current interpersonal communication theory and provides application for personal and professional development. Core Area IV. (F, Sp, Su)

SPH 123-124-125 Forensics Workshop I-II-III. 3 hrs. each
PREREQUISITE: Consent of Instructor
These courses offer experience in speech activities such as debate, discussion, oral interpretation, extemporaneous speaking, and original oratory. The student is required to participate in scheduled intercollegiate speech tournaments. Code C. (F, Sp, Su)

THEATER ARTS (THR)

THR 120 Theater Appreciation. 3 hrs.
PREREQUISITE: None
This course is designed to increase appreciation of the art of theatre. Attendance at theatre productions will likely be required. Core Area II (Arts), AHUM. (F, Sp, Su)

THR 131 Acting Techniques I. 3 hrs
PREREQUISITE: None
This is the first of a two-course sequence in which the student will focus on the development of the body and voice as the performer's instruments in acting. Emphasis is placed on improvisation, acting exercises, and characterizations in scenes and/or monologues. AHUM.

VETERINARY TECHNOLOGY (VET)

VET 110 Vet Tech Clinics I. 2 hrs. (Clin 6)
PREREQUISITE: Admission to program
This course provides students with required clinical tasks to be completed in an approved clinical site in the areas of: surgery, restraint, instrumentation, equipment, surgical and medical care, and basic clinical procedures. Upon course completion, the student should be able to understand the responsibilities of a veterinary technician and begin the development of fundamental skills.

VET 112 Introduction to Veterinary Technology. 5 hrs. (3-Clin 6)
PREREQUISITE: Admission to program
A series of lectures and required clinical tasks are designed to introduce the student to hospital fundamentals. Topics include history and physical examination, breeds of animals, small animal parasitology, diagnostic and surgical procedures, equine and food animal nursing, sanitation, medical vocabulary, The Alabama Veterinary Practice Act, ethics, jurisprudence, and hospital management. Upon course completion, students should be able to perform history and physical examinations, collect samples, administer medications, perform fecal analysis, know different breeds of animals, and understand parasite life cycles, OSHA regulations and safety procedures, and the technician's role in veterinary medicine.

VET 114 Anatomy and Physiology of Mammals. 5 hrs. (4-2)
PREREQUISITE: Admission to program
This course is designed specifically for students in the two-year veterinary technology program and covers the fundamentals of anatomy and physiology of mammals. Topics include the skeletal system, muscular system, respiratory system, digestive system, circulatory system, urinary system, the eye, the ear, female reproductive system, pregnancy, parturition, lactation, male reproductive system, neurology, and the endocrine system; and online laboratory dissection. Upon course completion, the student should be able to identify major tissues and organs, understand the physiology of organs and organ systems, and understand the physiological basis for the development of clinical laboratory testing.

VET 120 Vet Tech Clinics II. 3 hrs. (Clin 9)
PREREQUISITE: Student must have completed VET 110, 112, and 114 unless special arrangements have been made with the Program.
This course provides students with required clinical tasks to be completed in an approved clinical site in the areas of surgery, and clinical medicine. Required tasks will include surgical and nursing care, and clinical medicine. Upon course completion,

those skills learned from the previous semester should be reinforced and the student should have learned some new technical procedures.

VET 122 Vet Tech Emergency and First Aid. 5 hrs. (4-Clin 3)
PREREQUISITE: Student must have completed VET 110, 112, and 114 unless special arrangements have been made with the Program.
This course is designed to teach the basic principles in emergency treatment of animals and incorporates actual management in a clinical environment. Topics include emergency information, equipment and drugs, initial examination, evaluation and treatment, shock, cardiac arrest, respiratory emergencies, fluid therapy, blood collection and transfusion, emergency treatment of specific conditions, poisonings, and large animal emergencies. Upon course completion, the student should be able to administer first aid to animals needing immediate attention.

VET 124 Clinical Procedures and Pathology. 4 hrs. (3-Clin 3)
PREREQUISITE: Student must have completed VET 110, 112, and 114 unless special arrangement has been made with the Program. This course introduces students to common laboratory techniques and diagnostic methods. Students will begin developing laboratory skills with an emphasis in the areas of urology and hematology. Topics of study include the basic laboratory, hematology, bone marrow and blood cytology, urinalysis, clinical chemistry, function tests of the liver, kidney, pancreas, and thyroid, diagnostic cytology, and post mortem examinations; required clinical tasks will be completed in an approved clinical site. The study of medical vocabulary is continued from VET 112. Upon course completion, the student should be able to understand the physiological basis used for diagnostic testing and to perform the laboratory procedures outlined in the course material.

VET 126 Animal Diseases and Immunology. 3 hrs. (3-0)
PREREQUISITE: Student must have completed VET 110, 112, and 114 unless special arrangements have been made with the Program.
This course is designed to acquaint the student with the importance and transmissibility of common animal diseases and with immunological principles involved in prophylaxis, treatment and recovery. Emphasis is placed on those aspects of the immune response that affect immunization and diagnosis and to familiarize the student with the common infectious diseases and immunization schedules of domestic animals. Upon course completion, the student should be able to communicate with clients regarding preventable diseases and zoonotic implications and should also be able to assist with formulation of immunization schedules for various species of animals.

