

Course Descriptions



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Course Abbreviations

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

ACT	Accounting
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 Basic
ENG	English
ESL	Alabama Language Institute
FSC	Fire Science
FSE	Funeral Service Education
GEO	Geography
HED	Health Education
HIS	History
HSM	Hospitality Services Management
HMM	Hotel-Motel Management
HUM	Humanities
IDH	Interdisciplinary Honors
IWR	Ironworker
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
RDG	Reading
REL	Religion
SOC	Sociology
SPA	Spanish
SPH	Speech
THR	Theater Arts
VET	Veterinary 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.

Competency in the basic use of the computer is a requirement of the Southern Association of Colleges and Schools. Courses with the computer designation substantially integrate use of the computer as a course requirement and satisfy this competency.

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 MTH 116)
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.

The term that a course is typically offered is identified at the end of each course description with the following notation: F for fall semester, Sp for spring semester, and Su for summer term, as needed, once yearly, on demand. The college reserves the right to withdraw any course for which the demand is insufficient. The term “credit” indicates the number of “semester hours’ credit” granted upon the successful completion of a course. A credit hour is based upon the average number of hours of instruction taught weekly. The ratio of weekly contact hours to credit hours varies with the type of instruction being used. The categories of instruction and the corresponding contact/credit hour ratios are as follows:

Lecture: One hour of instruction per week for each credit hour (1:1)

Experimental Laboratory: Two hours of instruction per week for each credit hour (2:1)

Manipulative/Skills Laboratory or Clinical Practice: Three hours of instruction per week for each credit hour (3:1)

Preceptorship: Five hours of internship per week for each credit hour (5:1)

Internship: Five hours of internship per week for each credit hour (5:1)

Prerequisite or corequisite requirements of courses are listed with the course description in this section of the *Catalog and Student Handbook*. It is the responsibility of the student to know these requirements and follow them when registering. The instructor of the course and the appropriate division chair must approve any waiver of these requirements.

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 semester hours

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 semester hours

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

(Same as OAD 137)

3 semester hours

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 semester hours**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 semester hours**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 semester hours**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 semester hours**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, Sp, Su)

Advanced Manufacturing**ADM 106 Quality Control Concepts***3 semester hours**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 Air Force Today I***1 semester hour**Prerequisite: None Code C*

A survey course of topics relating to the Air Force and national defense. Discussion of purpose, structure, and career opportunities in the United States Air Force. Introduction to effective written communications. The AFS 101 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies, and military commands. (F)

AFS 102 Air Force Today II*1 semester hour**Prerequisite: None Code C*

Introduction to interpersonal communications. Seminar focusing on effective listening techniques, verbal and non-verbal communications. Practical exercises and group projects designed to demonstrate barriers to effective communications and techniques to overcome barriers. The AFS 102 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies, and military commands. (Sp)

AFS 201 The Air Force Way I*1 semester hour**Prerequisite: None Code C*

Historical survey of technological innovation in warfare. Focus on the emergence of air power and its significance of war and national security policy implementation. The AFS 201 Leadership Laboratory is a co-curricular activity that includes a study of Air Force customs and courtesies, drill and ceremonies and military commands. (F)

AFS 202 The Air Force Way II*1 semester hour**Prerequisite: None Code C*

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. 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. (Sp)

Anthropology (ANT)**ANT 200 Introduction to Anthropology***3 semester hours**Prerequisite: None Core Area IV, ASOC TSOC*

This course is a comprehensive introduction to anthropology, the study of humanity. It is both a scientific and a humanistic endeavor to explain differences and similarities in culture, appearance, language, and ideological perspectives. It

incorporates basic biology and physiology, history, geography, sociology, and evolution. All four subfields of anthropology: cultural, physical, archaeological, and linguistic; will be explored. The course consists of lectures, films, and discussions about different forms of human organization, lifestyles and practices throughout the world. (F, Sp, Su)

ANT 220 Cultural Anthropology

3 semester hours

Prerequisite: None Core Area IV, ASOC TSOC

Cultural anthropology is a social science that provides a comprehensive understanding of human diversity. This course will introduce students to the history, methods, and theories of the discipline, while primary attention will be given to the concept of culture as an analytical tool and to the research methods of ethnographic fieldwork. Drawing on material from all parts of the world, we will examine a variety of topics including: culture; kinship and social organization; beliefs and values; economic and political change; language; and sickness and healing. (Sp)

ANT 226 Culture and Personality

3 semester hours

Prerequisite: None Core Area IV, ASOC TSOC

This course explores the relationship between personality development and culture from a cross-cultural perspective. (Sp)

ANT 230 Introduction to Archaeology

3 semester hours

Prerequisite: None Core Area IV, ASOC TSOC

This is an introduction to the practice of archaeology and its major themes such as ancient diet, trade, and political systems from our human past. Covering such topics as where to dig, how to analyze what is found, and what is known about the origins of the human species, agriculture, cities, and civilization; this course integrates both archaeological methods and theory. (F, Sp)

Architectural Technology (AET)

AET 101S Architectural Drawing

3 semester hours

Prerequisite: None (Lec 2 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: AET 101S and AET 291 (Lec 2 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: None (Lec 2 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: AET 110 (Lec 2 hrs, Lab 2 hrs)

These courses provide specialized instruction in various areas related to architectural engineering. Emphasis is placed on meeting students' need. (Sp)

AET 191 (290) Basic Building Information Modeling (BIM)

3 semester hours

Prerequisite: CIS 146 or AET 110 (Lec 2 hrs, Lab 2 hrs)

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 semester hours

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 semester hours

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 student will be able to apply building code and requirements in planning and designing buildings. (Sp)

AET 291 Advanced Building Information Modeling (BIM)*3 semester hours**Prerequisite: AET 191 (Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: None**Core Area II (Arts), AHUM, THUM, TFA*

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

ART 109 Art Museum Survey*3 semester hours**Prerequisite: None AHUM*

This course covers the art experience through supervised visits to museums and art galleries. Emphasis is placed on learning through critical study. Upon completion, students should be able to write a critical analysis of the art work experienced that demonstrates an understanding of aesthetics. (as needed)

ART 113 Drawing I*3 semester hours**Prerequisite: None AHUM (Lab 6 hrs)*

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

ART 114 Drawing II*3 semester hours**Prerequisite: ART 113 or permission of Instructor or Department Head**AHUM (Lab 6 hrs)*

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. (F or Sp)

ART 121 Two Dimensional Composition*3 semester hours**Prerequisite: ART 113 or permission of Instructor or Department Head**AHUM (Lab 6 hrs)*

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

ART 127 Three Dimensional Composition*3 semester hours**Prerequisite: ART 113 or permission of Instructor or Department Head**AHUM (Lab 6 hrs)*

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. (F or Sp)

ART 143 Crafts*3 semester hours**Prerequisite: None AHUM (Lab 6 hrs)*

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: A. Painting, B. Bookbinding, D. Drawing, J. Jewelry, K. Basket weaving, P. Pottery, Q. Quilting, S. Stained Glass, T. Textiles, W. Watercolor. (Sp or Su)

ART 175 Digital Photography I*3 semester hours**Prerequisite: None AHUM (Lec 1 hr, Lab 6 hrs)*

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. (F, Sp)

ART 203 Art History I*3 semester hours**Prerequisite: None**Core Area II (Arts), AHUM THUM TFA*

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

ART 204 Art History II*3 semester hours**Prerequisite: None**Core Area II (Arts), AHUM TFA THUM*

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

ART 220 Introduction to Computer Graphics *3 semester hours**Prerequisite: None AHUM (Lab 6 hrs)*

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. (F, Sp, Su)

ART 221 Computer Graphics I *3 semester hours**Prerequisite: ART 220 AHUM (Lab 6 hrs)*

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. (F or Sp)

ART 233 Painting I*3 semester hours**Prerequisite: ART 113 AHUM (Lab 6 hrs)*

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. (F)

ART 234 Painting II*3 semester hours**Prerequisite: ART 233 AHUM (Lab 6 hrs)*

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. (as needed)

ART 253 Graphic Design I*3 semester hours**Prerequisite: ART 283 AHUM (Lab 6 hrs)*

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. (Sp)

ART 254 Graphic Design II*3 semester hours**Prerequisite: ART 253 AHUM (Lab 6 hrs)*

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. (F)

ART 275 Digital Photography II*3 semester hours**Prerequisite: ART 175**AHUM (Lec 1 hr, Lab 6hrs)*

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. (Sp)

ART 283 Graphic Animation*3 semester hours**Prerequisite: None AHUM (Lab 6 hrs)*

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. (F)

ART 284 Graphic Animation II*3 semester hours**Prerequisite: ART 283 AHUM (Lab 6 hrs)*

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. (Sp)

Astronomy (AST)

AST 220 Introduction to Astronomy

4 semester hours

Prerequisite: None

Core Area III ASCI TSCI (Lec 3 hrs, Lab 2 hrs)

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

Automated Manufacturing Technology (ATM)

ATM 181/281 Special Topics

3 semester hours

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 semester hours

Prerequisite: None (Lec 3 hrs)

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 semester hours

Prerequisite: ELM 215 or approval of program coordinator

(Lec 2 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: ATM 211 or approval of program coordinator

(Lec 2 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: ELM 215 or approval of program coordinator

(Lec 1 hr, Lab 4 hrs)

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 semester hours

Prerequisite: Approval of Program Coordinator

(Lec 2 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: None (Lec 3 hrs)

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 semester hours**Prerequisite: None (Lec 3 hrs)*

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*(Same as DDT 114)**3 semester hours**Prerequisite: None (Lec 3 hrs)*

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 112 Principles of Industrial Electricity*(Same as ELM 200)**3 semester hours**Prerequisite: MTH 100, appropriate score on placement test, permission of program coordinator, or equivalent (Lec 2 hrs, Lab 2 hrs)*

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.

AUT 114 Introduction to Programmable Logic Controllers I*(Same as ATM 211)**3 semester hours**Prerequisite: None (Lec 2 hrs, Lab 2 hrs)*

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.

AUT 116 Introduction to Robotics*(Same as MET 193)**3 semester hours**Prerequisite: None (Lec 2 hrs, Lab 2 hrs)*

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 120 Industrial Controls I*(Same as ELM 215)**4 semester hours**Prerequisite: ELM 200 or equivalent (Lec 2 hrs, Lab 4 hrs)*

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

AUT 130 Fundamentals of Industrial Hydraulics and Pneumatics*(Same as ELM 210)**3 semester hours**Prerequisite: None (Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: None (Lec 1 hr, Lab 4 hrs)*

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

AUT 144 Manufacturing Systems, Methods, and Processes

3 semester hours

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 161 Die Maintenance and Repair

(Same as ATM 281D)

3 semester hours

*Prerequisite: Approval of program coordinator
(Lec 2 hrs, Lab 2 hrs)*

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

AUT 164 Mechanical Tools

(Same as MET 190)

4 semester hours

Prerequisite: None (Lec 2 hrs, Lab 4 hrs)

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.

AUT 166 Blueprint Reading for Machinists

(Same as DDT 115)

3 semester hours

Prerequisite: None (Lec 3 hrs)

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 167 Geometric Dimensioning and Tolerancing

(Same as MET 239)

2 semester hours

Prerequisite: None (Lec 2 hrs)

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.

AUT 169 Basic CAD

(Same as MET 201)

3 semester hours

Prerequisite: None (Lec 1 hr, Lab 4 hrs)

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

AUT 184 Introduction to Weld Technologies and Projection Welding Applications

3 semester hours

*Prerequisite: approval by program coordinator or AUT 186
(Lec 2 hrs, Lab 2 hrs)*

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 semester hours

Prerequisite: None (Lec 1 hr, Lab 4 hrs)

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 semester hours

*Prerequisite: AUT 186 or approval of program coordinator
(Lab 4 hrs)*

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 Automated System Diagnosis and Troubleshooting

3 semester hours

Prerequisite: ATM 211 and ATM 220 (Lec 2hrs, Lab 2 hrs)

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 semester hours

Prerequisite: AUT 116 (1 lec, 4 lab)

In this course, students apply skills learned to design, fabricate, analyze, program, and/operate a robotics system under faculty supervision.

AUT 221 Advanced Programmable Logic Controllers

(Same as ATM 212)

3 semester hours

Prerequisite: AUT 114, ATM 211, or approval of program coordinator

(Lec 2 hrs, Lab 2 hrs)

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.

