

North Central Texas College Course Catalog

ITSY 2359 - SECURITY ASSESSMENT & AUDITING

Comprehensive experience for the security curriculum. Synthesizes technical material covered in prior courses to monitor, audit, analyze, and revise computer and network security systems that ensure appropriate levels of protection are in place to assure regulatory compliance. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Appraise security plan to ensure appropriate level of protection
- Assess network security design
- Audit network system based on security design
- Use relevant tools to assure security requirements
- Review security policies and procedures on a regular basis

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 1342](#) - INFORMATION TECHNOLOGY SECURITY
-

ITCC 2410 - CISCO Exploration IV - Accessing the WAN

This course explains the principles of traffic control and access control lists (ACLs) and provides an overview of the services and protocols at the data link layer for wide-area access. Describe user access technologies and devices and discover how to implement and configure Point-to-Point Protocol (PPP), Point-to-Point Protocol over Ethernet (PPPoE), DSL, and Frame Relay. WAN security concepts, tunneling, and VPN basics are introduced. Discuss the special network services required by converged applications and an introduction to quality of service (QoS). 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe the impact of applications (Voice Over IP and Video Over IP) on a network
- Implement basic switch security (port security, trunk access, management vlan other than vlan1, etc.)
- Configure, verify, and troubleshoot DHCP and DNS operation on a router (CLI/SDM)

- Describe today's increasing network security threats and explain the need to implement a comprehensive security policy to mitigate the threats
- Configure and apply ACLs based on network filtering requirements (CLI/SDM)
- Configure and apply an ACLs to limit telnet and SSH access to the router using (SDM/CLI)
- Configure NAT for given network requirements using (CLI/SDM)
- Configure and verify a basic WAN serial connection
- Configure and verify Frame Relay on Cisco routers
- Describe VPN technology (importance, benefits, role, impact, components)

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [ITCC 2408](#) - CISCO Exploration III - LAN Switching and Wireless

ACCT 2301 - PRINCIPLES OF FINANCIAL ACCOUNTING

This course is an introduction to the fundamental concepts of financial accounting as prescribed by U.S. generally accepted accounting principles (GAAP) and applied to transactions and events that affect business organizations. Students will examine the procedures and systems to accumulate, analyze, measure, and record financial transactions. Students will use recorded financial information to prepare a balance sheet, income statement, statement of cash flows, and statement of shareholders' equity to communicate the business entity's results of operations and financial position to users of financial information who are external to the company. Students will study the nature of assets, liabilities, and owners' equity while learning to use reported financial information for purposes of making decisions about the company. Students will be exposed to International Financial Reporting Standards (IFRS). 48 lecture hours
Recommended co-requisite: MATH1324 - Mathematics for Business & Social Sciences

Upon completion, students will be able to:

- Use basic accounting terminology and the assumptions, principles, and constraints of the accounting environment
- Identify the difference between accrual and cash basis accounting
- Analyze and record business events in accordance with U.S. generally accepted accounting principles (GAAP)
- Prepare adjusting entries and close the general ledger
- Prepare financial statements in an appropriate U.S. GAAP format, including the following: income statement, balance sheet, statement of cash flows, and statement of shareholders' equity
- Analyze and interpret financial statements using financial analysis techniques
- Describe the conceptual differences between International Financial Reporting Standards and U.S. generally accepted accounting principles

Grade Basis: L

Credit hours: 3.0

ACCT 2302 - PRINCIPLES OF MANAGERIAL ACCOUNTING

This course is an introduction to the fundamental concepts of managerial accounting appropriate for all organizations. Students will study information from the entity's accounting system relevant to decisions made by internal managers, as distinguished from information relevant to users who are external to the company. The emphasis is on the identification and assignment of product costs, operational budgeting and planning, cost control, and management decision making. Topics include product costing methodologies, cost behavior, operational and capital budgeting, and performance evaluation. 48 lecture hours

Upon completion, students will be able to:

- Identify the role and scope of financial and managerial accounting and the use of accounting information in the decision making process of managers
- Define operational and capital budgeting, and explain its role in planning, control, and decision making
- Prepare an operating budget, identify its major components, and explain the interrelationships among its various components
- Explain methods of performance evaluation
- Use appropriate financial information to make operational decisions
- Demonstrate use of accounting data in the areas of product costing, cost behavior, cost control, and operational and capital budgeting for management decisions

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ACCT 2301](#) - PRINCIPLES OF FINANCIAL ACCOUNTING
-

ACNT 1303 - INTRODUCTION TO ACCOUNTING I

A study of analyzing, classifying, and recording business transactions in a manual and computerized environment. Emphasis on understanding the complete accounting cycle and preparing financial statements, bank reconciliations and payroll. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Define accounting terminology
- Analyze and record business transactions in a manual and computerized environment
- Complete the accounting cycle
- Prepare financial statements
- Apply accounting concepts related to cash and payroll

- Prepare bank reconciliations
- Correct accounting errors

Grade Basis: L
Credit hours: 3.0

ACNT 1311 - INTRODUCTION TO COMPUTERIZED ACCOUNTING

Introduction to utilizing the computer in maintaining accounting records with primary emphasis on a general ledger package. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Utilize an application software to perform accounting tasks
- Maintain records
- Prepare reports
- Analyze reports for a business entity
- Complete a comprehensive project
- Explain the components of general ledger software

Grade Basis: L
Credit hours: 3.0

DRAM 1351 - Acting I

An introduction to the fundamental principles and tools of acting as used in auditions, rehearsals, and performances. This may include ensemble performing, character and script analysis, and basic theater terminology. This exploration will emphasize the development of the actor's instrument: voice, body and imagination. 48 lecture hours.

Grade Basis: L
Credit hours: 3.0

DRAM 1352 - Acting II

Exploration and further training within the basic principles and tools of acting, including an emphasis on critical analysis of oneself and others. The tools include ensemble performing, character and analysis, and basic theater terminology. This will continue the exploration of the development of the actor's instrument: voice, body and imagination. 48 lecture hours.

Grade Basis: L
Credit hours: 3.0

POFT 2380 - Cooperative Education - Administrative Assistant and Secretarial Science

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 320 practicum hours.

Grade Basis: L

Credit hours: 3.0

POFT 1309 - Administrative Office Procedures I

Study of current office procedures, duties, and responsibilities applicable to an office environment. 48 lecture hours.

Upon completion, students will be able to:

- Develop time management techniques
- Demonstrate communication skills
- Identify the basic skills of an office professional

Grade Basis: L

Credit hours: 3.0

MUSI 1182 - Advanced Class Piano

Interpretation and a larger music vocabulary; opportunity to increase repertoire of piano ensemble literature to the student. 32 lecture hours.

Grade Basis: L

Credit hours: 1.0

MCHN 2435 - Advanced CNC Machining

The study of advanced CNC operation with an emphasis on programming and operations of machining and turning centers. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Set up and operate CNC machining centers and CNC turning centers
- Select proper tooling with correct speeds and feeds
- Produce a part to specific tolerances

Grade Basis: L

Credit hours: 4.0

DFTG 2332 - Advanced Computer Aided Drafting

Application of advanced CAD techniques. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Use a customized CAD system to create documents and/or solid models
- Use OLE with external software

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [DFTG 1309](#) - Basic Computer Aided Drafting
 - [DFTG 2319](#) - Intermediate Computer Aided Drafting
 - [DFTG 1305](#) - Technical Drafting
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CSME 2237 - Advanced Cosmetology Techniques

Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services, and workplace competencies. 16 lecture hours + 64 laboratory hours.

Grade Basis: L

Credit hours: 2.0

FMKT 2331 - Advanced Floral Design

An in-depth coverage of advanced floral design practices for the retail floral industry. Topics include contemporary floral arrangement styles and trends. Advanced study of floral design as an art form in contrast to a commercial florist operation; interpretive expression of design principles and color stressed along with international design styles. Required \$100 lab fee. 32 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 3.0

WLDG 2352 - Advanced Flux Cored Arc Welding

Advanced concepts of flux cored arc welding of structural and fabricated steel products. Skill development in multi-pass fillet and v-groove welding. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Perform safety inspections of equipment and accessories
- Perform multi-pass fillet and v-groove welds in various positions

Grade Basis: L
Credit hours: 3.0

WLDG 2447 - Advanced Gas Metal Arc Welding (GMAW)

Advanced topics in Gas Metal Arc Welding (GMAW). Includes welding in various positions. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Demonstrate proficiency in various welding positions
- Describe safety rules and equipment use
- Describe the effects of welding parameters in GMAW
- Weld various joint designs and diagnose welding problems and perform visual inspection

Grade Basis: L
Credit hours: 4.0

CSME 2310 - Advanced Hair Cutting and Related Theory

Advanced concepts and practice of haircutting. Topics include haircuts utilizing scissors, razor, and/or clippers. 16 lecture hours + 144 laboratory hours.

Grade Basis: L
Credit hours: 3.0

DFTG 2358 - Advanced Machine Design

Design process skills for the production of complete design package, including jig and fixture design, extrusion dies, and injection mold design. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Analyze design problems and prepare solutions to complete a set of drawings

Grade Basis: L
Credit hours: 3.0

RADR 2333 - Advanced Medical Imaging

An exploration of specialized imaging modalities. 48 lecture hours.

Grade Basis: L
Credit hours: 3.0

INEW 2334 - Advanced Web Programming

Web programming using industry-standard languages and data stores. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Design, code, and implement a dynamic website
- Develop connectivity between data store and website

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2321](#) - Object Oriented Programming
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PHED 1120 - Aerobic Workout I

This course is designed to improve the student's maximum muscular and cardiovascular endurance.

Grade Basis: L

Credit hours: 1.0

PHED 1121 - Aerobic Workout II

This course is designed to improve the student's maximum muscular and cardiovascular endurance.

Grade Basis: L

Credit hours: 1.0

AGAH 1291 - SPECIAL TOPICS IN ANIMAL SCIENCES, GENERAL

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. 16 lecture hours + 32 laboratory hours Learning outcomes and objectives are determined by local occupational need and business and industry trends.

Grade Basis: L

Credit hours: 2.0

AGAH 1372 - AGRICULTURAL SPANISH

This is an industry specific Spanish course designed for agricultural students. The scope of this course will include the English to Spanish translation for terminology and phrases associated with production agriculture. The primary goal of this course is to provide students some basic communication skills so that they will be able to interact with Spanish speaking employees in different work environments and under different situations within their specific agricultural fields. 48 lecture hours + 32 laboratory hours
NOTE: This is not a University Transfer course. This course does not fulfill any core curriculum requirements at NCTC.

Upon completion, students will be able to:

- Demonstrate proficiency in Spanish terminology that may be needed in a farm or ranch workplace safety or emergency situation
- Demonstrate recollection and pronunciation of common colors, numbers, mathematical units, weights and measures
- Demonstrate ability to provide mock employees work details in Spanish related to farm, ranch and equine workplace situations
- Demonstrate the ability to discuss wages and employment terms with farm and ranch employees

Grade Basis: L

Credit hours: 3.0

AGAH 1443 - ANIMAL HEALTH

An overview of anatomy and physiology as it relates to animal health. Topics include disease symptoms, basic immunology, diagnosis, prevention, and control of infectious and non-infectious diseases of animals. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Summarize the importance of livestock diseases and animal health
- Diagnose symptoms and identify causes of various animal diseases
- Implement preventative and treatment methods for various animal diseases

Grade Basis: L

Credit hours: 4.0

AGAH 1453 - BEEF CATTLE PRODUCTION

An overview of the beef cattle industry. Topics include the organization and operation of beef cattle enterprises, selection breeding, reproduction, health, nutrition, management, and marketing. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Summarize the importance of the beef cattle industry and its role in food production
- Identify beef cattle breeds, classes, and products
- Implement managerial practices designed to increase the efficiency of beef cattle production

Grade Basis: L

Credit hours: 4.0

AGAH 2270 - ARTIFICIAL INSEMINATION

A course to train persons to inseminate cattle. In addition to spending many hours learning the inseminating technique, various management practices to insure a successful overall program will be presented. These subjects include handling of frozen semen and equipment, reproductive problems and diseases, heat detection, cycle control, nutrition and methods of bull evaluation for maximum genetics and conformation progress. 16 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Discover the value of artificial insemination in livestock breeding and reproduction
- Examine the anatomy and physiology of reproduction
- Identify the importance of nutrition to reproduction
- Identify reproductive problems and diseases
- Show the economic advantages of artificial insemination
- Handle frozen semen and equipment
- Use artificial insemination to improve the quality of beef and dairy herds
- Discover methods of bull evaluation for maximum genetics and conformation progress
- Utilize technology in agriculture using the Ag Network Satellite program

Grade Basis: L

Credit hours: 2.0

AGAH 2270 - Artificial Insemination

A course to train persons to inseminate cattle. In addition to spending many hours learning the inseminating technique, various management practices to insure a successful overall program will be presented. These subjects include handling of frozen semen and equipment, reproductive problems and diseases, heat detection, cycle control, nutrition and methods of bull evaluation for maximum genetics and conformation progress. 16 lecture hours + 32 lab hours

Upon completion, students will be able to:

- Discover the value of artificial insemination in livestock breeding and reproduction
- Examine the anatomy and physiology of reproduction
- Identify the importance of nutrition to reproduction

- Identify reproductive problems and diseases
- Show the economic advantages of artificial insemination
- Handle frozen semen and equipment
- Use artificial insemination to improve the quality of beef and dairy herds
- Discover methods of bull evaluation for maximum genetics and conformation progress
- Utilize technology in agriculture using the Ag Network Satellite program

Grade Basis: L

Credit hours: 2.0

AGAH 2271 - CATTLE REPRODUCTION

This is a training course in the reproductive management and artificial insemination of cattle. Students will become familiar with and learn the anatomy of the cow reproductive tract. This course is designed to acquaint students with the techniques of artificial insemination and pregnancy diagnosis in the cow, and to familiarize students with the collection, evaluation, processing, and handling of semen. The class will also participate in a mock embryo transfer in order to acquaint students with estrus synchronization, drug protocols, and the mechanics of uterine flushing. 16 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate knowledge of animal physiology and management considerations for an artificial insemination and/or rectal palpation
- Describe changes in the uterus and uterine horns in relation to the different stages of pregnancy
- Demonstrate basic skills required to successfully perform artificial insemination in cattle and/or demonstrate basic skills in using rectal palpation method of determining cattle pregnancy
- Demonstrate proper semen handling technique from the storage tank up to being placed in the cow

Grade Basis: L

Credit hours: 2.0

AGAH 2313 - PRINCIPLES OF FEEDS & FEEDING

Study of the role and application of feed nutrients and additives. Topics include comparative aspects of digestion, absorption, and metabolism of nutrients. Emphasis on identification of nutrient requirements and formulation of dietary feeding regiment. 48 lecture hours + 16 hours

Upon completion, students will be able to:

- Outline the roles and functions of feed nutrients and non-nutritive feed additives

- Describe and compare digestion, absorption, and metabolism
- Compute dietary feeding regimens
- Identify nutritional problems as related to digestive systems

Grade Basis: L

Credit hours: 3.0

AGCR 1371 - SUSTAINABLE AGRICULTURE

Introduction to history, principles, and practices of sustainable agriculture as applied to local and global agriculture. A comparison and evaluation of sustainability of conventional agricultural practices will be made from the environmental, economic, and social perspectives ("planet, profit, and people"). Case studies and other tools will be used to relate principles of sustainable agriculture to basic farming practices. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe and demonstrate various techniques and management practices used to optimize agriculture from an environmental, social, and financial perspective
- Identify environmental, social and financial factors which are important in both sustainable and conventional
- Express and discuss the importance of sustainable agriculture as it compares to conventional agriculture
- Utilize computer programs and agriculture related programs associated with this course and various aspects of the agriculture related industry
- Demonstrate the implementation of planning, establishing, and maintaining agricultural operations under sustainable practices

Grade Basis: L

Credit hours: 3.0

AGCR 1441 - FORAGE & PASTURE MANAGEMENT

Study of the production and management of forage crops and pastures including establishment, fertilization, weed control, grazing systems, hay, seed production, and harvesting. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Develop techniques and management practices to optimize pasture and forage production
- Determine forage nutritive quality in relation to livestock production
- Identify forage and pasture plants and weed species

Grade Basis: L

Credit hours: 4.0

AGCR 2405 - ENTOMOLOGY

Study of the morphology, physiology, and classification of the common insect orders and related arthropods with emphasis on species of economic or biological importance. Emphasis on integrated pest management concepts and proper use of pesticides. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe basic insect morphology and physiology
- Classify insects to the order level
- Identify common insect and arthropod pest and beneficial species
- Interpret pesticide labels and state and federal laws
- Explain pesticide application procedures
- Apply integrated pest management techniques to specific pest situations

Grade Basis: L

Credit hours: 4.0

AGEQ 1205 - EQUINE ENTERPRISE MANAGEMENT

Course is designed as a business survey of the equine industry as a whole. Topics will include all areas involved directly and indirectly with the equine industry and the applied management techniques that are involved with these areas. Lecture will be supplemented with guest speakers and field trips to area farms and businesses. 16 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Define the various equine industry segments and explain their economic significance
- Identify employment opportunities in the equine industry

Grade Basis: L

Credit hours: 2.0

AGEQ 1291 - CATTLE REPRODUCTION

This is a training course in the reproductive management and artificial insemination of cattle. Students will become familiar with and learn the anatomy of the cow reproductive tract. This course is designed to acquaint students with the techniques of artificial insemination and pregnancy diagnosis in the cow, and to familiarize student with the collection, evaluation, processing, and handling of semen. The class will also participate in a mock embryo transfer in order to acquaint students with estrus synchronization, drug protocols, and the mechanics of uterine flushing. 16 lecture hours + 32 laboratory hours Learning outcomes and objectives are determined by local occupational need and business and industry trends.

Grade Basis: L
Credit hours: 2.0

AGEQ 1300 - ENGLISH EQUITATION I

Course in basic equitation skills, including handling, saddling, bridling, mounting, riding, grooming, safety, and basic health care. Topics will include correct riding position, leg strengthening exercises, and balance exercises. 32 lecture + 32 laboratory hours

Upon completion, students will be able to:

- Identify and employ basic handling and riding safety practices
- Identify and care for equipment and tack
- Demonstrate proper leg, seat, and hand positions as they relate to riding techniques

Grade Basis: L
Credit hours: 3.0

AGEQ 1315 - HORSE EVALUATION I

Instruction in evaluation and selection of horses based on breed and performance criteria. Topics include basic anatomy and its relation to function, breed type, and characteristics. Emphasis will be given to breed standards and rules of judging performance horses. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Relate conformation to equine functions
- Prioritize and utilize criteria as related to evaluation and selection
- Employ appropriate terminology used in discussing evaluation and selection processes

Grade Basis: L
Credit hours: 3.0

AGEQ 1319 - HORSEMANSHIP I

Instruction in basic horsemanship skills including handling, saddling, safety, proper riding techniques, and basic health care will be discussed. Emphasis will be given to use of aids and cues; and proper leg, seat, and hand position. 32 lecture + 32 laboratory hours

Upon completion, students will be able to:

- Recognize and employ basic handling and riding safety practices
- Identify and care for equipment and tack

- Demonstrate proper leg, seat, and hand positions as they relate to riding techniques

Grade Basis: L

Credit hours: 3.0

AGEQ 1322 - FUNDAMENTALS OF RIDING INSTRUCTION

Students will develop basic skills needed to become an effective riding instructor. Through classroom and arena exercises students will gain skills in organization, development of lesson plans, and a variety of teaching techniques. Students will be working with first year students. Course requires approval of instructor. 48 lecture hours

Upon completion, students will be able to:

- Develop teaching techniques in riding instruction
- Implement safe practices
- Evaluate risk management factors
- Demonstrate effective communication skills

Grade Basis: L

Credit hours: 3.0

AGEQ 1350 - EQUINE REPRODUCTION

Reproductive anatomy, physiological functions, and common management practices related to equine reproductive facilities. Lecture portion of this course is conducted in the first 6 weeks of the semester with emphasis on anatomy and physiology of the mare and stallion as it relates to management for maximum reproductive efficiency. Basic principles of artificial insemination, embryonic development, parturition, and care of the pregnant mare and newborn will be discussed. Semen collection, evaluation, and shipping will also be discussed. The lab portion is the remainder of the semester, and consists of students working on well-respected breeding farms in the area. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Identify equine reproductive organs and functions
- Relate endocrinology to the reproductive process
- Implement managerial practices designed to improve reproductive efficiency

Grade Basis: L

Credit hours: 3.0

AGEQ 1370 - LOCAL NEEDS - PRINCIPLES OF RANCH HORSE RIDING I

Instruction in the basic principles of Ranch Horse riding. To include, but not limited to handling, saddling, bridling, mounting, riding, grooming, safety, basic health care, basic rope handling, basic cow handling and tactics for competing in Ranch Horse events. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Recognize and employ basic handling and riding safety practices
- Identify and care for equipment and tack
- Demonstrate proper leg, seat, and hand positions as they relate to basic principles of Ranch Horse riding
- Identify core areas of focus for training the versatile ranch horse
- Generalize rules and procedures related to Ranch Horse competitions

Grade Basis: L

Credit hours: 3.0

AGEQ 1371 - LOCAL NEEDS - PRINCIPLES OF RANCH HORSE RIDING II

Introduction to the advanced principles of Ranch Horse riding. To include, but not limited to handling, saddling, bridling, mounting, riding, grooming, safety, health care, advanced rope handling, advanced cow handling and tactics for competing in Ranch Horse events. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Assess and rate individual horses based upon their performance and abilities as a versatile ranch horse
- Interpret horse reaction to various headgear/bit selections and further use this information in selecting the best headgear & bit for each individual horse
- Propose and implement a conditioning and training schedule for their own horse
- Demonstrate proper and safe rope handling from horseback
- Exhibit proper use of the mechanical cow for training purposes
- Employ tactics facilitated in the course during the working of live cattle

Grade Basis: L

Credit hours: 3.0

AGEQ 1391 - SPECIAL TOPICS III

This course will address recently identified current events, skills, knowledge, and behaviors pertinent to the equine industry and relevant to the professional development

of the student. 16 lecture hours + 64 laboratory hours Learning outcomes and objectives are determined by local occupational need and business and industry trends.

Grade Basis: L

Credit hours: 3.0

AGEQ 1401 - EQUINE BEHAVIOR & TRAINING I

Instruction in basic equine behavior and training methods will be discussed. Topics will include safety, behavior, health care and management, and training methods. Students will use a systematic approach to training a weanling horse while learning proper safety and training techniques used in the industry. 16 lecture hours + 144 laboratory hours

Upon completion, students will be able to:

- Recognize behavioral patterns as they relate to training methods and desired results
- Implement appropriate training strategies
- Evaluate progress and adapt training method(s) accordingly

Grade Basis: L

Credit hours: 4.0

AGEQ 1411 - EQUINE SCIENCE I - HORSE PRODUCTION & MANAGEMENT

Provides the student with an introduction to the horse industry. Topics will include history, breeds, selection, identification, anatomy (health,) and basic management techniques and theories related to horses and horse facilities. Laboratory exercises will supplement lecture presentations. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Explain the historical significance of the horse to society
- Identify horse breeds
- Identify basic anatomy and physiological functions
- Outline managerial practices relevant to the horse industry

Grade Basis: L

Credit hours: 4.0

AGEQ 2310 - EQUINE BUSINESS MANAGEMENT

Instruction in the management of the equine business will be discussed. Topics will include record keeping, insurance and liability, promotion and sales, as well as employer relationships. Lectures will be supplemented with industry speakers and students will complete an in-depth business plan of their choice. 48 lecture hours

Upon completion, students will be able to:

- Initiate equine business records
- Explain insurance and liability needs
- Outline and demonstrate the proper procedures for show management
- Summarize equine marketing
- Identify the socioeconomic factors involved in the equine industry

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1205](#) - EQUINE ENTERPRISE MANAGEMENT
 - [AGEQ 1411](#) - EQUINE SCIENCE I - HORSE PRODUCTION & MANAGEMENT
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AGEQ 2311 - EQUINE SCIENCE II - ADVANCED HORSE PRODUCTION & MANAGEMENT

Course will present advanced concepts in horse production and management. Topics include advanced anatomy, physiology and nutrition of the horse as it relates to exercise and fitness. Discussion will focus on techniques and theories related to management of the horse for athletic events. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify and assess needs in the production & management of horses
- Employ critical thinking skills in management decisions
- Implement management practices

Grade Basis: L

Credit hours: 3.0

AGEQ 2315 - HORSE EVALUATION II

A study of the advanced concepts in evaluation and selection of horses. Students in this course will be part of the horse judging team and participate in judging contests on a state and national level. Students will also learn how to organize a judging contest, perfect oral reason presentation and learn to judge other's oral reasons. Students must be enrolled in this course to travel with the judging team. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Evaluate conformation as it applies to equine functions
- Evaluate western and English performance classes
- Organize, apply, and defend criteria as related to the evaluation and selection of horses

Grade Basis: L
Credit hours: 3.0

AGEQ 2339 - HORSEMANSHIP II

Instruction in advanced horsemanship skills including cues, lead changes, head-set, side-pass, and pivots will be given. Emphasis will be given to proper use of cues, legs, and seat during maneuvers; as well as proper training concepts and methods of working horses for specific performance areas. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate a balanced seat and posture in all natural gaits
- Maintain correct leads
- Develop and utilize proper cues

Grade Basis: L
Credit hours: 3.0

AGEQ 2359 - ENGLISH EQUITATION II

Advanced equitation skills in English equitation. Topics will include suppling exercises for the horse and rider, ground pole exercises to gain Strength and stability, in addition to exercises in stride length and rhythm. 32 lecture hours + 32 Laboratory hours

Upon completion, students will be able to:

- Demonstrate a balanced seat and posture in all natural gaits
- Maintain correct leads
- Develop and utilize proper cues

Grade Basis: L
Credit hours: 3.0

AGEQ 2370 - LOCAL NEEDS - REINING

Fundamentals of selecting, training, working and showing reining horses will be taught. Topics include history, development, rules, judging, conditioning, training and showing reining horses. Showing in at least on competition is required. Student must provide their own horse for training and or competition 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe the kind of horse that is most likely to succeed in reining competition
- Recognize which families of horses are most likely to succeed as reining horses based on past success in show ring
- Demonstrate industry recognized training methods

- Explain and develop proper riding techniques
- Exhibit basic reining maneuvers and patterns
- Evaluate effective training equipment
- Distinguish the proper use and function of bits
- Develop proper showmanship and sportsmanship

Grade Basis: L

Credit hours: 3.0

AGEQ 2371 - LOCAL NEEDS - ADVANCED RANCH HORSE RIDING

Instruction in advanced Ranch Horse skills focusing on the use of the horse to assist in the management of cattle as commonly utilized for cow/horse competitions. Skills taught will include reading cattle, roping, sorting, control of an individual cow and the training methods used on the horse to achieve these skills. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate industry recognized training methods for finishing horses in the area of cow work
- Exhibit the ability to rope live cattle and properly handle cattle in a manner which is safe for both horse and rider
- Summarize the fundamentals to be employed when reading cattle for handling purposes
- Show the ability to handle and manipulate the movement of an individual cow
- Identify and appraise the characteristics of individual horses and their abilities when performing cow work
- Demonstrate progressive ability in completing a competitive cow horse pattern

Grade Basis: L

Credit hours: 3.0

AGEQ 2372 - LOCAL NEEDS - ADVANCED REINING

Advanced principles in training, working and showing reining horses will be taught. Topics include rules, judging, conditioning, and advanced showmanship. Students will also learn methods for keeping their horses healthy and in competitive condition during the rigors of traveling to and from shows. Showing in at least two competitions is required. Student must provide their own horse for training and or competition. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Calculate correct drug dosage for frequently used equine pharmaceuticals
- Design a vaccination protocol for different types of equine operations
- Interpret clinical pathology results

- Explain proper restraint methods of an equine patient for various veterinary procedures

Grade Basis: L

Credit hours: 3.0

AGEQ 2373 - INTRODUCTION TO EQUINE VETERINARY TECHNOLOGY

Basic concepts of equine veterinary care will be taught. The course will be a survey of equine veterinary medicine from the physical exam to medical terminology, preventive medicine and pharmacology as well as basic principles of alternative therapies, diagnostic imagery, medical records and client communication. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Calculate correct drug dosage for frequently used equine pharmaceuticals
- Design a vaccination protocol for different types of equine operations
- Interpret clinical pathology results
- Explain proper restraint methods of an equine patient for various veterinary procedures

Grade Basis: L

Credit hours: 3.0

AGEQ 2374 - BASICS OF DRESSAGE

The fundamental principles of dressage will be addressed. Basic riding exercises and dressage movements will be introduced emphasizing horse and rider fitness, and the development of the equine athlete through the classical and sequential training scale of rhythm, relaxation, connection, impulsion, straightness, and finally collection. Western Dressage principles will also be discussed and use of a western, hunt seat, or traditional dressage saddle will be acceptable. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate progressive ability to ride a horse forward with rhythm, relaxation, and connection, with the goal of achieving impulsion, straightness and finally collection through a variety of basic dressage movements. USDF Pyramid of Training adapted from the German training scale
- Understand and demonstrate elements of a balanced riding position and the coordination and timing of the aids. Circle of the Aids
- Exhibit ability to successfully complete an appropriate level Classical or Western Dressage test

Grade Basis: L

Credit hours: 3.0

AGEQ 2386 - INTERNSHIP - EQUINE SCIENCE

Meets 8 weeks during the summer. Departmental approval required for registration in this course. Each student will be placed in the horse industry under the supervision of a prominent person who specializes in the student's main areas of interest. The student's industry training will be supervised by the instructor as well as their immediate supervisor on the job. This course serves as the external or capstone experience. 0 lecture hours + 288 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

AGEQ 2401 - EQUINE BEHAVIOR & TRAINING II

A study of advanced concepts in equine behavioral patterns that is relevant to specific performance training strategies. Emphasis will be given to safety, and different training methods involved with working a young horse. Students will use a systematic approach to training a two-year old horse from the ground to working specified maneuvers and patterns. 16 lecture hours + 144 laboratory hours

Upon completion, students will be able to:

- Identify appropriate equine training methods for specific results
- Identify equine behavioral patterns
- Implement appropriate equine training procedures for desired results

Grade Basis: L

Credit hours: 4.0

FIRS 1103 - Fire Fighter Agility and Fitness Preparation

Physical ability testing methods. Rigorous training in skills and techniques needed in typical fire department physical ability tests.