VET 230 Vet Tech Clinics III. 3 hrs. (Clin 9)
PREREQUISITE: Student must have completed VET 110, 112, 114, 120, 122, 124, 126, 234 and 236 unless special arrangements have been made with the Program.
This course provides students with required clinical tasks to be completed in an approved clinical site in the areas of surgery, dentistry, and clinical medicine. Topics include surgical and nursing care, dentistry, and clinical medicine. Upon course completion, those skills learned from the previous semester should be reinforced and the student should have learned new technical procedures.

VET 232 Anesthesia and Diagnostic Imaging. 4 hrs. (3-3)
PREREQUISITE: Student must have completed VET 110, 112, 114, 120, 122, 124, 126, 234 and 236 unless special arrangements have been made with the Program. This course introduces the student to principles of anesthesia, diagnostic imaging, and safety. Topics include an introduction to anesthesia, patient evaluation and preparation, pre-anesthetic considerations, local anesthesia, assessing the depth of general anesthesia, injectable anesthetic drugs, inhalation anesthesia, introduction to radiography, the radiograph machine, darkroom, radiographic films, general principles of positioning, radiographic protocol, safety measures, technique charts, quality control, introduction to ultrasonography, patient preparation, and equipment controls; required clinical tasks will be completed in an approved clinical site. Upon course completion, the student should be able to properly anesthetize and monitor animals under anesthesia, develop a technique chart, and apply the care and knowledge necessary to produce good quality radiographs and observe safety measures.

VET 234 Animal Pharmacology and Toxicology. 3 hrs. (3-0)
PREREQUISITE: Student must have completed VET 110, 112, 114, 124 and 126 unless special arrangements have been made with the Program.
This course is designed to give the student exposure to veterinary drugs and teach the importance of exact calculations, proper administration, and the danger and recognition of reactions and over dosage. Topics include introduction and principles of pharmacology; antimicrobials; disinfectants; drugs affecting the nervous, respiratory, cardiovascular, and gastrointestinal systems; anti-inflammatories; antiparasitics; euthanasia solutions; and pharmacy and inventory control. Upon course completion, the student should be able to properly calculate drug dosages; fill, label, and dispense medications; recognize the various classifications of drugs; and have knowledge regarding the dangers and toxicosis of various medications.

VET 236 Vet Microbiology and Parasitology. 3 hrs. (3-0)
PREREQUISITE: Student must have completed VET 110, 112, 114, 124 and 126 unless special arrangements have been made with the Program.
This course is designed to provide students with practical knowledge of common pathogens. Students will learn how to select and collect samples and data for laboratory processing or submission to another laboratory. Topics include identification of causative agents of diseases; classification and nomenclature of bacteria; morphology and physiology of bacteria; bacteria and disease; laboratory procedures in bacteriology; gram positive and gram negative bacteria; spiral and curved bacteria; actinomycetes organisms; fungi; virology; review of common small animal parasites, and equine and food animal parasitology. Upon course completion, the student should be able to properly collect and handle bacteriological specimens, identify organisms

by gram staining, and have a basic knowledge of large animal parasite life cycles, as well as methods of identification of the commonly encountered parasites.

VET 240 Vet Tech Clinics IV. 3 hrs. (Clin 9)
PREREQUISITE: Student must have completed VET 110, 112, 114, 120, 122, 124, 126, 234, and 236 unless special arrangements have been made with the Program.
This course provides students with required clinical tasks to be completed in an approved clinical site in the areas of surgical and nursing care, anesthesia, and clinical pathology. Topics include surgical, medical care and laboratory procedures. Upon course completion, the student should be proficient in those skills reinforced from previous semesters.

VET 242 Animal Nutrition and Laboratory Animals. 3 hrs. (2-3)
PREREQUISITE: Student must have completed VET 110, 112, and 114, unless special arrangements have been made with the Program.
This course is designed to acquaint the student with the basic concepts of animal nutrition and laboratory animal maintenance, husbandry, and handling. Topics include canine dietetics, feline dietetics, nutritional management of small animal disease, feeding the neonate, nutritional management of the convalescent animal, fundamentals of nutrition, principles of disease prevention, housing and equipment, job opportunities, biology of common lab animals, basic principles of research and necessity for use of lab animals, techniques, and zoonosis; required clinical tasks will be completed in an approved clinical site. Upon course completion, the student should be able to formulate a nutritional plan for the healthy and sick animal. The student should be able to handle, care for, and collect diagnostic samples and have basic knowledge of the diseases of the commonly used laboratory animals.

VET 244 Seminar in Veterinary Technology. 3 hrs. (3-0)
PREREQUISITE: Student must have completed VET 110, 112, 114, 120, 122, 124, 126, 230, 232, 234, 236, 240, and 246 unless special arrangements have been made with the Program.
This course is designed to review critical topics covered during the two years of the veterinary technology curriculum along with review questions and tests associated with these topics. Topics include anatomy and physiology, anesthesiology, animal care, dentistry, emergency and first aid, hospital management, laboratory animals, laboratory procedures, medical calculations, medical nursing, medical terminology, pharmacology, radiology and surgical nursing. Upon course completion, the student should be prepared for the Veterinary Technician National Exam.