AUT 230 Preventive and Predictive Maintenance

3 semester hours

Prerequisites: None (Lec 1 hr, Lab 4 hrs)

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 238 Advanced Motor Drives

(Same as ATM 220)

3 semester hours

Prerequisite: None (Lec 1 hr, Lab 4 hrs)

This course covers advanced AC and DC motor drive topics. Topics include various AC and DC drive systems and troubleshooting, and DC motion control. Upon completion of this course, the student will be 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. (F, on demand)

AUT 262 Computer Integrated Manufacturing

3 semester hours

Prerequisite: None (Lec 3 hrs)

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 265 Materials

(Same as MET 233)

3 semester hours

Prerequisite: None (Lec 3 hrs)

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.

AUT 267 Quality Auditing

(Same as MET 235)

3 semester hours

Prerequisite: None (Lec 3 hrs)

Principles of auditing under the ISO 9000 series of quality standards. Topics include quality standards, quality documents, auditor selection, auditing procedures, and exit procedures. Upon completion of this course a student will be able to plan, conduct, and report an internal audit under the ISO 9000 series of quality standards.

AUT 270 Advanced CAD

(Same as MET 202)

3 semester hours

Prerequisite: MET 201 or AUT 169 or equivalent experience (Lec 1 hr, Lab 4 hrs)

This course provides instruction in 3D design modeling utilizing the 3D capabilities of CAD software. Emphasis is placed on 3D wireframe, surface and solid modeling along with the development of 2D working drawings from 3D models.

AUT 272 Advanced Solid Modeling

(Same as MET 211)

3 semester hours

Prerequisite: MET 201 or AUT 169 or equivalent experience (Lec 1 hr, Lab 4 hrs)

Continuation of AUT 171. This course provides instruction in 3D design modeling utilizing the 3D capabilities of Computer-Aided Design software. Topics include solid modeling, assembling models, and documenting assemblies. Upon completion of this course a student should be able to draw, dimension, and render the solid model of an assembly using 3 dimensional microcomputer techniques.

AUT 278 Robotic Programming and Welding*3 semester hours**Prerequisite: AUT 116 and AUT 186 or approval of program coordinator**(Lec 1, Lab 4 hrs)*

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 semester hours**Prerequisite: None (Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: Successful completion of at least one semester and Program Coordinator approval (Int 15 hrs)*

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 semester hours**Prerequisite: None Code C*

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. (F, W, Sp, Su)

BFN 101 Law and Banking: Principles*2 semester hours**Prerequisite: None Code C*

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. (W, Su)

BFN 102 Law and Banking: Applications*2 semester hours**Prerequisite: None Code C*

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. (F, S)

BFN 110 Marketing for Bankers*2 semester hours**Prerequisite: None Code C*

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. (W, Su)

BFN 147 Consumer Lending*2 semester hours**Prerequisite: None Code C*

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. (once yearly)

BFN 167 Supervision*2 semester hours**Prerequisite: None Code C*

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. (F, Sp)

BFN 205 Money and Banking*3 semester hours**Prerequisite: None Code C*

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. (F, Sp)

BFN 236 Analyzing Financial Statements*2 semester hours**Prerequisite: None Code C*

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. (as needed)

BFN 280 Real Estate Finance

2 semester hours

Prerequisite: None Code C

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. (as needed)

Biology (BIO)

BIO 101 Introduction to Biology I

4 semester hours

Prerequisite: None

Core Area III, ASCI TSCI (Lec 3 hrs, Lab 2 hrs)

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

BIO 102 Introduction to Biology II

4 semester hours

Prerequisite: BIO 101

Core Area III, ASCI, TSCI (Lec 3 hrs, Lab 2 hrs)

Introduction to Biology II is the second of a two-course sequence for non-science majors. It covers evolutionary principles and relationships, environmental and ecological topics, classification, and a survey of biodiversity. (F, Sp, Su)

BIO 103 Principles of Biology I

4 semester hours

Prerequisite: None

Core Area III, ASCI, TSCI (Lec 3 hrs, Lab 2 hrs)

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

BIO 104S Principles of Biology II

4 semester hours

Prerequisite: BIO 103

Core Area III, ASCI, TSCI (Lec 3 hrs, Lab 3 hrs)

Principles of Biology II is the second of a two-course sequence for science majors. It covers the basic ecological and evolutionary relationships of plants and animals and a survey of plant and animal diversity including classification, morphology, physiology, and reproduction. (Sp, Su)

BIO 111 Survey of Human Biology

4 semester hours

Prerequisite: Funeral Service Majors only

Code C (Lec 3 hrs, Lab 2 hrs)

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. (F)

BIO 201 Human Anatomy and Physiology I

4 semester hours

Prerequisite: None, Recommended BIO 103

ASCI (Lec 3 hrs, Lab 2 hrs)

Human Anatomy and Physiology is the first of a two-semester sequence that covers the structure and function of the human body. Included is an orientation of the human body, basic principles of chemistry, a study of cells and tissues, metabolism, joints, the integumentary, skeletal, muscular, nervous system, and the senses. Dissection, histological studies, and physiology are featured in the laboratory experience. (F, Sp, Su)

BIO 202 Human Anatomy and Physiology II

4 semester hours

Prerequisite: BIO 201 ASCI (Lec 3 hrs, Lab 2 hrs)

Human Anatomy and Physiology II is the second of a two-semester sequence that covers the structure and function of the human body. Included is a study of basic nutrition, basic principles of water, electrolyte, and acid-base balance, the endocrine, respiratory, digestive, urinary, cardiovascular, lymphatic, and reproductive systems. Dissection, histological studies, and physiology are featured in the laboratory experience. (F, Sp, Su)

BIO 220 General Microbiology

4 semester hours

Prerequisite: BIO 103 or 201, Recommended: 4 semester hours of chemistry

ASCI (Lec 2 hrs, Lab 4 hrs)

This course includes historical perspectives, cell structure and function, microbial genetics, infectious diseases, immunology, distribution, physiology, culture, identification, classification, and disease control of microorganisms. The laboratory experience includes micro-techniques, distribution, culture, identification, and control. (F, Sp, Su)

BIO 230 Human Pathophysiology*4 semester hours**Prerequisite: BIO 201, BIO 202, and BIO 220**ASCI (Lec 3 hrs, Lab 2 hrs)*

Human Pathophysiology covers the nature, etiology, prognosis, prevention, and therapeutics of human disease. (F)

BIO 250S Directed Studies in Biology I*1-3 semester hours**Prerequisite: Permission of department head**Code C (on demand)*

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.

BIO 251 Directed Studies in Biology II*1-3 semester hours**Prerequisite: BIO 250 Code C*

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. (on demand)

Biomedical Equipment Technology (BET)**BET 211 Biomedical Electronic Systems I***3 semester hours**Prerequisite: Admission to program (Lec 3 hrs)*

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 semester hours**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 semester hours**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 semester hours**Prerequisite: Admission to program**(Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: Admission to program**(Clin 12 hrs)*

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 semester hours**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 semester hours**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 semester hours**Prerequisite: None Code C*

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. (Sp, F)

BUS 188 Personal Development*1-3 semester hours**Prerequisite: None Code C*

This course provides strategies for personal and professional development. Topics include business etiquette, personal

appearance, interviewing techniques, and development of a self-concept necessary for business success. (F, Sp)

BUS 215 Business Communication

3 semester hours

Prerequisite: None Code C

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

BUS 241 Principles of Accounting I

3 semester hours

Prerequisite: None Code B

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

BUS 242 Principles of Accounting II

3 semester hours

Prerequisite: BUS 241 Code B

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. (F, Sp, Su)

BUS 248 Managerial Accounting

3 semester hours

Prerequisite: BUS 242 Code B

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. (F, Sp, Su)

BUS 263 The Legal and Social Environment of Business

3 semester hours

Prerequisite: None Code B

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. (F, Sp, Su)

BUS 271 Business Statistics I

3 semester hours

Prerequisite: MTH 112 Code B

This is an introductory study of basic statistical concepts applied to economic and business problems. Topics include the

collection, classification, and presentation of data, statistical description and analysis of data, measures of central tendency and dispersion, elementary probability, sampling, estimation and introduction to hypothesis testing. (F, Sp, Su)

BUS 272 Business Statistics II

3 semester hours

Prerequisite: BUS 271 Code B

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. (F, Sp, Su)

BUS 275 Principles of Management

3 semester hours

Prerequisite: None Code B

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

BUS 285 Principles of Marketing

3 semester hours

Prerequisite: None Code B

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

Chemistry (CHM)

CHM 104 Introduction to Inorganic Chemistry

4 semester hours

Prerequisite: MTH 098, 116, or equivalent math placement score

Core Area III, ASCI, TSCI (Lec 3 hrs, Lab 3 hrs)

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

CHM 105 Introduction to Organic Chemistry

4 semester hours

Prerequisite: CHM 104 or CHM 111

Core Area III, ASCI, TSCI (Lec 3 hrs, Lab 3 hrs)

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

CHM 111 College Chemistry I*4 semester hours**Prerequisite: MTH 112 or equivalent math placement score**Core Area III ASCI TSCI (Lec 3 hrs, Lab 3 hrs)*

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

CHM 112 College Chemistry II*4 semester hours**Prerequisite: CHM 111**Core Area III ASCI TSCI (Lec 3 hrs, Lab 3 hrs)*

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

CHM 220 Quantitative Analysis*4 semester hours**Prerequisite: CHM 112**ASCI (Lec 3 hrs, Lab 3 hrs)*

This course covers the theories, principles, and practices in standard gravimetric, volumetric, calorimetric, and electrometric analysis with special emphasis on equilibrium in acid-base and oxidation-reduction reactions and stoichiometry of chemical equations. Laboratory is required and will include classical techniques in chemical analysis, modern methods of chemical separation, and basic instrumental techniques. (on demand)

CHM 221 Organic Chemistry I*4 semester hours**Prerequisite: CHM 112**ASCI (Lec 3 hrs, Lab 3 hrs)*

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

CHM 222 Organic Chemistry II*4 semester hours**Prerequisite: CHM 221**ASCI (Lec 3 hrs, Lab 3 hrs)*

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

Child Development (CHD)**CHD 100 Introduction of Early Care and Education of Children***3 semester hours**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 semester hours**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 semester hours**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 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours (Int 15 hrs)

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 semester hours (Int 10 hrs)

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 semester hours

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 semester hours

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 semester hours

Prerequisite: Eligible for MTH 100

(Lec 2 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: AET 101S and AET 110

(Lec 2 hrs, Lab 2 hrs)

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 semester hours

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 semester hours

Prerequisite: CIS 146 or spreadsheet experience

Code C

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. (F, Sp, Su)

CIS 117 Database Management Software Applications

3 semester hours

Prerequisite: CIS 146 or database experience

Code C

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. (F, Sp)

CIS 130 Introduction to Information Systems

3 semester hours


Prerequisite: None

Code B

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. (F, Sp, Su)

CIS 146 Microcomputer Applications *3 semester hours**Prerequisite: Keyboarding skills recommended**Code B*

This course is an introduction to the most common microcomputer software applications. These software packages should include typical features of applications, such as word processing, spreadsheets, database management, and presentation software. Upon completion, students will be able to utilize selected features of these packages. (F, Sp, Su)

CIS 150 Introduction to Computer Logic and Programming *3 semester hours**Prerequisite: CIS 146 or equivalent background**Code C*

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. (F, Sp, Su)

CIS 161 Introduction to Networking Communications *3 semester hours**Prerequisite: CIS 146 or equivalent background**Code C*

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

CIS 207 Introduction to Web Development *3 semester hours**Prerequisite: CIS 146 or equivalent background**Code C*

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. (F, Sp, Su)

CIS 208 Intermediate Web Development *3 semester hours**Prerequisite: CIS 207 Code C*

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

CIS 209 Advanced Web Development *3 semester hours**Prerequisite: CIS 207 or equivalent Code C*

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. (Su)

CIS 215 C# Programming*3 semester hours**Prerequisite:**Code C*

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.

CIS 216 Advanced C# Programming*3 semester hours**Prerequisite: CIS 215**Code C*

This course is a continuation of C# programming. Techniques for the improvement of application and systems programming will be covered and other topics may include developing GUI's with C#, memory management, Classes and objects, functions, debugging, portability, and reusable code. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.