Grade Basis: L

AGME 1307 - AGRICULTURE EQUIPMENT & TOOLS

Introduction to hand tool and shop equipment skills and safety. 32 lecture hours + 64 lab hours

Upon completion, students will be able to:

- Identify hand tools and shop equipment
- Demonstrate their applications, maintenance, and safe operational procedures

Grade Basis: L

Credit hours: 3.0

AGME 1315 - FARM & RANCH SHOP SKILLS

Study and application of shop skills used in agricultural processes including arc welding, oxyacetylene cutting and welding, drawing and planning projects, tool maintenance, metal working, woodworking, plumbing, and concrete. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Demonstrate oxyacetylene cutting procedures
- Demonstrate arc welding
- Identify shop tools
- Utilize shop plans
- Describe construction processes

Grade Basis: L

Credit hours: 3.0

AGME 1415 - FARM & RANCH SHOP SKILLS I

Study and application of shop skills used in agricultural processes including arc welding, oxyacetylene cutting and welding, drawing and planning projects, tool maintenance, metal working, woodworking, plumbing, and concrete. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate oxyacetylene cutting procedures
- Demonstrate arc welding
- Identify shop tools
- Utilize shop plans
- Describe construction processes

Grade Basis: L

Credit hours: 4.0

AGME 1449 - FARM & RANCH EQUIPMENT

Planning and application of farm and ranch maintenance equipment. Includes basic repair and adjustment to tractors and other agricultural equipment and design and use of maintenance records. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Summarize maintenance of farm and ranch equipment
- Demonstrate repair and adjustment of equipment

Grade Basis: L

Credit hours: 4.0

AGMG 2280 - COOPERATIVE EDUCATION - AGRICULTURAL BUSINESS & MANAGEMENT, GENERAL

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 4.0

AGMG 2301 - LIVESTOCK BUSINESS MANAGEMENT

Instruction in contracts, leases, laws and regulations, estate planning, and applications of personnel and management principles. 48 lecture hours

Upon completion, students will be able to:

- Discuss contract terms related to livestock and real estate
- Explain laws and regulations pertaining to the livestock industry
- Illustrate the importance of estate planning

- Compare the personnel and management techniques employed in the livestock industry

Grade Basis: L

Credit hours: 3.0

AGMG 2480 - COOPERATIVE EDUCATION - AGRICULTURAL BUSINESS & MANAGEMENT, GENERAL

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 336 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 4.0

AGRI 1131 - THE AGRICULTURE INDUSTRY

Overview of world agriculture, nature of the industry, resource conservation, and the American agricultural system, including production, distribution, and marketing. 16 lecture hours

Upon completion, students will be able to:

- Identify the principles of food science related to food production, quality, safety, nutrition, and distribution
- Describe common and emerging technologies in food science
- Explain how engineering, microbiology, and chemistry are applied in food production and processing systems
- Describe food safety procedures in U.S. production systems
- Demonstrate appropriate food handling/food safety procedures
- Explain nutrient composition and the link between nutrition and health
- Examine the dynamics of global food supply

Grade Basis: L

Credit hours: 1.0

AGRI 1309 - COMPUTERS IN AGRICULTURE

Use of computers in agricultural applications. Introduction to programming languages, word processing, electronic spreadsheets, and agricultural software. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate a basic understanding and use of word processing, spreadsheet, presentation, and communication software in agriculture
- Identify common uses of computers in agriculture
- Demonstrate appropriate use of the internet for agricultural purposes

Grade Basis: L

Credit hours: 3.0

AGRI 1325 - MARKETING OF AGRICULTURE PRODUCTS

Operations in the movement of agricultural commodities from producer to consumer, including the essential marketing functions of buying, selling, transporting, storing, financing, standardizing, pricing, and risk bearing. 48 lecture hours

Upon completion, students will be able to:

- Explain the essential marketing functions of buying, selling, transporting, storing, financing, standardizing, pricing, and risk bearing
- Apply economic principles to the marketing of agricultural products
- Identify alternatives in marketing of agricultural commodities/products
- Examine the structure of agricultural markets

Grade Basis: L

Credit hours: 3.0

AGRI 1407 - AGRONOMY

Principles and practices in the development, production, and management of field crops including plant breeding, plant diseases, soils, insect control, and weed control. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Summarize the role of climate and geography in present and past crop production
- Explain the growth and development of crops
- Analyze the impact of climate on crops
- Assess the interactions of soils, water, and fertility on crop production

- Contrast methods of pest management in crop production
- Differentiate production methods based on geography and crop selection
- Apply scientific reasoning to investigate questions and utilize scientific and agronomic tools to collect and analyze data and demonstrate methods
- Use critical thinking and scientific problem-solving to make informed decisions
- Communicate effectively the results of scientific investigations
- Summarize the role of climate and geography in present and past crop production

Grade Basis: L

Credit hours: 4.0

AGRI 1419 - INTRODUCTORY ANIMAL SCIENCE

Scientific animal agriculture. Importance of livestock and meat industries. Selection, reproduction, nutrition, management, and marketing of livestock. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Explain the role of animal agriculture in providing benefits for mankind
- Identify common livestock breeds and classes
- Define terminology specific to animal science disciplines
- Demonstrate understanding of fundamental animal science principles including selection, reproduction, nutrition, and health
- Apply animal science principles by solving common problems
- Identify animal issues of interest to society, and related responsibilities
- Apply scientific reasoning to investigate questions and utilize animal science tools to collect and analyze data and demonstrate methods
- Use critical thinking and scientific problem-solving to make informed decisions
- Communicate effectively the results of scientific investigations

Grade Basis: L

Credit hours: 4.0

AGRI 2301 - AGRICULTURAL POWER UNITS

Fundamentals of internal combustion engines: gasoline, diesel, and liquefied petroleum. Maintenance and adjustments of the electrical, ignition, fuel, lubricating, and cooling systems of agricultural power machinery. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Recount the operating fundamentals of both four-stroke and two-stroke internal combustion engines
- Demonstrate ability to disassemble and reassemble small single cylinder gasoline engine
- Identify important points in maintenance of an internal combustion engine

- Discuss considerations when selecting a lubricating fluid or grease

Grade Basis: L

Credit hours: 3.0

AGRI 2303 - AGRICULTURAL CONSTRUCTION I

Selection, use, and maintenance of hand and power tools; arc and oxy-acetylene welding; and construction materials and principles. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Demonstrate proper safety procedures in an agricultural construction laboratory
- Determine the proper usage of common hand and power tools
- Demonstrate principles of project layout (e.g. measurements, squaring, leveling)
- Demonstrate proper use of metal cutting and welding equipment
- Apply basic wiring and plumbing techniques
- Illustrate the principles of surveying and concrete layout

Grade Basis: L

Credit hours: 3.0

AGRI 2317 - INTRODUCTION TO AGRICULTURAL ECONOMICS

Fundamental economic principles and their applications to the problems of the industry of agriculture. 48 lecture hours

Upon completion, students will be able to:

- Describe fundamental macro- and micro-economic principles
- Apply economic principles to agricultural production, marketing, and consumption
- Describe the different agricultural economics fields (e.g. food industry, demand theory, supply theory, competitive environments)

Grade Basis: L

Credit hours: 3.0

AGRI 2321 - LIVESTOCK EVALUATION I

Evaluation and grading of market cattle, swine, sheep, and goats and their carcasses and wholesale cuts. Emphasis will be placed on value determination. Selection and evaluation of breeding cattle, sheep, swine, and goats with emphasis on economically important traits. 32 lecture hours + 48 laboratory hours

Upon completion, students will be able to:

- Accurately evaluate and grade meat animals (cattle, swine, sheep, and goats), their carcasses, and wholesale cuts according to USDA and industry standards
- Determine market value for meat animals, carcasses, and whole cuts
- Evaluate and select breeding animals based upon their economic potential in common production scenarios
- Apply knowledge of both subjective and objective techniques, tools, and information in order to make evaluation, grading, and selection decisions in practical production scenarios

Grade Basis: L

Credit hours: 3.0

AGRI 2330 - WILDLIFE CONSERVATION & MANAGEMENT

Principles and practices used in the production and improvement of wildlife resources. Aesthetic, ecological, and recreational uses of public and private lands. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Explain basic ecological principles of population dynamics, habitat, succession, and ecosystems
- Describe how these ecological principles can be applied to manage wildlife populations and habitats
- Contrast wildlife management strategies for different purposes (i.e. recreation, conservation, and preservation)
- Use critical thinking and scientific problem-solving to make informed decisions about wildlife and natural resources management strategies
- Discuss the impact of current trends and societal issues on wildlife and increased demands on natural resources

Grade Basis: L

Credit hours: 3.0

AGRI 2303 - Agricultural Construction I

Selection, use, and maintenance of hand and power tools, arc and oxy-acetylene welding, and construction materials and principles. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Demonstrate proper safety procedures in an agricultural construction laboratory
- Determine the proper usage of common hand and power tools
- Demonstrate principles of project layout (e.g. measurements, squaring, leveling)
- Demonstrate proper use of metal cutting and welding equipment
- Apply basic wiring and plumbing techniques

- Illustrate the principles of surveying and concrete layout

Grade Basis: L

Credit hours: 3.0

AGRI 2303 - AGRICULTURAL COURSE

Grade Basis: L

Credit hours: 3.0

AGRI 2301 - Agricultural Power Units

Fundamentals of internal combustion engines: gasoline, diesel, and liquefied petroleum. Maintenance and adjustments of the electrical, ignition, fuel, lubricating, and cooling systems of agricultural power machinery. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Recount the operating fundamentals of both four-stroke and two-stroke internal combustion engines
- Demonstrate ability to disassemble and reassemble small single cylinder gasoline engine
- Identify important points in maintenance of an internal combustion engine
- Discuss considerations when selecting a lubricating fluid or grease

Grade Basis: L

Credit hours: 3.0

AGAH 1372 - Agriculture Spanish

This is an industry specific Spanish course designed for agricultural students. The scope of this course will include the English to Spanish translation for terminology and phrases associated with production agriculture. The primary goal of this course is to provide students some basic communication skills so that they will be able to interact with Spanish speaking employees in different work environments and under different situations within their specific agricultural fields. NOTE: This is not a University Transfer course. This course does not fulfill any core curriculum requirements at NCTC. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate proficiency in Spanish terminology that may be needed in a farm or ranch workplace safety or emergency situation
- Demonstrate recollection and pronunciation of common colors, numbers, mathematical units, weights and measures

- Demonstrate ability to provide mock employees work details in Spanish related to farm, ranch and equine workplace situations
- Demonstrate the ability to discuss wages and employment terms with farm and ranch employees

Grade Basis: L
Credit hours: 3.0

AGAH 1372 - AGRICULTURE BUSINESS

Grade Basis: L
Credit hours: 3.0

AGAH 1372 - AGRICULTURAL ELECTIVE

Grade Basis: L
Credit hours: 2.0

AGRI 1131 - The Agriculture Industry

Overview of world agriculture, nature of the industry, resource conservation, and the American agricultural system, including production, distribution, and marketing. 16 lecture hours.

Upon completion, students will be able to:

- Identify the principles of food science related to food production, quality, safety, nutrition, and distribution
- Describe common and emerging technologies in food science
- Explain how engineering, microbiology, and chemistry are applied in food production and processing systems
- Describe food safety procedures in U.S. production systems
- Demonstrate appropriate food handling and food safety procedures
- Explain nutrient composition and the link between nutrition and health
- Examine the dynamics of global food supply

Grade Basis: L
Credit hours: 1.0

AGRI 1131 - AGRICULTURE MECHANICS

Grade Basis: L
Credit hours: 3.0

AGRI 1131 - AGRICULTURE SCIENCE ELECTIVE

Grade Basis: L

Credit hours: 4.0

AGRI 1407 - Agronomy

Principles and practices in the development, production, and management of field crops including plant breeding, plant diseases, soils, insect control, and weed control. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Summarize the role of climate and geography in present and past crop production
- Explain the growth and development of crops
- Analyze the impact of climate on crops
- Assess the interactions of soils, water, and fertility on crop production
- Contrast methods of pest management in crop production
- Differentiate production methods based on geography and crop selection
- Apply scientific reasoning to investigate questions and utilize scientific and agronomic tools to collect and analyze data and demonstrate methods
- Use critical thinking and scientific problem-solving to make informed decisions
- Communicate effectively the results of scientific investigations

Grade Basis: L

Credit hours: 4.0

HART 2301 - Air Conditioning and Refrigeration Codes

HVAC standards and concepts with emphasis on the understanding, and documentation of the codes and regulations required for the state mechanical contractors license and local codes. 48 lecture hours.

Upon completion, students will be able to:

- Demonstrate the ability to locate and identify information in code books and reference materials applicable to installation procedures governed by Texas Department of Licensing and Regulation (TDLR)

Grade Basis: L

Credit hours: 3.0

ENGL 2327 - American Literature I

A survey of American literature from the period of exploration and settlement through the Civil War. Students will study works of prose, poetry, drama, and fiction in relation to

their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 2328 - American Literature II

A survey of American literature from the Civil War to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ENGL 1301](#) - Composition I
-

MUSI 1310 - American Music

General survey of various styles of music in America. Topics may include jazz, ragtime, folk, rock, and contemporary art music. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

VNSG 1420 - Anatomy and Physiology for Allied Health

Introduction to the normal structure and function of the body, including an understanding of body systems in maintaining homeostasis. Principles of microbiology also included. 64 lecture hours.

Grade Basis: L

Credit hours: 4.0

AND - Anatomy and Physiology for Allied Health

Grade Basis: L

AGAH 1443 - Animal Health

An overview of anatomy and physiology as it relates to animal health. Topics include disease symptoms, basic immunology, diagnosis, prevention, and control of infectious and non-infectious diseases of animals. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Summarize the importance of livestock diseases and animal health
- Diagnose symptoms and identify causes of various animal diseases
- Implement preventative and treatment methods for various animal diseases

Grade Basis: L

Credit hours: 4.0

AGAH X2XX - ANIMAL SCIENCES ELECTIVE

Grade Basis: L

Credit hours: 2.0

ANTH 2302 - INTRODUCTION TO ARCHEOLOGY

The study of the human past through material remains. The course includes a discussion of methods and theories relevant to archeological inquiry. Topics may include the adoption of agriculture, response to environmental change, the emergence of complex societies, and ethics in the discipline.

Upon completion, students will be able to:

- Describe key concepts and theories in archeology
- Explain the key techniques and methods used in archeology
- Demonstrate an understanding of long-term cultural change from an archeological perspective

Grade Basis: L

Credit hours: 3.0

ANTH 2346 - GENERAL ANTHROPOLOGY

The study of human beings, their antecedents and related primates, and their cultural behaviors and institutions. Introduces the major sub-fields: physical and cultural anthropology, archaeology, linguistics, their applications, and ethics in the discipline. Meets NCTC Core Curriculum Requirements

Upon completion, students will be able to:

- Describe the key concepts and methods of anthropology

- Compare and contrast the sub-fields of anthropology, including but not limited to physical anthropology, cultural anthropology, and archaeology
- Demonstrate an understanding of anthropological approaches to human diversity

Grade Basis: L
Credit hours: 3.0

ANTH 2351 - CULTURAL ANTHROPOLOGY

The study of human cultures. Topics may include social organization, institutions, diversity, interactions between human groups, and ethics in the discipline. Meets NCTC Core Curriculum Requirement

Grade Basis: L
Credit hours: 3.0

CJSA XXXX - ANY CRIMINAL JUSTICE ELECTIVE

Grade Basis: L
Credit hours: 3.0

CJSA XXXX - ANY TWO CRIMINAL JUSTICE ELECTIVES

Grade Basis: L
Credit hours: 6.0

DFTG 2328 - Architectural Drafting - Commercial

Architectural drafting procedures, practices, governing codes, terms and symbols including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Apply commercial construction materials and processes
- Produce a set of commercial construction drawings including a site plan, floor plans, reflected ceiling plan, sections, elevations, schedules, and details

Grade Basis: L
Credit hours: 3.0

DFTG 1317 - Architectural Drafting - Residential

Architectural drafting procedures, practices, and symbols, including preparation of detailed working drawings for residential structure.

Upon completion, students will be able to:

- Utilize architectural terms, symbols, residential construction materials, and processes to produce a set of residential construction drawings including site plan, floor plan, elevations, wall sections, schedules, details, and foundation plan using reference materials

Grade Basis: L

Credit hours: 3.0

ARTS 1301 - Art Appreciation

A course open to all students directed toward understanding the elements and principles of art as applied to the visual arts: painting, sculpture and architecture, printmaking, ceramics, metal work, and weaving. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ARTC 1302 - DIGITAL IMAGING I: PHOTOSHOP

Digital Imaging using raster image editing and/or image creation software: scanning, resolution, file formats, output devices, color systems, and image-acquisitions. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify terminology, advantages and limitations of image editing software
- Distinguish bit-mapped resolutions for image acquisitions and output devices
- Use digital editing and painting tools
- Use basic half-tone theory in production of images, manipulate, create, and edit digital images for print and for web
- Specify appropriate file formats

Grade Basis: L

Credit hours: 3.0

ARTC 1325 - INTRODUCTION TO COMPUTER GRAPHICS

A survey of computer design concepts, terminology, processes, and procedures. Topics include computer graphics hardware, electronic images, electronic publishing, vector based graphics, and interactive multimedia. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Define computer terminology
- Identify peripherals
- Demonstrate page layout, multimedia, and peripherals software use

Grade Basis: L

Credit hours: 3.0

ARTS 1303 - Art History (Prehistoric to 14th Century)

A chronological analysis of the historical and cultural contexts of the visual arts from prehistoric times to the 14th century. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

ARTS 1304 - Art History II (14th Century to Present)

A chronological analysis of the historical and cultural contexts of the visual arts from the 14th century to the present day. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

ARTS 1301 - ART APPRECIATION

A course open to all students directed toward understanding the elements and principles of art as applied to the visual arts: painting, sculpture and architecture as well as printmaking, ceramics, metal work and weaving. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ARTS 1303 - ART HISTORY I: Prehistoric to 14th Century

A chronological analysis of the historical and cultural contexts of the visual arts from prehistoric times to the 14th century. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

ARTS 1304 - ART HISTORY II: 14th Century to Present

A chronological analysis of the historical and cultural contexts of the visual arts from the 14th century to the present day. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

ARTS 1311 - DESIGN I: 2-Dimensional

An introduction to the fundamental terminology, concepts, theory, and application of two-dimensional design. 32 lecture hours + 64 laboratory hours

Grade Basis: L

Credit hours: 3.0

ARTS 1312 - DESIGN II: 3-Dimensional

An introduction to the fundamental terminology, concepts, theory, and application of three-dimensional design. 32 lecture hours + 64 laboratory hours

Grade Basis: L

Credit hours: 3.0

ARTS 1316 - DRAWING I

A foundation studio course exploring drawing with emphasis on descriptive, expressive, and conceptual approaches. Students will learn to see and interpret a variety of subjects while using diverse materials and techniques. Course work will facilitate a dialogue in which students will engage in critical analysis and begin to develop their understanding of drawing as a discipline. 32 lecture hours + 64 laboratory hours

Grade Basis: L

Credit hours: 3.0

ARTS 1317 - DRAWING II

A studio course exploring drawing with continued emphasis on descriptive, expressive and conceptual approaches. Students will further develop the ability to see and interpret a variety of subjects while using diverse materials and techniques. Course work will facilitate a dialogue in which students will employ critical analysis to broaden their understanding of drawing as a discipline. 32 lecture hours + 64 laboratory hours

Grade Basis: L

Credit hours: 3.0

ARTS XXXX - VISUAL & PERFORMING ART CORE

Grade Basis: L

Credit hours: 3.0

DFTG 1309 - Basic Computer Aided Drafting

An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinate systems, and plot/print to scale. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify terminology and basic functions used with CAD software
- Use CAD hardware and software to create, organize, display, and plot/print working drawings
- Use file management techniques

Grade Basis: L

Credit hours: 3.0

HART 1301 - Basic Electricity for HVAC

Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits, and component theory and operation. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate knowledge of basic principles of electricity, electrical current, circuitry, and air conditioning devices
- Apply Ohm's law to electrical calculations
- Perform electrical continuity, voltage, and current tests with appropriate meters; and demonstrate electrical safety

Grade Basis: L

Credit hours: 3.0

MCHN 1438 - Basic Machine Shop I

A course that introduces the student to machining fundamentals. The student begins by using basic machine tools including the lathe, milling machine, drill press, power

saw, and bench grinder. Machine terminology, theory, math, part layout, and bench work using common measuring tools included. Emphasis is placed on shop safety, housekeeping, and preventative maintenance. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Demonstrate set-up and use of the lathe, milling machine, drill press, power saw, and bench grinder applying good housekeeping, proper safety, and preventative maintenance
- Use precision instruments to perform bench work including part layout, drilling, reaming, tapping, press fitting, location of hole centers and surfaces
- Set up power saws for cutoff operation
- Demonstrate tooling maintenance, and hazardous material handling
- Perform preventative maintenance
- Interpret blueprints

Grade Basis: L

Credit hours: 4.0

VNSG 1323 - Basic Nursing Skills

Mastery of entry level nursing skills and competencies for a variety of health care settings. Utilization of the nursing process as the foundation for all nursing interventions. Related aspects of nutrition, pharmacology, and medical terminology included. 80 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 3.0

RADR 1311 - Basic Radiographic Procedures

An introduction to radiographic positioning terminology, the proper manipulation of equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of basic anatomy. 48 lecture hours + 64 laboratory hours.

Grade Basis: L

Credit hours: 3.0

AGEQ 2374 - Basics of Dressage

The fundamental principles of dressage will be addressed. Basic riding exercises and dressage movements will be introduced emphasizing horse and rider fitness, and the development of the equine athlete through the classical and sequential training scale of rhythm, relaxation, connection, impulsion, straightness, and finally collection. Western Dressage principles will also be discussed and use of a western, hunt seat, or traditional dressage saddle will be acceptable. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate progressive ability to ride a horse forward with rhythm, relaxation, and connection, with the goal of achieving impulsion, straightness and finally collection through a variety of basic dressage movements (USDF Pyramid of Training adapted from the German training scale)
- Understand and demonstrate elements of a balanced riding position and the coordination and timing of the aids (Circle of the Aids)
- Exhibit ability to successfully complete an appropriate level Classical or Western Dressage test

Grade Basis: L

Credit hours: 3.0

PHED 1134 - Basketball I

This course is designed to teach the student the rules, skills, and fundamentals necessary to play the game and is designed to improve the student's physical fitness.

Grade Basis: L

Credit hours: 1.0

PHED 1135 - Basketball II

This course is designed to teach the student the rules, skills, and fundamentals necessary to play the game and is designed to improve the student's physical fitness.

Grade Basis: L

Credit hours: 1.0

BCIS 1305 - Business Computer Applications

Students will study computer terminology, hardware, and software related to the business environment. The focus of this course is on business productivity software applications and professional behavior in computing, including word processing (as needed), spreadsheets, databases, presentation graphics, and business-oriented utilization of the Internet. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe the fundamentals of Information Technology (IT) infrastructure components: hardware, software, and data communications systems
- Explain the guiding principles of professional behavior in computing
- Demonstrate proper file management techniques to manipulate electronic files and folders in a local and networked environment
- Use business productivity software to manipulate data and find solutions to business problems

- Explain the concepts and terminology used in the operation of application systems in a business environment
- Identify emerging technologies for use in business applications
- Complete projects that integrate business software applications

Grade Basis: L

Credit hours: 3.0

BCIS 1305 - BUSINESS COMPUTER APPLICATIONS

Students will study computer terminology, hardware, and software related to the business environment. The focus of this course is on business productivity software applications and professional behavior in computing, including word processing (as needed), spreadsheets, databases, presentation graphics, and business-oriented utilization of the Internet. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe the fundamentals of Information Technology (IT) infrastructure components: hardware, software, and data communications systems
- Explain the guiding principles of professional behavior in computing
- Demonstrate proper file management techniques to manipulate electronic files and folders in a local and networked environment
- Use business productivity software to manipulate data and find solutions to business problems
- Explain the concepts and terminology used in the operation of application systems in a business environment
- Identify emerging technologies for use in business applications
- Complete projects that integrate business software applications

Grade Basis: L

Credit hours: 3.0

AGAH 1453 - Beef Cattle Production

An overview of the beef cattle industry. Topics include the organization and operation of beef cattle enterprises, selection breeding, reproduction, health, nutrition, management, and marketing. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Summarize the importance of the beef cattle industry and its role in food production
- Identify beef cattle breeds, classes, and products
- Implement managerial practices designed to increase the efficiency of beef cattle production

Grade Basis: L

Credit hours: 4.0

MATH 0305 - Beginning Algebra

This course includes basic algebraic concepts and notations; algebraic expressions and equations, factoring polynomials and graphing. Some algebra is required. This course does not count toward graduation at NCTC. 48 Lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 0303](#) - Pre-Algebra
-

MUSI 1192 - Beginning Class Guitar

Notation, key signatures, scales, time signatures, meter and rhythm, major and minor chords. Emphasis is placed on guitar ensemble and solo literature of the simple type for the student's own pleasure. Open to all students and designed to meet the individual needs of the student. 32 lecture hours.

Grade Basis: L

Credit hours: 1.0

MUSI 1181 - Beginning Class Piano

Notation, clefs, key signatures, scales, time signatures, meter and rhythm, major and minor chords. Emphasis is placed on piano ensemble and solo literature of the simple type for the student's own pleasure. Open to all students and designed to meet the individual needs of the student. 32 lecture hours.

Grade Basis: L

Credit hours: 1.0

FREN 1411 - Beginning French I

Emphasis on the development of elementary listening, speaking, reading, and writing skills applied to present situations and events relevant to students' lives and to the understanding of French-speaking communities. 48 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 4.0

FREN 1412 - Beginning French II

Continuation of FREN 1411 with emphasis on elementary listening, speaking, reading and writing skills. Includes basic vocabulary, grammatical structures, and culture. 48 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [FREN 1411](#) - Beginning French I
-

POFT 1329 - Beginning Keyboarding

Skill development in keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents. 48 lecture hours.

Upon completion, students will be able to:

- Demonstrate keyboarding techniques
- Apply proofreading and editing skills
- Create basic business documents

Grade Basis: L

Credit hours: 3.0

SPAN 1411 - Beginning Spanish I

Basic Spanish language skills in listening, speaking, reading, and writing within a cultural framework. Students will acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the beginner level. 48 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 4.0

SPAN 1412 - Beginning Spanish II

Continued development of basic Spanish language skills in listening, speaking, reading, and writing within a cultural framework. Students acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the high beginner to low intermediate level. 48 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 4.0

BIOL 1322 - NUTRITION & DIET THERAPY I

This course introduces general nutritional concepts in health and disease and includes practical applications of that knowledge. Special emphasis is given to nutrients and nutritional processes including functions, food sources, digestion, absorption, and metabolism. Food safety, availability, and nutritional information including food labels, advertising, and nationally established guidelines are addressed.

Grade Basis: L

Credit hours: 3.0

BIOL 1406 - BIOLOGY FOR SCIENCE MAJORS I

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. This laboratory-based course accompanies Biology 1306, Biology for Science Majors I. Laboratory activities will reinforce the fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included.

Grade Basis: L

Credit hours: 4.0

BIOL 1407 - BIOLOGY FOR SCIENCE MAJORS II

The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Lab required. This laboratory-based course accompanies Biology 1307, Biology for Science Majors II. Laboratory activities will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals.

Grade Basis: L

Credit hours: 4.0

BIOL 1408 - BIOLOGY FOR NON-SCIENCE MAJORS I

Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. 48 lecture hours + 48 laboratory hours This laboratory-based course accompanies BIOL 1308, Biology for Non-Science Majors I. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction

Grade Basis: L
Credit hours: 4.0

BIOL 1411 - GENERAL BOTANY

Fundamental biological concepts relevant to plant physiology, life cycle, growth and development, structure and function, and cellular and molecular metabolism. The role of plants in the environment, evolution, and phylogeny of major plant groups, algae, and fungi. (This course is intended for science majors.) This laboratory-based course accompanies Biology 1311, General Botany. Laboratory activities will reinforce fundamental biological concepts relevant to plant physiology, life cycle, growth and development, structure and function, and cellular and molecular metabolism. The role of plants in the environment, evolution, and phylogeny of major plant groups, algae, and fungi.

Grade Basis: L
Credit hours: 4.0

BIOL 1413 - GENERAL ZOOLOGY

Fundamental biological concepts relevant to animals, including systematics, evolution, structure, and function, cellular and molecular metabolism, reproduction, development, diversity, phylogeny, and ecology (This course is intended for science majors.). This laboratory-based course accompanies Biology 1313, General Zoology. Laboratory activities will reinforce fundamental biological concepts relevant to animals, including systematics, evolution, structure and function, cellular and molecular metabolism, reproduction, development, diversity, phylogeny, and ecology.