VET 246 Vet Tech Large Animal Clinics. 2 hrs. (Clin 6)
PREREQUISITE: Student must have completed VET 110, 112, 114, 120, 122, 124, 126, 234, and 236 unless special arrangements have been made with the Program.
This course provides students with required tasks to be completed in an approved clinical site in the areas of large animals. Topics include: restraint, bandaging, venipunctures, radiography, patient care, medication administration. Upon course completion, the student should be able to have a working knowledge of fundamental large animal skills.

VET 250 Vet Tech Preceptorship. 3 hrs. (Prec 15)
PREREQUISITE: Student must have completed VET 110, 112, 114, 120, 122, 124, 126, 230, 232, 234, 236, 240 and 246 unless special arrangements have been made with the Program.
The veterinary technology preceptorship consists of one academic semester of work experience in an approved clinical site. A student evaluation report from the clinical supervisor will be necessary for the course completion and also for meeting requirements for graduation. The clinical practice will include clinical instruction in all areas of a veterinary practice as deemed necessary by the clinical supervisor. Upon course completion, the student should be able to apply all procedures learned in the veterinarian technology program to the practice environment.

WORKPLACE SKILLS ENHANCEMENT (WKO)

WKO 110 NCCER Core. 3 hrs.
PREREQUISITE: none
This course is designed to provide students with knowledge and skills related to multi-craft technicians in a variety of fields. Information in this course is based on the National Center for Construction Education and Research (NCCER) core curriculum and prepares students to test for the NCCER credential.

WELDING (WDT)

WDT 109 SMAW Fillet/PAC/ CAC. 3 hrs. (2-2)
PREREQUISITE: AUT 186
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.

WDT 115 GTAW Carbon Pipe. 3 hrs. (1-4)
PREREQUISITE: AUT 186
This course is designed to provide the student with the practices and procedures of welding carbon pipe using the gas tungsten arc weld (GTAW) process. Emphasis is placed on pipe positions, filler metal selection, purging gasses, joint geometry joint preparation and fit-up. Upon completion, students should be able to identify pipe positions, filler metals, purging gas, proper joint geometry, joint preparation and fit-up to the applicable code.

WDT 119 Gas Metal Arc/Flux Cored ARC Welding. 3 hrs. (2-2)
PREREQUISITE: AUT 186
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 gasses, process principles, component identification, various welding techniques and base and filler metal identification.

WDT 120 Shielded Metal Arc Welding Groove. 3 hrs. (2-2)
PREREQUISITE: AUT 186
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.

WDT 125 Shielded Metal Arc Welding Groove/ 3 hrs. (0-6)
PREREQUISITE: WDT 109 or Permission of Instructor.
COREQUISITE: WDT 120
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 166 Flux Core Arc Welding (FCAW). 3 hrs. (2-2)
PREREQUISITE: WDT 119
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. This course supports CIP code 48.0508.

WDT 217 SMAW Carbon Pipe. 3 hrs. (1-4)
PREREQUISITE: WDT 120
This course introduces the student to the practices and procedures of welding carbon steel pipe using the shielded metal arc weld (SMAW) process. Emphasis is placed on pipe positions, electrode selection, joint geometry, joint preparation and fit-up. Upon completion, students should be able to identify pipe positions, electrodes, proper joint geometry, joint preparation, and fit-up in accordance with applicable codes. (F, Sp, Su)

WDT 218 Certification. 3 hrs. (1-4)
PREREQUISITE: None
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 and industry standard welding test in accordance with various applicable welding code requirements.

WDT 219 Welding Inspection & Testing. 3 hrs. (3-0)
PREREQUISITE: AUT 186
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 228 Gas Tungsten Arc Welding. 3 hrs. (2-2)
PREREQUISITE: AUT 186
This course provides a student with knowledge to preform gas tungsten arc welds using ferrous and/or non-ferrous metals, according to applicable welding codes. Topics include safe operating practice, 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 practice, equipment identification and set-up, 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 229 Boiler Tube. 3 hrs. (1-4)
PREREQUISITE: WDT 119
This course is designed to provide the student with the practices and procedures of welding boiler tubes using the gas tungsten arc and shielded metal arc welding process to the applicable code. Emphasis is placed on tube fit-up, tube welding technique, and code requirements. Upon completion, students should be able to identify code requirements and tube welding technique.

WDT 258 Certification Lab. 3 hrs. (0-6)
PREREQUISITE: WDT 219
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 290 CO-OP. 3 hrs. (0-6)
PREREQUISITE: WKO 110 and AUT 186
These courses constitute a series wherein the student works on a part- time basis in a job directly related to welding. In these courses the employer evaluates the student's productivity and the student submits a descriptive report of his work experiences. Upon completion, the student will demonstrate skills learned in an employment setting. (F, Sp, Su)

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