CIS 222 Database Management Systems *3 semester hours**Prerequisite: CIS 150 or database experience**Code C*

This course will discuss database system architectures, concentrating on Structured Query Language (SQL). It will teach students how to design, normalize and use databases with SQL, and to link those to the Web.

CIS 250 E-Commerce *3 semester hours**Prerequisite: CIS 146 or equivalent background and Web related computer experience**Code C*

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. (F)

CIS 251 C++ Programming 📖*3 semester hours**Prerequisite: CIS 150 Code B*

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. (F, Sp, Su)

CIS 255 Java Programming 📖*3 semester hours**Prerequisite: CIS 150 Code B*

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. (F, Sp, Su)

CIS 259 Advanced Mobile App Development*3 semester hours**Prerequisite:**Code C*

This course serves as a capstone class for app development. Students will conceive, design, develop, and deploy a finished app for mobile platforms using specified app-development software.

CIS 261 COBOL Programming 📖*3 semester hours**Prerequisite: CIS 150 Code B*

This course is an introduction to the COBOL programming language. Included are structured programming techniques, report preparation, arithmetic operations, conditional statements, group totals, and table processing. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. (as needed)

CIS 262 Advanced COBOL Programming 📖*3 semester hours**Prerequisite: CIS 261 Code B*

This course consists of development, completion, testing, and execution of complex problems in COBOL using various data file structures. A structured approach will be implemented as a methodological system. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. (as needed)

CIS 263 Computer Maintenance 📖*3 Semester hours**Prerequisite: Code C*

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. (F,Sp, Su)

CIS 268 Software Support 📖*3 semester hours**Prerequisite: CIS 146 or equivalent background**Code C*

This course provides students with hands-on practical experience in installing computer software, operating systems, and trouble-shooting. (F, Sp, Su)

CIS 269 Hardware Support 📖*3 semester hours**Prerequisite: CIS 268 or equivalent**Code C*

This course provides students with hands-on practical experience in installation and troubleshooting computer hardware. (F, Sp, Su)

CIS 270 Cisco CCNA I*3 semester hours**Prerequisite: None**Code C*

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. (F)

CIS 271 Cisco CCNA II*3 semester hours**Prerequisite: CISCO 270**Code C*

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

CIS 272 Cisco CCNA III*3 semester hours**Prerequisite: CISCO 271**Code C*

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

CIS 273C Cisco CCNA IV*3 semester hours**Prerequisite: CISCO 272**Code C*

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

CIS 275 Workstation Administration

3 semester hours

Prerequisite: CIS 161 or equivalent experience

Code C

This course provides a study of client system administration in a network environment. Topics include installing, monitoring, maintaining, and troubleshooting client operating system software and managing hardware devices and shared resources. Students gain hands-on experience in client operating system installation and basic administration of network workstations. (Sp)

CIS 276 Server Administration

3 semester hours

Prerequisite: CIS 161 or equivalent experience

Code C

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

CIS 277 Network Services Administration

3 semester hours

Prerequisite: CIS 161 or equivalent experience

Code C

This course provides an introduction to the administration of fundamental networking services and protocols. Topics included in this course are implementing, managing, and maintaining essential network operating system services such as those for client address management, name resolution, security, routing, and remote access. Students gain hands-on experience performing common network infrastructure administrative tasks. (Su)

CIS 278 Directory Services Administration

3 semester hours

Prerequisite: CIS 161 or equivalent experience

Code C

This course provides a study of planning, implementing, and maintaining a network directory service. Topics included in this course are planning and implementing network directory organizational and administrative structures. Students gain hands-on experience using a directory service to manage user, group, and computer accounts, shared folders, network resources, and the user environment. (Su)

CIS 280 Network Security

3 semester hours

Prerequisite: CIS 161 or equivalent experience

This course provides a study of threats to network security and methods of securing a computer network from such threats. Topics included in this course are security risks, intrusion detection, and methods of securing authentication, network access, remote access, Web access, and wired and wireless network

communications. Upon completion students will be able to identify security risks and appropriate counter measures. (F)

CIS 281 System Analysis and Design

3 semester hours

Prerequisite: CIS 213, CIS 222, CIS 251, CIS 255, CIS 209, or CIS 285

Code C

This course is a study of contemporary theory and systems analysis and design. Emphasis is placed on investigating, analyzing, designing, implementing, and documenting computer systems. Upon completion, students should be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. (Sp)

CIS 282 Computer Forensics

3 semester hours

Prerequisite: None

Code C

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

CIS 284 CIS Internship

3 semester hours

Prerequisite: Permission of Instructor

Code C (Int 15 hrs)

This course is designed to provide the student with an opportunity to work in a degree/program related environment. Emphasis is placed on the student's "real world" work experience as it integrates academics with practical applications that relate meaningfully to careers in the computer discipline. Significance is also placed on the efficient and accurate performance of job tasks as provided by the "real world" work experience. Grades for this course will be based on a combination of the employer's evaluation of the student, and the contents of this course submitted by the student. Upon completion of this course, the student will be able to demonstrate the ability to apply knowledge and skills gained in the classroom to a "real world" work experience. Currently, courses are available in A. Applications, N. Networking, P. Programming, and W. Web Technologies. (F, Sp)

CIS 285 Object Oriented Programming

3 semester hours

Prerequisite: CIS 255 or equivalent Code B

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, such as C++ or Java. Subject matter includes object-oriented analysis and design, encapsulation, inheritance, polymorphism (operator and function overloading), information hiding, abstract data types, reuse, dynamic memory allocation and file manipulation. Upon completion, students should be able to develop a hierarchical class structure necessary to the implementation of an object-oriented software system. Currently, courses are available in 285. Advanced Java and 285C. C#. (Sp)

CIS 287 SQL Server *3 semester hours**Prerequisite: CIS 161 or equivalent experience Code C*

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.

CIS 291 Case Study in Computer Science *3 semester hours**Prerequisite: Permission of Instructor**Code C*

This course is a case study involving the assignment of a complete system development project for analysis, programming, implementation, and documentation. Topics include planning system analysis and design, programming techniques, coding and documentation. Upon completion, students should be able to design, code, test and document a comprehensive computer information system. Currently, courses are available in A. Applications, N. Networking, P. Programming, and W. Web Technologies. (F, Sp, Su)

CIS 294 Special Topics *3 semester hours**Prerequisite: None Code C*

This course allows study of currently relevant computer science topics, with the course being able to be repeated for credit for each different topic covered. Course content will be determined by the instructor and will vary according to the topic being covered. Upon completion, the student will be able to demonstrate knowledge of the course topic through the completion of assignments and appropriate tests. (Sp)

Construction Management Technology (CMT)**CMT 101S Construction Materials and Methods***3 semester hours**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 semester hours**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 semester hour**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 semester hour**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 semester hour**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 semester hours**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.

CMT 161 Introduction to Sustainable Construction

1 semester hour

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 semester hours

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 semester hours

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 semester hours

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 semester hours

Prerequisite: Eligible for MTH 100, CMT 101S, and either CMT 102 or AET 101S

(Lec 2 hrs, Lab 2 hrs)

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 on-line: 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 semester hours

Prerequisite: None Code B

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. (F, Sp, Su)

CRJ 110 Introduction to Law Enforcement

3 semester hours

Prerequisite: None Code B

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. (F, Sp)

CRJ 130 Introduction to Law and Judicial Process

3 semester hours

Prerequisite: None Code C

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. (F, Sp)

CRJ 140 Criminal Law and Procedure

3 semester hours

Prerequisite: None Code C

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. (F or Sp)

CRJ 146 Criminal Evidence*3 semester hours**Prerequisite: None Code C*

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. (as needed)

CRJ 147 Constitutional Law*3 semester hours**Prerequisite: None Code C*

This course involves constitutional law as it applies to criminal justice. It includes recent Supreme Court decisions affecting criminal justice professionals, such as right to counsel, search and seizure, due process, such as right to counsel, search and seizure, due process and civil rights. (F or Sp)

CRJ 150 Introduction to Corrections*3 semester hours**Prerequisite: None Code B*

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

CRJ 160 Introduction to Security*3 semester hours**Prerequisite: None Code B*

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

CRJ 178 Narcotics/Dangerous Drugs*3 semester hours**Prerequisite: None Code B*

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. (F or Sp)

CRJ 208 Introduction to Criminology*(Same as SOC 208)**3 semester hours**Prerequisite: None Code B*

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. (F, Sp, Su)

CRJ 209 Juvenile Delinquency*(Same as SOC 209)**3 semester hours**Prerequisite: None Code B*

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. (F, Sp)

CRJ 216 Police Organization and Administration*3 semester hours**Prerequisite: None Code C*

This course examines the principles of organization and administration of law enforcement agencies. Theories of management, budgeting, and various personnel issues are covered. (F or Sp)

CRJ 220 Criminal Investigation*3 semester hours**Prerequisite: None Code C*

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. (F or Sp)

CRJ 227 Homicide Investigation*3 semester hours**Prerequisite: None Code C*

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

CRJ 230 Criminalistics*3 semester hours**Prerequisite: None Code C*

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

CRJ 236 Advanced Criminalistics*3 semester hours**Prerequisite: None Code C*

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. (as needed)

CRJ 280 Internship in Criminal Justice*3 semester hours**Prerequisite: Sophomore status, 2.0 GPA, and permission of program coordinator**Code C*

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

CRJ 290 Selected Topics - Seminar in Criminal Justice*3 semester hours**Prerequisite: None Code C*

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. (as needed)

Culinary Arts (CUA)

CUA 101 Orientation to the Hospitality Profession

3 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours

Prerequisite: CUA 110, 112S, 120, CUA 201

(Lec 1 hr, Lab 6 hrs)

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 semester hours

Corequisite: CUA 110 (Lab 6 hrs)

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 semester hours

Prerequisite: CUA 204 or permission of instructor

(Lec 1 hr, Lab 6 hrs)

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

2 semester hours

Prerequisite: CUA 204 or permission from instructor

(Lec 1 hr, Lab 3 hrs)

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 semester hours

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 to begin cooking for good health. (F, Sp)

CUA 165 Cake Decorating and Design

3 semester hours

Prerequisite: CUA 204 or permission of instructor

(Lec 2 hrs, Lab 3 hrs)

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 as 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 semester hour**Prerequisite: None (Lab 3 hrs)*

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 bussing 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. (F, Sp)

CUA 201 Meat Preparation and Processing*2 semester hours**Prerequisite: CUA 110, 120 with a grade of C or better**(Lec 1 hr, Lab 3 hrs)*

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, Su)

CUA 204 Foundations of Baking*3 semester hours**Prerequisite: CUA 110, 112, 120 with a grade of C or better**(Lec 1 hr, Lab 6 hrs)*

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 semester hours**Prerequisite: CUA 110, 120 (Lec 1 hr, Lab 6 hrs)*

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*2 semester hours**Prerequisite: CUA 204, CUA 130 (Lec 1 hr, Lab 3 hrs)*

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 semester hours**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 semester hours**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 semester hours**Prerequisite: CUA 204 or permission of instructor**(Lec 2 hrs, Lab 3 hrs)*

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 semester hours**Prerequisite: Foodservice majors, CUA 101, CUA 112S, CUA 110, CUA 120, (Lab 20 hrs)*

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 255 Field Experience Savory*3 semester hours**Prerequisite: Foodservice majors, CUA 101, CUA 112S, CUA 110, CUA 120, (Lab 20 hrs)*

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 semester hour**Prerequisite: Culinary Arts majors**(Intern 5 hrs)*

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 semester hour**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. (Su)

Economics (ECO)**ECO 231 Principles of Macroeconomics***3 semester hours**Prerequisite: None Core Area IV ASOC TSOC*

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. (F, Sp, Su)

ECO 232 Principles of Microeconomics*3 semester hours**Prerequisite: None Core Area IV ASOC TSOC*

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. (F, Sp, Su)

Electromechanical Technology (ELM)**ELM 181/281 Special Topics in Electromechanical Technology***1-3 semester hours**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 semester hours**Prerequisite: Eligible for MTH 100, appropriate score on placement test, permission of program coordinator, or equivalent**(Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: ELM 200 or equivalent**(Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: None (Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: ELM 201S (Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: ELM 205 (Lec 2 hrs, Lab 2 hrs)*

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 semester hours

Prerequisite: None (Lec 2 hrs, Lab 2 hrs)

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 semester hours

*Prerequisite: ELM 200 or equivalent**(Lec 2 hrs, Lab 4 hrs)*

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)

**Emergency Medical Technology/
Technician (EMS)****EMS 118 Emergency Medical Technician**

9 semester hours

*Prerequisite: Admission to EMP Basic Courses**(Lec 6 hrs, Lab 6 hrs)*

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 semester hour

*Prerequisite: Admission to EMP Basic Courses**(Cln 3 hrs)*

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 semester hours

*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.**(Lec 5 hrs, Lab 6 hrs)*

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 semester hours

*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.**(Cln 6 hrs)*

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 semester hours

*Prerequisite: Enrolled at JSCC**(Lec 4 hrs)**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 semester hours

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.