Grade Basis: L
Credit hours: 4.0

BIOL 2401 - HUMAN ANATOMY AND PHYSIOLOGY I

Anatomy and Physiology I is the first part of a two-course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous and special senses. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Systems to be studied include integumentary, skeletal, muscular, nervous, and special senses.

Grade Basis: L
Credit hours: 4.0

BIOL 2402 - HUMAN ANATOMY AND PHYSIOLOGY II

Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Systems to be studied include endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics).

Grade Basis: L

Credit hours: 4.0

BIOL 2406 - ENVIRONMENTAL BIOLOGY

Principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research. 48 lecture hours + 32 laboratory hours
This laboratory-based course accompanies Biology 2306, Environmental Biology. Laboratory activities will reinforce principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research.

Grade Basis: L

Credit hours: 4.0

BIOL 2420 - MICROBIOLOGY - For Pre-Nursing or Health Science Majors

This course covers basic microbiology and immunology and is primarily directed at pre-nursing, pre-allied health, and non-science majors. It provides an introduction to historical concepts of the nature of microorganisms, microbial diversity, the importance of microorganisms and acellular agents in the biosphere, and their roles in human and animal diseases. Major topics include bacterial structure as well as growth, physiology, genetics, and biochemistry of microorganisms. Emphasis is on medical microbiology, infectious diseases, and public health. This course covers basics of culture and identification of bacteria and microbial ecology. This course is primarily directed at pre-nursing and other pre-allied health majors and covers basics of microbiology. Emphasis is on medical microbiology, infectious diseases, and public health.

Grade Basis: L

Credit hours: 4.0

BIOL 1408 - Biology for Non-Science Majors

Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. 48 lecture hours + 48 laboratory hours. This laboratory-based course accompanies BIOL 1308, Biology for Non-Science Majors I. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction.

Grade Basis: L

Credit hours: 4.0

BIOL 1406 - Biology for Science Majors I

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. This laboratory-based course accompanies Biology 1306, Biology for Science Majors I. Laboratory activities will reinforce the fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included.

Grade Basis: L

Credit hours: 4.0

BIOL 1407 - Biology for Science Majors II

The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Lab required. This laboratory-based course accompanies Biology 1307, Biology for Science Majors II. Laboratory activities will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [BIOL 1406](#) - Biology for Science Majors I
-

BMGT 1327 - PRINCIPLES OF MANAGEMENT

Concepts, terminology, principles, theories, and issues in the field of management. 48 lecture hours

Upon completion, students will be able to:

- Explain various theories, processes, and functions of management
- Apply theories to a business environment
- Identify leadership roles in organizations
- Describe elements of the communication process

Grade Basis: L

Credit hours: 3.0

BMGT 2309 - LEADERSHIP

Concepts of leadership and its relationship to management. Prepares the student with leadership and communication skills needed to motivate and identify leadership styles. 48 lecture hours

Upon completion, students will be able to:

- Determine individual leadership styles
- Distinguish differences between leadership and management
- Explain the effects of leadership style in various organizational environments
- Apply principles of leadership

Grade Basis: L

Credit hours: 3.0

PHED 1108 - Bowling I

This course is designed to introduce the student to basic bowling skills, etiquette, safety procedures, and scoring.

Grade Basis: L

Credit hours: 1.0

PHED 1109 - Bowling II

This course is designed to introduce the student to basic bowling skills, etiquette, safety procedures, and scoring.

Grade Basis: L

Credit hours: 1.0

ENGL 2322 - British Literature I

A survey of the development of British literature from the Anglo-Saxon period to the Eighteenth Century. Students will study works of prose, poetry, drama, and fiction in relation to their historical, linguistic, and cultural contexts. Texts will be selected from a diverse group of authors and traditions. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ENGL 1301](#) - Composition I
-

ENGL 2323 - British Literature II

A survey of the development British literature from the Romantic period to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

FIRT 1329 - Building Codes and Construction

Examination of building codes and requirements, construction types, and building materials. Includes walls, flooring, foundations, and various roof types and the associated dangers of each.

Grade Basis: L

Credit hours: 3.0

BUSG 1301 - INTRODUCTION TO BUSINESS

Fundamental business principles including structure, functions, resources, and operational processes. 48 lecture hours

Upon completion, students will be able to:

- Identify business functions of accounting, management, marketing, and economics
- Describe the relationships of social responsibility, ethics, and law; and describe the scope of global business enterprise

Grade Basis: L

Credit hours: 3.0

BUSG 1304 - INTRODUCTION TO FINANCIAL ADVISING

A study of the financial problems encountered by financial advisers when managing family financial affairs. Includes methods to advise clients on topics such as estate planning, retirement, home ownership, savings, and investment planning. 48 lecture hours

Upon completion, students will be able to:

- Identify the concepts associated with the time value of money
- Identify the differences among various savings and investment programs and classes of securities
- Identify the options for insurance
- Describe retirement and estate planning techniques
- Explain owning versus renting real property
- Describe consumer protection legislation

Grade Basis: L

Credit hours: 3.0

BUSG 2305 - BUSINESS LAW & CONTRACTS

Principles of law which form the legal framework for business activity including applicable statutes, contracts, and agency. 48 lecture hours

Upon completion, students will be able to:

- Define fundamental legal terminology regarding contracts, torts, property, and wills
- Differentiate between business ethics and legal issues
- Explain required elements of torts, requirements of contracts, and various consumer laws as applied to business and individuals

Grade Basis: L

Credit hours: 3.0

BUSG 2380 - COOPERATIVE EDUCATION - BUSINESS, GENERAL

Career related activities encountered in the student's area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. This course may be related if topics and learning outcomes vary. 16 lecture hours + 224 external learning experience

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

SPCH 1321 - Business and Professional Communication

Study and application of communication within the business and professional context. Special emphasis will be given to communication competencies in presentations, dyads, teams and technologically mediated formats. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

POFT 2312 - Business Correspondence and Communication

Development of writing and presentation skills to produce effective business communications. 48 lecture hours.

Upon completion, students will be able to:

- Create effective business documents
- Evaluate business documents
- Apply ethical communication practices

Grade Basis: L

Credit hours: 3.0

POFT 2312 - Business Elective

Grade Basis: L

BUSG 2305 - Business Law Contracts

Principles of law which form the legal framework for business activity including applicable statutes, contracts, and agency. 48 lecture hours.

Upon completion, students will be able to:

- Define fundamental legal terminology regarding contracts, torts, property, and wills
- Differentiate between business ethics and legal issues
- Explain required elements of torts, requirements of contracts, and various consumer laws as applied to business and individuals

Grade Basis: L

Credit hours: 3.0

POFT 1325 - Business Math and Machine Applications

Skill development in business math problem-solving using electronic technology. 48 lecture hours.

Upon completion, students will be able to:

- Solve business math application problems using technology

Grade Basis: L

Credit hours: 3.0

POFT 1328 - Business Presentations

Skill development in planning and conducting business presentations on an individual and/or group basis including communication and media skills. This course is designed to be repeated multiple times to improve student proficiency. 48 lecture hours.

Upon completion, students will be able to:

- Deliver business presentations
- Develop visual aids using presentation software
- Analyze audiences
- Use active listening and feedback skills

Grade Basis: L

Credit hours: 3.0

MATH 1325 - Calculus For Business and Social Sciences

This course is the basic study of limits and continuity, differentiation, optimization, and graphing, and integration of elementary functions, with emphasis on applications in business, economics, and social sciences. This course is not a substitute for MATH2413, Calculus I. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

MATH 2413 - Calculus I

Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing or minimizing a function; the chain rule, mean value theorem, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions; with an application to calculation of areas. 64 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

MATH 2414 - Calculus II

A continuation of MATH2413. Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. 64 lecture hours.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 2413](#) - Calculus I
-

MATH 2415 - Calculus III

A continuation of MATH2414. Advanced topics in calculus, including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, and Jacobians; application of the line integral, including Green's Theorem, the Divergence Theorem, and Stokes' Theorem. 64 lecture hours.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 2414](#) - Calculus II
-

PHED 1140 - Cardio Fitness I

This course is designed to improve the student's maximum muscular and cardio vascular endurance through a variety of exercises and help teach the basics of the muscles used during physical activity in cardio and weight lifting and making healthy food choices and how they all work together for overall cardio fitness.

Grade Basis: L

Credit hours: 1.0

PHED 1141 - Cardio Fitness II

This course is designed to improve the student's maximum muscular and cardio vascular endurance through a variety of exercises and help teach the basics of the muscles used during physical activity in cardio and weight lifting and making healthy food choices and how they all work together for overall cardio fitness.

Grade Basis: L

Credit hours: 1.0

PHED 2356 - Care and Prevention of Athletic Injuries

Prevention and care of athletic injuries with emphasis on qualities of a good athletic trainer, avoiding accidents and injuries, recognizing signs and symptoms of specific sports injuries and conditions, immediate and long-term care of injuries, and administration procedures in athletic training. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

AGAH 2271 - Cattle Reproduction

This is a training course in the reproductive management and artificial insemination of cattle. Students will become familiar with and learn the anatomy of the cow reproductive tract. This course is designed to acquaint students with the techniques of artificial insemination and pregnancy diagnosis in the cow, and to familiarize students with the collection, evaluation, processing, and handling of semen. The class will also participate in a mock embryo transfer in order to acquaint students with estrus synchronization, drug protocols, and the mechanics of uterine flushing. 16 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate knowledge of animal physiology and management considerations for an artificial insemination and/or rectal palpation
- Describe changes in the uterus and uterine horns in relation to the different stages of pregnancy
- Demonstrate basic skills required to successfully perform artificial insemination in cattle and/or demonstrate basic skills in using rectal palpation method of determining cattle pregnancy
- Demonstrate proper semen handling technique from the storage tank up to being placed in the cow

Grade Basis: L

Credit hours: 2.0

AGEQ 1291 - Cattle Reproduction

This is a training course in the reproductive management and artificial insemination of cattle. Students will become familiar with and learn the anatomy of the cow reproductive tract. This course is designed to acquaint students with the techniques of artificial insemination and pregnancy diagnosis in the cow, and to familiarize student with the collection, evaluation, processing, and handling of semen. The class will also participate in a mock embryo transfer in order to acquaint students with estrus synchronization, drug protocols, and the mechanics of uterine flushing. 16 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Learn outcomes/objectives are determined by local occupational need and business and industry trends

Grade Basis: L

Credit hours: 2.0

CETT 1302 - Electricity Principles

Principles of electricity including proper use of test equipment, A/C and D/C circuits, and component theory and operation. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify basic principles of electricity (A/C and D/C), voltage, current, and circuitry
- Apply Ohm's law to electrical calculations
- Use test equipment to measure continuity, voltage, and current values
- Use electrical safety practices

Grade Basis: L

Credit hours: 3.0

CETT 1302 - ELECTRICITY PRINCIPLES

Principles of electricity including proper use of test equipment, A/C and D/C circuits, and component theory and operation. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify basic principles of electricity (A/C and D/C), voltage, current, and circuitry
- Apply Ohm's law to electrical calculations
- Use test equipment to measure continuity, voltage, and current values
- Use electrical safety practices

Grade Basis: L

Credit hours: 3.0

CHEM 1406 - INTRODUCTORY CHEMISTRY

Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for allied health students and for students who are not science majors. 48 Lecture hours + 48 Laboratory hours

Grade Basis: L

Credit hours: 4.0

CHEM 1411 - GENERAL CHEMISTRY I

Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. Basic laboratory experiments supporting theoretical principles presented in CHEM 1311; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports.

Grade Basis: L

Credit hours: 4.0

CHEM 1412 - GENERAL CHEMISTRY II

Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry. A continuation of CHEM1411. Basic laboratory experiments supporting theoretical principles presented in CHEM 1312; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [CHEM 1411](#) - GENERAL CHEMISTRY I
-

CHEM 2423 - ORGANIC CHEMISTRY I

Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature,

stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. This laboratory-based course accompanies CHEM 2323, Organic Chemistry I. Laboratory activities will reinforce fundamental principles of organic chemistry, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Methods for the purification and identification of organic compounds will be examined.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [CHEM 1412](#) - GENERAL CHEMISTRY II
-

CHEM 2425 - ORGANIC CHEMISTRY II

Advanced principles of organic chemistry will be studied, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. This laboratory-based course accompanies CHEM 2325, Organic Chemistry II. Laboratory activities reinforce advanced principles of organic chemistry, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [CHEM 2423](#) - ORGANIC CHEMISTRY I
-

CSME 1453 - Chemical Reformation and Related Theory

Presentation of the theory and practice of chemical reformation including terminology, application, and workplace competencies related to hair waving, perming, straightening and hair color. 32 lecture hours + 128 laboratory hours. 4 credit hours

Grade Basis: L
Credit hours: 4.0

CSME 1453 - CHEMISTRY

One year of High School or one semester of College Chemistry.

Grade Basis: L

CJSA 2331 - Child Abuse Prevention and Investigation

Forms of child abuse and neglect and the traits of typical abusers. Includes strategies to investigate abuse, interview victims and witnesses, document evidence in accordance with state law, and conduct case studies. 48 contact hours.

Upon completion, students will be able to:

- Identify forms of abuse and neglect
- Compare and contrast characteristics of typical abusers
- Outline investigative strategies

Grade Basis: L
Credit hours: 3.0

TECA 1354 - Child Growth and Development

A study of the physical, emotional, social, and cognitive factors impacting growth and development of children through adolescence. 48 lecture hours.

Grade Basis: L
Credit hours: 3.0

DFTG 2330 - Civil Drafting

An in-depth study of drafting methods and principles used in civil engineering. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Interpret field notes
- Develop documents for a civil project
- Analyze and layout drainage and utilities infrastructure
- Perform related calculations

Grade Basis: L
Credit hours: 3.0

CJCR 1304 - PROBATION & PAROLE

A survey of the structure, organization, and operation of probation and parole services. Emphasis on applicable state statutes and administrative guidelines. 48 lecture hours

Upon completion, students will be able to:

- Describe the professional qualifications for employment as a probation or parole practitioner
- Demonstrate skills in management and treatment practices
- Create and develop community relations strategies

Grade Basis: L

Credit hours: 3.0

CJSA 1317 - JUVENILE JUSTICE SYSTEM

A study of the juvenile justice process to include specialized juvenile law, role of the juvenile law, role of the juvenile courts, role of police agencies, role of correctional agencies, and theories concerning delinquency. 48 lecture hours

Upon completion, students will be able to:

- Describe the juvenile law and the role of juvenile courts
- Explain the roles of police and correctional agencies concerning delinquency
- Review and contrast the theories of delinquent conduct

Grade Basis: L

Credit hours: 3.0

CJSA 1325 - CRIMINOLOGY

Current theories and empirical research pertaining to crime and criminal behavior and its causes, methods of prevention, systems of punishment, and rehabilitation. 48 lecture hours

Upon completion, students will be able to:

- Identify and explain the various theories of causation of criminal behavior
- Identify and appraise the avenue of prevention
- Outline the various research methods/methodology used in criminological research
- Identify the categories and sources of criminological data utilized in interpreting crime trends

Grade Basis: L

Credit hours: 3.0

CJSA 1330 - CYBER CRIMES

An introduction to cybercrime. Topics include specific laws, investigative techniques, and criminological theories applicable to computer crime. 48 contact hours

Upon completion, students will be able to:

- Identify and describe the major types of internet crimes and their elements
- List the trends involving digital crime; outline the investigative process in cyber crimes
- Apply existing laws to actions and events in computer crime investigations
- Identify future areas of legal concern in computer crime cases

Grade Basis: L

Credit hours: 3.0

CJSA 1342 - CRIMINAL INVESTIGATION

Investigative theory; collection and preservation of evidence, sources of information, interview and interrogation, uses of forensic sciences, case and trial preparation. 48 lecture hours

Upon completion, students will be able to:

- Define the goals and objectives of criminal investigation
- Demonstrate ability to conduct proper crime scene investigations
- Illustrate the use of forensic science for various statutory offenses
- Organize the criminal case including field notes, reports, crime scene activities, and mandatory documentation of statutory warning

Grade Basis: L

Credit hours: 3.0

CJSA 1348 - ETHICS IN CRIMINAL JUSTICE

Ethical philosophies and issues pertaining to the various professions in the criminal justice system. Includes ethical issues emanating from constitutional conflict with public protection and individual rights, civil liberties, and correctional policies. 48 lecture hours

Upon completion, students will be able to:

- Explain the foundation of ethics
- Compare and contrast theories of ethics with personal and professional practices
- Interpret and apply ethical considerations in policing, the courts, and corrections

Grade Basis: L

Credit hours: 3.0

CJSA 1351 - USE OF FORCE

Study of the use of force including introduction to and statutory authority for the use of force, deadly force, and related legal issues. Fulfills the Texas Commission on Law Enforcement Use of Force Intermediate Certificate requirement. This course was designed to be repeated multiple times to improve student proficiency. 48 contact hours

Upon completion, students will be able to:

- Identify the status pertaining to use of force
- Explain the use of force continuum
- Describe key elements of major court cases involving use of force issues

Grade Basis: L

Credit hours: 3.0

CJSA 2331 - CHILD ABUSE - PREVENTION & INVESTIGATION

Forms of child abuse and neglect and the traits of typical abusers. Includes strategies to investigate abuse, interview victims and witnesses, document evidence in accordance with state law, and conduct case studies. 48 contact hours

Upon completion, students will be able to:

- Identify forms of abuse and neglect
- Compare and contrast characteristics of typical abusers
- Outline investigative strategies

Grade Basis: L

Credit hours: 3.0

CJSA 2334 - CONTEMPORARY ISSUES IN CRIMINAL JUSTICE

A series of lectures and class participation exercises presenting selected topics currently confronting criminal justice personnel and the public they serve. 48 lecture hours

Upon completion, students will be able to:

- Explore an assigned contemporary topic in criminal justice
- List specific problems within the topic and suggest solutions

Grade Basis: L

Credit hours: 3.0

CJSA 2388 - INTERNSHIP

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. 144 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

MUSI 1183 - Class Voice

Notation, clefs, key signatures, scales, time signatures, meter and rhythm, major and minor chords. Emphasis is placed on the basic mechanics of good voice production, i.e., proper breath support, resonance and diction. Open to all students and designed to meet the individual needs of the student. 32 lecture hours.

Grade Basis: L

Credit hours: 1.0

RADR 1160 - Clinical I

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 80 clinical hours.

Grade Basis: L

Credit hours: 1.0

VNSG 1360 - Clinical I

This course provides clinical experience in fundamental nursing skills. The nursing process is applied to provide individualized care designed to meet a client's particular needs. The geriatric client is the focus of care. 240 clinical hours.

Grade Basis: L

Credit hours: 3.0

VNSG 1463 - Clinical II - Fall Admission

This course is offered in the spring semester for the August admission class. It provides a continuation of Clinical I with the emphasis on utilizing the nursing process in providing individualized care of the client in all stages of development. The principles of safety in medication administration and other care are closely monitored. 336 clinical hours.

Grade Basis: L

Credit hours: 4.0

VNSG 2360 - Clinical III - Fall Admission

This course is offered in the summer semester for the August admission class. It assists the student in the continued development of their knowledge and skill in the role and functions of the vocational nurse. It provides learning experiences in the clinical setting focusing on further refinement of the nursing process in caring for clients exhibiting health-illness continuum through the life span. 240 clinical hours.

Grade Basis: L

Credit hours: 3.0

VNSG 2460 - Clinical III - Spring Admission

This course is offered in the fall semester for the January admission class. It assists the student in the continued development of their knowledge and skill in the role and functions of the vocational nurse. It provides learning experiences in the clinical setting focusing on further refinement of the nursing process in caring for clients exhibiting health-illness continuum through the life span. 336 clinical hours.

Grade Basis: L

Credit hours: 4.0

VNSG 1363 - Clinical II - Spring Admission

This course is offered in the summer semester for the January admission class. It provides a continuation of Clinical I with the emphasis on utilizing the nursing process in providing individualized care of the client in all stages of development. The principles of safety in medication administration and other care are closely monitored. 240 clinical hours.

Grade Basis: L

Credit hours: 3.0

RNSG 1262 - Clinical Nursing for Transition Students

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Emphasis is on preparation for transition from vocational to professional nursing. 128 clinical hours.

Grade Basis: L

Credit hours: 2.0

Restrictions:

- Must be a currently licensed vocational/practical nurse or certified paramedic and must have been accepted into the Associate Degree Nursing program.
-

RNSG 1261 - Clinical Nursing I

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 144 clinical hours.

Grade Basis: L

Credit hours: 2.0

RNSG 1462 - Clinical Nursing II

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 256 clinical hours.

Grade Basis: L

Credit hours: 4.0

RNSG 2461 - Clinical Nursing III

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 256 clinical hours.

Grade Basis: L

Credit hours: 4.0

RNSG 2462 - Clinical Nursing IV

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 256 clinical hours.

Grade Basis: L
Credit hours: 4.0

RNSG 1163 - Clinical - Psychiatric Nursing

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Emphasis is on nursing skills essential for the care of patients along the mental health/mental illness continuum. 48 clinical hours.

Grade Basis: L
Credit hours: 1.0

SRGT 1662 - Clinical - Surgical and Operating Room Technician (Advanced)

An advanced type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. 288 clinical hours.

Grade Basis: L
Credit hours: 6.0

SRGT 1661 - Clinical- Surgical and Operating Room Technician (Intermediate)

An intermediate type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. 288 clinical hours.

Grade Basis: L
Credit hours: 6.0

SRGT 1261 - Clinical - Surgical and Operating Room Technician (Introductory)

A basic type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision

is provided by the clinical professional (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. 96 clinical hours.

Grade Basis: L

Credit hours: 2.0

CNBT 1311 - CONSTRUCTION METHODS & MATERIALS

Introduction to construction materials and methods and their applications. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify construction materials
- List their applications
- Describe the various methods of construction
- Explain the development and use of new materials being introduced to the construction industry under sustainable building standards

Grade Basis: L

Credit hours: 3.0

PHED 1321 - Coaching, Sports, and Athletics I

Study of the history, theories, philosophies, rules, and terminology of competitive sports. Includes coaching techniques.

Grade Basis: L

Credit hours: 3.0

MATH 1314 - College Algebra

In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 0310](#) - Intermediate Algebra
-

MUEN 1151 - College Ensemble

May be repeated for credit. Entrance by audition only from College Singers. This group will perform in connection with public relations activities and recruitment for the College. Travel in the service area will be required. 48 laboratory hours.

Grade Basis: L

Credit hours: 1.0

PHYS 1401 - College Physics I

Fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces with emphasis on problem solving. 48 Lecture hours + 48 laboratory hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 1314](#) - College Algebra
 - [MATH 1316](#) - Plane Trigonometry
 - [MATH 2412](#) - Pre-Calculus Mathematics
-

PHYS 1402 - College Physics II

Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. 48 lecture hours + 48 laboratory hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [PHYS 1401](#) - College Physics I
-

MUEN 1154 - College Singers

May be repeated for credit. Entrance by audition only. Study and performance of a broad range of music from Renaissance motets and madrigals to pop and show. This group will be involved in public relations activities for the college. 48 laboratory hours.

Grade Basis: L

Credit hours: 1.0

HART 2342 - Commercial Refrigeration

Theory and practical application in the maintenance of commercial refrigeration; medium, and low temperature applications and ice machines. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Explain and apply medium and low temperature systems operation
- Explain and apply ice machine and packaged refrigeration system operation
- Explain application and conversion procedures of refrigerants related to specific systems

Grade Basis: L

Credit hours: 3.0

ENGL 1301 - Composition I

Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus on writing the academic essay as a vehicle for learning, communicating, and critical analysis. 48 lecture hours. Meets NCTC Core Curriculum Requirement Prerequisites Satisfactory placement test score or passing grade in ENGL0305

Grade Basis: L

Credit hours: 3.0

ENGL 1302 - Composition II

Intensive study of and practice in the strategies and techniques for developing research-based expository and persuasive texts. Emphasis on effective and ethical rhetorical inquiry, including primary and secondary research methods; critical reading of verbal, visual, and multimedia texts; systematic evaluation, synthesis, and documentation of information sources; and critical thinking about evidence and conclusions. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ENGL 1301](#) - Composition I
-

ITSY 2382 - Cooperative Education - Computer and Information Systems Security

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 224 practicum hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

Restrictions:

- Departmental Chair approval required unless student is in last semester of their CyberSecurity Degree

ITSY 2382 - COMPUTER LITERACY

One year of High School BCIS, one semester College Computers (BCIS1305) or successful completion of the Computer Department Exam

Grade Basis: L

AGRI 1309 - Computers in Agriculture

Use of computers in agricultural applications. Introduction to programming languages, word processing, electronic spreadsheets, and agricultural software. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate a basic understanding and use of word processing, spreadsheet, presentation, and communication software in agriculture
- Identify common uses of computers in agriculture
- Demonstrate appropriate use of the internet for agricultural purposes

Grade Basis: L

Credit hours: 3.0

ITSY 2343 - Computer System Forensics

In-depth study of system forensics including methodologies used for analysis of computer security breaches. Gather and evaluate evidence to perform postmortem analysis of a security breach. 32 lecture hours and 32 laboratory hours.

Upon completion, students will be able to:

- Identify computer investigation issues
- Identify legal issues associated with computer investigations
- Collect and document evidence
- Evaluate network traffic, and evaluate recovered remnant or residual data

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 2300](#) - Operating System Security
-

ITNW 2280 - Cooperative Education - Computer Systems Networking

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 128 practicum hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 2.0

Restrictions:

- Departmental Chair approval required unless student is in last semester of their Networking Degree
-

ITNW 1313 - Computer Visualization

Implement and support virtualization of clients of servers in a networked computing environment. This course explores installation, configuration, and management of computer virtualization workstation and servers. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Install and configure virtual machine managers
- Create and network virtual machines and set priorities for accessing resources
- Move and clone virtual machines
- Ensure high availability for applications within virtual machines

Grade Basis: L

Credit hours: 3.0

PHED 1338 - Concepts of Physical Fitness

Concepts and use of selected physiological variable of fitness, individual testing and consultation, and the organization of sports and fitness programs. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

CNBT 1311 - Construction Methods and Materials

Introduction to construction materials and methods and their applications. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify construction materials
- List their applications
- Describe the various methods of construction
- Explain the development and use of new materials being introduced to the construction industry under sustainable building standards

Grade Basis: L

Credit hours: 3.0

CJSA 2334 - Contemporary Issues in Criminal Justice

A series of lectures and class participation exercises presenting selected topics currently confronting criminal justice personnel and the public they serve. 48 lecture hours.

Upon completion, students will be able to:

- Explore an assigned contemporary topic in criminal justice
- List specific problems within the topic and suggest solutions

Grade Basis: L

Credit hours: 3.0

MATH 1332 - Contemporary Mathematics I

Topics may include introductory treatments of sets, logic, number systems, number theory, relations, functions, probability and statistics. Appropriate applications are included. 48 lecture hours. Meets NCTC Core Curriculum Requirements

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 0310](#) - Intermediate Algebra
-

HALT 2280 - Cooperative Education

Career related activities encountered in the student's area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. This course may be repeated if topics and learning outcomes vary. This course serves as the external learning experience or capstone experience. 16 lecture hours + 160 practicum hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 2.0

HART 2380 - Cooperative Education

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under

the supervision of the college and the employer, the student combines learning with work experience. Includes lecture component. 16 lecture hours + 224 practicum hours.

Upon completion, students will be able to:

- As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

AGMG 2480 - Cooperative Education - Agricultural Business and Management

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 336 practicum hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 4.0

BUSG 2380 - Cooperative Education - Business

Career related activities encountered in the student's area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. This course may be related if topics and learning outcomes vary. 16 lecture hours + 224 laboratory hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business or industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business or industry

Grade Basis: L

Credit hours: 3.0

BUSG 2380 - CORE COLLEGE MATH

Grade Basis: L

Credit hours: 3.0

CRIJ 2313 - Correctional Systems and Practices

This course is a survey of institutional and non-institutional corrections. Emphasis will be placed on the organization and operation of correctional systems; treatment and rehabilitation; populations served; Constitutional issues; and current and future issues. 48 lecture hours.

Upon completion, students will be able to:

- Describe the organization and operation of correctional systems and alternatives to institutionalization
- Describe treatment and rehabilitative programs
- Differentiate between the short-term incarceration and long-term institutional environments
- Evaluate current and future correctional issues
- Identify the Constitutional rights applicable to the correctional setting

Grade Basis: L

Credit hours: 3.0

COSC 1436 - PROGRAMMING FUNDAMENTALS I

This course introduces the fundamental concepts of structured programming, and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging.. This course assumes computer literacy. (This course is included in the Field of Study Curriculum for Computer Science.) 48 lecture hours + 32 laboratory hours. At the conclusion of the course a student will be able to: Describe how data are

represented, manipulated, and stored in a computer; categorize different programming languages and their uses; understand and use the fundamental concepts of data types, structured programming, algorithmic design, and user interface design; demonstrate a fundamental understanding of software development methodologies, including modular design, pseudo code, flowcharting, structure charts, data types, control structures, functions, and arrays; develop projects that utilize logical algorithms from specifications and requirements statements; demonstrate appropriate design, coding, testing, and documenting of computer programs that implement project specifications and requirements; apply computer programming concepts to new problems or situations.

Grade Basis: L

Credit hours: 4.0

COSC 1436 - PROGRAMMING FUNDAMENTALS I

This course introduces the fundamental concepts of structured programming, and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging.. This course assumes computer literacy. This course is included in the Field of Study Curriculum for Computer Science. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe how data are represented, manipulated, and stored in a computer
- Categorize different programming languages and their uses
- Understand and use the fundamental concepts of data types, structured programming, algorithmic design, and user interface design
- Demonstrate a fundamental understanding of software development methodologies, including modular design, pseudo code, flowcharting, structure charts, data types, control structures, functions, and arrays
- Develop projects that utilize logical algorithms from specifications and requirements statements
- Demonstrate appropriate design, coding, testing, and documenting of computer programs that implement project specifications and requirements
- Apply computer programming concepts to new problems or situations

Grade Basis: L

Credit hours: 4.0

COSC 1437 - PROGRAMMING FUNDAMENTALS II

This course focuses on the object-oriented programming paradigm, emphasizing the definition and use of classes along with fundamentals of object-oriented design. The course includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering processes. Students will apply techniques for testing and debugging software. (This course is included in the Field of Study

Curriculum for Computer Science.). 48 lecture hours + 32 laboratory hours. At the conclusion of the course a student will be able to: Identify and explain a programming development lifecycle, including planning, analysis, design, development, and maintenance; demonstrate a basic understanding of object-oriented programming by using structs and classes in software projects; use object-oriented programming techniques to develop executable programs that include elements such as inheritance and polymorphism; document and format code in a consistent manner; apply basic searching and sorting algorithms in software design; apply single- and multi-dimensional arrays in software; use a symbolic debugger to find and fix runtime and logical errors in software; demonstrate a basic understanding of programming methodologies, including object-oriented, structured, and procedural programming; describe the phases of program translation from source code to

Grade Basis: L

Credit hours: 4.0

COSC 1437 - PROGRAMMING FUNDAMENTALS II

This course focuses on the object-oriented programming paradigm, emphasizing the definition and use of classes along with fundamentals of object-oriented design. The course includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering processes. Students will apply techniques for testing and debugging software. This course is included in the Field of Study Curriculum for Computer Science. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify and explain a programming development lifecycle, including planning, analysis, design, development, and maintenance
- Demonstrate a basic understanding of object-oriented programming by using structs and classes in software projects
- Use object-oriented programming techniques to develop executable programs that include elements such as inheritance and polymorphism
- Document and format code in a consistent manner
- Apply basic searching and sorting algorithms in software design
- Apply single- and multi-dimensional arrays in software
- Use a symbolic debugger to find and fix runtime and logical errors in software
- Demonstrate a basic understanding of programming methodologies, including object-oriented, structured, and procedural programming
- Describe the phases of program translation from source code

Grade Basis: L

Credit hours: 4.0

COSC 2425 - COMPUTER ORGANIZATION

The organization of computer systems is introduced using assembly language. Topics include basic concepts of computer architecture and organization, memory hierarchy, data types, computer arithmetic, control structures, interrupt handling, instruction sets, performance metrics, and the mechanics of testing and debugging computer systems. Embedded systems and device interfacing are introduced. 48 lecture hours + 32 laboratory hours. At the conclusion of the course a student will be able to: Explain contemporary computer system organization. Describe data representation in digital computers. Explain the concepts of memory hierarchy, interrupt processing, and input/output mechanisms. Measure the performance of a computer system. Design and develop assembly language applications. Explain the interfaces between software and hardware components. Explain the design of instruction set architectures. Develop a single-cycle processor. Explain the concept of virtual memory and how it is realized in hardware and software. Explain the concepts of operating system virtualization. Prerequisite: COSC1436.

Grade Basis: L

Credit hours: 4.0

COSC 2425 - COMPUTER ORGANIZATION

The organization of computer systems is introduced using assembly language. Topics include basic concepts of computer architecture and organization, memory hierarchy, data types, computer arithmetic, control structures, interrupt handling, instruction sets, performance metrics, and the mechanics of testing and debugging computer systems. Embedded systems and device interfacing are introduced. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Explain contemporary computer system organization
- Describe data representation in digital computers
- Explain the concepts of memory hierarchy, interrupt processing, and input/output mechanisms
- Measure the performance of a computer system
- Design and develop assembly language applications
- Explain the interfaces between software and hardware components
- Explain the design of instruction set architectures
- Develop a single-cycle processor
- Explain the concept of virtual memory and how it is realized in hardware and software
- Explain the concepts of operating system virtualization

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [COSC 1436](#) - PROGRAMMING FUNDAMENTALS I
-

COSC 2436 - PROGRAMMING FUNDAMENTALS III

Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), searching, sorting, recursion, and algorithmic analysis. Programs will be implemented in an appropriate object oriented language. (This course is included in the Field of Study Curriculum for Computer Science.). 48 lecture hours + 32 laboratory hours. At the conclusion of the course a student will be able to: Design and develop programs that implement basic data structures, including stacks, queues, linked lists, hash tables, trees, and graphs; apply recursive techniques and algorithms to solve problems; implement searching and sorting algorithms; understand algorithm efficiency, Big-O notation, and why it should be considered in programming; analyze and select appropriate data structures to implement a solution to a problem; design and implement data structures using classes and incorporating object-oriented concepts; demonstrate best practices of software development including testing, validation, and documentation. Prerequisite: COSC1437.

Grade Basis: L

Credit hours: 4.0

COSC 2436 - PROGRAMMING FUNDAMENTALS III

Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include data structures including stacks, queues, linked lists, hash tables, trees, and graphs, searching, sorting, recursion, and algorithmic analysis. Programs will be implemented in an appropriate object oriented language. This course is included in the Field of Study Curriculum for Computer Science. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Design and develop programs that implement basic data structures, including stacks, queues, linked lists, hash tables, trees, and graphs
- Apply recursive techniques and algorithms to solve problems
- Implement searching and sorting algorithms
- Understand algorithm efficiency, Big-O notation, and why it should be considered in programming
- Analyze and select appropriate data structures to implement a solution to a problem
- Design and implement data structures using classes and incorporating object-oriented concepts
- Demonstrate best practices of software development including testing, validation, and documentation

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [COSC 1437](#) - PROGRAMMING FUNDAMENTALS II
-

CSME 1534 - Cosmetology Instructor I

The fundamentals of instruction of cosmetology students. 32 lecture hours + 144 laboratory hours. Demonstrate classroom/clinic management differentiate teaching methodologies identify different learning styles assess lesson plans

Grade Basis: L

Credit hours: 5.0

CSME 2514 - Cosmetology Instructor II

A continuation of the fundamentals of instruction of cosmetology students. 32 lecture hours + 144 laboratory hours. Demonstrate effective classroom/clinic management Implement teaching methodologies Develop lesson plans

Grade Basis: L

Credit hours: 5.0

CRIJ 1306 - Court Systems and Practices

This course is a study of the court system as it applies to the structures, procedures, practices and sources of law in American courts, using federal and Texas statutes and case law. 48 lecture hours.

Upon completion, students will be able to:

- Describe the American judicial systems (civil, criminal, and juvenile), their jurisdiction, development and structure; analyze the function and dynamics of the courtroom work group
- Identify judicial processes from pretrial to appeal
- Describe the significant Constitutional Amendments, doctrines, and other sources of law in the American judicial system

Grade Basis: L

Credit hours: 3.0

CRIJ 1306 - CREATIVE ARTS ELECTIVE

Grade Basis: L

Credit hours: 3.0

ENGL 2307 - Creative Writing

Practical experience in the techniques of imaginative writing. May include fiction, nonfiction, poetry, screenwriting, or drama. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

CRIJ 1301 - INTRODUCTION TO CRIMINAL JUSTICE

This course provides a historical and philosophical overview of the American criminal justice system, including the nature, extent, and impact of crime; criminal law; and justice agencies and processes. 48 lecture hours

Upon completion, students will be able to:

- Describe the history and philosophy of the American criminal justice system
- Explain the nature and extent of crime in America
- Analyze the impact and consequences of crime
- Evaluate the development, concepts, and functions of law in the criminal justice system
- Describe the structure of contemporary federal, state, and local justice agencies and processes

Grade Basis: L

Credit hours: 3.0

CRIJ 1306 - COURT SYSTEMS & PRACTICES

This course is a study of the court system as it applies to the structures, procedures, practices and sources of law in American courts, using federal and Texas statutes and case law. 48 lecture hours

Upon completion, students will be able to:

- Describe the American judicial systems (civil, criminal, and juvenile) , their jurisdiction, development, and structure
- Analyze the function and dynamics of the courtroom work group
- Identify judicial processes from pretrial to appeal
- Describe the significant Constitutional Amendments, doctrines, and other sources of law in the American judicial system

Grade Basis: L

Credit hours: 3.0

CRIJ 1310 - FUNDAMENTALS OF CRIMINAL LAW

This course is the study of criminal law including application of definitions, statutory elements, defenses, and penalties using Texas statutes, the Model Penal Code, and case law. The course also analyzes the philosophical and historical development of criminal law and criminal culpability. 48 lecture hours

Upon completion, students will be able to:

- Identify the elements of crimes and defenses under Texas statutes, Model Penal Code, and case law
- Classify offenses and articulate penalties for various crimes
- Compare culpable mental states when assigning criminal responsibility
- Assess the impact of history and philosophy on current criminal laws
- Evaluate the application of criminal law to other areas of criminal justice such as law enforcement and corrections

Grade Basis: L

Credit hours: 3.0

CRIJ 2313 - CORRECTIONAL SYSTEMS & PRACTICES

This course is a survey of institutional and non-institutional corrections. Emphasis will be placed on the organization and operation of correctional systems, treatment and rehabilitation, populations served, Constitutional issues, and current and future issues. 48 lecture hours

Upon completion, students will be able to:

- Describe the organization and operation of correctional systems and alternatives to institutionalization
- Describe treatment and rehabilitative programs
- Differentiate between the short-term incarceration and long-term institutional environments
- Evaluate current and future correctional issues
- Identify the Constitutional rights applicable to the correctional setting

Grade Basis: L

Credit hours: 3.0

CRIJ 2328 - POLICE SYSTEMS & PRACTICES

This course examines the establishment, role and function of police in a democratic society. It will focus on types of police agencies and their organizational structure, police-community interaction, police ethics, and use of authority. 48 lecture hours

Upon completion, students will be able to:

- Describe the types of police agencies and explain the role of police in America within the context of a democratic society
- Describe means and methods utilized to ensure police accountability
- Explain the historical development of policing
- Describe the selection process for police officers
- Compare and contrast organizational structures, policies, strategies and tactics employed to ensure police effectiveness, efficiency and equity

Grade Basis: L

Credit hours: 3.0

CJSA 1342 - Criminal Investigation

Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation. 48 lecture hours.

Upon completion, students will be able to:

- Define the goals and objectives of criminal investigation
- Demonstrate ability to conduct proper crime scene investigations
- Illustrate the use of forensic science for various statutory offenses
- Organize the criminal case including field notes, reports, crime scene activities, and mandatory documentation of statutory warning

Grade Basis: L

Credit hours: 3.0

CJSA 1325 - Criminology

Current theories and empirical research pertaining to crime and criminal behavior and its causes, methods of prevention, systems of punishment, and rehabilitation. 48 lecture hours.

Upon completion, students will be able to:

- Identify and explain the various theories of causation of criminal behavior
- Identify and appraise the avenue of prevention
- Outline the various research methods/methodology used in criminological research
- Identify the categories and sources of criminological data utilized in interpreting crime trends

Grade Basis: L

Credit hours: 3.0

CSME 1248 - PRINCIPLES OF SKIN CARE

An introduction of the theory and practice of skin care. 16 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Define terminology related to skin care treatments
- Demonstrate skin care procedures
- Practice safety and sanitation according to the laws and rules of the state licensing agency
- Exhibit workplace competencies in skin care

Grade Basis: L

Credit hours: 2.0

CSME 1401 - ORIENTATION TO COSMETOLOGY

An overview of the skills and knowledge necessary for the field of cosmetology. 32 lecture hours + 128 laboratory hours

Upon completion, students will be able to:

- Demonstrate introductory skills, professional ethics, safety, and sanitation
- Explain the laws and rules of the state

Grade Basis: L

Credit hours: 4.0

CSME 1405 - FUNDAMENTALS OF COSMETOLOGY

A course in the basic fundamentals of cosmetology. Topics include safety and sanitation, service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, and comb out. 32 lecture hours + 128 laboratory hours

Upon completion, students will be able to:

- Identify fundamental concepts related to skills required by the Texas Department of Licensing and Regulation (TDLR)
- Demonstrate basic required skills by TDLR standards

Grade Basis: L

Credit hours: 4.0

CSME 1410 - INTRODUCTION TO HAIR-CUTTING & RELATED THEORY

Introduction to the theory and practice of hair cutting. Topics include terminology, implements, sectioning and finishing techniques. 32 lecture hours + 128 laboratory hours

Upon completion, students will be able to:

- Define terminology
- Practice basic workplace competencies related to hair-cutting and finishing techniques
- Demonstrate use of implements, sectioning, hair-cutting, and finishing skills

Grade Basis: L

Credit hours: 4.0

CSME 1420 - ORIENTATION TO FACIAL SPECIALIST

An overview of the skills and knowledge necessary for the field of facials and skin care. 32 lecture hours + 96 laboratory hours

Upon completion, students will be able to:

- Demonstrate facial and skin care skills
- Practice safety and sanitation according to the rules of the state licensing agency
- Practice professional ethics

Grade Basis: L

Credit hours: 4.0

CSME 1421 - PRINCIPLES OF FACIAL & SKIN CARE TECHNOLOGY I

An introduction to the principles of facial and skin care technology. Topics include anatomy, physiology, theory and related skills of facial and skin care technology. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Explain the basic anatomy and physiology of the skin and demonstrate the related skills of skin care and cosmetics

Grade Basis: L

Credit hours: 4.0

CSME 1443 - MANICURING & RELATED THEORY

Presentation of the theory and practice of nail services. Topics include terminology, application, and workplace competencies related to nail services. 32 lecture hours + 96 laboratory hours

Upon completion, students will be able to:

- Define terminology related to nail services
- Demonstrate the basic procedures of nail services
- Practice safety and sanitation according to the laws and rules of the state licensing agency
- Exhibit workplace competencies in nail services

Grade Basis: L

Credit hours: 4.0

CSME 1545 - PRINCIPLES OF FACIAL & SKIN CARE TECHNOLOGY II

A continuation of the concepts and principles in skin care and other related technologies. Topics include advanced instruction in anatomy, physiology, theory, and related skills of facial and skin care technology. 32 lecture hours + 144 laboratory hours

Upon completion, students will be able to:

- Demonstrate the use of facial machines
- Explain the chemical composition of products
- Practice advanced applications of skin care and cosmetics
- Remove superfluous hair

Grade Basis: L

Credit hours: 5.0

CSME 1447 - PRINCIPLES OF SKIN CARE, FACIALS & RELATED THEORY

A continuation of the concepts and principles in skin care and other related technologies. Topics include advanced instruction in anatomy, physiology, theory, and related skills of facial and skin care technology. 32 lecture hours + 128 laboratory hours

Upon completion, students will be able to:

- Define terminology related to the skin, products, and treatments
- Demonstrate applications related to skin care and cosmetics
- Practice safety and sanitation according to the laws and rules of the state licensing agency
- Exhibit workplace competencies in skin care and cosmetics

Grade Basis: L
Credit hours: 4.0

CSME 1453 - CHEMICAL REFORMATION & RELATED THEORY

Presentation of the theory and practice of chemical reformation including terminology, application, and workplace competencies. 32 lecture hours + 128 laboratory hours

Upon completion, students will be able to:

- Define terminology related to chemical reformation
- Follow safety and sanitation laws and rules according to the state licensing agency
- Exhibit workplace competencies related to chemical reformation

Grade Basis: L
Credit hours: 4.0

CSME 1534 - COSMETOLOGY INSTRUCTOR I

The fundamentals of instruction of cosmetology students. 32 lecture hours + 144 laboratory hours

Upon completion, students will be able to:

- Demonstrate classroom/clinic management
- Differentiate teaching methodologies
- Identify different learning styles
- Assess lesson plans

Grade Basis: L
Credit hours: 5.0

CSME 1535 - ORIENTATION TO THE INSTRUCTION OF COSMETOLOGY

An overview of the skills and knowledge necessary for the instruction of cosmetology students. 32 lecture hours + 144 laboratory hours

Upon completion, students will be able to:

- Identify teaching methodologies
- Observe lesson plan implementation
- Monitor various learning settings

Grade Basis: L
Credit hours: 5.0

CSME 2237 - ADVANCED COSMETOLOGY TECHNIQUES

Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services, and workplace competencies. 16 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Utilize a variety of hair techniques
- Perform professional cosmetology services
- Demonstrate workplace competencies

Grade Basis: L

Credit hours: 2.0

CSME 2410 - ADVANCED HAIR-CUTTING AND RELATED THEORY

Advanced concepts and practice of haircutting. Topics include haircuts utilizing scissors, razor, and/or clippers. 16 lecture hours + 128 laboratory hours

Upon completion, students will be able to:

- Utilize correct terminology related to advanced hair-cutting techniques
- Demonstrate work place competencies related to advanced hair-cutting techniques

Grade Basis: L

Credit hours: 4.0

CSME 2343 - SALON DEVELOPMENT

Procedures necessary for salon development. Topics include professional ethics, goal setting, salon operation, and record keeping. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Create a salon portfolio or business plan
- Demonstrate organizational skills related to salon operation and management

Grade Basis: L

Credit hours: 3.0

CSME 2501 - PRINCIPLES OF HAIR COLORING & RELATED THEORY

Presentation of the theory, practice, and chemistry of hair color. Topics include terminology, application, and workplace competencies related to hair color. 32 lecture hours + 144 laboratory hours

Upon completion, students will be able to:

- Define terminology
- Demonstrate hair color application
- Practice safety and sanitation according to the laws and rules of the state licensing agency
- Practice workplace competencies related to hair color

Grade Basis: L

Credit hours: 5.0

CSME 2431 - PRINCIPLES OF FACIALS & SKIN CARE TECHNOLOGY III

Advanced concepts and principles of skin care and other related technologies. 32 lecture hours + 96 laboratory hours

Upon completion, students will be able to:

- Demonstrate professional ethics
- Design salon management
- Perform advanced skin care services
- Exhibit related skills in preparation for the state licensing examination

Grade Basis: L

Credit hours: 4.0

CSME 2441 - PREPARATION FOR TEXAS DEPARTMENT OF LICENSING & REGULATIONS

Preparation for the state licensing examination. 32 lecture hours + 128 laboratory hours

Upon completion, students will be able to:

- Review for the written state licensing exam
- Prepare for the practical state licensing exam
- Practice safety and sanitation according to the laws and rules of the state licensing agency

Grade Basis: L

Credit hours: 4.0

CSME 2514 - COSMETOLOGY INSTRUCTOR II

A continuation of the fundamentals of instruction of cosmetology students. 32 lecture hours + 144 laboratory hours

Upon completion, students will be able to:

- Demonstrate effective classroom and clinic management
- Implement teaching methodologies
- Develop lesson plans

Grade Basis: L

Credit hours: 5.0

ANTH 2351 - Cultural Anthropology

The study of human cultures. Topics may include social organization, institutions, diversity, interactions between human groups, and ethics in the discipline. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

MRKG 1301 - Customer Relations

General principles of customer service including skills, knowledge, attitudes, and behaviors. Topics will include teamwork in an organization, internal and external customer relationships, communication in clear and professional manner, and conflict resolution. 48 lecture hours.

Upon completion, students will be able to:

- Examine internal and external customer relationship management (CRM) strategies

Grade Basis: L

Credit hours: 3.0

CJSA 1330 - Cyber Crimes

An introduction to cybercrime. Topics include specific laws, investigative techniques, and criminological theories applicable to computer crime. 48 contact hours.

Upon completion, students will be able to:

- Identify and describe the major types of internet crimes and their elements
- List the trends involving digital crime
- Outline the investigative process in cybercrimes
- Apply existing laws to actions and events in computer crime investigations
- Identify future areas of legal concern in computer crime cases

Grade Basis: L

Credit hours: 3.0

DANC 2303 - DANCE APPRECIATION I

Survey of primitive, classical, and contemporary dance and its interrelationship with cultural developments and other art forms. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

DANC 2303 - Dance Appreciation I

Survey of primitive, classical, and contemporary dance and its interrelationship with cultural developments and other art forms. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

DFTG 2317 - Descriptive Geometry

Graphical solutions to problems involving points, lines, and planes in space. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe spatial relationships
- Use sequential thinking
- Create views necessary to show object's true size and shape/development using points, lines, and planes in space

Grade Basis: L

Credit hours: 3.0

GAME 1306 - Design and Creation of Games

Introduction to game and simulation development. Includes analysis of existing applications and creation of a game using an existing game engine. In-depth coverage of the essential elements of game design. Also covers an overview of cultural history of electronic games, survey of the major innovators, and examination of the trends and taboos that motivate game design. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Summarize the evolution of the electronic game industry
- Explain essential game and simulation elements
- Evaluate the strengths and limitations of game and simulation systems
- Identify programmatic and graphical elements of a development system
- Develop a concept document and simple game

Grade Basis: L

Credit hours: 3.0

ARTS 1312 - Design II (3-D)

An introduction to the fundamental terminology, concepts, theory, and application of three-dimensional design. 32 lecture hours + 64 laboratory hours.

Grade Basis: L

Credit hours: 3.0

ARTS 1311 - Design I (2-D)

An introduction to the fundamental terminology, concepts, theory, and application of two-dimensional design. 32 lecture hours + 64 laboratory hours.

Grade Basis: L

Credit hours: 3.0

POFI 2331 - Desktop Publishing for the Office

In-depth coverage of desktop publishing terminology, text editing, and use of design principles to create publishing material using word processing desktop publishing features. Emphasis on layout techniques, graphics, and multiple page displays. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Define desktop publishing terminology
- Manipulate text and graphics to create a balanced and focused layout
- Create fliers, brochures, and multiple page documents

Grade Basis: L

Credit hours: 3.0

NCBM 0200 - Developmental Mathematics (BASE) (NCBO)

This course is a BASE developmental education intervention and supports foundational topics in mathematics such as fractions, integers, decimals, percent, algebraic concepts, solving equations, graphing, and polynomials. This course is designed for those students with little algebra background, and must be taken concurrently with MATH0305 . Course may include basic study skills, note-taking, time management, learning styles, math anxiety, and test-taking strategies. This course does not count toward graduation at NCTC. 32 lecture hours.

Grade Basis: L

Restrictions:

- Corequisites - MATH0305 and score in placement in TSI ABE levels 3-4
-

DFTG 1305 - TECHNICAL DRAFTING

Introduction to the principles of drafting to include terminology and fundamentals, including size and shape descriptions, projection methods, geometric construction, sections, auxiliary views, and reproduction processes. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Create technical sketches, geometric constructions, orthographic projections, pictorial/sectional views, dimension drawings, and apply lettering techniques

Grade Basis: L

Credit hours: 3.0

DFTG 1309 - BASIC COMPUTER-AIDED DRAFTING

An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry, storing and retrieving predefined shapes, placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinate systems, and plot and print to scale. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify terminology and basic functions used with CAD software
- Use CAD hardware and software to create, organize, display, and plot/print working drawings
- Use file management techniques

Grade Basis: L

Credit hours: 3.0

DFTG 1317 - ARCHITECTURAL DRAFTING - RESIDENTIAL

Architectural drafting procedures, practices, and symbols, including preparation of detailed working drawings for residential structure with emphasis on light frame construction methods. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Utilize architectural terms, symbols, residential construction materials, and processes to produce a set of residential construction drawings including site plan, floor plan, elevations, wall sections, schedules, details, and foundation plan using reference materials

Grade Basis: L
Credit hours: 3.0

DFTG 1333 - MECHANICAL DRAFTING

Study of mechanical drawings using dimensioning and tolerances, sectioning techniques, orthographic projection, and pictorial drawings. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Develop a set of working drawings including assembly, detail, and pictorial

Grade Basis: L
Credit hours: 3.0

DFTG 1358 - ELECTRICAL & ELECTRONIC DRAFTING

Electrical and electronic drawings stressing modern representation used for block diagrams, schematic diagrams, logic diagrams, wiring/assembly drawings, printed circuit board layouts, motor control diagrams, power distribution diagrams, and electrical one-line diagrams. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Layout components and symbols, both electronic and electrical
- Apply basic math and the theory of electricity
- Utilize component identification including schematics, block, wiring, and logic
- Perform diagram construction and drafting

Grade Basis: L
Credit hours: 3.0

DFTG 1391 - SPECIAL TOPICS IN DRAFTING & DESIGN TECHNOLOGY

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Learning outcomes & objectives are determined by local occupational need and business and industry trends

Grade Basis: L

Credit hours: 3.0

DFTG 2300 - INTERMEDIATE ARCHITECTURAL DRAFTING - RESIDENTIAL

Continued application of principles and practices used in residential construction. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Define the principles of design and implementation of advanced residential construction
- Incorporate site and environmental considerations in planning a residential development
- Select materials
- Apply codes and standards in the creation of construction drawings
- Write specifications

Grade Basis: L

Credit hours: 3.0

DFTG 2302 - MACHINE DRAFTING

Production of detail and assembly drawings of machines, threads, gears, utilizing tolerances, limit dimensioning, and surface finishes. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Interpret terms used in tolerancing
- Identify dimensions of two mating parts
- Draw spur and/or bevel gears
- Draw details and assemblies
- Identify interference and clearance fits
- Identify types of threads forms
- Interpret thread notes

Grade Basis: L

Credit hours: 3.0

DFTG 2306 - MACHINE DESIGN

Theory and practice of design. Projects in problem-solving, including press fit, bolted and welded joints, and transmission components. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Utilize the steps used in the design process, terminology, mechanical processes to produce drawings

Grade Basis: L

Credit hours: 3.0

DFTG 2317 - DESCRIPTIVE GEOMETRY

Graphical solutions to problems involving points, lines, and planes in space. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe spatial relationships
- Use sequential thinking
- Create views necessary to show object's true size and shape/development using points, lines, and planes in space

Grade Basis: L

Credit hours: 3.0

DFTG 2319 - INTERMEDIATE COMPUTER-AIDED DRAFTING

A continuation of practices and techniques used in basic computer-aided drafting including the development and use of prototype drawings, construction of pictorial drawings, extracting data, and basics of 3D. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Produce 2D and 3D drawings and pictorial drawings
- Use external referencing of multiple drawings to construct a composite drawing
- Import and extract data utilizing attributes

Grade Basis: L

Credit hours: 3.0

DFTG 2323 - PIPE DRAFTING

A study of pipe fittings, symbols, specifications and their applications to a piping process system. Creation of symbols and their usage in flow diagrams, plans, elevations, and isometrics. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Create drawings of foundations, structural supports, and process equipment
- Identify symbols and research specifications
- Generate a bill of material list

- Use charts and standards
- Generate isometric drawings
- Calculate measurements for pipe fittings

Grade Basis: L

Credit hours: 3.0

DFTG 2328 - ARCHITECTURAL DRAFTING - COMMERCIAL

Architectural drafting procedures, practices, governing codes, terms and symbols including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Apply commercial construction materials and processes
- Produce a set of commercial construction drawings including a site plan, floor plans, reflected ceiling plan, sections, elevations, schedules, and details

Grade Basis: L

Credit hours: 3.0

DFTG 2330 - CIVIL DRAFTING

An in-depth study of drafting methods and principles used in civil engineering. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Interpret field notes
- Develop documents for a civil project
- Analyze and layout drainage and utilities infrastructure
- Perform related calculations

Grade Basis: L

Credit hours: 3.0

DFTG 2332 - ADVANCED COMPUTER-AIDED DRAFTING

Application of advanced CAD techniques. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Use a customized CAD system to create documents and/or solid models
- Use OLE with external software

Grade Basis: L

Credit hours: 3.0

DFTG 2338 - FINAL PROJECT - ADVANCED DRAFTING

A drafting course in which students participate in a comprehensive project from conception to conclusion. 32 lecture hours + 32 laboratory hours This course is the program capstone course and should be taken the last semester of the program.

Upon completion, students will be able to:

- Conceptualize, design and present a complete project in a prescribed discipline
- Integrate problem solving and related technologies to identify solutions
- Use discipline specific industry standards, and produce documentation

Grade Basis: L

Credit hours: 3.0

DFTG 2340 - SOLID MODELING & DESIGN

A computer-aided modeling course. Development of three-dimensional drawings and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Create three-dimensional solid model objects
- Generate pictorial and orthographic drawings

Grade Basis: L

Credit hours: 3.0

DFTG 2358 - ADVANCED MACHINE DESIGN

Design process skills for the production of complete design package, including jig and fixture design, extrusion dies, and injection mold design. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Analyze design problems and prepare solutions to complete a set of drawings

Grade Basis: L

Credit hours: 3.0

DFTG XXXX - ADVANCED DRAFTING ELECTIVE

Grade Basis: L

Credit hours: 3.0

MUSI 1262 - Diction I

Study of the International Phonetic Alphabet and the phonetics of English and Italian to promote the ability to sing in those languages. 32 lecture hours.