(Lec 1 hr, Lab 2 hrs)

This course focuses on the operational knowledge and skills needed for safe and effective patient care within 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 semester hours

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.

(Lec 2 hrs, Lab 2 hrs)

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 credit hours

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.

(Lec 2 hrs, Lab 2 hrs)

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 semester hour

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.

(Lab 2 hrs)

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 semester hour

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.

(Cln 3 hrs)

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 semester hours

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.

(Lec 2 hrs, Lab 2 hrs)

This course relates 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 semester hours

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.

(Lec 2 hrs, Lab 2 hrs)

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 Population

2 semester hours

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.

(Lec 1 hr, Lab 2 hrs)

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 semester hours

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.

(Cln 9 hrs)

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 semester hours

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.

(Lec 1 hr, Lab 2 hrs)

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 semester hours

Prerequisite: 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.

(Lec 1 hr, Lab 2 hrs)

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 semester hours

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.

(Cln 15 hrs)

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 semester hour

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.

(Cln 3 hrs)

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 093 Basic English

3 institutional semester hours

Corequisite: RDG 085 for students with marked language deficiency

This course is a review of composition skills and grammar. Emphasis is placed on coherence and the use of a variety of sentence structures in the composing process and on standard American written English usage. Students will demonstrate these skills chiefly through the writing of paragraph blocks and short essays. Enrollment is determined by the student's placement score. (F, Sp, Su)

ENG 101 English Composition I

3 semester hours

Prerequisite: Successful completion of ENG 093, ENR 094, 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)

Core Area I

English Composition I provides instruction and practice in the writing of at least six (6) extended compositions and the development of analytical and critical reading skills and basic reference and documentation skills in the composition process. English Composition I may include instruction and practice in library usage. (F, Sp, Su)

ENG 102 English Composition II

3 semester hours

Prerequisite: A grade of "C" or higher in ENG 101 or the equivalent

Core Area I

English Composition II provides instruction and practice in the writing of six (6) formal analytical essays, at least one of which is a research project using outside sources and/or references effectively and legally. Additionally, English Composition II provides instruction in the development of analytical and critical reading skills in the composition process. English Composition II may include instruction and practice in library usage. (F, Sp, Su)

ENG 246-247-248-249 Creative Writing

3 semester hours

Prerequisite: Consent of instructor

Code C

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. (F, Sp)

ENG 251 American Literature I

3 semester hours

Prerequisite: ENG 102 or equivalent

Core Area II THUM TLIT AHUM

This course is a survey of American literature from its inception to the middle of the nineteenth century. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research. (F, Sp, Su)

ENG 252 American Literature II

3 semester hours

Prerequisite: ENG 102 or equivalent

Core Area II, THUM TLIT AHUM

This course is a survey of American literature from the middle of the nineteenth century to the present. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research. (F, Sp, Su)

ENG 261 English Literature I

3 semester hours

Prerequisite: ENG 102 or equivalent

Core Area II, TLIT THUM AHUM

This course is a survey of English literature from its Anglo-Saxon period to the Romantic Age. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research. (F, Sp, Su)

ENG 262 English Literature II

3 semester hours

Prerequisite: ENG 102 or equivalent

Core Area II THUM TLIT AHUM

This course is a survey of English literature from the Romantic Age to the present. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research. (F, Sp, Su)

ENG 271 World Literature I*3 semester hours**Prerequisite: ENG 102 or equivalent**Core Area II, THUM TLIT AHUM*

This course is a study of selected literary masterpieces from Homer to the Renaissance. Emphasis is placed on major representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research. (F, Sp, Su)

ENG 272 World Literature II*3 semester hours**Prerequisite: ENG 102 or equivalent**Core Area II, THUM TLIT AHUM*

This course is a study of selected literary masterpieces from the Renaissance to the present. Emphasis is placed on major representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research. (F, Sp, Su)

English/Reading (ENR)**ENR 094 Integrated Reading and Writing***4 semester hours**Prerequisite: RDG 085 or ESL 098 with "C" or Required**Placement Test Score*

This course will provide comprehensive instruction in basic reading and writing skills, paragraph and essay construction, comprehension skills, vocabulary development, and critical reading. (F, Sp, Su)

Alabama Language Institute (ESL)**ESL 098 Advanced ESL***3 institutional semester hours**Prerequisite: Successful completion of ESL 096 or appropriate placement score*

Advanced ESL is an introduction to college reading and writing for students who are non-native speakers of English. This course provides instruction and practice in sentence structure, paragraph development, essay development, and oral presentation skills. Students will demonstrate these skills chiefly through the writing of paragraphs and short essays, and giving oral presentations.

Fire Science (FSC)**FSC 101 Introduction to the Fire Service***3 semester hours**Prerequisite: None Code C*

This course teaches the many functions of the fire service, its importance and origins. It is designed to acquaint the student with the philosophy and history of the fire service and fire protection, the exacting loss of life and property, and the organization and function of public and private fire protection agencies. Emphasis is placed on the organization and function of federal, state, county, city, and private fire protection. (on demand)

FSC 110 (210) Building Construction Principles*3 semester hours**Prerequisite: None Code C*

This course highlights and assesses the problems and hazards to fire personnel when a building is attacked by fire or is under stress from other factors dealing with collapse. Emphasis is placed on construction principles: wood, ordinary, steel, concrete, and truss construction. (on demand)

FSC 131 Fire Extinguishment Principles*3 semester hours**Prerequisite: None Code C*

This is a study of water supplies and services, fire extinguishing chemicals, and the selection and use of extinguishing agents. Emphasis is placed on dry chemical, dry powder, foam and halogenated agents. (on demand)

FSC 160 Hazards Awareness*3 semester hours**Prerequisite: None Code C*

This course includes the basic awareness of characteristics and behavior of solids, liquids, and gases when involved in fire. Emphasis is placed on characteristics, storage, and handling of various materials. (on demand)

FSC 161 Hazardous Materials Awareness and Operations*3 semester hours**Prerequisite: None Code C*

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

FSC 201 Fire Instructor I*3 semester hours**Prerequisite: None Code C*

A course that trains participants to teach a class from a prepared lesson plan. This course introduces the student to the concept of utilizing training aids to enhance his/her presentation, how to properly select these training aids, and how to use the training aid selected. Subject areas for this course include: Communication, Concepts of Learning, Methods of Teaching, Organizing the Class, Performance Evaluations, Testing and Evaluations, The Lesson Plan, Teaching Techniques, and the Use of Instructional Materials. The student will give several presentations during the week, all leading to the final fifteen minute graded presentation on the final day of class. (on demand)

FSC 202 Fire Instructor II*3 semester hours**Prerequisite: None Code C*

This course provides the Fire Instructor I with the next level of understanding for the training of personnel. This course trains the participants to perform job and task analysis, develop goals and objectives, and develop a lesson plan along with the coordinating training aids, and student tests and evaluation. During the course, the students are divided into groups, each of which is responsible for the development of a lesson plan to be presented to the class on the final day. (on demand)

FSC 203 Fire Instructor III*3 semester hours**Prerequisite: None Code C*

This course is intended for the instructor who is ready to assume a leadership role by moving into the upper management level of his/her department. This course consists of subjects designed to give the instructor more knowledge of management and supervision so that he/she can make basic evaluations of employee relations and assume a more proactive role in their department. If you bring your own laptop computer the required soft ware is Microsoft Word and PowerPoint. (on demand)

FSC 208 Fire Combat Tactics and Strategy*3 semester hours**Prerequisite: None Code C*

This course is designed to offer the advanced firefighter or beginning fire officer the necessary information and related techniques to ensure effective fire scene operations. Topics of study include: Pre-fire Planning, Tactical Operations, and Scene Management Techniques. Students are given the opportunity to participate in group activities, discussions, and practical exercises to further enhance the learning experience and reinforce methodology discussed. (on demand)

FSC 220 National Incident Management Systems II (NIMS II)*3 semester hours**Prerequisite: None Code C*

This course will extend the students understanding of NIMS I and allow them to operate in several complex roles in a Unified Command system. These positions may include Command and General Staff, Incident Command, and deputies and/or assistants to the Incident Commander. This is accomplished by utilizing tabletop exercises and real-time scenarios. This course will meet the baseline requirements for the NIMS 300 and NIMS 400. (on demand)

FSC 230 Rescue Technician: Rope*3 semester hours*

Prerequisite: Certified Volunteer Firefighter or Certified Firefighter I or documented proof of Hazardous Materials Awareness & Operational training, Introduction to Technical Rescue, completion of EMT Basic course.

Code C

This course in rope rescue techniques includes a classroom review of equipment, knots and rope safety. Instruction events include: establishing need for rope rescue; uses and limitations of equipment; knotcraft; safety aspects; anchoring systems; rescue rappelling; third man rescue; lowering systems and other aspects of rope rescue. (on demand)

FSC 231 Rescue Technician: Confined Space*3 semester hours*

Prerequisite: Certified Volunteer Firefighter or Certified Firefighter I or documented proof of Hazardous Materials Awareness & Operational training, Introduction to Technical Rescue, completion of EMT Basic course.

Code C

This course is designed for both fire department personnel and private industry, this course provides responders with a comprehensive understanding of accidents involving a confined space. It teaches the responder how to recognize the hazard, access the victim, stabilize the victim and the proper procedures for retrieval. Practical and classroom sessions focus on the three primary hazards associated with confined space rescue: physical, atmospheric, and physiological. Realistic training evolutions using the latest in equipment and techniques ensure student retention of this material. (on demand)

FSC 232 Rescue Technician: Trench*3 semester hours*

Prerequisite: Certified Volunteer Firefighter or Certified Firefighter I or documented proof of Hazardous Materials Awareness & Operational training, Introduction to Technical Rescue, completion of EMT Basic course.

Code C

A course designed to offer a combination of classroom and practical evolutions that allow the student to learn proper techniques to make open trenches and excavations safe for victim access and removal. The class is made realistic by actual sheeting and shoring operations of "unsafe" trenches, by using

shoring equipment, and practice in developing skills in lifting practices within the trench environment. (on demand)

FSC 233 Rescue Technician: Structural Collapse

3 semester hours

Prerequisite: Certified Volunteer Firefighter or Certified Firefighter I or documented proof of Hazardous Materials Awareness & Operational training, Introduction to Technical Rescue, completion of EMT Basic course.

Code C

This course is designed to comply with NFPA 1006, Standard for Rescue Technician Professional Qualifications. It is an intense course which addresses heavy construction collapse and emphasizes the following discipline areas: breaching and breaking, lifting and moving, interior shoring, exterior shoring, and cutting and burning. (on demand)

FSC 237 Rescue Technician: Vehicle and Machinery

3 semester hours

Prerequisite: Certified Volunteer Firefighter or Certified Firefighter I or documented proof of Hazardous Materials Awareness & Operational training, Introduction to Technical Rescue, completion of EMT Basic course.