Grade Basis: L

Credit hours: 2.0

MATH 2320 - Differential Equations

Ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions, series solutions, singular points, transform methods, and boundary value problems; application of differential equations to real-world problems. 64 lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 2414](#) - Calculus II
-

ARTC 1302 - Digital Imaging I (Photoshop)

Digital Imaging using raster image editing and or image creation software and scanning, resolution, file formats, output devices, color systems, and image-acquisitions. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify terminology, advantages, and limitations of image editing software
- Distinguish bit-mapped resolutions for image acquisitions and output devices
- Use digital editing and painting tools
- Use basic half-tone theory in production of images, manipulate, create, and edit digital images for print and for web
- Specify appropriate file formats

Grade Basis: L

Credit hours: 3.0

DRAM 1120 - THEATER PRACTICUM I

The course provides the student an opportunity to apply classroom theory in a practical situation and environment through mounting a theatrical production. The student will gain familiarity with one or more of the following areas: acting, directing, costuming,

scenery construction, properties, lighting, sound and stage management. Open to all students. 48 lecture hours

Grade Basis: L

Credit hours: 1.0

DRAM 1121 - THEATER PRACTICUM II

Continuation of DRAM1120. 48 lecture hours

Grade Basis: L

Credit hours: 1.0

DRAM 1310 - INTRODUCTION TO THEATER

Survey of theater including its history, dramatic works, stage techniques, production procedures, and relation to other art forms. Participation in productions may be required. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

DRAM 1330 - STAGECRAFT I

Study and application of the methods and components of theatrical production which may include one or more of the following; theater facilities, scenery construction and painting, properties, lighting, costume, makeup, sound, and theatrical management. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

DRAM 1351 - ACTING I

An introduction to the fundamental principles and tools of acting as used in auditions, rehearsals, and performances. This may include ensemble performing, character and script analysis, and basic theater terminology. This exploration will emphasize the development of the actor's instrument: voice, body and imagination. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

DRAM 1352 - ACTING II

Exploration and further training within the basic principles and tools of acting, including an emphasis on critical analysis of oneself and others. The tools include ensemble

performing, character and analysis, and basic theater terminology. This will continue the exploration of the development of the actor's instrument: voice, body and imagination. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

DRAM 2120 - THEATER PRACTICUM III

Continuation of DRAM1120 and DRAM1121. 48 lecture hours

Grade Basis: L
Credit hours: 1.0

DRAM 2121 - THEATER PRACTICUM IV

Continuation of DRAM1120, DRAM1121 and DRAM2120. 48 lecture hours

Grade Basis: L
Credit hours: 1.0

DRAM 2331 - STAGECRAFT II

Course is a continuation of DRAM1330, but it allows the individual student the opportunity to specialize in a particular area of technical theater. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

DRAM 2366 - INTRODUCTION TO CINEMA

Survey and analyze cinema including history, film techniques, production procedures, selected motion pictures, and cinema's impact on and reflection of society. . 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L
Credit hours: 3.0

ARTS 1316 - Drawing I

A foundation studio course exploring drawing with emphasis on descriptive, expressive, and conceptual approaches. Students will learn to see and interpret a variety of subjects while using diverse materials and techniques. Course work will facilitate a dialogue in which students will engage in critical analysis and begin to develop their understanding of drawing as a discipline. 32 lecture hours + 64 laboratory hours.

Grade Basis: L

Credit hours: 3.0

ARTS 1317 - Drawing II

A studio course exploring drawing with continued emphasis on descriptive, expressive and conceptual approaches. Students will further develop the ability to see and interpret a variety of subjects while using diverse materials and techniques. Course work will facilitate a dialogue in which students will employ critical analysis to broaden their understanding of drawing as a discipline. 32 lecture hours + 64 laboratory hours.

Grade Basis: L

Credit hours: 3.0

PTRT 1303 - Drilling

A study of practices and procedures that are involved in drilling operations. Topics on rig equipment, casing design, fishing, and proper procedures to successfully drill a well are discussed. 48 lecture hours.

Upon completion, students will be able to:

- Describe fundamentals operations in the drilling industry
- Identify the five major systems and equipment of a drilling rig
- Describe specific downhole problems
- Explain solutions

Grade Basis: L

Credit hours: 3.0

SOCI 2340 - Drug Use and Abuse

Study of the use and abuse of drugs in today's society. Emphasizes the physiological, sociological, and psychological factors. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

ECON 2301 - PRINCIPLES OF MACROECONOMICS

An analysis of the economy as a whole including measurement and determination of Aggregate Demand and Aggregate Supply, national income, inflation, and unemployment. Other topics include international trade, economic growth, business cycles, and fiscal policy and monetary policy. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ECON 2302 - PRINCIPLES OF MICROECONOMICS

Analysis of the behavior of individual economic agents, including consumer behavior and demand, producer behavior and supply, price and output decisions by firms under various market structures, factor markets, market failures, and international trade. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

EDUC 1300 - LEARNING FRAMEWORK

A study of research and theory in the psychology of learning, cognition, and motivation, factors that impact learning, and application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of the college-level student academic strategies. Students use assessment instruments (e.g. learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. Cross-listed as PSYC1300 Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

EDUC 1301 - INTRODUCTION TO THE TEACHING PROFESSION

An enriched, integrated pre-service course and content experience that: Provides active recruitment and institutional support of students interested in a teaching career, especially in high need fields Provides students with opportunities to participate in early field observations at all levels of P-12 schools with varied and diverse students populations Provides students with support from college and school faculty for the purpose of introduction to and analysis of the culture of schooling and classrooms Course content is aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards Course must include a minimum of 16 contact hours of field experience in P-12 classrooms. 48 lecture hours + 16 hour lab

Grade Basis: L

Credit hours: 3.0

EDUC 2301 - INTRODUCTION SPECIAL POPULATIONS

An enriched, integrated pre-service course and content experience that provides an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic and academic diversity, and equity with an emphasis on factors that facilitate learning. The course provides students with opportunities to participate in early field observations of P- 12 special populations and should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Must include a minimum of 16 contact hours of field experience in P-12 classrooms with special populations. 48 lecture hours + 16 hour lab

Grade Basis: L

Credit hours: 3.0

TECA 1311 - Educating Young Children

An introduction to the education of the young child, including developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities, and current issues. Course content is aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Course includes a minimum of 16 hours of field experiences. 48 lecture hours + 16 laboratory hours.

Grade Basis: L

Credit hours: 3.0

EECT 1300 - TECHNICAL CUSTOMER SERVICE

General principles of customer service within a technical environment. Topics include internal/external customer relationships, time-management, best practices, and verbal and non-verbal communications skills. 48 lecture hours

Upon completion, students will be able to:

- Discuss internal and external customer relationships
- Respond to customer questions and complaints in a polite and thorough manner
- Update customers on work progress to maintain customer satisfaction and public relations
- Communicate technical information in a clear, precise and logical manner
- Identify verbal and non-verbal communications skills

Grade Basis: L

Credit hours: 3.0

EECT 1300 - ELECTIVE

Grade Basis: L

Credit hours: 3.0

DFTG 1358 - Electrical & Electronic Drafting

Electrical and electronic drawings stressing modern representation used for block diagrams, schematic diagrams, logic diagrams, wiring/assembly drawings, printed circuit board layouts, motor control diagrams, power distribution diagrams, and electrical one-line diagrams. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Layout components and symbols, both electronic and electrical
- Apply basic math and the theory of electricity
- Utilize component identification including schematics, block, wiring, and logic
- Perform diagram construction and drafting

Grade Basis: L

Credit hours: 3.0

MATH 1342 - Elementary Statistical Methods

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: AL

Credit hours: 3.0

Prerequisites:

- [MATH 0310](#) - Intermediate Algebra
-

ELPT 1319 - FUNDAMENTALS OF ELECTRICITY I

An introduction to basic direct current (DC) theory including electron theory and direct current applications. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Explain atomic structure and basic electrical values such as voltage, current, resistance, and power
- Calculate electrical values for series, parallel, and combination circuits
- Calculate voltage drop based on conductor length, type of material, and size

- Summarize the principles of magnetism; and utilize electrical measuring instruments

Grade Basis: L

Credit hours: 3.0

ELPT 1325 - NATIONAL ELECTRICAL CODE I

An introductory study of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring design, protection, methods, and materials; equipment for general use; and basic calculations. 48 lecture hours

Upon completion, students will be able to:

- Locate and interpret the sections in the NEC that pertain to electrical installations
- Calculate the size of conductors, boxes, raceways, and overcurrent protective devices for branch circuits supplying electrical equipment
- Calculate conductors, over-current protection, and service equipment as applied to building services
- Compute the size of branch circuits, feeders, and equipment for motors

Grade Basis: L

Credit hours: 3.0

ELPT 1341 - MOTOR CONTROL

Operating principles of solid-state and conventional controls along with their practical applications. Includes braking, jogging, plugging, safety interlocks, wiring, and schematic diagram interpretations. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify practical applications of jogging and plugging
- Describe the types of motor braking and their operating principles
- Explain different starting methods for large motors
- Demonstrate proper troubleshooting methods on circuits using wiring and schematic diagrams

Grade Basis: L

Credit hours: 3.0

ELPT 2305 - MOTORS & TRANSFORMERS

Operation of single- and three-phase motors and transformers. Includes transformer banking, power factor correction, and protective devices. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Match the type of single-phase motor with its principles of operation
- Compare the operating characteristics of the three types of three-phase motors
- Explain the advantages of Wye and Delta connections in motor and transit applications
- Size over-current, short circuit, and ground fault protective devices
- Utilize nameplate information

Grade Basis: L

Credit hours: 3.0

ELPT 2319 - PROGRAMMABLE LOGIC CONTROLLERS I

Fundamental concepts of programmable logic controllers, principles of operation, and numbering systems as applied to electrical controls. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify and describe digital logic circuits and explain numbering systems
- Explain the operation of programmable logic controllers
- Convert ladder diagrams into programs
- Incorporate timers and counters utilizing programmable logic controllers
- Execute and evaluate programs

Grade Basis: L

Credit hours: 3.0

EMSP 1501 - Emergency Medical Technician

Introduction to the level of Emergency Medical Technician (EMT) - Basic. Includes all the skills necessary to provide emergency medical care at a basic life support level with an ambulance service or other specialized services. 32 lecture + 96 laboratory hours.

Upon completion, students will be able to:

- Provide emergency medical care at a basic life support level with an ambulance service or other specialized services

Grade Basis: L

Credit hours: 5.0

Prerequisites:

- [EMSP 1160](#) - Emergency Medical Technology

Restrictions:

- Current AHA Health Care Provider CPR or equivalent
-

EMSP 1160 - Emergency Medical Technology

A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. 48 clinical hours.

Grade Basis: L

Credit hours: 1.0

EMSP 2206 - Emergency Pharmacology

Utilization of medications in treating emergency situations.

Upon completion, students will be able to:

- Utilization of medications in treating emergency situations

Grade Basis: L

Credit hours: 2.0

EMSP 1160 - CLINICAL - EMERGENCY MEDICAL TECHNICIAN/ TECHNOLOGY

A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. 48 clinical hours

Grade Basis: L

Credit hours: 1.0

EMSP 1338 - INTRODUCTION TO ADVANCED PRACTICE

32 lecture + 32 laboratory hours

Upon completion, students will be able to:

- Understand the roles and responsibilities of a paramedic within the EMS system

- Apply the basic concepts of development, pathophysiology and pharmacology to assessment and management of emergency patients
- Properly administer medications
- Communicate effectively with patients
- Understand the medical, legal, and ethical issues relating to EMS practice as well as the issues impacting the well being of the paramedic

Grade Basis: L

Credit hours: 3.0

EMSP 1355 - TRAUMA MANAGEMENT

A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with traumatic injuries. 32 lecture + 32 laboratory hours

Grade Basis: L

Credit hours: 3.0

EMSP 1356 - PATIENT ASSESSMENT & AIRWAY MANAGEMENT

A detailed study of the knowledge and skills required to reach competence in performing patient assessment and airway management. 32 lecture + 32 laboratory hours

Grade Basis: L

Credit hours: 3.0

EMSP 1501 - EMERGENCY MEDICAL TECHNICIAN

Introduction to the level of Emergency Medical Technician (EMT) - Basic. Includes all the skills necessary to provide emergency medical care at a basic life support level with an ambulance service or other specialized services. 32 lecture + 96 laboratory hours

Grade Basis: L

Credit hours: 5.0

EMSP 2206 - EMERGENCY PHARMACOLOGY

Utilization of medications in treating emergency situations.

Grade Basis: L

Credit hours: 2.0

EMSP 2261 - CLINICAL I - EMERGENCY MEDICAL TECHNICIAN/ PARAMEDIC

A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. 96 clinical hours

Grade Basis: L

Credit hours: 2.0

EMSP 2262 - CLINICAL II - EMERGENCY MEDICAL TECHNICIAN/ PARAMEDIC

A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement is the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. 96 clinical hours

Grade Basis: L

Credit hours: 2.0

EMSP 2305 - EMS OPERATIONS

Knowledge and skills to safely manage multi-casualty incidents and rescue situations, utilize air medical resources, identify hazardous materials, and other specialized incidents.

Grade Basis: L

Credit hours: 3.0

EMSP 2338 - EMERGENCY MEDICAL OPERATIONS

A detailed study of the knowledge and skills necessary to reach competence to safely manage the scene of an emergency. 16 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 3.0

EMSP 2352 - EMERGENCY MEDICAL SERVICES RESEARCH

Primary and/or secondary research in current and emerging issues in EMS. Basic research principles, scientific inquiry, and interpretation of professional literature are emphasized. Students will demonstrate computer competencies during this course. Students will be required to present research data utilizing the internet. Data presentation shall include, but not be limited to PowerPoint, Excel or other Windows platforms. 48 lecture

Grade Basis: L

Credit hours: 3.0

EMSP 2434 - MEDICAL EMERGENCIES

A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with medical emergencies. 64 lecture + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

EMSP 2544 - CARDIOLOGY

A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies. 64 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 5.0

EMSP 2553 - EMERGENCY MEDICAL SERVICES CERTIFICATION FOR THE REGISTERED NURSE, PHYSICIAN'S ASSISTANT, REGISTERED RESPIRATORY THERAPIST & LICENSED NURSE PRACTITIONER

Preparation of the R.N., R.R.T., L.P.N., or P.A. (Licensed to Practice in Texas) for Emergency Medical Services (EMS) certification. In addition to completing this course, students must also successfully complete an EMS internship. Students that meet all the listed requirements are eligible to apply for certification as an Emergency Medical Technician-Paramedic. 64 lecture hours + 32 skills hours

Grade Basis: L

Credit hours: 5.0

EMSP 2563 - *CLINICAL - EMT-P INTERNSHIP

A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. 256 clinical hours

Grade Basis: L

Credit hours: 5.0

OSHT 1320 - Energy Industrial Safety

An overview for industrial workers of state/federal regulations and guidelines which require industrial safety training. Topics include the 29 C.F.R. 1910, 1926 and National Fire Protection Association (NFPA) 70E standards such as confined space entry, emergency action, lock out/tag out, arc flash, and other work related subjects. 48 lecture hours.

Upon completion, students will be able to:

- Describe the basic components of safety, health, and environmental systems as defined by the Occupational Safety and Health Administration
- Describe Hazardous Waste Operator (HAZWOPER) standards
- Locate Material Safety Data Sheets (MSDS) and interpret the data
- Select and don Personal Protective Equipment (PPE)
- Perform lock out/tag out procedures
- Complete a confined space and hot work permit
- Select and employ fall protection equipment
- Fill out a Job Hazard Analysis (JHA)

Grade Basis: L

Credit hours: 3.0

ENGL 0300 - FUNDAMENTALS OF ENGLISH I

In this course, students will learn to write clear, well-developed paragraphs. Students will also learn to identify and correct major sentence errors, including fragments, comma splices, and run-ons. Other topics include subject-verb agreement, pronoun usage, and basic punctuation. This course does not count toward graduation at NCTC. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

ENGL 0305 - FUNDAMENTALS OF ENGLISH II

In this course, students will learn to compose unified, well-developed essays with an introduction, a body, and a conclusion. The thesis statement and topic sentences will be emphasized. Students will also review and practice the basic grammar skills taught in ENGL 0300 and then move to more advanced topics, including modifiers and parallelism. This course does not count toward graduation at NCTC. 48 Lecture hours

Grade Basis: L

Credit hours: 3.0

ENGL 1301 - COMPOSITION I

Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus on writing the academic essay as a vehicle for learning, communicating, and critical analysis. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 1302 - COMPOSITION II

Intensive study of and practice in the strategies and techniques for developing research-based expository and persuasive texts. Emphasis on effective and ethical rhetorical inquiry, including primary and secondary research methods; critical reading of verbal, visual, and multimedia texts; systematic evaluation, synthesis, and documentation of information sources; and critical thinking about evidence and conclusions. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 2307 - CREATIVE WRITING

Practical experience in the techniques of imaginative writing. May include fiction, nonfiction, poetry, screenwriting, or drama. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

ENGL 2311 - TECHNICAL & BUSINESS WRITING

Intensive study of and practice in professional settings. Focus on the types of documents necessary to make decisions and take action on the job, such as

proposals, reports, instructions, policies and procedures, e-mail messages, letters, and descriptions of products and services. Practice individual and collaborative processes involved in the creation of ethical and efficient documents. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 2322 - BRITISH LITERATURE I

A survey of the development of British literature from the Anglo-Saxon period to the Eighteenth Century. Students will study works of prose, poetry, drama, and fiction in relation to their historical, linguistic, and cultural contexts. Texts will be selected from a diverse group of authors and traditions. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 2323 - BRITISH LITERATURE II

A survey of the development British literature from the Romantic period to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 2327 - AMERICAN LITERATURE I

A survey of American literature from the period of exploration and settlement through the Civil War. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 2328 - AMERICAN LITERATURE II

A survey of American literature from the Civil War to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they

reflect and reveal about the evolving American experience and character. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 2332 - WORLD LITERATURE I

A study of world literature from the ancient world through the sixteenth century. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ENGL 2333 - WORLD LITERATURE II

A survey of world literature from the seventeenth century to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

AGEQ 1300 - English Equitation I

Course in basic equitation skills, including handling, saddling, bridling, mounting, riding, grooming, safety, and basic health care. Topics will include correct riding position, leg strengthening exercises, and balance exercises. 32 lecture + 32 laboratory hours.

Upon completion, students will be able to:

- Identify and employ basic handling and riding safety practices
- Identify and care for equipment and tack
- Demonstrate proper leg, seat, and hand positions as they relate to riding techniques

Grade Basis: L

Credit hours: 3.0

AGEQ 2359 - English Equitation II

Advanced equitation skills in English equitation. Topics will include suppling exercises for the horse and rider, ground pole exercises to gain Strength and stability, in addition to exercises in stride length and rhythm. 32 lecture hours + 32 Laboratory hours.

Upon completion, students will be able to:

- Demonstrate a balanced seat and posture in all natural gaits
- Maintain correct leads
- Develop and utilize proper cues

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1300](#) - English Equitation I
-

ENGL XXXX - COMMUNICATIONS CORE

Grade Basis: L

Credit hours: 3.0

AGCR 2405 - Entomology

Study of the morphology, physiology, and classification of the common insect orders and related arthropods with emphasis on species of economic or biological importance. Emphasis on integrated pest management concepts and proper use of pesticides. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe basic insect morphology and physiology
- Classify insects to the order level
- Identify common insect and arthropod pest and beneficial species
- Interpret pesticide labels and state and federal laws
- Explain pesticide application procedures
- Apply integrated pest management techniques to specific pest situations

Grade Basis: L

Credit hours: 4.0

BIOL 2406 - Environmental Biology

Principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research. 48 lecture hours + 32 laboratory hours. This laboratory-based course accompanies Biology 2306, Environmental Biology. Laboratory activities will reinforce principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic

relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research.

Grade Basis: L

Credit hours: 4.0

HART 1256 - EPA Recovery Certification

Certification training for HVAC refrigerant recovery, recycle, and reclaim. Instruction will provide a review of EPA guidelines for refrigerant recovery and recycling during the installation, service, and repair of all HVAC and refrigeration systems. 32 lecture hours.

Upon completion, students will be able to:

- Define refrigerant recovery, recycle, and reclaim terms
- Explain refrigerant recovery, recycle, and reclaim procedures
- Analyze refrigerant recovery, recycle, and reclaim operations
- Identify Type I, Type II, and Type III appliances
- Examine and utilize Section 608 of the Clean Air Act of 1990 Refrigerant, Recovery, Recycle, and Reclaim

Grade Basis: L

Credit hours: 2.0

HART 1256 - EQUESTRIAN II REQUIREMENT

Grade Basis: L

Credit hours: 3.0

HART 1256 - EQUESTRIAN I REQUIREMENT

Grade Basis: L

Credit hours: 3.0

AGEQ 1401 - Equine Behavior and Training I

Instruction in basic equine behavior and training methods will be discussed. Topics will include safety, behavior, health care and management, and training methods. Students will use a systematic approach to training a weanling horse while learning proper safety and training techniques used in the industry. 16 lecture hours + 144 laboratory hours.

Upon completion, students will be able to:

- Recognize behavioral patterns as they relate to training methods and desired results
- Implement appropriate training strategies

- Evaluate progress and adapt training method(s) accordingly

Grade Basis: L

Credit hours: 4.0

AGEQ 2401 - Equine Behavior and Training II

A study of advanced concepts in equine behavioral patterns that is relevant to specific performance training strategies. Emphasis will be given to safety, and different training methods involved with working a young horse. Students will use a systematic approach to training a two-year old horse from the ground to working specified maneuvers and patterns. 16 lecture hours + 144 laboratory hours.

Upon completion, students will be able to:

- Identify appropriate equine training methods for specific results
- Identify equine behavioral patterns
- Implement appropriate equine training procedures for desired results

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [AGEQ 1300](#) - English Equitation I
 - [AGEQ 1319](#) - Horsemanship I
-

AGEQ 2310 - Equine Business Management

Instruction in the management of the equine business will be discussed. Topics will include record keeping, insurance and liability, promotion and sales, as well as employer relationships. Lectures will be supplemented with industry speakers and students will complete an in-depth business plan of their choice. 48 lecture hours. Prerequisite: AGEQ 1305 or approval by instructor.

Upon completion, students will be able to:

- Initiate equine business records
- Explain insurance and liability needs
- Outline and demonstrate the proper procedures for show management
- Summarize equine marketing
- Identify the socioeconomic factors involved in the equine industry

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1305](#) - Equine Enterprise Management

AGEQ 2310 - EQUINE ELECTIVE

Grade Basis: L

Credit hours: 3.0

AGEQ 1305 - Equine Enterprise Management

Course is designed as a business survey of the equine industry as a whole. Topics will include all areas involved directly and indirectly with the equine industry and the applied management techniques that are involved with these areas. Lecture will be supplemented with guest speakers and field trips to area farms and businesses. 16 lecture hours and 32 laboratory hours.

Upon completion, students will be able to:

- Define the various equine industry segments and explain their economic significance
- Identify employment opportunities in the equine industry

Grade Basis: L

Credit hours: 2.0

AGEQ 1350 - Equine Reproduction

Reproductive anatomy, physiological functions, and common management practices related to equine reproductive facilities. Lecture portion of this course is conducted in the first 6 weeks of the semester with emphasis on anatomy and physiology of the mare and stallion as it relates to management for maximum reproductive efficiency. Basic principles of artificial insemination, embryonic development, parturition, and care of the pregnant mare and newborn will be discussed. Semen collection, evaluation, and shipping will also be discussed. The lab portion is the remainder of the semester, and consists of students working on well-respected breeding farms in the area. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Identify equine reproductive organs and functions
- Relate endocrinology to the reproductive process
- Implement managerial practices designed to improve reproductive efficiency

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGAH 1443](#) - Animal Health
- [AGEQ 2311](#) - Equine Science II (Advanced Horse Production and Management)

AGEQ 1411 - Equine Science I (Horse Production and Management)

Provides the student with an introduction to the horse industry. Topics will include history, breeds, selection, identification, anatomy (health,) and basic management techniques and theories related to horses and horse facilities. Laboratory exercises will supplement lecture presentations. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Explain the historical significance of the horse to society
- Identify horse breeds
- Identify basic anatomy and physiological functions
- Outline managerial practices relevant to the horse industry

Grade Basis: L

Credit hours: 4.0

AGEQ 2311 - Equine Science II (Advanced Horse Production and Management)

Course will present advanced concepts in horse production and management. Topics include advanced anatomy, physiology and nutrition of the horse as it relates to exercise and fitness. Discussion will focus on techniques and theories related to management of the horse for athletic events. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify and assess needs in the production and management of horses
- Employ critical thinking skills in management decisions
- Implement management practices

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1411](#) - Equine Science I (Horse Production and Management)

Restrictions:

- prerequisite or approval by instructor
-

VNSG 1227 - Essentials of Medication Administration

General principles of medication administration including determination of dosage, preparation, safe administration, and documentation of multiple forms of drugs. Instruction includes various systems of measurement. 32 lecture hours.

Grade Basis: L
Credit hours: 2.0

CJSA 1348 - Ethics in Criminal Justice

Ethical philosophies and issues pertaining to the various professions in the criminal justice system. Includes ethical issues emanating from constitutional conflict with public protection and individual rights, civil liberties, and correctional policies. 48 lecture hours.

Upon completion, students will be able to:

- Explain the foundation of ethics
- Compare and contrast theories of ethics with personal and professional practices
- Interpret and apply ethical considerations in policing, the courts, and corrections

Grade Basis: L
Credit hours: 3.0

TECA 1303 - Family, School, and Community

A study of the child, family, community, and schools, including parent education and involvement, family and community lifestyles, child abuse, and current family life issues. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Association for the Education of Young Children position statement related to developmentally appropriate practices for children from birth through age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. The course includes a minimum of 16 hours of field experiences.

Grade Basis: L
Credit hours: 3.0

AGME 1449 - Farm and Ranch Equipment

Planning and application of farm and ranch maintenance equipment. Includes basic repair and adjustment to tractors and other agricultural equipment and design and use of maintenance records. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Summarize maintenance of farm and ranch equipment
- Demonstrate repair and adjustment of equipment

Grade Basis: L
Credit hours: 4.0

AGAH X3XX - FARM AND RANCH MANAGEMENT ELECTIVE

Grade Basis: L

Credit hours: 3.0

AGME 1415 - Farm and Ranch Shop Skills I

Study and application of shop skills used in agricultural processes including arc welding, oxyacetylene cutting and welding, drawing and planning projects, tool maintenance, metal working, woodworking, plumbing, and concrete. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate oxyacetylene cutting procedures
- Demonstrate arc welding
- Identify shop tools
- Utilize shop plans
- Describe construction processes

Grade Basis: L

Credit hours: 4.0

GOVT 2305 - Federal Government (Federal Constitution & Topics)

Origin and development of the U.S. Constitution, structure and powers of the national government including the legislative, executive, and judicial branches, federalism, political participation, the national election process, public policy, civil liberties and civil rights. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

DFTG 2338 - Final Project - Advanced Drafting

A drafting course in which students participate in a comprehensive project from conception to conclusion. 32 lecture hours + 32 laboratory hours. This course is the program capstone course and should be taken the last semester of the program.

Upon completion, students will be able to:

- Conceptualize, design and present a complete project in a prescribed discipline
- Integrate problem solving and related technologies to identify solutions
- Use discipline specific industry standards, and produce documentation

Grade Basis: L

Credit hours: 3.0

FIRT 1333 - Fire Chemistry

Chemical nature and properties of compounds as related to the fire service. Fundamental laws of chemistry, states of matter, gas laws, chemical bonding, and thermodynamics.

Grade Basis: L

Credit hours: 3.0

FIRS 1301 - Firefighter Certification I

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, III, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION (TCFP)***

Grade Basis: L

Credit hours: 3.0

FIRS 1407 - Firefighter Certification II

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, III, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION (TCFP)***

Grade Basis: L

Credit hours: 4.0

FIRS 1313 - Firefighter Certification III

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION (TCFP)***

Grade Basis: L

Credit hours: 3.0

FIRS 1319 - Firefighter Certification IV

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION (TCFP)***

Grade Basis: L

Credit hours: 3.0

FIRS 1323 - Firefighter Certification V

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION (TCFP)***

Grade Basis: L

Credit hours: 3.0

FIRS 1329 - Firefighter Certification VI

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION (TCFP)***

Grade Basis: L

Credit hours: 3.0

FIRS 1333 - Firefighter Certification VII

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, III, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION (TCFP)***

Grade Basis: L

Credit hours: 3.0

FIRT 1319 - Firefighter Health and Safety

Firefighter occupational safety and health in emergency and non-emergency situations.

Grade Basis: L

Credit hours: 3.0

FIRT 1307 - Fire Prevention Codes and Inspections

Examination of building codes and requirements, construction types, and building materials. Includes walls, floorings, foundations, and various roof types and the associated dangers of each. This course meets Fire and Emergency Services Higher Education(FESHE) Model Curriculum core requirements.

Grade Basis: L

Credit hours: 3.0

ITSY 2301 - Firewall and Network Security

Identify elements of firewall design, types of security threats and responses to security attacks. Use Best Practices to design, implement, and monitor a network security plan. Examine security incident postmortem reporting and ongoing network security activities. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate system security skills through firewall implementation and testing
- Use system tools, practices, and relevant technologies to implement a security plan
- Evaluate practices, tools, and technologies to identify security breaches, sources of attacks, and protect mission critical systems
- Establish an appropriate level of security based on an analysis of security logs
- Use relevant tools to secure a network, respond to and follow up on various types of attacks

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 1342](#) - Information Technology Security
-

FIRS 1103 - FIREFIGHTER AGILITY & FITNESS PREPARATION

Physical ability testing methods. Rigorous training in skills and techniques needed in typical fire department physical ability tests.

Grade Basis: L

Credit hours: 1.0

FIRS 1301 - FIREFIGHTER CERTIFICATION I

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification III, IV, V, and VI to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. This course may be offered only by institutions certified as a training facility by the Texas Commission on Fire Protection (TCFP).

Grade Basis: L

Credit hours: 3.0

FIRS 1313 - FIREFIGHTER CERTIFICATION III

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, IV, V, and VI to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. This course may be offered only by institutions certified as a training facility by the Texas Commission on Fire Protection (TCFP).

Grade Basis: L

Credit hours: 3.0

FIRS 1319 - FIREFIGHTER CERTIFICATION IV

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. This course may be offered only by institutions certified as a training facility by the Texas Commission on Fire Protection (TCFP).

Grade Basis: L

Credit hours: 3.0

FIRS 1323 - FIREFIGHTER CERTIFICATION V

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. This course may be offered only by institutions certified as a training facility by the Texas Commission on Fire Protection (TCFP).

Grade Basis: L

Credit hours: 3.0

FIRS 1329 - FIREFIGHTER CERTIFICATION VI

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, III, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. This course may be offered only by institutions certified as a training facility by the Texas Commission on Fire Protection (TCFP).

Grade Basis: L

Credit hours: 3.0

FIRS 1333 - FIREFIGHTER CERTIFICATION VII

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, III, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. This course may be offered only by institutions certified as a training facility by the Texas Commission on Fire Protection (TCFP).

Grade Basis: L

Credit hours: 3.0

FIRS 1407 - FIREFIGHTER CERTIFICATION II

One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, III, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. This course may be offered only by institutions certified as a training facility by the Texas Commission on Fire Protection (TCFP).

Grade Basis: L

Credit hours: 4.0

FIRT 1301 - FUNDAMENTALS OF FIRE PROTECTION

Orientation to the fire service, career opportunities, and related fields.

Grade Basis: L

Credit hours: 3.0

FIRT 1307 - FIRE PREVENTION CODES & INSPECTIONS

Examination of building codes and requirements, construction types, and building materials. Includes walls, floorings, foundations, and various roof types and the associated dangers of each. This course meets Fire and Emergency Services Higher Education (FESHE) Model Curriculum core requirements.

Grade Basis: L
Credit hours: 3.0

FIRT 1309 - FIRE ADMINISTRATION I

Introduction to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis on fire service leadership from the perspective of the company officer.

Grade Basis: L
Credit hours: 3.0

FIRT 1315 - HAZARDOUS MATERIAL I

The chemical characteristics and behavior of various materials. Storage, transportation, handling hazardous emergency situations, and the most effective methods of hazard mitigation.

Grade Basis: L
Credit hours: 3.0

FIRT 1319 - FIREFIGHTER HEALTH & SAFETY

Course Description: Firefighter occupational safety and health in emergency and non-emergency situations. This course meets Fire and Emergency Services Higher Education (FESHE) Model Curriculum core requirements.

Grade Basis: L
Credit hours: 3.0

FIRT 1329 - BUILDING CODES & CONSTRUCTION

Local building and fire prevention codes. Fire prevention inspections, practices, and procedures. This course meets Fire and Emergency Services Higher Education (FESHE) Model Curriculum core requirements.

Grade Basis: L
Credit hours: 3.0

FIRT 1333 - FIRE CHEMISTRY

Chemical nature and properties of compounds as related to the fire service. Fundamental laws of chemistry, states of matter, gas laws, chemical bonding, and thermodynamics. This course meets Fire and Emergency Services Higher Education (FESHE) Model Curriculum core requirements.

Grade Basis: L
Credit hours: 3.0

FIRT 1338 - FIRE PROTECTION SYSTEMS

Design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. This course meets Fire and Emergency Services Higher Education (FESHE) Model Curriculum core requirements.

Grade Basis: L
Credit hours: 3.0

FIRT 2188 - INTERNSHIP-FIRE PROTECTION & SAFETY TECHNOLOGY

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the College and the employer. This may be a paid or unpaid experience.

Grade Basis: L

FIRT 2309 - FIREFIGHTING STRATEGIES & TACTICS

Analysis of the nature of fire problems and selection of initial strategies and tactics including an in-depth study of efficient and effective use of staffing and equipment to mitigate the emergency.

Grade Basis: L
Credit hours: 3.0

FMKT 1301 - Floral Design

Principles and elements of floral art with an emphasis on commercial design. Topics include basic design styles and color harmonies; identification, use, and care of processing of cut flowers and foliages; mechanical aids and containers; personal flowers; holiday designs; and plant identification and care. History of floral art in society. Required \$100 lab fee. 32 lecture hours + 32 laboratory hours.

Grade Basis: L
Credit hours: 3.0

FMKT 1301 - FLORAL DESIGN

Principles and elements of floral art with an emphasis on commercial design. Topics include basic design styles and color harmonies, identification, use, and care of processing of cut flowers and foliage, mechanical aids and containers, personal flowers, holiday designs, and plant identification and care. History of floral art in society. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Apply principles and elements of design
- Identify floral design styles
- Identify cut flowers and foliage
- Explain the care and processing methods for extended vase life
- Select containers and mechanical aids
- Create basic floral arrangements

Grade Basis: L

Credit hours: 3.0

FMKT 2331 - ADVANCED FLORAL DESIGN

An in-depth coverage of advanced floral design practices for the retail floral industry. Topics include contemporary floral arrangement styles and trends. Advanced study of floral design as an art form in contrast to a commercial florist operation; interpretive expression of design principles and color stressed along with international design styles. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Create contemporary floral designs
- Identify specialty flowers and foliage used in retail flower shops
- Determine care and processing techniques
- Select mechanical aids
- Calculate price by various methods

Grade Basis: L

Credit hours: 3.0

HALT 2307 - Food Crops

A study of commercial and home cultivated food crops including various vegetables, fruits, and nuts. Topics address planting, maintenance, harvest, and storage of the various crops. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate the ability to plan, design, and plant a vegetable garden or small fruit orchard and properly cultivate, fertilize, water, and harvest the garden or orchard
- Discuss various types of gardens and their applications in both commercial and residential settings

Grade Basis: L

Credit hours: 3.0

AGCR 1441 - Forage and Pasture Management

Study of the production and management of forage crops and pastures including establishment, fertilization, weed control, grazing systems, hay, seed production, and harvesting. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Develop techniques and management practices to optimize pasture and forage production
- Determine forage nutritive quality in relation to livestock production
- Identify forage and pasture plants and weed species

Grade Basis: L

Credit hours: 4.0

FREN 1411 - BEGINNING FRENCH I

Emphasis on the development of elementary listening, speaking, reading, and writing skills applied to present situations and events relevant to students' lives and to the understanding of French-speaking communities. 48 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

FREN 1412 - BEGINNING FRENCH II

Continuation of FREN 1411 with emphasis on elementary listening, speaking, reading and writing skills. Includes basic vocabulary, grammatical structures, and culture. 48 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

FREN 2311 - INTERMEDIATE FRENCH I

Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

FREN 2312 - INTERMEDIATE FRENCH II

Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

ENGL 0300 - Fundamentals of English I

In this course, students will learn to write clear, well-developed paragraphs. Students will also learn to identify and correct major sentence errors including fragments, comma splices, and run-ons. Other topics include subject-verb agreement, pronoun usage, and basic punctuation. This course does not count toward graduation at NCTC. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Restrictions:

- EDUC 1300 or PSYC 1300 must be completed at passing of ENGL0300
-

MCHN 2303 - Fundamentals of Computer Numerical (CNC) Controlled Machine Controls

Programming and operation of Computer Numerical Controlled (CNC) machine shop equipment. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Demonstrate operations of CNC machine controls
- Compare and contrast the differences between conventional and CNC machines
- Utilize CNC machine applications for machining operations

Grade Basis: L

Credit hours: 3.0

CSME 1405 - Fundamentals of Cosmetology

A course in the basic fundamentals of cosmetology. Topics include service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, and comb out. 32 lecture hours + 128 laboratory hours. Identify fundamental concepts related to skills required by the Texas Department of Licensing and Regulation (TDLR) Demonstrate basic required skills by TDLR standards

Grade Basis: L

Credit hours: 4.0

CRIJ 1310 - Fundamentals of Criminal Law

This course is the study of criminal law including application of definitions, statutory elements, defenses, and penalties using Texas statutes, the Model Penal Code, and case law. The course also analyzes the philosophical and historical development of criminal law and criminal culpability. 48 lecture hours.

Upon completion, students will be able to:

- Identify the elements of crimes and defenses under Texas statutes, Model Penal Code, and case law
- Classify offenses and articulate penalties for various crimes
- Compare culpable mental states when assigning criminal responsibility
- Assess the impact of history and philosophy on current criminal laws
- Evaluate the application of criminal law to other areas of criminal justice such as law enforcement and corrections

Grade Basis: L

Credit hours: 3.0

ELPT 1319 - Fundamentals of Electricity I

An introduction to basic direct current (DC) theory including electron theory and direct current applications. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Explain atomic structure and basic electrical values such as voltage, current, resistance, and power
- Calculate electrical values for series, parallel, and combination circuits
- Calculate voltage drop based on conductor length, type of material, and size
- Summarize the principles of magnetism
- Utilize electrical measuring instruments

Grade Basis: L

Credit hours: 3.0

ENGL 0305 - Fundamentals of English II

In this course, students will learn to compose unified, well-developed essays with an introduction, a body, and a conclusion. The thesis statement and topic sentences will be emphasized. Students will also review and practice the basic grammar skills taught in ENGL 0300 and then move to more advanced topics, including modifiers and parallelism. This course does not count toward graduation at NCTC. 48 Lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ENGL 0300](#) - Fundamentals of English I
-

FIRT 1301 - Fundamentals of Fire Protection

Orientation to the fire service, career opportunities, and related fields.

Grade Basis: L

Credit hours: 3.0

MATH 1350 - Fundamentals of Mathematics I

Concepts of sets, functions, numeration systems, number theory, and properties of the natural numbers, integers, rational, and real number systems with an emphasis on problem solving and critical thinking. (NOTE: This course is for education/teaching majors only and is a required part of the approved field of study curriculum for EC-6 and EC-12 Special Education teacher certification) 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 1314](#) - College Algebra
-

MATH 1351 - Fundamentals of Mathematics II

Concepts of geometry, probability, and statistics, as well as applications of the algebraic properties of real numbers to concepts of measurement with an emphasis on problem solving and critical thinking. (NOTE: This course is for education/teaching majors only and is a required part of the approved field of study curriculum for EC-6 and EC-12 Special Education teacher certification.) 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 1314](#) - College Algebra
 - [MATH 1350](#) - Fundamentals of Mathematics I
-

MUSI 1301 - Fundamentals of Music I

Introduction to the basic elements of music theory for non-music majors: scales, intervals, keys, triads, elementary ear training, keyboard harmony, notation, meter, and rhythm. (Does not apply to a music major degree). 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

SRGT 1509 - Fundamentals of Perioperative Concepts and Techniques

In-depth coverage of perioperative concepts such as aseptic principles and practices, infectious processes, wound healing, and creation and maintenance of the sterile field. 64 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 5.0

RBPT 1300 - Fundamentals of Residential Building Science

A study of the house as a complex interrelated system of people, building technologies, and the environment. Emphasizes residential building techniques and how they affect the needs for energy, water, and materials while providing a safe, healthy, and comfortable home. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Discuss the whole house approach to home construction using basic strategies to build energy-efficient, safe, and healthy homes with a variety of materials
- Explain the movement in different climates of heat, moisture, and air through the building enclosure
- Identify methods homeowners and building professionals use to contribute to the construction of resource-efficient, safe, healthy, and comfortable homes while minimizing the impact on the environment

Grade Basis: L

Credit hours: 3.0

AGEQ 1322 - Fundamentals of Riding Instruction

Students will develop basic skills needed to become an effective riding instructor. Through classroom and arena exercises students will gain skills in organization,

development of lesson plans, and a variety of teaching techniques. Students will be working with first year students. Course requires approval of instructor. 48 lecture hours.

Upon completion, students will be able to:

- Develop teaching techniques in riding instruction
- Implement safe practices
- Evaluate risk management factors
- Demonstrate effective communication skills

Grade Basis: L

Credit hours: 3.0

GAME 1303 - INTRODUCTION TO GAME DESIGN & DEVELOPMENT

Introduction to electronic game development and game development careers. Includes examination of history and philosophy of games, the game production process, employee factors for success in the field, and current issues and practices in the game development industry. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe the history and evolution of video and computer games and game genres
- Identify the phases and processes involved in developing a computer game
- Design a simple computer game from initial concept to final design document
- Describe current trends in the game industry with regards to hiring practices, working conditions, etc

Grade Basis: L

Credit hours: 3.0

GAME 1306 - DESIGN AND CREATION OF GAMES

Introduction to game and simulation development. Includes analysis of existing applications and creation of a game using an existing game engine. In-depth coverage of the essential elements of game design. Also covers an overview of cultural history of electronic games, survey of the major innovators, and examination of the trends and taboos that motivate game design. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Summarize the evolution of the electronic game industry
- Explain essential game and simulation elements
- Evaluate the strengths and limitations of game and simulation systems
- Identify programmatic and graphical elements of a development system
- Develop a concept document and simple game

Grade Basis: L

Credit hours: 3.0

GAME 1309 - INTRODUCTION TO ANIMATION PROGRAMMING

Mathematical elements and algorithms involved in basic animation. Includes generating graphics, viewing 3D environments such as visible line detection and 3D surfaces, image processing techniques, and special effects. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Develop programs that apply the basic character animation techniques, build and pose animated characters, and implement proper timing within animations

Grade Basis: L

Credit hours: 3.0

GAME 1328 - VIDEO GAME DESIGN

Characters, environments, architecture, static objects, user interface, and storyboards for games. Emphasizes applying 2D design concepts. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Solve design problems
- Demonstrate refinement and enhancement of preliminary design concepts
- Demonstrate techniques for communicating complex design criteria and inspiration to artists and non-artists

Grade Basis: L

Credit hours: 3.0

GAME 1343 - GAME AND SIMULATION PROGRAMMING I

Game and simulation programming. Includes advanced pointer manipulation techniques and pointer applications, points and vectors, sound, and graphics. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Perform game and simulation programming
- Use advanced pointer manipulation techniques and pointer applications, points and vectors, sound, and graphics

Grade Basis: L

Credit hours: 3.0

GAME 2308 - PORTFOLIO FOR GAME DEVELOPMENT

Design and management of an industry standard portfolio. Includes techniques in self-promotion, resume writing, portfolio distribution systems, and interviewing.

Upon completion, students will be able to:

- Design a professional portfolio for various delivery systems
- Create resume, business card, web page, demo reel, and hardcopy

Grade Basis: L

Credit hours: 3.0

Restrictions:

- Department Chair approval required unless student is in last semester of their Application Development degree
-

GAME 2342 - GAME DEVELOPMENT USING C++

Skill development in C++ programming for games and simulations. Examines real-work C++ development issues. 32 lecture hours + 32 lab hours

Upon completion, students will be able to:

- Utilize standard game libraries
- Examine interfaces, exceptions, file access, and random numbers
- Create basic game or simulation frameworks building upon C++ knowledge

Grade Basis: L

Credit hours: 3.0

GAME 1343 - Game and Simulation Programming I

Game and simulation programming. Includes advanced pointer manipulation techniques and pointer applications, points and vectors, sound, and graphics. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Game and simulation programming
- Use advanced pointer manipulation techniques and pointer applications, points and vectors, sound, and graphics

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2321](#) - Object Oriented Programming

GAME 2342 - Game Development Using C++

Skill development in C++ programming for games and simulations. Examines real-work C++ development issues. 32 lecture hours + 32 lab hours.

Grade Basis: L

Credit hours: 3.0

ANTH 2346 - General Anthropology

The study of human beings, their antecedents and related primates, and their cultural behaviors and institutions. Introduces the major sub-fields of physical and cultural anthropology, archaeology, and linguistics, their applications, and ethics in the discipline. Meets NCTC Core Curriculum Requirements

Upon completion, students will be able to:

- Describe the key concepts and methods of anthropology
- Compare and contrast the sub-fields of anthropology, including but not limited to physical anthropology, cultural anthropology, and archaeology
- Demonstrate an understanding of anthropological approaches to human diversity

Grade Basis: L

Credit hours: 3.0

BIOL 1411 - General Botany

Fundamental biological concepts relevant to plant physiology, life cycle, growth and development, structure and function, and cellular and molecular metabolism. The role of plants in the environment, evolution, and phylogeny of major plant groups, algae, and fungi. This course is intended for science majors. This laboratory-based course accompanies Biology 1311, General Botany. Laboratory activities will reinforce fundamental biological concepts relevant to plant physiology, life cycle, growth and development, structure and function, and cellular and molecular metabolism. The role of plants in the environment, evolution, and phylogeny of major plant groups, algae, and fungi.

Grade Basis: L

Credit hours: 4.0

CHEM 1411 - General Chemistry I

Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering. Topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases,

and an introduction to thermodynamics and descriptive chemistry. 48 lecture hours + 48 laboratory hours. Basic laboratory experiments supporting theoretical principles presented in CHEM 1311; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 1314](#) - College Algebra
-

CHEM 1412 - General Chemistry II

Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry. A continuation of CHEM1411.

Basic laboratory experiments supporting theoretical principles presented in CHEM 1312; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [CHEM 1411](#) - General Chemistry I
-

PSYC 2301 - General Psychology

General Psychology is a survey of the major psychological topics, theories, and approaches to the scientific study of behavior and mental processes. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

BIOL 1413 - General Zoology

Fundamental biological concepts relevant to animals, including systemics, evolution, structure, and function, cellular and molecular metabolism, reproduction, development, diversity, phylogeny, and ecology (This course is intended for science majors.). This laboratory-based course accompanies Biology 1313, General Zoology. Laboratory activities will reinforce fundamental biological concepts relevant to animals, including systematics, evolution, structure and function, cellular and molecular metabolism, reproduction, development, diversity, phylogeny, and ecology.

Grade Basis: L

Credit hours: 4.0

PHED 1110 - Golf I

This course is designed to introduce the student to basic golf skills, etiquette, safety procedures, and swing.

Grade Basis: L

Credit hours: 1.0

PHED 1111 - Golf II

This course is designed to introduce the student to basic golf skills, etiquette, safety procedures, and swing.

Grade Basis: L

Credit hours: 1.0

GOVT 2305 - FEDERAL GOVERNMENT - FEDERAL CONSTITUTION & TOPICS

Origin and development of the U.S. Constitution, structure and powers of the national government including the legislative, executive, and judicial branches, federalism, political participation, the national election process, public policy, civil liberties and civil rights. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

GOVT 2306 - TEXAS GOVERNMENT - TEXAS CONSTITUTION & TOPICS

Origin and development of the Texas constitution, structure and powers of state and local government, federalism and inter-governmental relations, political participation, the election process, public policy, and the political culture of Texas. 48 lecture hours Meets Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

GOVT XXXX - GOVERNMENT CORE

Grade Basis: L

Credit hours: 3.0

HALT 2302 - Greenhouse Crop Production

In-depth coverage of the production of crops within the controlled environment of the greenhouse. Topics include growing techniques, environmental control, crop rotation, scheduling, preparation for sale, and marketing. Hands-on greenhouse production of bulbs, cut flowers, foliage, and flowering potted plants, bedding plants, and/or perennials. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Produce crops within a greenhouse
- Explain various cultural requirements for greenhouse crops
- Implement marketing and sales
- Modify crop growth and development

Grade Basis: L

Credit hours: 3.0

HALT 2308 - Greenhouse Management

Fundamentals of greenhouse construction and operation. Topics include architectural styles, construction materials, environmental systems and controls, growing media, fertilizers, post-harvest handling, marketing, and business management. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Compare and select architectural styles and materials for greenhouse construction
- Calculate heating, cooling, and light requirements and select appropriate equipment
- Determine cultural and business methods necessary for crop production

Grade Basis: L

Credit hours: 3.0

MUEN 1135 - Guitar Ensemble

May be repeated for credit. Study and performance of a wide range of guitar repertoire from the Renaissance through the Twentieth Century. Open to all students (audition required). 48 lecture hours.

Grade Basis: L

Credit hours: 1.0

HALT 1303 - HERBACEOUS PLANTS

A study of herbaceous plant material. Topics include practices and procedures used in the identification, growth, propagation, maintenance, and utilization of herbaceous plants in the horticulture industry. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify herbaceous plants at various growth stages
- Explain methods used to propagate herbaceous plants
- Describe the cultural requirements for care and use of herbaceous plants

Grade Basis: L

Credit hours: 3.0

HALT 1309 - INTERIOR PLANTS

Instruction in the identification and classification of the plants used in home and commercial interior landscapes. Topics include design characteristics for interiorscapes and environmental requirements of the plants. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify interior plants
- Select care methods for specific plants
- Identify production methods of interior plants

Grade Basis: L

Credit hours: 3.0

HALT 1325 - LANDSCAPE PLANT MATERIAL

Study of the identification, characteristics, cultural requirements, and landscape uses of native and adapted plants. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify plants
- Select plants for various landscape situations
- List characteristics of plants
- Describe cultural requirements of plants

Grade Basis: L

Credit hours: 3.0

HALT 1331 - WOODY PLANTS

Study of woody plant materials used in the horticulture industry. Topics include identification, characteristics, adaptation, cultural requirements, pest and disease problems, and use in the landscape. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify woody plants in various growth stages
- Describe morphological, anatomical, or other botanical features
- Explain cultural requirements of woody plants

Grade Basis: L

Credit hours: 3.0

HALT 1333 - LANDSCAPE IRRIGATION

Coverage of irrigation systems including equipment, design, performance, and maintenance. Topics include residential and small business applications, troubleshooting, repair, and technological advances in irrigation systems. 32 lecture hours + 32 lab hours

Upon completion, students will be able to:

- Describe the basic installation techniques used to install an irrigation system
- Discuss the separation of zones for turf areas, shrubs, ground covers, and other plant groups
- Prepare a design for an irrigation system

Grade Basis: L

Credit hours: 3.0

HALT 1353 - LANDSCAPE COMPUTER DESIGN

A course in computer-aided landscape design. Emphasis on the application of design concepts and techniques using software. Prerequisite: HALT1422 (Landscape Design). 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Design landscape plans using computer software programs
- Print a report of all hardscape and softscape materials used in the design

Grade Basis: L

Credit hours: 3.0

HALT 1372 - NATURALISTIC HORTICULTURE

An organic approach to plant production, pest management, soil fertility, and plant health. Emphasis on sustainability, xeriscaping and landscaping using native plants as well as creating wildlife landscapes. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate and apply sustainable horticulture techniques and principles
- Explain the benefits of biodiversity in the garden
- Identify various Texas hardy plants
- Create living soils by identifying and cultivating microbial activity
- Design wildscapes to attract desired wildlife

Grade Basis: L

Credit hours: 3.0

HALT 1422 - LANDSCAPE DESIGN

A study of the principles and elements of landscape design. Topics include client interview, site analysis, plan view, scale, plant selection, basic drawing and drafting skills, and plan preparation. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate procedures utilized in the development of a landscape plan
- Develop a landscape design
- Perform a site analysis and incorporate the information into the final design

Grade Basis: L

Credit hours: 4.0

HALT 2280 - COOPERATIVE EDUCATION

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 160 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry

- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 2.0

HALT 2302 - GREENHOUSE CROP PRODUCTION

Production of crops within the greenhouse environment. Topics include growing techniques, environmental control, crop rotation, scheduling, preparation for sale, and marketing. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Produce crops within a greenhouse
- Explain various cultural requirements for greenhouse crops
- Implement marketing and sales
- Modify crop growth and development

Grade Basis: L

Credit hours: 3.0

HALT 2307 - FOOD CROPS

A study of commercial and home cultivated food crops including various vegetables, fruits, and nuts. Topics address planting, maintenance, harvest, and storage of the various crops. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate the ability to plan, design, and plant a vegetable garden or small fruit orchard and properly cultivate, fertilize, water, and harvest the garden or orchard
- Discuss various types of gardens and their applications in both commercial and residential settings

Grade Basis: L

Credit hours: 3.0

HALT 2308 - GREENHOUSE MANAGEMENT

Fundamentals of greenhouse construction and operation. Topics include architectural styles, construction materials, environmental systems and controls, growing media, fertilizers, post-harvest handling, marketing, and business management. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Compare and select architectural styles and materials for greenhouse construction
- Calculate heating, cooling, and light requirements and select appropriate equipment
- Determine cultural and business methods necessary for crop production

Grade Basis: L

Credit hours: 3.0

HALT 2321 - SMALL FARMING

Instruction in small farming techniques with emphasis on horticulture science including comprehensive and profitable guidelines. Topics include herbs, fruits, nut, and vegetable crops. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify major physical and biological factors that affect crops
- Utilize innovative production techniques for a small farming operation
- Demonstrate creative marketing techniques for small farming operations
- Design productive and profitable small farming operations

Grade Basis: L

Credit hours: 3.0

HART 1256 - EPA RECOVERY CERTIFICATION

Certification training for HVAC refrigerant recovery, recycle, and reclaim. Instruction will provide a review of EPA guidelines for refrigerant recovery and recycling during the installation, service, and repair of all HVAC and refrigeration systems. 32 lecture hours

Upon completion, students will be able to:

- Define refrigerant recovery, recycle, and reclaim terms
- Explain refrigerant recovery, recycle, and reclaim procedures
- Analyze refrigerant recovery, recycle, and reclaim operations
- Identify Type I, Type II, and Type III appliances
- Examine and utilize Section 608 of the Clean Air Act of 1990 Refrigerant, Recovery, Recycle, and Reclaim

Grade Basis: L

Credit hours: 2.0

HART 1301 - BASIC ELECTRICITY FOR HVAC

Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits, and component theory and operation. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate knowledge of basic principles of electricity, electrical current, circuitry, and air conditioning devices
- Apply Ohm's law to electrical calculations
- Perform electrical continuity, voltage, and current tests with appropriate meters
- Demonstrate electrical safety

Grade Basis: L

Credit hours: 3.0

HART 1307 - REFRIGERATION PRINCIPLES

An introduction to the refrigeration cycle, heat transfer theory, temperature/pressure relationship, refrigerant handling, refrigeration components, and safety. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify refrigeration components
- Explain operation of the basic refrigeration cycle and heat transfer
- Demonstrate proper application and/or use of tools, test equipment, and safety procedures

Grade Basis: L

Credit hours: 3.0

HART 1341 - RESIDENTIAL AIR CONDITIONING

A study of components, applications, and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair, and charging of air conditioning systems. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify various types of system applications
- Perform charging, recovery, and evacuation procedures of an installed system
- Perform component and part diagnostics and replacement
- Perform system maintenance

Grade Basis: L

Credit hours: 3.0

HART 2301 - AIR CONDITIONING & REFRIGERATION CODES

HVAC standards and concepts with emphasis on the understanding, and documentation of the codes and regulations required for the state mechanical contractors license and local codes. 48 lecture hours

Upon completion, students will be able to:

- Demonstrate the ability to locate and identify information in code books and reference materials applicable to installation procedures governed by Texas Department of Licensing and Regulation (TDLR)

Grade Basis: L

Credit hours: 3.0

HART 2342 - COMMERCIAL REFRIGERATION

Theory and practical application in the maintenance of commercial refrigeration; medium, and low temperature applications and ice machines. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Explain and apply medium and low temperature systems operation
- Explain and apply ice machine and packaged refrigeration system operation
- Explain application and conversion procedures of refrigerants related to specific systems

Grade Basis: L

Credit hours: 3.0

HART 2358 - TESTING, ADJUSTING & BALANCING HVAC SYSTEMS

A study in the process of checking and adjusting all the building environmental systems to produce the design objectives. Emphasis on efficiency and energy savings. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Interpret HVAC design specifications and plans
- Measure air flow, water flow, and system pressure with instruments
- Perform calculations for fan and pump laws including psychometric
- Adjust and align mechanical equipment
- Diagnose malfunctioning equipment and create a punch list
- Test air quality, humidity, noise, and temperature

Grade Basis: L

Credit hours: 3.0

HART 2380 - COOPERATIVE EDUCATION

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines learning with work experience. Includes lecture component. 16 lecture hours + 224 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

HART 2445 - RESIDENTIAL AIR CONDITIONING SYSTEMS DESIGN

Study of the properties of air and results of cooling, heating, humidifying or dehumidifying; heat gain and heat loss calculations including equipment selection and balancing the air system. 32 lecture hours + 64 lecture hours

Upon completion, students will be able to:

- Calculate heat loss and heat gain
- Size heating and cooling equipment to the structure
- Read and interpret detailed HVAC design plans
- Perform a load calculation using industry standards
- Design a complete air distribution system including ventilatins requirements and indoor air quality

Grade Basis: L

Credit hours: 4.0

FIRT 1315 - Hazardous Material I

The chemical characteristics and behavior of various materials. Storage, transportation, handling hazardous emergency situations, and the most effective methods of hazard mitigation.

Grade Basis: L

Credit hours: 3.0

RNSG 1300 - Health Assessment Across the Lifespan

Development of skills and techniques required for a comprehensive nursing health assessment of patients across the lifespan: pediatric, adult, and geriatric. Includes assessment of patients' health promotion and maintenance, illness and injury prevention and restoration, and application of the nursing process within a legal/ethical framework. 16 lecture hours; 48 laboratory hours.