Code C

This course is designed to offer a combination of classroom and practical evolutions that allow the student to learn proper techniques to plan for a vehicle/machinery incident, establish fire protection, stabilize a vehicle or machine, isolate potential harmful energy sources, determine vehicle access and egress points, create access and egress openings for rescue, disentangle victims, remove a packaged victim to a designated safe area, and terminate a vehicle/machinery incident. (on demand)

FSC 241 Fire Investigator I

3 semester hours

Prerequisite: None Code C

This course targets fire investigators, police officers, and company-level officers with a desire to learn more about determining the origin and cause of fire. Students wishing to attend this course should be prepared for an intense week of training and practical skills application. Topics covered include: Determining the Point of Origin, Burn Patterns, Evidence Collection and Analysis, Interviewing Techniques, and Court Procedure and Testifying. (on demand)

FSC 242 Fire Investigator II

3 semester hours

Prerequisite: None Code C

This is an introduction to arson and incendiarism, arson laws, methods of determining fire causes, evidence, interviewing and detaining witnesses, procedures in handling juveniles, and court procedures. (on demand)

FSC 251 Fire Inspector I

3 semester hours

Prerequisite: None Code C

A beginning level course for firefighters and other interested parties wishing to become more involved in the aspect of fire

prevention and inspections. This course is primarily designed for those entering into fire service inspections and would be extremely useful to city inspectors and company level officers. Some of the topics covered in this course include: Building Construction, Decorative Materials and Furnishings, Fire Drills, Inspection Procedure, Code Enforcement, and Fire Alarm and Communications. (on demand)

FSC 252 Fire Inspector II

3 semester hours

Prerequisite: None Code C

This course delves deeper into the interpretation of applicable codes and standards, covers the procedure involved in various types of inspections, and prepares the inspector for the plans review process. It is an advanced level course which covers a wide range of topics some of which are: Inspection Procedure, Building Construction, Occupancy Classification and Means of Egress, Fire Protection and Water Supply Systems, Plans Review, and the Storage of Hazardous Materials. (on demand)

FSC 253 Fire Inspector III

3 semester hours

Prerequisite: None Code C

This course provides the participant with an in-depth view of the skills and duties required of the Fire Inspector III. The Fire Inspector III is an individual at the third and most advanced level of progression, who has met the job performance requirements specified in NFPA 1031, Standard for Professional Qualifications for Fire Inspector and Plans Examiner, current edition. The Fire Inspector III performs all types of fire inspections, plans review duties, and resolves complex code-related issues. (on demand)

FSC 254 The ISO (AIA) Standards

3 semester hours

Prerequisite: None Code C

This course is a study of insurance theory and practice, the economics of the ISO grading system and a city's fire defense and insurance rates. Included is a detailed analysis of a city's water supply, fire department, fire alarm, fire prevention, and other grading methods of fire defense. (on demand)

FSC 255 Public Fire and Life Safety Educator

3 semester hours

Prerequisite: None Code C

With the leading cause of death among children being unintentional injuries, the need for fire and life safety education has become evident in today's society. This course will train the student to coordinate and deliver existing comprehensive community fire and injury prevention programs designed to eliminate or mitigate situations that endanger lives, health, property, and the environment. (on demand)

FSC 261 Hazmat Technician

3 semester hours

Prerequisite: None Code C

This course is designed for the student already certified at the Hazardous Materials Awareness and Operational level, this

course develops the skills already learned and provides in-depth training in the mitigation of hazardous materials incidents. Through both classroom and practical training the student becomes familiar with health and safety issues, incident management, hazard and risk analysis, personal protective clothing, and decontamination. (on demand)

FSC 270 Fire Protection Systems

3 semester hours

Prerequisite: None Code C

This course will teach students the design and operation of fire protection systems for commercial, residential, and special hazard environments. Students will understand the general principals of automatic sprinkler systems, heat and smoke control systems, standpipe systems, and fire detection/ alarm systems, and portable extinguishing systems. (on demand)

FSC 280 Fire Apparatus and Equipment

3 semester hours

Prerequisite: None Code C

This is a study of driving laws, techniques, construction and operation of pumping engines, ladder trucks, aerial platforms, specialized equipment and apparatus maintenance. (on demand)

FSC 291 Fire Officer I

3 semester hours

Prerequisite: None Code C

The Fire Officer I curriculum identifies the requirements necessary to perform the duties of a first line supervisor. This course introduces the student to the basic concepts of management and supervision by concentration on such topics as: Organizational Structure, Communication Skills, Human Resource Management, Public Relations, Planning, Emergency Service Delivery, and Safety. (on demand)

FSC 292 Fire Officer II

3 semester hours

Prerequisite: None Code C

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

FSC 293 Fire Officer III

3 semester hours

Prerequisite: None Code C

This course is specialized for the chief officer who is ready to advance into the upper management level of his/her department. This course consists of subjects designed to give the officer more knowledge of management and administration so

that he/she can make basic evaluations of employee relations and assume a more proactive role in their department. This is a projects-based class. (on demand)

FSC 294 Fire Officer IV

3 semester hours

Prerequisite: None Code C

This course meets executive management level needs. The course is designed to meet the elements of NFPA 1021, Chapter 7. Fire Officer IV will emphasize management of fire protection services to include human resource management, multi-agency emergency service delivery with horizontal/vertical communication requirements and risk management. There will be group interactive exercises, which will reinforce class lectures. (on demand)

FSC 295 Fire Department Safety Officer

3 semester hours

Prerequisite: None Code C

The purpose of this course is to provide training for fire officers and firefighters on the role and responsibilities of the Incident Safety Officer, and to allow participants to practice some of the key skills needed for competency as an Incident Safety Officer. This training program is for Fire Officers who could be asked to assume the duties of the Incident Safety Officer either as a staff assignment or an on-scene appointment. The program is also appropriate for firefighters who will be working on-scene with the Incident Safety Officer and must understand and appreciate the scope and duties of the job. (on demand)

FSC 299 Legal Aspects of the Fire Service

3 semester hours

Prerequisite: None Code C

This course introduces students to the legal obligations and responsibilities within the fire service along with the limitations and restrictions placed on emergency responders. Students will discuss and apply federal and state laws, codes, regulations and standards relevant to the fire service. Both civil and criminal law will be addressed. (on demand)

Funeral Service Education (FSE)

FSE 101 Funeral Directing

3 semester hours

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 semester hours**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 semester hours**Prerequisite: Admission to Program*

This course explores requirements for those interested in franchising, starting, or acquisition of 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 semester hours**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 semester hours**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 semester hours**Prerequisite: Admission to program**(Lab 9 hrs)*

In this course students demonstrate the knowledge, skills, and abilities needed to function as an embalmer. Emphasis will be placed on the students 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 semester hours**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 semester hours**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 semester hours**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 semester hours**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 semester hours**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, after-care, 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 semester hours**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 semester hours**Prerequisite: FSE 225*

This course explores requirements for those interested in franchising, starting, or acquisition of 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 semester hours**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 semester hours**Prerequisite: Admission to program**(Int 15 hrs)*

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 semester hours**Prerequisite: Admission to program*

Each student is required to take the National Board examination as a condition for completing this course and for graduation. 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 semester hours**Prerequisite: None Core Area IV, ASOC TSOC*

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. (F, Sp, Su)

Health Education (HED)

HED 221 Personal Health

3 semester hours

Prerequisite: None Code B

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. (F, Sp, Su)

HED 222 Community Health

3 semester hours

Prerequisite: None Code C

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. (F, Sp, Su)

HED 231 First Aid

3 semester hours

Prerequisite: None Code B

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. (F, Sp, Su)

HED 277 CPR Recertification

1 semester hour

Prerequisite: Valid CPR Certification

Code C

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. (F, Sp, Su)

History (HIS)

HIS 101 Western Civilization I

3 semester hours

Prerequisite: None

Core Area IV, ASOC TSOC THIS

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. (F, Sp, Su)

HIS 102 Western Civilization II

3 semester hours

Prerequisite: None

Core Area IV, ASOC TSOC THIS

This course is a continuation of HIS 101. It surveys development of the modern western world from the era of the Renaissance and Reformation to the present. (F, Sp, Su)

HIS 121 World History I

3 semester hours

Prerequisite: None

Core Area IV, ASOC TSOC THIS

This course surveys social, intellectual, 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.

HIS 122 World History II

3 semester hours

Prerequisite: None

Core Area IV, ASOC TSOC THIS

This course is a continuation of HIS 121; it covers world history, both western and non-western, from the early modern era to the present.

HIS 201 United States History I

3 semester hours

Prerequisite: None

Core Area IV, ASOC TSOC THIS

This course surveys United States history during colonial, Revolutionary, early national and antebellum periods. It concludes with the Civil War and Reconstruction. (F, Sp, Su)

HIS 202 United States History II

3 semester hours

Prerequisite: None

Core Area IV, ASOC TSOC THIS

This course is a continuation of HIS 201. It surveys United States history from the Reconstruction era to the present. (F, Sp, Su)

HIS 216 History of World Religions

3 semester hours

Prerequisite: None Code C

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

HIS 256 African American History

3 semester hours

Prerequisite: None Code B, ASOC

This course focuses on the experience of African-American people in the western hemisphere, particularly the United States. It surveys the period from the African origins of the slave trade during the period of exploration and colonization to the present. The course presents a comparison between the

African experience in the United States and in Mexico and South America.

HIS 260 Alabama History

3 semester hours

Prerequisite: None Code B ASOC

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

Hospitality Services Management (HSM)

HSM 240 Housekeeping Administration

3 semester hours

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 semester hours

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 106S Beverage Selection and Appreciation

3 semester hours

Prerequisite: None (Lec 2 hrs, Lab 3 hrs)

This course will provide students with a basic understanding of distilled and brewed spirits. Emphasis will be placed on international wine producing areas and students will learn serving techniques and the basics of beverage etiquette. Upon completion, students will have a basic knowledge of beverage production. (Su)

HMM 190 Internship-Practicum I

3 semester hours

Prerequisite: Limited to Hotel- Restaurant Management majors

(Int 30 hrs)

In this course students will gain on-the-job experience in using knowledge and skills acquired through various courses of instructions completed. Emphasis is placed on the student's

working under the direct supervision of an experienced employee of the business establishment. Upon completion of this work experience, the supervisor will provide the college with a written report on the student's progress according to prior agreement of experience to be gained. (F, Sp, Su)

HMM 240 Hospitality Managerial Accounting

3 semester hours

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. (Sp)

HMM 241- Restaurant Service Management 1

3 semester hours

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.

HMM 251 Front Office Management

3 semester hours

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. (F)

Humanities (HUM)

HUM 106 Humanities Through the Arts

3 semester hours

Prerequisite: None AHUM

This course is an integrated survey of film, drama, music, literature, painting, and sculpture, and architecture. (as needed)

HUM 298 Directed Studies in the Humanities

1-3 semester hours

Prerequisite: None AHUM

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 (F, Sp, Su), B. Ambassadors, C. Concert Series (as needed), I. International (Su), M. Movie Series (F, Sp, Su), S. Sigma Kappa Delta (F, Sp)

HUM 299 PTK Honors Course*1 semester hours**Prerequisite: None Core Area II, THUM*

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.

Industrial Engineering Technology**IET 114 Basic Electricity***3 semester hours**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 semester hours*

Prerequisite: Permission of instructor; completion of ENG 101 and 102. Completion of first semester western civilization is recommended.

Core Area IV, ASOC TSOC

This course is an 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.

Ironworker (IRW)**IIRW 111 Ironworker Tools and Equipment***4 semester hours*

Co-requisite: ORI 101- Orientation to College, WKO 110 NCCER

This course provides students with introduction to Ironworker trade, types of fastenings, tools and equipment required for the trade, basic structural Ironworker, and trade safety. This course will be conducted as theory and laboratory combination.

IWR 113 Ironworker Trade Practices*3 semester hours**Prerequisite: IWR 111 Ironworker Tools and Equipment*

This course introduces the participating students Introduction to Arc welding, Oxyfuel cutting, Plumbing aligning and guying in Ironworking, and Rigging equipment required in Ironworking. This course will be conducted as theory and laboratory combination.

IWR 115 Ironworker Field Work*4 semester hours**Prerequisite: IWR 111 Ironworker Tools and Equipment*

This course provides instruction and demonstration with Mobile Construction Cranes, Rigging Practices, Steel Bar Joist and Girders, Field Fabrication, and Steel Metal Decking. This course will be conducted as theory and laboratory combination.

Management and Supervision Technology (MST)**MST 111 Elements of Supervision***3 semester hours**Prerequisite: None Code C*

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

MST 201 Human Resource Management*3 semester hours**Prerequisite: None Code C*

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

MST 215 Small Business Management*3 semester hours**Prerequisite: None Code C*

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. (Sp)

Mass Communications (MCM)**MCM 100 Introduction to Mass Communications***3 semester hours**Prerequisite: None Code B*

This course provides the student with general study of mass communication and journalism. This course includes theory, development, regulation, operation, and effects upon society. (F)

MCM 102 Writing for the Media*3 semester hours**Prerequisite: None Code B*

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. (Sp)

Mathematics (MTH)**MTH 090 Basic Mathematics***3 institutional semester hours**Prerequisite: None*

This developmental course reviews basic arithmetic principles and terminology, operations involving real numbers, algebraic expressions and applications, linear equations and inequalities. (F, Sp, Su)

MTH 098 Elementary Algebra*3 institutional semester hours**Prerequisite: MTH 090 or appropriate mathematics placement score*

This course is a review of the fundamental arithmetic and algebra operations. The topics include the numbers of ordinary arithmetic and their properties, integers and rational numbers; the solving of equations; polynomials and factoring; systems of equations; operations with algebraic fractions and graphs of linear equations in two variables. (F, Sp, Su)

MTH 098S Elementary Algebra*4 institutional semester hours**Prerequisite: MTH 090 or appropriate mathematics placement score*

This course is a review of MTH 090 and the fundamental arithmetic and algebra operations. The topics include the numbers of ordinary arithmetic and their properties, integers and rational numbers; the solving of equations; polynomials and factoring; systems of equations; operations with algebraic fractions and graphs of linear equations in two variables.

MTH 100 Intermediate College Algebra*3 semester hours**Prerequisite: MTH 098, MTH 098S or appropriate mathematics placement score**AMTH A116*

This course provides a study of algebraic techniques such as linear equations and inequalities, quadratic equations, systems of equations, and operations with exponents and radicals. Functions and relations are introduced and graphed with special emphasis on linear and quadric functions. This course does not apply toward the AGSC core requirement for mathematics. (F, Sp, Su)

MTH 100S Intermediate College Algebra*4 semester hours**Prerequisite: MTH 098, 098S or appropriate mathematics placement score**AMTH A116*

This course is a review of MTH 098 and provides a study of algebraic techniques such as linear equations and inequalities, quadratic equations, systems of equations, and operations with exponents and radicals. Functions and relations are introduced and graphed with special emphasis on linear and quadric functions. This course does not apply toward the AGSC core requirement for mathematics.

MTH 110 Finite Mathematics*3 semester hours**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 Intermediate College Algebra (MTH 100 or MTH 100S).**Core Area III, AMTH A116 TMTH*

This course is intended to give an overview of topics in finite mathematics together with their applications, and is taken primarily by students who are not majoring in science, engineering, commerce, or mathematics (i.e., students who are not required to take calculus). This course will draw on and significantly enhance the student's arithmetic and algebraic skills. The course includes sets, counting, permutations, combinations, basic probability (including Bayes' Theorem), and introduction to statistics (including work with binomial distributions and normal distributions), matrices and their applications to Markov chains and decision theory. Additional topics may include symbolic logic, linear models, linear programming, the simplex method and applications. (F, Sp, Su)

MTH 112 Precalculus Algebra*3 semester hours**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 Intermediate College Algebra (MTH 100 or MTH 100S).**Core Area III, AMTH A116 TMTH*

This course emphasizes the algebra of functions - including polynomial, rational, exponential, and logarithmic functions. The course also covers systems of equations and inequalities, quadratic inequalities, and the binomial theorem. Additional topics may include matrices, Cramer's rule, and mathematical induction. (F, Sp, Su)

MTH 113 Precalculus Trigonometry

3 semester hours

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 MTH 112.

Core Area III, AMTH A116 TMTH

This course includes the study of trigonometric (circular functions) and inverse trigonometric functions, and includes extensive work with trigonometric identities and trigonometric equations. The course also covers vectors, complex numbers, DeMoivre's theorem, and polar coordinates. Additional topics may include conic sections, sequences, and using matrices to solve linear systems. (F, Sp, Su)

MTH 115S Precalculus Algebra and Trigonometry

4 semester hours

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 MTH 100 and receive permission from the department chairperson.

Core Area III, AMTH TMTH A116

This course is a one semester combination of Precalculus Algebra and Precalculus Trigonometry intended for superior students. The course covers the following topics: the algebra of functions (including polynomial, rational, exponential, and logarithmic functions), systems of equations and inequalities, quadratic inequalities, and the binomial theorem, as well as the study of trigonometric (circular functions) and inverse trigonometric functions, and includes trigonometric equations, vectors, complex numbers, DeMoivre's theorem, and polar coordinates. (as needed)

MTH 116 Mathematical Applications

3 semester hours

Prerequisite: MTH 090 or appropriate mathematics placement score

Code C A116

This course provides practical applications of mathematics and includes selected topics from consumer math and algebra. Some types included are integers, percent, interest, ratio and proportion, metric system, probability, linear equations, and problem solving. This is a terminal course designed for students seeking an associate in applied science degree and does not meet the general core requirement for mathematics. (F, Sp, Su)

MTH 118 Technical Mathematics

3 semester hours

Prerequisite: MTH 100 "C" or higher or appropriate mathematics placement score

AMTH A116

This course includes selected topics from algebra, analytic geometry, and trigonometry with emphasis on applications

to engineering technology. Topics include variation, determinants, conic sections, exponential and logarithmic functions, and solutions of right triangles. This course does not apply toward the AGSC core requirement for mathematics. (as needed)

MTH 120 Calculus and its Applications

3 semester hours

Prerequisite: A minimum prerequisite of high school

Algebra I, Geometry, and Algebra II with an appropriate mathematics placement score is required. An alternative to this is that the student should successfully pass with a "C" or higher MTH 112.

Core Area III AMTH A116 TMTH

This course is intended to give a broad overview of calculus and is taken primarily by students majoring in commerce and business administration. It includes differentiation and integration of algebraic, exponential, and logarithmic functions and applications to business and economics. The course should include functions of several variables, partial derivatives (including applications), Lagrange multipliers, L'Hôpital's rule, and multiple integration (including applications). (F, Sp, Su)

MTH 125S Calculus I

4 semester hours

Prerequisite: A minimum prerequisite of high school

Algebra I, Geometry, and Algebra II with an appropriate mathematics placement score is required. An alternative to this is that the student should successfully pass with a "C" or higher MTH 113 or MTH 115S.

Core Area III AMTH A116 TMTH

This course 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. (F, Sp, Su)

MTH 126S Calculus II

4 semester hours

Prerequisite: A minimum prerequisite of high school

Algebra I, Geometry, and Algebra II with an appropriate mathematics placement score is required. An alternative to this is that the student should successfully pass with a "C" or higher MTH 125S.

Core Area III, AMTH A116 TMTH

This course is the second of three courses in the basic calculus sequence. Topics include vectors in the plane and in space, lines and planes in space, applications of integration (such as volume, arc, length, work and average value), techniques of integration, infinite series, polar coordinates, and parametric equation. (F, Sp, Su)

MTH 227 Calculus III*4 semester hours**Prerequisite: MTH 126S with a "C" or higher.**Core Area III, AMTH A116 TMTH*

This course 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). (Sp, Su)

MTH 231 Math for the Elementary Teacher I*3 semester hours**Prerequisite: MTH 098 or appropriate mathematics placement score**A116*

This course is designed to provide appropriate insights into mathematics for students majoring in elementary education and to ensure that students going into elementary education are more than proficient at performing basic arithmetic operations. Topics include logic, sets and functions, operations and properties of whole numbers and integers including number theory; use of manipulatives by teachers to demonstrate abstract concepts; and by students while learning these abstract concepts as emphasized in the class. Upon completion, students are required to demonstrate proficiency in each topic studied as well as to learn teaching techniques that are grade level and subject matter appropriate, and test for mathematical proficiency and the learning of teaching concepts. (on demand)

MTH 232 Math for the Elementary Teacher II*3 semester hours**Prerequisite: MTH 231 A116*

This course is designed to provide appropriate insights into mathematics for students majoring in elementary education and to ensure that students going into elementary education are more than proficient at performing basic arithmetic operations. Topics include numeration skills with fractions, decimals and percentages, elementary concepts of probability and statistics, and analytic geometry concepts associated with linear equations and inequalities. The use of manipulatives and calculators in the teaching and learning process is stressed. Upon completion, students will test for mathematical proficiency and the learning of teaching concepts. Students also will demonstrate an appropriate teaching technique by preparing a lesson and teaching it to the class for their final exam grade. (on demand)

MTH 237 Linear Algebra*3 semester hours**Prerequisite: MTH 126S**Core Area III, AMTH A116 TMTH*

This course introduces the basic theory of linear equations and matrices, real vector spaces, bases and dimension, linear transformations and matrices, determinants, eigenvalues and eigenvectors, inner product spaces, and the diagonalization of symmetric matrices. Additional topics may include quadratic

forms and the use of matrix methods to solve systems of linear differential equations. (on demand)

MTH 238 Applied Differential Equations I*3 semester hours**Corequisite: MTH 227**Core Area III, AMTH A116 TMTH*

An introduction to numerical methods, qualitative behavior of first order differential equations, techniques for solving separable and linear equations analytically, and applications to various models (e.g. populations, motion, chemical mixtures, etc.); techniques for solving higher order linear differential equations with constant coefficients, reduction of order and the method of variation of parameters), with emphasis on interpreting the behavior of the solutions, and applications to physical models whose governing equations are of higher order; the Laplace transform as a tool for the solution of initial value problems whose inhomogeneous terms are discontinuous. (Sp)

MTH 265 Elementary Statistics*3 semester hours**Prerequisite: MTH 100 or appropriate mathematics placement score**AMTH A116*

This course provides an introduction to methods of statistics, including the following topics: sampling, frequency distributions, measures of central tendency, graphic representation, reliability, hypothesis testing, confidence intervals, analysis, regression analysis, estimation, and applications. Probability, permutations, combinations, binomial theorem, random variable, and distributions may be included. (F, Sp, Su)

Mechanical Engineering Technology (MET)**MET 190 Mechanical Tools I***4 semester hours**Prerequisite: None (Lec 2 hrs, Lab 4 hrs)*

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 semester hours**Prerequisite: MET 190 or equivalent experience or approval of program coordinator (Lec 2 hrs, Lab 4 hrs)*

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). Student 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 semester hours**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 semester hours**Prerequisite: None (Lec 1 hr, Lab 4 hrs)*

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 semester hours**Prerequisite: MET 201 or equivalent experience (Lec 1 hr, Lab 4 hrs)*

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 semester hours**Prerequisite: MET 201 or equivalent experience (Lec 1 hr, Lab 4 hrs)*

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 semester hours**Prerequisite: MET 204 or equivalent experience (Lec 1 hr, Lab 4 hrs)*

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 semester hours**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 semester hours**Prerequisite: None (Lec 2 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: PHY 115 and MET 213 (Lec 3 hrs)*

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 semester hours**Prerequisite: None (Lec 2 hr, Lab 2 hrs)*

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 semester hours**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 semester hours**Prerequisite: None*

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 📖

4 semester hours

Prerequisite: Admission to program

(Lec 2 hrs, Lab 4 hrs)

This course focuses on the theory and techniques in the examination of urine and other body fluids. The student is introduced to the physical and chemical properties of these fluids 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 semester hours

Prerequisite: Admission to program

(Lec 3 hrs, Lab 4 hrs)

In this course the theory and techniques of hematology are covered. The student is presented with blood components, normal and abnormal cell morphology, hemostasis, and selected automated methods. 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 semester hours

Prerequisite: Admission to program

(Lec 3 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: Admission to program

(Lec 3 hrs, Lab 4 hrs)

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 📖

4 semester hours

Prerequisite: Admission to program

(Lec 3 hrs, Lab 2 hrs)

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 semester hours

Prerequisite: Admission to program

(Lec 3 hrs, Lab 4 hrs)

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 semester hours

Prerequisite: Admission to program

(Lab 4 hrs)

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 semester hours

Prerequisite: Admission to program

(Lec 1 hr, Lab 2 hrs)

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 semester hours

Prerequisite: Admission to program

(Lec 3 hrs, Lab 4 hrs)

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 in MLT *2 semester hours**Prerequisite: Admission to program**(Lab 4 hrs)*

In this seminar students work independently on a research project and present their findings in a paper. Topics are current, as are all materials that are used to support their research. Upon completion, students should be able to perform scientific research and present a paper in proper form. (as needed)

MLT 293S MLT Medical Seminar *2 semester hours**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 I *3 semester hours**Prerequisite: Admission to program**(Prec 9 hrs)*

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 II *3 semester hours**Prerequisite: Admission to program**(Prec 9 hrs)*