Grade Basis: L

Credit hours: 3.0

HALT 1303 - Herbaceous Plants

A study of herbaceous plant material. Topics include practices and procedures used in the identification, growth, propagation, maintenance, and utilization of herbaceous plants in the horticulture industry. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify herbaceous plants at various growth stages
- Explain methods used to propagate herbaceous plants
- Describe the cultural requirements for care and use of herbaceous plants

Grade Basis: L

Credit hours: 3.0

HIST 1301 - UNITED STATES HISTORY I

A survey of the social, political, economic, cultural, and intellectual history of the United States from the pre-Columbian era to the Civil War/Reconstruction period. United States History I includes the study of pre-Columbian, colonial, revolutionary, early national, slavery and sectionalism, and the Civil War/Reconstruction eras. Themes that may be addressed in United States History I include: American settlement and diversity, American culture, religion, civil and human rights, technological change, economic change, immigration and migration, and creation of the federal government. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

HIST 1302 - U.S. HISTORY FROM 1865

A survey of the social, political, economic, cultural, and intellectual history of the United States from the Civil War and Reconstruction era to the present. United States History II examines industrialization, immigration, world wars, the Great Depression, Cold War and post-Cold War eras. Themes that may be addressed in the United States History II include American culture, religion, civil and human rights, technological change,

economic change, immigration and migration, urbanization and suburbanization, the expansion of the federal government, and the study of U.S. foreign policy. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

HIST 2301 - TEXAS HISTORY

A survey of the political, social, economic, cultural, and intellectual history of Texas from the pre-Columbian era to the present. Themese that may be addressed in Texas History include: Spanish colonization and Spanish Texas, Mexican Texas, the Republic of Texas, statehood and secession, oil, industrialization, and urbanization, civil rights, and modern Texas. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

HIST 2321 - WORLD CIVILIZATIONS I

A survey of the social, political, economic, cultural, religious, and intellectual history of the world from emergence of human cultures through the 15th century. The course examines major cultural regions of the world in Africa, the Americas, Asia, Europe, and Oceania and their global interactions over time. Themes include the emergence of early societies, the rise of civilizations, the development of political and legal systems, religion and philosophy, economic systems and trans-regional networks of exchange. The course emphasizes the development, interaction and impact of global exchange. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

HIST 2322 - WORLD CIVILIZATIONS II

A survey of the social, political, economic, cultural, religious, and intellectual history of the world from the 15th century to the present. The course examines major cultural regions of the world in Africa, the Americas, Asia, Europe, and Oceania and their global interactions over time. Themes include maritime exploration and transoceanic empires, nation/state formation and industrialization, imperialism, global conflicts and resolutions, and global economic integration. The course emphasizes the development, interaction and impact of global exchange. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

HIST XXXX - HISTORY CORE

Grade Basis: L

Credit hours: 3.0

HITT 1205 - MEDICAL TERMINOLOGY

Study of medical terms through word origin and structure. Introduction to abbreviations and symbols, surgical and diagnostic procedures, and medical specialties.

Grade Basis: L

Credit hours: 2.0

SRGT HITT 1205 - MEDICAL TERMINOLOGY

Study of the basic structure of medical words including prefixes, suffixes, roots, combining forms, plurals, pronunciation, spelling, and the definitions of medical terms. Emphasis is on building a professional vocabulary required for employment in the allied health care field. 2 lecture hours

Grade Basis: L

Credit hours: 2.0

AGEQ 1315 - Horse Evaluation I

Instruction in evaluation and selection of horses based on breed and performance criteria. Topics include basic anatomy and its relation to function, breed type, and characteristics. Emphasis will be given to breed standards and rules of judging performance horses. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Relate conformation to equine functions
- Prioritize and utilize criteria as related to evaluation and selection
- Employ appropriate terminology used in discussing evaluation and selection processes

Grade Basis: L

Credit hours: 3.0

AGEQ 2315 - Horse Evaluation II

A study of the advanced concepts in evaluation and selection of horses. Students in this course will be part of the horse judging team and participate in judging contests on a state and national level. Students will also learn how to organize a judging contest, perfect oral reason presentation and learn to judge other's oral reasons. Students

must be enrolled in this course to travel with the judging team. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Evaluate conformation as it applies to equine functions
- Evaluate western and English performance classes
- Organize, apply, and defend criteria as related to the evaluation and selection of horses

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1315](#) - Horse Evaluation I
-

AGEQ 1319 - Horsemanship I

Instruction in basic horsemanship skills including handling, saddling, safety, proper riding techniques, and basic health care will be discussed. Emphasis will be given to use of aids and cues; and proper leg, seat, and hand position. 32 lecture + 32 laboratory hours.

Upon completion, students will be able to:

- Recognize and employ basic handling and riding safety practices
- Identify and care for equipment and tack
- Demonstrate proper leg, seat, and hand positions as they relate to riding techniques

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1300](#) - English Equitation I
 - [AGEQ 1315](#) - Horse Evaluation I
-

AGEQ 2339 - Horsemanship II

Instruction in advanced horsemanship skills including cues, lead changes, head-set, side-pass, and pivots will be given. Emphasis will be given to proper use of cues, legs, and seat during maneuvers; as well as proper training concepts and methods of working horses for specific performance areas. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate a balanced seat and posture in all natural gaits

- Maintain correct leads
- Develop and utilize proper cues

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1319](#) - Horsemanship I
-

HORT 1401 - HORTICULTURE

Structure, growth, and development of horticultural plants from a practical and scientific approach. Environmental effects, basic principles of propagation, greenhouse and outdoor production, nutrition, pruning, chemical control, of growth, pest control, and landscaping. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify the various horticultural industries and their roles in our society
- Describe the fundamentals of plant science
- Assess the interactions of soils, water, and fertility in plant science
- Contrast the methods of plant reproduction and propagation
- Explain the impacts of production methods and technologies on plant science
- Contrast methods of pest management in plant science
- Investigate methods of environmental manipulation (e.g. greenhouse controls, frost management methods, hot caps)
- Apply scientific reasoning to investigate questions and utilize scientific and horticultural tools to collect and analyze data and demonstrate methods
- Use critical thinking and scientific problem-solving to make informed decisions
- Communicate effectively the results of scientific investigations
- Identify the various horticultural industries and their roles in our society

Grade Basis: L

Credit hours: 4.0

HORT 1401 - Horticulture

Structure, growth, and development of horticultural plants from a practical and scientific approach. Environmental effects, basic principles of propagation, greenhouse and outdoor production, nutrition, pruning, chemical control, of growth, pest control, and landscaping. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify the various horticultural industries and their roles in our society
- Describe the fundamentals of plant science
- Assess the interactions of soils, water, and fertility in plant science

- Contrast the methods of plant reproduction and propagation
- Explain the impacts of production methods and technologies on plant science
- Contrast methods of pest management in plant science
- Investigate methods of environmental manipulation (e.g. greenhouse controls, frost management methods, hot caps)
- Apply scientific reasoning to investigate questions and utilize scientific and horticultural tools to collect and analyze data and demonstrate methods
- Use critical thinking and scientific problem-solving to make informed decisions
- Communicate effectively the results of scientific investigations
- Identify the various horticultural industries and their roles in our society

Grade Basis: L

Credit hours: 4.0

HORT 1401 - HORTICULTURE ELECTIVE

Grade Basis: L

Credit hours: 3.0

HPRS 1201 - INTRODUCTION TO HEALTH PROFESSIONS

An overview of roles of various members of the health care system, education requirements, and issues affecting the delivery of health care.

Grade Basis: L

Credit hours: 2.0

HPRS 1304 - BASIC SKILLS I

Study of the concepts that serve as the foundation for health profession courses, including client care and safety issues, basic client monitoring, and health documentation methods.

Grade Basis: L

Credit hours: 3.0

HPRS 1391 - SPECIAL TOPICS - INSTRUMENTS I

The primary focus of this course is the anesthesia machine. However, all ancillary equipment, including but not limited to gas cylinders, hospital supply lines, ventilators, and absorbers will also be covered. The setup, calibration, operation, basic troubleshooting, maintenance and safety checks for each is taught.

Grade Basis: L

Credit hours: 3.0

HPRS 1392 - SPECIAL TOPICS - INSTRUMENTS II

This course is a continuation of Anesthesia Technology Instrumentation I and expands upon the scope of anesthesia instrumentation. Various pieces of instrumentation such as cell savers, patient warmers, fluid warmers, ACT machines, pulse oximeters will be discussed.

Grade Basis: L

Credit hours: 3.0

HPRS 1563 - CLINICAL I

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision is provided by the clinical professional.

Grade Basis: L

Credit hours: 5.0

HPRS 2300 - PHARMACOLOGY

Categorize the classification of drugs, calculate drug dosages, and identify the therapeutic use, routes of administration, indicates contraindications, and adverse effects.

Grade Basis: L

Credit hours: 3.0

HPRS 2310 - BASIC SKILLS II

Builds on previously acquired knowledge and skills relevant to the professional development of the student. Lecture and simulated laboratory experiences prepare the student to perform patient care utilizing critical thinking and advanced clinical skills.

Grade Basis: L

Credit hours: 3.0

HPRS 2331 - HEALTH PROFESSIONS MANAGEMENT

Exploration and application of management concepts necessary for effective health profession operations.

Grade Basis: L

Credit hours: 3.0

HPRS 2563 - CLINICAL II

A health-related work based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Grade Basis: L

Credit hours: 5.0

HRPO 2301 - HUMAN RESOURCE MANAGEMENT

Behavioral and legal approaches to the management of human resources in organizations. 48 lecture hours

Upon completion, students will be able to:

- Explain the development of human resources management
- Explain current methods of job analysis, recruitment, selection, training/development, performance management, promotion, and separation
- Describe management's ethical, social, and legal responsibilities
- Explain methods of compensation and benefits planning
- Describe the role of strategic human resources planning

Grade Basis: L

Credit hours: 3.0

HRPO 2307 - ORGANIZATIONAL BEHAVIOR

The analysis and application of organizational theory, group dynamics, motivation theory, leadership concepts and the integration of interdisciplinary concepts from the behavioral sciences. 48 lecture hours

Upon completion, students will be able to:

- Explain organizational theory as it relates to management practices, employee relations, and structure of the organization to fits its environment and operation
- Analyze leadership styles and determine their effectiveness in employee situations
- Identify methods in resolving organizational problems
- Describe the impact of corporate culture on employee behavior
- Analyze team dynamics, team building strategies, and cultural diversity

Grade Basis: L

Credit hours: 3.0

HUMA 1301 - INTRODUCTION TO THE HUMANITIES I

This stand-alone course is an interdisciplinary survey of cultures focusing on the philosophical and aesthetic factors in human values with an emphasis on the historical development of the individual and society and the need to recreate. 48 lecture hours
Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

HUMA 1301 - ANY LANGUAGE, PHILOSOPHY AND CULTURE, OR CREATIVE ARTS ELECTIVE

Grade Basis: L

Credit hours: 3.0

BIOL 2401 - Human Anatomy and Physiology I

A study of the structure and function of human anatomy, including the neuroendocrin, integumentary, and musculoskeletal, digestive, urinary, reproductive, respiratory, and circulatory systems. Content may be either integrated or specialized. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Understand the structure and function of human anatomy, including the neuroendocrin, integumentary, and musculoskeletal, digestive, urinary, reproductive, respiratory, and circulatory systems

Grade Basis: L

Credit hours: 4.0

BIOL 2402 - Human Anatomy and Physiology II

Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Systems to be studied include endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics).

Grade Basis: L
Credit hours: 4.0
Prerequisites:

- [BIOL 2401](#) - Human Anatomy and Physiology I
-

BIOL 2402 - LANGUAGE, PHILOSOPHY AND CULTURE

Grade Basis: L
Credit hours: 3.0

BIOL 2402 - LANGUAGE, PHILOSOPHY AND CULTURE, OR CREATIVE ARTS ELECTIVE

Grade Basis: L
Credit hours: 3.0

HUMA - LANGUAGE, PHILOSOPHY AND CULTURE OR CREATIVE ARTS ELECTIVE

Grade Basis: L
Credit hours: 3.0

HRPO 2301 - Human Resource Management

Behavioral and legal approaches to the management of human resources in organizations. 48 lecture hours.

Upon completion, students will be able to:

- Explain the development of human resources management
- Explain current methods of job analysis, recruitment, selection, training & development, performance management, promotion, and separation
- Describe management's ethical, social, and legal responsibilities
- Explain methods of compensation and benefits planning
- Describe the role of strategic human resources planning

Grade Basis: L
Credit hours: 3.0

PSYC 2306 - Human Sexuality

This course will provide an overview of the broad field of human sexuality. Topics will be covered from various perspectives - biological, sociological, anthropological, etc., but will focus primarily on the psychological perspective. The goal is for each student to learn factual, scientifically-based information that will provoke thought and contribute to his/her own decision-making on sexual issues outside of the classroom. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

HYDR 1345 - HYDRAULICS & PNEUMATICS

Discussion of the fundamentals of hydraulics and pneumatics, components of each system, and the operations, maintenance, and analysis of each system. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate the operation of basic hydraulic and pneumatic systems including associated instruments
- Interpret schematics
- Troubleshoot systems
- Design a schematic drawing of a working system

Grade Basis: L

Credit hours: 3.0

HYDR 1345 - Hydraulics and Pneumatics

Discussion of the fundamentals of hydraulics and pneumatics, components of each system, and the operations, maintenance, and analysis of each system.

Grade Basis: L

Credit hours: 3.0

IBUS 1305 - INTRODUCTION TO INTERNATIONAL BUSINESS AND TRADE

The course is designed for the business student to explore the techniques for entering the international marketplace. Emphasis will be placed on the impact and dynamics of socio-cultural, demographic, economic, technological, and political-legal factors in the foreign trade environment. Topics include patterns of world trade, internationalization of the firm, and operating procedures of the multinational enterprise. 48 lecture hours

Upon completion, students will be able to:

- Explain terms used in the international business environment
- Discuss internal and external factors influencing the conduct of international business

Grade Basis: L

Credit hours: 3.0

IMED 1316 - WEB PAGE DESIGN I

Instruction in web page design and related graphic design issues including mark-up languages, web sites, and browsers. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify how the Internet functions with specific attention to the World Wide Web and file transfer
- Apply design techniques in the creation and optimization of graphics and other embedded elements
- Demonstrate the use of World Wide Web Consortium (W3C) formatting and layout standards
- Design, create, test, and maintain a web site

Grade Basis: L

Credit hours: 3.0

IMED 1345 - INTERACTIVE DIGITAL MEDIA

Exploration of the use of graphics and sound to create interactive multimedia applications and/or animations using industry standard authoring software. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Develop an interactive digital media presentation integrating different types of media
- Design a navigation scheme
- Demonstrate animation techniques

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2321](#) - OBJECT-ORIENTED PROGRAMMING
-

ITNW 1308 - Implementing and Supporting Client Systems

The fundamentals of managing and configuring network clients. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Install and configure network clients
- Setup users, groups, policies, and profiles
- Configure hardware components and applications
- Setup and maintain logon security and security for files and printers
- Configure and optimize clients in multiple environments

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITNW 1313](#) - Computer Visualization
-

ITNW 1354 - Implementing and Supporting Server Environment

Implement, administer, and troubleshoot information systems that incorporate servers in a networked computing environment. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Configure peripherals and devices
- Set up servers
- Configure directory replication
- Manage licensing
- Create and manage system policies and profiles
- Administer remote servers and disk resources
- Create and share resources
- Implement fault-tolerance
- Configure servers for interoperability
- Install and configure Remote Access Service (RAS)
- Identify and monitor performance bottlenecks and resolve configuration problems

Grade Basis: L

Credit hours: 3.0

ITSY 2342 - Incident Response and Handling

In-depth coverage of incident response and incident handling, including identifying courses of attacks and security breaches; analyzing security logs; recovering the system to normal; performing postmortem analysis; and implementing and modifying security measures. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify sources of attacks
- Restore the system to normal operation
- Identify and prevent security threats
- Perform a postmortem analysis
- Identify computer investigation issues
- Identify the roles and responsibility of the incident response team

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 2301](#) - Firewall and Network Security
 - [ITSY 2300](#) - Operating System Security
-

TECM 1301 - Industrial Mathematics

Math skills applicable to industrial occupations. Includes fraction and decimal manipulation, measurement, percentage, and problem solving techniques for equations and ratio/proportion applications. 48 lecture hours.

Upon completion, students will be able to:

- Convert between decimals and fractions
- Use measuring tools
- Calculate ratios and proportions in a technical application
- Transpose linear equations to solve for unknowns

Grade Basis: L

Credit hours: 3.0

PTRT 1313 - Industrial Safety

An overview for petroleum and manufacturing workers of state/federal regulations and guidelines which require industrial safety training. Topics include the 29 C.F.R. 1910, 1926 standards. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe the basic components of safety, health, and environmental systems as applied to oil and gas operations

Grade Basis: L

Credit hours: 3.0

INMT 2345 - Industrial Troubleshooting

An advanced study of the techniques used in troubleshooting various types of industrial equipment to include mechanical, electrical, hydraulic, and pneumatic systems and their control devices. Emphasis will be placed on the use of schematics and diagrams in conjunction with proper troubleshooting procedures.

Grade Basis: L

Credit hours: 3.0

INEW 2334 - ADVANCED WEB PROGRAMMING

Web programming using industry-standard languages and data stores. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Design, code, and implement a dynamic website
- Develop connectivity between data store and website

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2321](#) - OBJECT-ORIENTED PROGRAMMING
-

ITSY 1342 - Information Technology Security

Instruction in security for network hardware, software, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- National Institute of Standards and Technology (NIST) Guidelines and other best practices
- Develop backup procedures to provide for data security
- Use network operating system features to implement network security
- Identify computer and network threats and vulnerabilities and methods to prevent their effects
- Use tools to enhance network security
- Use encryption techniques to protect network data

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITNW 1358](#) - Network +
-

INMT 1305 - INTRODUCTION TO INDUSTRIAL MAINTENANCE

Basic mechanical skills and repair techniques common to most fields of industrial maintenance. Topics include precision measuring instruments and general safety rules common in industry, including lock-out/tag-out. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify various types of fasteners common to industrial maintenance
- Utilize various hand and power tools
- Utilize precision measuring instruments
- Demonstrate proper lock-out/tag-out procedures

Grade Basis: L

Credit hours: 3.0

INMT 2303 - PUMPS, COMPRESSORS & MECHANICAL DRIVES

A study of the theory and operations of various types of pumps and compressors. Topics include mechanical power transmission systems including gears, v-belts, and chain drives. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify the principles involved in the operation of centrifugal and positive displacement pumps and compressors
- Explain the function of various components in pumps and compressors, disassemble and reassemble pumps, compressors and mechanical drives, and troubleshoot pumps, compressors and mechanical drives

Grade Basis: L

Credit hours: 3.0

INMT 2345 - INDUSTRIAL TROUBLESHOOTING

An advanced study of the techniques used in troubleshooting various types of industrial equipment to include mechanical, electrical, hydraulic, and pneumatic systems and their control devices. Emphasis will be placed on the use of schematics and diagrams in conjunction with proper troubleshooting procedures. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate various troubleshooting techniques

- Troubleshoot hydraulic, pneumatic, electrical mechanical drive systems using schematics and diagrams

Grade Basis: L

Credit hours: 3.0

INMT 2380 - COOPERATIVE EDUCATION - MANUFACTURING TECHNOLOGY

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 224 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

INRW 0405 - INTEGRATED READING & WRITING

This is a combined lecture and lab, performance-based course designed to develop students' critical reading and academic writing skills. The focus of the course will be on applying critical reading skills for organizing, analyzing, and retaining material and developing written work appropriate to the audience, purpose, situation, and length of the assignment. The course integrates preparation in basic academic reading skills with basic skills in writing a variety of academic essays. The course fulfills TSI requirements for reading and writing. This class does not count toward graduation at NCTC.

Grade Basis: L

Credit hours: 4.0

INRW 0405 - INSTITUTIONAL CORE REQUIREMENT

Grade Basis: L

Credit hours: 3.0

RNSG 2404 - Integrated Care of the Patient with Common Health Care Needs

Application of a systematic problem-solving process, critical thinking skills and concepts to provide nursing care to diverse patients and families across the life span with common health care needs including, but not limited to, common childhood/adolescent diseases, uncomplicated perinatal care, mental health concepts, perioperative care, frequently occurring adult health problems and health issues related to aging. Emphasis on secondary disease prevention and collaboration with members of the interdisciplinary health care team. Content includes roles of the professional nurse and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. 64 lecture hours; 32 laboratory hours.

Grade Basis: L

Credit hours: 4.0

RNSG 2414 - Integrated Care of the Patient with Complex Health Care Needs

Application of a systematic problem solving process, critical thinking skills and concepts to provide comprehensive nursing care to diverse patients and families across the life span with complex health care needs including, but not limited to, complex childhood/adolescent diseases, complicated perinatal care, acute mental illness, complex perioperative care, serious adult health problems and health issues related to aging. Emphasis on tertiary disease prevention, health maintenance/restoration and collaboration with members of the multidisciplinary health care team. Content includes the roles of the professional nurse and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. 64 lecture hours; 32 laboratory hours.

Grade Basis: L

Credit hours: 4.0

RNSG 1219 - Integrated Nursing Skills I

Study of the concepts and principles necessary to perform basic nursing skills for care of diverse patients across the life span; demonstrate competence in the performance of nursing procedures. Content includes knowledge, judgment, skills, and professional values within a legal/ethical framework. 16 lecture hours; 48 laboratory hours.

Grade Basis: L

Credit hours: 2.0

RNSG 2435 - Integrated Patient Care Management

Application of independent nursing interventions to care for diverse patients and families throughout the life span whose health care needs may be difficult to predict. Emphasis on collaborative clinical reasoning, nursing leadership skills, and patient management. Content includes the significance of professional development, trends in nursing and health care, and applicable knowledge, judgment, skills, and professional values within a legal/ethical framework. 64 lecture hours; 32 laboratory hours.

Grade Basis: L

Credit hours: 4.0

INRW 0405 - Integrated Reading and Writing

This is a combined lecture/lab, performance-based course designed to develop students' critical reading and academic writing skills. The focus of the course will be on applying critical reading skills for organizing, analyzing, and retaining material and developing written work appropriate to the audience, purpose, situation, and length of the assignment. The course integrates preparation in basic academic reading skills with basic skills in writing a variety of academic essays. The course fulfills TSI requirements for reading and writing. This class does not count toward graduation at NCTC.

Grade Basis: L

Credit hours: 4.0

IMED 1345 - Interactive Digital Media

Exploration of the use of graphics and sound to create interactive multimedia applications and/or animations using industry standard authoring software. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Develop an interactive digital media presentation integrating different types of media
- Design a navigation scheme
- Demonstrate animation techniques

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2321](#) - Object Oriented Programming
-

HALT 1309 - Interior Plants

Instruction in the identification and classification of the plants used in home and commercial interior landscapes. Topics include design characteristics for interiorscapes and environmental requirements of the plants. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify interior plants
- Select care methods for specific plants
- Identify production methods of interior plants

Grade Basis: L

Credit hours: 3.0

MATH 0310 - Intermediate Algebra

A study of relations and functions, inequalities, factoring, polynomials, rational expressions, and quadratics with an introduction to complex numbers, exponential and logarithmic functions, determinants and matrices, and sequences and series. 48 Lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 0305](#) - Beginning Algebra
-

DFTG 2300 - Intermediate Architectural Drafting - Residential

Continued application of principles and practices used in residential construction. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Define the principles of design and implementation of advanced residential construction
- Incorporate site and environmental considerations in planning a residential development
- Select materials
- Apply codes and standards in the creation of construction drawings
- Write specifications

Grade Basis: L

Credit hours: 3.0

DFTG 2319 - Intermediate Computer Aided Drafting

A continuation of practices and techniques used in basic computer-aided drafting including the development and use of prototype drawings, construction of pictorial drawings, extracting data, and basics of 3D. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Produce 2D and 3D drawings, pictorial drawings
- Use external referencing of multiple drawings to construct a composite drawing
- Import and extract data utilizing attributes

Grade Basis: L

Credit hours: 3.0

FREN 2311 - Intermediate French I

Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [FREN 1412](#) - Beginning French II

Restrictions:

- or two years of high school
-

FREN 2312 - Intermediate French II

Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [FREN 2311](#) - Intermediate French I

Restrictions:

- or two years of high school French
-

RADR 2301 - Intermediate Radiography Procedures

A continuation of study of the proper manipulation of radiographic equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of anatomy. 32 lecture hours + 64 laboratory hours.

Grade Basis: L

Credit hours: 3.0

WLDG 1457 - Intermediate Shielded Metal Arc Welding (SMAW)

A study of the production of various fillets and groove welds. Preparation of specimens for testing in various positions. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify principles of arc welding
- Describe arc welding operations of fillet and groove joints
- Explain heat treatments of low alloy steels
- Explain weld size and profiles
- Prepare test plates
- Perform fillet welds in the overhead position
- Perform air carbon arc weld removal
- Perform bevel groove welds with backing plates in various positions
- Demonstrate use of tools and equipment

Grade Basis: L

Credit hours: 4.0

SPAN 2311 - Intermediate Spanish I

The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis on comprehension, appreciation, and interpretation of the cultures of the Spanish-speaking world. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

SPAN 2312 - Intermediate Spanish II

The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis on comprehension, appreciation, and interpretation of the cultures of the Spanish-speaking world. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

WLDG 2413 - Intermediate Welding Using Multiple Processes

Instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes: oxy-fuel gas cutting and welding, shield metal arc welding (SMAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW), or any other approved welding process. 32 lecture hours + 96 laboratory hours.

Upon completion, students will be able to:

- Identify proper safety equipment and tools and identify and select the proper welding process for a given application
- Demonstrate skills training using more than one approved welding process
- Demonstrate ability to analyze situations and make decisions using skills as taught concerning safety and electrode selections
- Select the most economic and practical welding process for the given task

Grade Basis: L

Credit hours: 4.0

CJSA 2388 - Internship

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. 144 practicum hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

AGEQ 2386 - Internship - Equine Science

Meets 8 weeks during the summer. Departmental approval required for registration in this course. Each student will be placed in the horse industry under the supervision of a prominent person who specializes in the student's main areas of interest. The student's industry training will be supervised by the instructor as well as their immediate

supervisor on the job. This course serves as the external or capstone experience. 0 lecture hours + 288 practicum hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business and industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business and industry

Grade Basis: L

Credit hours: 3.0

SPCH 1318 - Interpersonal Communication

Application of communication theory to interpersonal relationship development, maintenance, and termination in relationship contexts including friendships, romantic partners, families, and relationships with co-workers and supervisors. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ACNT 1303 - Introduction to Accounting I

A study of analyzing, classifying, and recording business transactions in a manual and computerized environment. Emphasis on understanding the complete accounting cycle and preparing financial statements, bank reconciliations, and payroll. 48 lecture hours.

Upon completion, students will be able to:

- Define accounting terminology
- Analyze and record business transactions in a manual and computerized environment
- Complete the accounting cycle
- Prepare financial statements
- Apply accounting concepts related to cash and payroll
- Prepare bank reconciliations
- Correct accounting errors

Grade Basis: L

Credit hours: 3.0

AGRI 2317 - Introduction to Agricultural Economics

Fundamental economic principles and their applications to the problems of the industry of agriculture. 48 lecture hours.

Upon completion, students will be able to:

- Describe fundamental macro- and micro-economic principles
- Apply economic principles to agricultural production, marketing, and consumption
- Describe the different agricultural economics fields (e.g. food industry, demand theory, supply theory, competitive environments)

Grade Basis: L

Credit hours: 3.0

ANTH 2302 - Introduction to Archaeology

The study of the human past through material remains. The course includes a discussion of methods and theories relevant to archeological inquiry. Topics may include the adoption of agriculture, response to environmental change, the emergence of complex societies, and ethics in the discipline.

Upon completion, students will be able to:

- Describe key concepts and theories in archaeology
- Explain the key techniques and methods used in archaeology
- Demonstrate an understanding of long-term cultural change from an archaeological perspective

Grade Basis: L

Credit hours: 3.0

BUSG 1301 - Introduction to Business

Fundamental business principles including structure, functions, resources, and operational processes. 48 lecture hours.

Upon completion, students will be able to:

- Identify business functions of accounting, management, marketing, and economics
- Describe the relationships of social responsibility, ethics, and law
- Describe the scope of global business enterprise

Grade Basis: L

Credit hours: 3.0

ACNT 1311 - Introduction to Computerized Accounting

Introduction to utilizing the computer in maintaining accounting records with primary emphasis on a general ledger package. 48 lecture hours.

Upon completion, students will be able to:

- Utilize an application software to perform accounting tasks
- Maintain records
- Prepare reports
- Analyze reports for a business entity
- Complete a comprehensive project
- Explain the components of general ledger software

Grade Basis: L

Credit hours: 3.0

BUSG 1304 - Introduction to Financial Advising

A study of the financial problems encountered by financial advisers when managing family financial affairs. Includes methods to advise clients on topics such as estate planning, retirement, home ownership, savings, and investment planning. 48 lecture hours.

Upon completion, students will be able to:

- Identify the concepts associated with the time value of money
- Identify the differences among various savings and investment programs and classes of securities
- Identify the options for insurance
- Describe retirement and estate planning techniques
- Explain owning versus renting real property
- Describe consumer protection legislation

Grade Basis: L

Credit hours: 3.0

IBUS 1305 - Introduction to International Business and Trade

The course is designed for the business student to explore the techniques for entering the international marketplace. Emphasis will be placed on the impact and dynamics of socio-cultural, demographic, economic, technological, and political-legal factors in the foreign trade environment. Topics include patterns of world trade, internationalization of the firm, and operating procedures of the multinational enterprise. 48 lecture hours.

Upon completion, students will be able to:

- Explain terms used in the international business environment

- Discuss internal and external factors influencing the conduct of international business

Grade Basis: L

Credit hours: 3.0

EDUC 2301 - Introduction Special Populations

An enriched, integrated pre-service course and content experience that provides an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic and academic diversity, and equity with an emphasis on factors that facilitate learning. The course provides students with opportunities to participate in early field observations of P- 12 special populations and should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Must include a minimum of 16 contact hours of field experience in P-12 classrooms with special populations. 48 lecture hours + 16 hour lab.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [EDUC 1301](#) - Introduction to the Teaching Profession
-

EMSP 1338 - Introduction to Advanced Practice

At the completion of this module, the student will understand the roles and responsibilities of a paramedic within the EMS system; apply the basic concepts of development, pathophysiology and pharmacology to assessment and management of emergency patients; be able to properly administer medications; communicate effectively with patients; and understand the medical/legal and ethical issues relating to EMS practice as well as the issues impacting the well being of the paramedic. 32 lecture + 32 laboratory hours.