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 III *3 semester hours**Prerequisite: Admission to program**(Prec 9 hrs)*

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 IV *3 semester hours**Prerequisite: Admission to program**(Prec 9 hrs)*

This supervised practicum is within the medical lab setting and provides laboratory practice in clinical chemistry. Emphasis is placed on clinical 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 analysis by various methods, including testing utilizing computer oriented instrumentation, report test results, manage patient data and quality control statistics using information systems. (F, Sp)

Military Science (MSC)**MSC 101 Military Leadership***2 semester hours**Prerequisite: None Code C*

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. (F)

MSC 101A Adventure Training*2 semester hours**Prerequisite: None Code C*

Action-oriented alternative to MSC 100-level military science classes. Helps you meet everyday adversity and shows you how resourcefulness can help you 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. (on demand)

MSC 102 Military Science I*2 semester hours**Prerequisite: None Code C*

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. (Sp)

MSC 201 Military Leadership*2 semester hours**Prerequisite: None Code C*

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. (on demand)

MSC 202 Military Science II*2 semester hours**Prerequisite: None Code C*

Students focus on self-development guided by knowledge of self and group processes; students challenges current beliefs, knowledge, and skills; student provides equivalent preparation for the ROTC Advanced Course as the Leader's Training course. (on demand)

MSC 204 Rangers*1 semester hour**Prerequisite: None Code C*

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. (on demand)

Music (MUS)**MUS 101 Music Appreciation***3 semester hours**Prerequisite: None**Core Area II (Arts), THUM TFA AHUM*

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 multicultural 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. (F, Sp, Su)

MUS 110 Basic Musicianship*3 semester hours**Prerequisite: None AHUM*

This course is designed to provide rudimentary music knowledge and skills for the student with a limited music background. Topics include a study of notation, rhythm, scales, keys, intervals, chords and basic sight singing and ear training skills. Upon completion, students should be able to read and understand musical scores and demonstrate basic sight singing and ear training skills for rhythm, melody and harmony. (F)

MUS 111S Music Theory I*4 semester hours**Prerequisite: MUS 110 or suitable placement score or permission of instructor**AHUM*

This course introduces the student to the diatonic harmonic practices in the Common Practice Period. Topics include fundamental musical materials (rhythm, pitch, scales, intervals, diatonic harmonies) and an introduction to the principles of voice leading and harmonic progression. Upon completion, students should be able to demonstrate a basic competency

using diatonic harmony through analysis, writing, sight singing, dictation and keyboard skills. Laboratory included. (as needed)

MUS 112S Music Theory II*4 semester hours**Prerequisite: MUS 111S or permission of instructor**AHUM*

This course completes the study of diatonic harmonic practices in the Common Practice Period and introduces simple musical forms. Topics include principles of voice leading used in 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. (as needed)

Music Ensemble (MUL)**Music Ensembles***MUL 180 181 Chorus I, II**2 semester hours**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 semester hour**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 semeste hour (Lab 2 hrs)**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 semester hours**Prerequisite: Permission of UAB department head**Code C*

This course is offered through UAB and requires participation in UAB's marching band. (F)

Nursing (NUR)

NUR 112 Fundamental Concepts of Nursing

7 semester hours

Prerequisite: Admission the program

(Lec 4 hrs, Lab 2 hrs, Clin 1 hrs)

This course teaches foundational knowledge of nursing concepts and clinical decision making to provide evidence-based nursing care. Contents include but are not limited to: Health-care 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 semester hours

Prerequisite: Admission to Program

(Lec 4 hrs, Lab 1 hrs, Clin 3 hrs)

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 semester hours

Prerequisite: Admission to program

(Lec 5 hrs, Clin 3 hrs)

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 semester hours

Prerequisite: Admission to program

(Lec 1 hr, Clin 1 hr.)

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 semester hours

Prerequisite: Admission to program

(Lec 4 hrs, Clin 3 hrs)

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 semester hours

Prerequisite: Admission to program

(Lec 3 hrs, Clin 4 hrs)

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 semester hours

Prerequisite: None Code C

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. (F, Sp, Su)

OAD 103 Intermediate Keyboarding

3 semester hours

Prerequisite: OAD 101 Code C

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. (F, Sp, Su)

OAD 110 Computer Navigation

3 semester hours

Prerequisite: None Code C

This course is designed to introduce the student to the Windows environment through classroom instruction and outside lab. Emphasis is on Windows as a graphical user interface and includes operations and applications that use the Windows environment. Upon completion, the student should be able to demonstrate proficiency in the operation and management of hardware and software as defined by the course syllabus. (F, Sp, Su)

OAD 125 Word Processing

3 semester hours

Prerequisite: None Code C

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. Currently courses are available in W. Microsoft® Word (F, Sp, Su)

OAD 127 Business Law

3 semester hours

Prerequisite: None Code C

This course is designed to introduce the student to the fundamentals of business law affecting consumers and citizens. Emphasis is on principles of law dealing with contracts, sales, and commercial papers. Upon completion, the student should be able to demonstrate an understanding of the legal issues affecting business transactions. (Sp)

OAD 137 Computerized Financial Recordkeeping (Quickbooks)

(Same as ACT 246Q)

3 semester hours

Prerequisite: BUS 241 or ACT 145 Code C

This course is designed to provide the students with skill 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. (F, Sp, Su)

OAD 138 Records/Information Management

3 semester hours

Prerequisite: None Code C

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. (F, Sp, Su)

OAD 201 Legal Terminology

3 semester hours

Prerequisite: None Code C

This course is designed to familiarize the student with commonly used legal terms. Emphasis is on the spelling, definition, pronunciation, and usage of legal terminology. (F)

OAD 202 Legal Transcription

3 semester hours

Prerequisite: OAD 103 Code C

This course is designed to familiarize students with legal terms and provide transcription skill development in the production of legal correspondence, forms, and court documents through classroom instruction and outside lab. Emphasis is on transcribing legal documents from dictated recordings. Upon completion, the student should be able to demonstrate the ability to

transcribe accurately appropriately formatted legal documents. (F, Sp)

OAD 211 Medical Terminology

3 semester hours

Prerequisite: None Code C

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. (F, Sp, Su)

OAD 212 Medical Transcription

3 semester hours

Prerequisite: OAD 103 Code C

This course is designed to orient students to standard medical reports, correspondence, and related documents transcribed in a medical environment through classroom instruction and outside lab. Emphasis is on transcribing medical records and operating a transcribing machine efficiently. Upon completion, the student should be able to accurately transcribe medical documents from dictated recordings (F, Sp,)

OAD 215 Health Information Management (ICD-10, CPT-4 Coding)

3 semester hours

Prerequisite: None Code C

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. (F, Sp, Su)

OAD 216 Advanced Health Information Management (ICD-10, CPT-4 Coding)

3 semester hours

Prerequisite: OAD 215 Code C

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. (F, Sp, Su)

OAD 217 Office Management

3 semester hours

Prerequisite: None Code C

This course is designed to develop skills necessary for supervision of office functions. Emphasis is on issues relating to the combination of people and technology in achieving the goals of business in a culturally diverse workplace, including the importance of office organization, teamwork, workplace ethics, office politics, and conflict resolution skills. Upon completion, the student should be able to demonstrate use of the tools

necessary for effective supervision of people and technology in the modern office. (F, Sp, Su)

OAD 230 Computerized Desktop Publishing 📄

3 semester hours

Prerequisite: None Code C

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. (Su)

OAD 232 The Computerized Office 📄

3 semester hours

Prerequisite: None Code C

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. (F, Sp, Su)

OAD 242 Office Internship

3 semester hours

Prerequisite: Permission of instructor

Code C (Int 15 hrs)

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. (F, Sp, Su)

OAD 246 Office Graphics and Presentations 📄

3 semester hours

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, as well as such presentation considerations as the make-up of the target audience. Upon completion, the student should be able to demonstrate the ability to design and produce a business presentation. (F, Sp, Su)

Orientation (ORI)

ORI 101 Orientation to College

3 Semester hours

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)

Philosophy (PHL)

PHL 106 Introduction to Philosophy

3 semester hours

Prerequisite: None Core Area II, THUM AHUM

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. (F, Sp, Su)

PHL 116 Logic

3 semester hours

Prerequisite: None AHUM

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. (Su)

PHL 206 Ethics and Society

3 semester hours

Prerequisite: None Core II, THUM

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. (F, Sp, Su)

Physical Education (PED)

PED 100 Fundamentals of Fitness

3 semester hours

Prerequisite: None Code B

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. (F, Sp, Su)

PED 103 Weight Training*1 semester hour**Prerequisite: None Code C (Act 2 hrs)*

This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight-training program. (F, Sp, Su)

PED 105 Personal Fitness*1 semester hour**Prerequisite: None Code C (Act 2 hrs)*

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

PED 107 Aerobic Dance (Beginning)*1 semester hour**Prerequisite: None Code C (Act 2 hrs)*

This course introduces the fundamentals of step and dance aerobics. Emphasis is placed on basic stepping up, basic choreographed dance patterns, and cardiovascular fitness; and upper body, floor, and abdominal exercises. Upon completion, students should be able to participate in basic dance aerobics. (F, Sp, Su)

PED 108 Aerobic Dance (Intermediate)*1 semester hour**Code C (Act 2 hrs)*

This course provides a continuation of step aerobics. Emphasis is placed on a wide variety of choreographed step and dance patterns; cardiovascular fitness; and upper body, abdominal, and floor exercises. Upon completion, students should be able to participate in and design an aerobics routine. (F, Sp, Su)

PED 109 Jogging*1 semester hour**Code C (Act 2 hrs)*

This course covers the basic concepts involved in safely and effectively improving cardiovascular fitness. Emphasis is placed on walking, jogging, or running as a means of achieving fitness. Upon completion, students should be able to understand and appreciate the benefits derived from these activities. (on demand)

PED 126 Recreational Games*1 semester hour**Code C (Act 2 hrs)*

This course is designed to give an overview of a variety of recreational games and activities. Emphasis is placed on the skills and rules necessary to participate in a variety of lifetime recreational games. Upon completion, students should be able to demonstrate an awareness of the importance of participating in lifetime recreational activities. (Sp)

PED 131 Beginning Badminton*1 semester hour**Code C (Act 2 hrs)*

This course covers the fundamentals of badminton. Emphasis is placed on the basics of serving, clears, drops, drives, smashes, and the rules and strategies of singles and doubles. Upon completion, students should be able to apply these skills in playing situations. (F)

PED 171 Beginning Basketball*1 semester hour**Code C (Act 2 hrs)*

This course covers the fundamentals of basketball. Emphasis is placed on skill development, knowledge of the rules, and basic game strategy. Upon completion, students should be able to participate in recreational basketball. (on demand)

PED 200 Foundations of Physical Education*3 semester hours**Prerequisite: None Code B*

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. (F)

PED 216 Sports Officiating*3 semester hours**Code C*

This course surveys the basic rules and mechanics of officiating a variety of sports, including both team and individual sports. In addition to classwork, students will receive at least 3 hours of practical experience in officiating. (F, Sp)

PED 226 Hiking*1 semester hour**Code C (Act 2 hrs)*

This course provides instruction on how to equip and care for oneself on the trail. Topics include clothing, hygiene, trail ethics, and necessary equipment. Upon completion, students should be able to successfully participate in nature trail hikes. (F)

PED 295 Practicum in Physical Education*1 semester hour**Prerequisite: None**Code C (Practicum 4 hrs)*

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. (F)

Physical Science (PHS)

PHS 111 Physical Science

4 semester hours

Prerequisite: None

Core Area III, ASCI TSCI (Lec 3 hrs, Lab 2 hrs)

This course provides the non-technical student with an introduction to the basic principles of geology, oceanography, meteorology, and astronomy. (F, Sp, Su)

PHS 112 Physical Science II

4 semester hours

Prerequisite: None

Core Area III ASCI TSCI (Lec 3 hrs, Lab 2 hrs)

This course provides the non-technical student with an introduction to the basic principles of chemistry and physics. (F, Sp, Su)

PHS 230 Introduction to Meteorology

4 semester hours

Prerequisite: None ASCI (Lec 3 hrs, Lab 2 hrs)

This course is an introductory survey of meteorology emphasizing the hydrologic cycle, cloud formation, weather maps, forecasting and wind systems. Local weather systems will be given detailed study. Laboratory is required. (F, Sp, Su)

Physical Therapist Assistant (PTA)

PTA 120 Introduction to Kinesiology

3 semester hours

Prerequisite: None (Lec 2 hrs, Lab 3 hrs)

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 semester hours

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 semester hours

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 semester hours

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 semester hours

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 semester hours

Prerequisite: Admission to program, Corequisite: PTA 220 (Lab 6 hrs)

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 semester hours

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 semester hours

Prerequisite: Admission to program, PTA 222, and PTA 250, Corequisite: PTA 230 & PTA 232. (Lab 6 hrs)

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 semester hours

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 semester hours

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 semester hours

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 semester hours

Prerequisite: Admission to program, *Corequisite:* PTA 252S (Lec 2 hrs, Lab 6 hrs)

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 semester hours

Prerequisite: Admission to program, PTA 222, and PTA 250, *Corequisite:* PTA 230 & 232 (Lec 2 hrs, Lab 6 hrs)

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 semester hours

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. (F)

PTA 260 Clinical Education I

1 semester hour

Prerequisite: Admission to program (Prec 5 hrs)

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 semester hours

Prerequisite: Admission to program and PTA 260 (Prec 15 hrs)

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 semester hours

Prerequisite: Admission to program and PTA 263 (Prec 25 hrs)

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 semester hours

Prerequisite: MTH 100 ASCI (Lec 3 hrs, Lab 2 hrs)

Technical physics is an algebra based physics course designed to utilize modular concepts to include: motion, forces, torque, 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. (S, Su)

PHY 201 General Physics I - Trig Based

4 semester hours

Prerequisite: MTH 113 or equivalent

Core Area III, ASCI TSCI (Lec 3 hrs, Lab 2 hrs)

This course is designed to cover general physics at a level that assumes previous exposure to college algebra and basic trigonometry. Specific topics include mechanics, properties of matter and energy, thermodynamics and periodic motion. A laboratory is required. (F, Sp)

PHY 202 General Physics II - Trig Based

4 semester hours

Prerequisite: PHY 201

Core Area III, ASCI TSCI (Lec 3 hrs, Lab 2 hrs)

This course is designed to cover general physics using college algebra and basic trigonometry. Specific topics include wave motion, sound, light, optics, electricity, magnetism, and modern physics. Laboratory is required. (Sp, Su)

PHY 213S General Physics with Calculus I

4 semester hours

Prerequisite: MTH 125S or permission

Core Area III ASCI TSCI (Lec 3 hrs, Lab 2 hrs)

This course provides a calculus-based treatment of the principle subdivisions of classical physics: mechanics and energy including thermodynamics. Laboratory is required. (F, Sp, Su)

PHY 214S General Physics with Calculus II

4 semester hours

Prerequisite: PHY 213S

Core Area III, ASCI TSCI (Lec 3 hrs, Lab 2 hrs)

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. (Sp, Su)

PHY 299 Directed Studies in Physics

1 semester hour

Prerequisite: Permission of instructor Code C

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. (on demand)

Political Science (POL)

POL 211 American National Government

3 semester hours

Prerequisite: None Core Area IV, ASOC TSOC

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. (F, Sp, Su)

POL 220 State and Local Government

3 semester hours

Prerequisite: None ASOC

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. (as needed)

Psychology (PSY)

PSY 200 General Psychology

3 semester hours

Prerequisite: None Core Area IV ASOC TSOC

This course is a survey of behavior with an emphasis on psychological processes. This course includes the biological bases of behavior, thinking, emotion, motivation, and the nature and development of personality. (F, Sp, Su)

PSY 207 Psychology of Adjustment

3 semester hours

Prerequisite: PSY 200 ASOC

This course provides an understanding of the basic principles of mental health and an understanding of the individual modes of behavior. (on demand)

PSY 210 Human Growth and Development*3 semester hours**Prerequisite: PSY 200 Core Area IV ASOC TSOC*

This course is a study of the psychological, social and physical factors that affect human behavior from conception to death. (F, Sp, Su)

PSY 220 Human Sexuality*3 semester hours**Prerequisite: PSY 200 ASOC*

This course is a comprehensive and integrated approach to human sexuality emphasizing biological, psychological, social and emotional aspects. (on demand)

PSY 230 Abnormal Psychology*3 semester hours**Prerequisite: PSY 200 ASOC*

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. (F, Sp, Su)

PSY 250 Social Psychology*3 semester hours**Prerequisite: PSY 200 ASOC*

This course is a study of social factors and how they influence individual behavior. (on demand)

Radiologic Technology (RAD)**RAD 111 Introduction to Radiography***2 semester hours (Lec 2 hrs)**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 semester hours**Prerequisite: Admission to program**(Lec 3 hrs, Lab 3 hrs)*

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 semester hours**Prerequisite: Admission to program**(Lec 1 hr, Lab 3 hrs)*

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 semester hours**Prerequisite: Successful completion of all required previous semester courses**(Clin 6 hrs)*

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 semester hours**Prerequisite: Admission to program**(Lec 3 hrs, Lab 3 hrs)*

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 semester hours.**Prerequisite: Successful completion of all required previous semester courses**(Clin 15 hrs)*

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 semester hours:**Prerequisites: As required by program (Lec 3 hrs)*

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 semester hours

Prerequisites: Successful completion of all required previous semester courses

(Clin 15 hrs)

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 semester hours

Prerequisites: Admission to program

(Lec 2 hrs, Lab 3 hrs)

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 semester hours

Prerequisites: Admission to program

(Lec 2 hrs)

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 semester hours

Prerequisites: Admission to program

(Lec 1 hr, Lab 3 hrs)

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 semester hours.

Prerequisites: Successful completion of all required previous semester courses.

(Clin 24 hrs)

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 semester hours

Prerequisites: Successful completion of all required previous semester courses

(Clin 24 hrs)

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 semester hours

Prerequisites: 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.

Reading (RDG)

RDG 085 Developmental Reading 📖

1-3 institutional hours

Prerequisite: Appropriate placement score

This course is designed to assist students whose placement test scores indicate serious difficulty with decoding skills, comprehension, vocabulary, study skills. Remediation should be completed within one year by students who are required to take this course. (F, Sp, Su)

Religion (REL)

REL 151 Survey of the Old Testament

3 semester hours

Prerequisite: None Core Area II AHUM THUM

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. (F, Sp, Su)

REL 152 Survey of the New Testament

3 semester hours

Prerequisite: None Core Area II, AHUM THUM

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. (F, Sp, Su)

Sociology (SOC)

SOC 200 Introduction to Sociology

3 semester hours

Prerequisite: None Core Area IV, ASOC TSOC

This course is an introduction to vocabulary, concepts, and theory of sociological perspectives of human behavior. (F, Sp, Su)

SOC 208 Introduction to Criminology

(Same as CRJ 208)

3 semester hours

Prerequisite: None ASOC

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. (F, Sp, Su)

SOC 209 Juvenile Delinquency

(Same as CRJ 209)

3 semester hours

Prerequisite: SOC 200 ASOC

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. (F, Sp)

SOC 210 Social Problems

3 semester hours

Prerequisite: SOC 200

Core Area IV, ASOC TSOC

This course examines the social and cultural aspects, influences, incidences and characteristics of current social problems in light of sociological theory and research. (Sp)

SOC 247 Marriage and the Family

3 semester hours

Prerequisite: SOC 200 ASOC

This course is a study of family structures and families in a modern society. It covers preparation for marriage, as well as sociological, psychological, biological, and financial factors relevant to success in marriage and family life. (F)

Spanish (SPA)

SPA 101 Introductory Spanish I

4 semester hours

Prerequisite: None

Core Area II, THUM AHUM

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. (F, Su)

SPA 102 Introduction to Spanish II

4 semester hours

Prerequisite: SPA 101 or equivalent

Core Area II, THUM AHUM

This continuation course includes the development of basic communication skills and the acquisition of basic knowledge of the cultures of Spanish-speaking areas. (Sp)

SPA 201 Intermediate Spanish I

3 semester hours

Prerequisite: SPA 102 or equivalent

Core Area II, THUM AHUM

This course includes an overview and further development of communication skills. Topics include readings of literary, historical, and/or cultural texts. (as needed)

SPA 202 Intermediate Spanish II

3 semester hours

Prerequisite: SPA 201 or equivalent

Core Area II, THUM AHUM

This continuation course includes a review and further development of communication skills. Topics include readings of literary, historical, and/or cultural texts. (as needed)

Speech (SPH)

SPH 106 Fundamentals of Oral Communication

3 semester hours

Prerequisite: None Core Area II, THUM

Fundamentals of Oral Communication is a performance course that includes the principles of human communication: Intrapersonal, interpersonal, and public. It surveys current communication theory and provides practical application. (F, Sp, Su)

SPH 107 Fundamentals of Public Speaking*3 semester hours**Prerequisite: None Core Area II, THUM*

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. (F, Sp, Su)

SPH 116 Introduction to Interpersonal Communication*3 semester hours**Prerequisite: None Core Area IV, TSOC*

This course is an introduction to the basic principles of interpersonal communication. (F, Sp, Su)

SPH 123-124-125 Forensics Workshop I-II-III*1-3 semester hours each**Prerequisite: None**Code C*

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. (F, Sp)

Theater Arts (THR)**THR 120 Theater Appreciation***3 semester hours**Prerequisite: None**Core Area II (Arts), THUM TART AHUM*

This course is designed to increase appreciation of contemporary theater. Emphasis is given to the theater as an art form through the study of history and theory of drama and the contributions of playwright, actor, director, designer and technician to modern media. Attendance at theater production may be required. (F, Sp, Su)

Veterinary Technology (VET)**VET 110 Vet Tech Clinics I***2 semester hours**Prerequisite: Admission to program**(Clin 6 hours)*

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 semester hours**Prerequisite: Admission to program**(Lec 3 hrs, Clin 6 hrs)*

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 semester hours**Prerequisite: Admission to program**(Lec 4 hrs, Lab 2 hrs)*

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 semester hours**Prerequisite: Student must have completed VET 110, 112, and 114 unless special arrangements have been made with the Program.**(Clin 9 hrs)*

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 semester hours**Prerequisite: Student must have completed VET 110, 112, and 114 unless special arrangements have been made with the Program.**(Lec 4 hrs, Clin 3 hrs)*

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 semester hours

Prerequisite: Student must have completed VET 110, 112, and 114 unless special arrangement have been made with the Program.

(Lec 3 hrs, Clin 3 hrs)

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 semester hours

Prerequisite: Student must have completed VET 110, 112, and 114 unless special arrangements have been made with the Program.

(Lec 3 hrs)

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 semester hours

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.

(Clin 9 hrs.)

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 semester hours

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.

(Lec 3 hrs, Clin 3 hrs)

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 semester hours

Prerequisite: Student must have completed VET 110, 112, 114, 124 and 126 unless special arrangements have been made with the Program.

(Lec 3 hrs)

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 overdosage. Topics include introduction and principles of pharmacology; antimicrobials; disinfectants; drugs affecting the nervous, respiratory, cardiovascular, and gastrointestinal systems; antiinflammatories; 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 semester hours

Prerequisite: Student must have completed VET 110, 112, 114, , 124 and 126 unless special arrangements have been made with the Program.

(Lec 3 hrs)

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 semester hours

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.

(Clin 9 hrs)

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 semester hours

Prerequisite: Student must have completed VET 110, 112, and 114, unless special arrangements have been made with the Program.

(Lec 2 hrs, Clin 3 hrs)

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 semester hours

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.

(Lec 3 hrs)

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 semester hours

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.

(Clin 6 hrs)

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 semester hours

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.

(Prec 15 hrs)

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

3 semester hours

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 semester hours

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 semester hours**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 semester hours**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 166 Flux Core ARC Welding (FCAW)*3 semester hours**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 219 Welding Inspection & Testing*3 semester hours**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 221 Pipefitting and Fabrication*3 semester hours**Prerequisite: WDT 115*

Course Description (must match state common course directory and be used in all materials): This course provides the student with skills and practices necessary for fabricating pipe plans using pipe and fittings. Emphasis is placed on various pipe fittings to include various degree angles. Upon completion, students should be able to fit various pipe fittings, and cut and fabricate tees, and assorted angles.

WDT 229 Boiler Tube*3 semester hours**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 semester hours**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 and industry standard welding test in accordance with various welding code requirements.