Grade Basis: L

Credit hours: 3.0

GAME 1309 - Introduction to Animation Programming

Mathematical elements and algorithms involved in basic animation. Includes generating graphics, viewing 3D environments such as visible line detection and 3D surfaces, image processing techniques, and special effects. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Develop programs that apply the basic character animation techniques, build and pose animated characters, and implement proper timing within animations

Grade Basis: L

Credit hours: 3.0

WLDG 1413 - Introduction to Blueprint Reading for Welders

A study of industrial blueprints. Emphasis placed on terminology, symbols, graphic description, and welding processes. Includes systems of measurement and industry standards. Also includes interpretation of plans and drawings used by industry to facilitate field application and production. 64 lecture hours.

Upon completion, students will be able to:

- Define terms and abbreviations
- Identify and explain object views, lines, and dimensions
- Identify, explain, and interpret weld symbols
- Identify structural shapes
- Demonstrate the proper use of measuring devices
- Read and interpret blueprints
- Read welding detail drawings
- Calculate dimensions and material

Grade Basis: L

Credit hours: 4.0

DRAM 2366 - Introduction to Cinema

Survey and analyze cinema including history, film techniques, production procedures, selected motion pictures, and cinema's impact on and reflection of society. . 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ARTC 1325 - Introduction to Computer Graphics

A survey of computer design concepts, terminology, processes, and procedures. Topics include computer graphics hardware, electronic images, electronic publishing, vector based graphics, and interactive multimedia. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Define computer terminology
- Identify peripherals
- Demonstrate page layout, multimedia, and peripherals software use

Grade Basis: L
Credit hours: 3.0

METL 1313 - Introduction to Corrosion

An introduction to internal, external, and atmospheric corrosion including terminology, causes of common corrosion problems in industry, and general remedies such as cathodic protection, protective coatings, material selection, and chemical treatments. 48 lecture hours.

Upon completion, students will be able to:

- Identify the various types of corrosion
- Describe corrosion control methods
- Apply corrosion theory to at least one corrosion problem and design a solution
- Describe corrosion characteristics of metals, alloys, plastics, and nonmetallics
- Identify the major job markets in corrosion technology and identify the types and levels of certification in each field

Grade Basis: L
Credit hours: 3.0

CRIJ 1301 - Introduction to Criminal Justice

This course provides a historical and philosophical overview of the American criminal justice system, including the nature, extent, and impact of crime; criminal law; and justice agencies and processes. 48 lecture hours.

Upon completion, students will be able to:

- Describe the history and philosophy of the American criminal justice system
- Explain the nature and extent of crime in America
- Analyze the impact and consequences of crime
- Evaluate the development, concepts, and functions of law in the criminal justice system
- Describe the structure of contemporary federal, state, and local justice agencies and processes

Grade Basis: L
Credit hours: 3.0

AGEQ 2373 - Introduction to Equine Veterinary Technology

Basic concepts of equine veterinary care will be taught. The course will be a survey of equine veterinary medicine from the physical exam to medical terminology, preventive medicine and pharmacology as well as basic principles of alternative therapies,

diagnostic imagery, medical records and client communication. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Calculate correct drug dosage for frequently used equine pharmaceuticals
- Design a vaccination protocol for different types of equine operations
- Interpret clinical pathology results
- Explain proper restraint methods of an equine patient for various veterinary procedures

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1411](#) - Equine Science I (Horse Production and Management)
 - [AGEQ 2311](#) - Equine Science II (Advanced Horse Production and Management)
-

PHIL 2306 - Introduction to Ethics

The systematic evaluation of classical and/or contemporary ethical theories concerning the good life, human conduct in society, morals, and standards of value. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

PHIL 2303 - Introduction to Formal Logic

The purpose of the course is to introduce the student symbolic logic, including syllogisms, propositional and predicate logic, and logical proofs in a system of rules. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

GAME 1303 - Introduction to Game Design and Development

Introduction to electronic game development and game development careers. Includes examination of history and philosophy of games, the game production process, employee factors for success in the field, and current issues and practices in the game development industry. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe the history and evolution of video and computer games and game genres
- Identify the phases and processes involved in developing a computer game

- Design a simple computer game from initial concept to final design document
- Describe current trends in the game industry with regards to hiring practices, working conditions, etc

Grade Basis: L

Credit hours: 3.0

CSME 1410 - Introduction to Hair Cutting and Related Theory

Introduction to the theory and practice of hair cutting. Topics include terminology, implements, sectioning and finishing techniques. 32 lecture hours + 128 laboratory hours. Define terminology practice basic workplace competencies related to haircutting and finishing techniques Demonstrate use of implements, sectioning, haircutting and finishing skills

Grade Basis: L

Credit hours: 4.0

HUMA 1301 - Introduction to Humanities

This stand-alone course is an interdisciplinary survey of cultures focusing on the philosophical and aesthetic factors in human values with an emphasis on the historical development of the individual and society and the need to recreate. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

INMT 1305 - Introduction to Industrial Maintenance

Basic mechanical skills and repair techniques common to most fields of industrial maintenance. Topics include precision measuring instruments and general safety rules common in industry, including lock-out/tag-out. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify various types of fasteners common to industrial maintenance
- Utilize various hand and power tools
- Utilize precision measuring instruments
- Demonstrate proper lock-out/tag-out procedures

Grade Basis: L

Credit hours: 3.0

METL 1301 - Introduction to Metallurgy

A study of refining, mechanical, and physical properties of ferrous and non-ferrous materials including the theory of alloys, heat treatment, and testing. 48 lecture hours.

Upon completion, students will be able to:

- Define the physical and mechanical properties of ferrous and non-ferrous metals
- Describe the steel making process
- Name and describe methods of destructive and nondestructive testing
- Explain the effects of hot working, cold working, welding, machining, and heat treating on metal properties
- Perform tests to pinpoint failures; define metallurgical terms and processes
- Recognize defects and their causes

Grade Basis: L

Credit hours: 3.0

PTRT 1301 - Introduction to Petroleum Industry

An introduction to the various aspects of petroleum industry including equipment, systems, instrumentation, operations, and the various scientific principles. Addresses a variety of petroleum technologies: exploration, drilling, production, transportation, marketing, and chemical processing industries. 48 lecture hours.

Upon completion, students will be able to:

- Identify the concepts of exploration, production, refining, marketing, and transportation
- Describe the terms and phrases associated with the petroleum industry

Grade Basis: L

Credit hours: 3.0

PHIL 1301 - Introduction to Philosophy

A study of major issues in philosophy and/or the work of major philosophical figures in philosophy. Topics in philosophy may include theories of reality, theories of knowledge, theories of value, and their practical applications. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

PHED 1301 - Introduction to Physical Fitness and Sports

Orientation to the field of physical fitness and sport. Includes the study and practice of activities and principles that promote physical fitness. 48 lecture hours. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

WLDG 1435 - Introduction to Pipe Welding

An introduction to welding of pipe using the shielded metal arc welding process (SMAW), including electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 1G and 2G using various electrodes. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Describe equipment and required pipe preparation and perform 1G and 2G welds using various electrodes

Grade Basis: L

Credit hours: 4.0

RNSG 1423 - Introduction to Professional Nursing for Integrated Programs

Introduction to the profession of nursing including the roles of the professional nurse as provider of patient-centered care, patient safety advocate, member of health care team, and member of the profession with emphasis on health promotion and primary disease prevention across the life span; essential components of the nursing health assessment; identification of deviations from expected health patterns; the application of a systematic, problem-solving process to provide basic nursing care to diverse patients across the lifespan; and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. 48 lecture hours; 16 lab hours.

Grade Basis: L

Credit hours: 4.0

Restrictions:

- Admission of the Professional Nursing Program
-

RADR 1201 - Introduction to Radiography

An overview of the historical development of radiography, basic radiation protection, an introduction to medical terminology, ethical and legal issues for health care

professionals, and an orientation to the program and the health care system. 32 lecture hours.

Grade Basis: L

Credit hours: 2.0

WLDG 1428 - Introduction to Shielded Metal Arc Welding

An introduction to the shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs. Instruction provided in SMAW fillet welds in various positions. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Select electrodes and amperage settings for various thicknesses of materials and welding positions
- Define principles of arc welding
- Explain electrode classifications
- Perform SMAW operations in various positions using selected electrodes and different joint designs

Grade Basis: L

Credit hours: 4.0

SOCI 1301 - Introduction to Sociology

The scientific study of human society, including ways in which groups, social institutions, and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts, and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity, and deviance. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

SRGT 1505 - Introduction to Surgical Technology

Orientation to surgical technology theory, surgical pharmacology and anesthesia technological sciences, and patient care concepts. 64 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 5.0

DRAM 1310 - Introduction to Theater

Survey of theater including its history, dramatic works, stage techniques, production procedures, and relation to other art forms. Participation in productions may be required. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

EDUC 1301 - Introduction to the Teaching Profession

An enriched, integrated pre-service course and content experience that: Provides active recruitment and institutional support of students interested in a teaching career, especially in high need fields Provides students with opportunities to participate in early field observations at all levels of P-12 schools with varied and diverse students populations Provides students with support from college and school faculty for the purpose of introduction to and analysis of the culture of schooling and classrooms Course content is aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards Course must include a minimum of 16 contact hours of field experience in P-12 classrooms. 48 lecture hours + 16 hour lab.

Grade Basis: L

Credit hours: 3.0

WLDG 1407 - Introduction to Welding Using Multiple Processes

Basic welding techniques using some of the following processes: Oxy-fuel welding (OFW) and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), and gas tungsten arc welding (GTAW). 32 lecture hours + 96 laboratory hours.

Upon completion, students will be able to:

- Demonstrate machine set-up and complete welds and cutting operations
- Demonstrate basic shop safety
- Identify types of electrodes used in welding processes
- Identify various welding and cutting standards
- Demonstrate proper joint preparation techniques

Grade Basis: L

Credit hours: 4.0

AGRI 1419 - Introductory Animal Science

Scientific animal agriculture. Importance of livestock and meat industries. Selection, reproduction, nutrition, management, and marketing of livestock. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Explain the role of animal agriculture in providing benefits for mankind
- Identify common livestock breeds and classes
- Define terminology specific to animal science disciplines
- Demonstrate understanding of fundamental animal science principles including selection, reproduction, nutrition, and health
- Apply animal science principles by solving common problems
- Identify animal issues of interest to society and related responsibilities
- Apply scientific reasoning to investigate questions and utilize animal science tools to collect and analyze data and demonstrate methods
- Use critical thinking and scientific problem-solving to make informed decisions
- Communicate effectively the results of scientific investigations

Grade Basis: L

Credit hours: 4.0

CHEM 1406 - Introductory Chemistry

Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food and physiological chemistry, and environmental and consumer chemistry. Designed for allied health students and for students who are not science majors. 48 Lecture hours + 48 Laboratory hours.

Grade Basis: L

Credit hours: 4.0

ITSY 2330 - Intrusion Detection

Computer information systems security monitoring, intrusion detection, and crisis management. Includes alarm management, signature configuration, sensor configuration, and troubleshooting components. Emphasizes identifying, resolving, and documenting network crises and activating the response team. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Build IDS sensors and attach them to the network (hardware and software)
- Install and manage a secure communication link between all sensors and the monitor
- Install and manage event database(s)
- Analyze an event and trends

- Install, manage, and interpret syslog servers and system logs
- Identify legal and policy issues associated with system and network monitoring
- Deploy, implement, and test IDS security plan

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 2301](#) - Firewall and Network Security
 - [ITSY 2300](#) - Operating System Security
-

ITCC 1414 - CCNA 1: INTRODUCTION TO NETWORKS

This course covers networking architecture, structure, and functions; introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations to provide a foundation for the curriculum. 48 lecture hours + 32 laboratory hours Certification Agency: Cisco

Upon completion, students will be able to:

- Build simple LANs
- Perform basic configuration on routers and switches
- Implement IP addressing schemes

Grade Basis: L

Credit hours: 4.0

ITCC 1440 - CCNA 2: ROUTING AND SWITCHING ESSENTIALS

Describes the architecture, components, and basic operation of routers and explains the basic principles of routing and routing protocols. It also provides an in-depth understanding of how switches operate and are implemented in the LAN environment for small and large networks. 48 lecture hours + 32 laboratory hours Certification Agency: Cisco

Upon completion, students will be able to:

- Configure and maintain routers and switches
- Resolve common issues with routing protocols, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [ITCC 1414](#) - CCNA 1: INTRODUCTION TO NETWORKS
-

ITCC 2412 - CCNA 3: SCALING NETWORKS

CCNA R&S: Scaling Networks (ScaN) covers the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches using advanced protocols Certification Agency: Cisco

Upon completion, students will be able to:

- Configure advanced routing and switching
- Resolve common issues with OSPF, EIGRP, and STP in IP networks
- Implement a WLAN in a small-to-medium network

Grade Basis: L

Credit hours: 4.0

ITCC 2413 - CCNA 4: CONNECTING NETWORKS

WAN technologies and network services required by converged applications in a complex network; enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. 48 lecture hours + 32 laboratory hours Certification Agency: Cisco

Upon completion, students will be able to:

- Configure and troubleshoot network devices Resolve common issues with data link protocols
- Resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks
- Implement virtual private network (VPN) operations in a complex network
- Implement security best practices

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [ITCC 2412](#) - CCNA 3: SCALING NETWORKS
-

ITNW 1308 - IMPLEMENTING AND SUPPORTING CLIENT SYSTEMS

The fundamentals of managing and configuring network clients. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Install and configure network clients
- Setup users, groups, policies, and profiles
- Configure hardware components and applications

- Setup and maintain logon security and security for files and printers
- Configure and optimize clients in multiple environments

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITNW 1313](#) - COMPUTER VIRTUALIZATION
-

ITNW 1313 - COMPUTER VIRTUALIZATION

Implement and support virtualization of clients of servers in a networked computing environment. This course explores installation, configuration, and management of computer virtualization workstation and servers. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Install and configure virtual machine managers
- Create and network virtual machines and set priorities for accessing resources
- Move and clone virtual machines
- Ensure high availability for applications within virtual machines

Grade Basis: L

Credit hours: 3.0

ITNW 1335 - INFORMATION STORAGE AND MANAGEMENT

An introduction to data storage-related technologies. Topics include data storage for cloud, Big Data, mobile, social media, and software-defined data centers. Provides a strong understanding of storage technologies and prepares students for advanced concepts, technologies, and processes. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Differentiate storage architectures and key data center elements
- Explain the components of storage infrastructure including subsystems, RAID and intelligent storage systems
- Demonstrate network technologies used in storage systems
- Outline the benefits and components of Storage Area Networks (SANs)
- Adapt contingency plans for backup, replication and archiving
- Evaluate information security requirements and recommend solutions
- List SAN management issues and requirements

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 1346](#) - DATABASE THEORY AND DESIGN
-

ITNW 1353 - SUPPORTING NETWORK SERVER INFRASTRUCTURE

Installing, configuring, managing, and supporting a network infrastructure. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Install and configure DHCP, DNS, remote access, network security using public key infrastructure
- Integrate network services
- Deploy operating systems using remote installation services

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITCC 1414](#) - CCNA 1: INTRODUCTION TO NETWORKS
 - [ITNW 1308](#) - IMPLEMENTING AND SUPPORTING CLIENT SYSTEMS
 - [ITNW 1358](#) - NETWORK+
-

ITNW 1354 - IMPLEMENTING AND SUPPORTING SERVER ENVIRONMENT

Implement, administer, and troubleshoot information systems that incorporate servers in a networked computing environment. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Configure peripherals and devices
- Set up servers
- Configure directory replication
- Manage licensing
- Create and manage system policies and profiles
- Administer remote servers and disk resources
- Create and share resources
- Implement fault-tolerance
- Configure servers for interoperability
- Install and configure Remote Access Service (RAS)
- Identify and monitor performance bottlenecks and resolve configuration problems

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITCC 1414](#) - CCNA 1: INTRODUCTION TO NETWORKS
 - [ITNW 1353](#) - SUPPORTING NETWORK SERVER INFRASTRUCTURE
 - [ITNW 1358](#) - NETWORK+
-

ITNW 1358 - NETWORK+

Identify and define terminology, hardware, and software components of computer networks; utilize equipment, protocols, and topologies to differentiate between various network systems; demonstrate skills in installing network hardware, software, and cable; troubleshoot network connectivity; configure network protocol; and install and configure network client software. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify and define terminology, hardware, and software components of computer networks
- Utilize equipment, protocols, and topologies to differentiate between various network systems
- Demonstrate skills in installing network hardware, software, and cable
- Troubleshoot network connectivity
- Configure network protocol
- Install and configure network client software

Grade Basis: L

Credit hours: 3.0

ITNW 2280 - COOPERATIVE EDUCATION - COMPUTER SYSTEMS NETWORKING

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 128 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 2.0

Restrictions:

- Departmental Chair approval required unless student is in last semester of the Networking Degree.
-

ITSC 1316 - LINUX INSTALLATION AND CONFIGURATION

Introduction to Linux operating system. Includes Linux installation, basic administration, utilities and commands, upgrading, networking, security, and application installation. Emphasizes hands-on setup, administration, and management of Linux. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Install, administer, and manage a Linux system
- Demonstrate proficiency with Linux utilities, commands, and applications
- Identify and resolve security-based issues
- Integrate a Linux system into an existing network

Grade Basis: L

Credit hours: 3.0

ITSC 1325 - PERSONAL COMPUTER HARDWARE

A study of current personal computer hardware including assembly, upgrading, setup, configuration, and troubleshooting. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Assemble, setup, and upgrade personal computer systems
- Diagnose and isolate faulty components
- Optimize system performance
- Install and connect peripherals

Grade Basis: L

Credit hours: 3.0

ITSE 1302 - COMPUTER PROGRAMMING

An introduction to computer programming including design, development, testing, implementation, and documentation. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Design, write, test, and document computer programs

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 1303](#) - INTRODUCTION TO MySQL
 - [ITSE 2321](#) - OBJECT-ORIENTED PROGRAMMING
-

ITSE 1303 - INTRODUCTION TO MySQL

Introduction to fundamentals of SQL and relational databases. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify database terminology and concepts
- Plan, define, and design a database
- Design and generate tables
- Devise and process queries
- Install and start the MySQL server
- Troubleshoot syntax

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2321](#) - OBJECT-ORIENTED PROGRAMMING
 - [ITSW 1307](#) - INTRODUCTION TO DATABASE
-

ITSE 1311 - BEGINNING WEB PROGRAMMING

Skills development in web programming including mark-up and scripting languages. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate the use of markup and scripting languages
- Create interactive web pages

Grade Basis: L

Credit hours: 3.0

ITSE 1333 - MOBILE APPLICATIONS DEVELOPMENT

An overview of different mobile platforms and their development environments. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Design, write, and test small interactive programs for mobile platforms

Grade Basis: L

Credit hours: 3.0

ITSE 1345 - INTRODUCTION TO ORACLE SQL

An introduction to the design and creation of relational databases using Oracle. Topics include storing, retrieving, updating, and displaying data using Structured Query Language (SQL). 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Write Structured Query Language (SQL) statements using Oracle
- Select and sort data
- Produce reports with SQL
- Create and manage tables which include constraints
- Create Views and other database objects

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2321](#) - OBJECT-ORIENTED PROGRAMMING
-

ITSE 1346 - DATABASE THEORY AND DESIGN

Introduction to the analysis and utilization of data requirements and organization into normalized tables using the four normal forms of database design. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Organize data into normalized tables by applying the four normal forms of database design
- Create Entity-Relationship models and diagrams to graphically represent their database design
- Design database tables with One-to-Many and Many-to-Many relationships
- Create tables using the SQL "create" and "insert" statements
- Retrieve data from tables using SQL "select" statement
- Maintain data in tables using the SQL "update" and "delete" statements
- Implement stored procedures, triggers, and constraints using SQL statements

Grade Basis: L

Credit hours: 3.0

ITSE 2302 - INTERMEDIATE WEB PROGRAMMING

Techniques for Web development. Includes server-side and client-side scripting. 32 lecture hours + laboratory hours

Upon completion, students will be able to:

- Create and use client-side and server-side scripts to design and implement dynamic websites

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [IMED 1316](#) - WEB PAGE DESIGN I
-

ITSE 2310 - iOS APPLICATION PROGRAMMING

Course explores developing applications for iOS devices. Will include Objective-C programming, use of the iOS SDK environment, and current programming issues in the iOS environment. 32 lecture hours + laboratory hours

Upon completion, students will be able to:

- Implement the procedures to become a registered Apple iOS developer
- Design interfaces for iOS applications
- Produce concept documentation
- Create iOS in native SDK
- Execute deployment procedures for various iOS devices

Grade Basis: L

Credit hours: 3.0

ITSE 2317 - JAVA PROGRAMMING

Introduction to object-oriented Java programming including the fundamental syntax and semantics of Java for applications and web applets. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Design and write documented Java applications and applets

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 2300](#) - OPERATING SYSTEM SECURITY

ITSE 2321 - OBJECT-ORIENTED PROGRAMMING

Introduction to object-oriented programming. Emphasis on the fundamentals of design with classes, including development, testing, implementation, and documentation. Includes object-oriented programming techniques, classes, and objects. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Develop executable programs
- Create appropriate documentation
- Create programs using classes and objects using object-oriented programming techniques

Grade Basis: L

Credit hours: 3.0

ITSE 2333 - IMPLEMENTING A DATABASE ON MICROSOFT SQL SERVER

Skills development in the implementation of a database solution using Microsoft SQL Server client/server database management system. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe the elements of Microsoft SQL Server and its operational environments
- Describe the elements of the Transact-SQL language
- Demonstrate and configure the data storage architecture of SQL server
- Write, maintain, and tune advanced queries
- Manage locking options and transactions to ensure data concurrency and recoverability
- Create views of data
- Design and create stored procedures
- Design and create triggers
- Use distributed data

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 1303](#) - INTRODUCTION TO MySQL
-

ITSE 2343 - ADVANCED MOBILE PROGRAMMING

Programming for mobile devices including file access methods, data structures, modular programming, program testing and documentation. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Design, write, and document mobile programs

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 1333](#) - MOBILE APPLICATIONS DEVELOPMENT
 - [ITSE 2321](#) - OBJECT-ORIENTED PROGRAMMING
-

ITSE 2354 - ADVANCED ORACLE PL/SQL

A continuation of Oracle SQL. Topics include hierarchical queries, set based queries, correlated subqueries, scripting, and scripting generation. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Retrieve data including SET operators, correlated subqueries, and hierarchical queries
- Write SQL scripts that execute remote procedure calls
- Create a package to group together variables, cursors, exceptions, procedures, and functions
- Invoke a package constraint

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 1345](#) - INTRODUCTION TO ORACLE SQL
-

ITSE 2356 - ORACLE DATABASE ADMINISTRATION I

Fundamentals of the tasks and functions required of a database administrator using Oracle. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Create an operational database using Oracle

- Create, delete, and modify associated files, table spaces, segments, extents, and blocks
- Start up and shut down an Oracle instance and database
- Add, delete, and modify users, privileges, and resources
- Demonstrate use of National Language and Support (NLS) features

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2354](#) - ADVANCED ORACLE PL/SQL
- [ITSW 2337](#) - ADVANCED DATABASE

ITSE 2358 - ORACLE DATABASE ADMINISTRATION II

A continuation of Oracle Database Administration I. Topics include the recovery procedures, logical backups, standby database capabilities, and performance tuning of the Oracle Server. Common performance problems and the use of diagnostic tools to troubleshoot and optimize throughout will be discussed. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- List the Oracle backup and recovery components
- Formulate a backup and recovery strategy
- Practice backup and recovery operations
- Use Oracle tools to diagnose performance problems
- Optimize and troubleshoot Oracle database performance

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 2356](#) - ORACLE DATABASE ADMINISTRATION I

ITSE 2380 - COOPERATIVE EDUCATION - COMPUTER PROGRAMMER

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 224 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

Restrictions:

- Departmental Chair approval required unless student is in last semester of the Computer Information Degree.
-

ITSW 1307 - INTRODUCTION TO DATABASE

Introduction to database theory and the practical applications of a database. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify database terminology and concepts
- Plan, define, and design a database
- Design and generate tables, forms, and reports
- Devise and process queries

Grade Basis: L

Credit hours: 3.0

ITSW 2337 - ADVANCED DATABASE

Advanced concepts of database design and functionality. 32 lecture hours + 32 lab hours

Upon completion, students will be able to:

- Explain relational database theory
- Collect and distribute data
- Analyze data
- Perform complex queries, data validation and table relationships

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSE 1346](#) - DATABASE THEORY AND DESIGN

- [ITSW 1307](#) - INTRODUCTION TO DATABASE
-

ITSY 1342 - INFORMATION TECHNOLOGY SECURITY

Instruction in security for network hardware, software, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- National Institute of Standards and Technology (NIST) Guidelines and other best practices
- Develop backup procedures to provide for data security
- Use network operating system features to implement network security
- Identify computer and network threats and vulnerabilities and methods to prevent their effects
- Use tools to enhance network security
- Use encryption techniques to protect network data

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITNW 1358](#) - NETWORK+
-

ITSY 2300 - OPERATING SYSTEM SECURITY

Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats and monitor network security implementations. Use best practices to configure operating systems to industry security standards. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify network security risks, security design, and monitoring solutions
- Identify sources of computer threats, evaluate potential practices, tools, and technologies to protect individual network systems
- Establish and sustain an operating system security plan utilizing systems and application security tools
- Implement procedures to secure and monitor audit logs and set system administrator alerts
- Develop an organizational operating system security plan that provides for periodic reviews of security policies, procedures, authorized users list, and software update patches

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 1342](#) - INFORMATION TECHNOLOGY SECURITY
-

ITSY 2301 - FIREWALL AND NETWORK SECURITY

Identify elements of firewall design, types of security threats and responses to security attacks. Use Best Practices to design, implement, and monitor a network security plan. Examine security incident postmortem reporting and ongoing network security activities. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate system security skills through firewall implementation and testing
- Use system tools, practices, and relevant technologies to implement a security plan
- Evaluate practices, tools, and technologies to identify security breaches, sources of attacks, and protect mission critical systems
- Establish an appropriate level of security based on an analysis of security logs
- Use relevant tools to secure a network, respond to and follow up on various types of attacks

Grade Basis: L

Credit hours: 3.0

ITSY 2330 - INTRUSION DETECTION

Computer information systems security monitoring, intrusion detection, and crisis management. Includes alarm management, signature configuration, sensor configuration, and troubleshooting components. Emphasizes identifying, resolving, and documenting network crises and activating the response team. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Build IDS sensors and attach them to the network (hardware and software)
- Install and manage a secure communication link between all sensors and the monitor
- Install and manage event database(s)
- Analyze an event and trends
- Install, manage, and interpret syslog servers and system logs
- Identify legal and policy issues associated with system and network monitoring
- Deploy, implement, and test IDS security plan

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 2300](#) - OPERATING SYSTEM SECURITY
 - [ITSY 2301](#) - FIREWALL AND NETWORK SECURITY
-

ITSY 2342 - INCIDENT RESPONSE & HANDLING

In-depth coverage of incident response and incident handling, including identifying courses of attacks and security breaches, analyzing security logs; recovering the system to normal, performing postmortem analysis, and implementing and modifying security measures. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify sources of attacks
- Restore the system to normal operation
- Identify and prevent security threats
- Perform a postmortem analysis
- Identify computer investigation issues
- Identify the roles and responsibility of the incident response team

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 2301](#) - FIREWALL AND NETWORK SECURITY
-

ITSY 2343 - COMPUTER SYSTEM FORENSICS

In-depth study of system forensics including methodologies used for analysis of computer security breaches. Gather and evaluate evidence to perform postmortem analysis of a security breach. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify computer investigation issues
- Identify legal issues associated with computer investigations
- Collect and document evidence
- Evaluate network traffic, and evaluate recovered remnant or residual data

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 2300](#) - OPERATING SYSTEM SECURITY
-

ITSY 2382 - COOPERATIVE EDUCATION COMP & INFO SYS SEC

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 224 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

Restrictions:

- Departmental Chair approval required unless student is in last semester of the Cyber Security Degree.

ITSY 2445 - NETWORK DEFENSE AND COUNTERMEASURES

This is a practical application and comprehensive course that includes the planning, design, and construction of a complex network that will sustain an attack, document events, and mitigate the effects of the attack. 48 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Assemble network defense tools
- Identify network traffic to determine differences between authorized and unauthorized activity on a network
- Respond to a breach in security through the use of countermeasures designed to minimize the impact of the breach on the network
- Document network events
- Present an analysis of network breach and plan for remediation

Grade Basis: L

Credit hours: 4.0

MUEN 1171 - Jazz Band

May be repeated for credit. Consisting of 16-21 instrumentalists, the band performs both traditional and contemporary jazz literature. A number of performances are given both on and off campus (including some travel). Open to all students (audition required). 48 laboratory hours.

Grade Basis: L

Credit hours: 1.0

MUEN 1133 - Jazz Combo

May be repeated for credit. The combo performs both traditional and contemporary jazz literature. A number of performances are given both on and off campus (including some travel). Open to all students (audition required.) 48 lecture hours.

Grade Basis: L

Credit hours: 1.0

POFT 1220 - Job Search Skills

Skills to seek and obtain employment in business and industry. 32 lecture hours + 16 lab hours.

Upon completion, students will be able to:

- Assess career aptitudes
- Describe job search procedures
- Prepare employment documents
- Create a professional portfolio

Grade Basis: L

Credit hours: 2.0

PHED 1118 - Jogging and Walking I

This course is designed to improve or maintains the student's cardiovascular endurance and knowledge of cardiovascular fitness such as heart rates, body mass index and body fat percentage according to the student's age, gender, height and weight.

Grade Basis: L

Credit hours: 1.0

PHED 1119 - Jogging and Walking II

This course is designed to improve or maintain the student's cardiovascular endurance and knowledge of cardiovascular fitness such as heart rates, body mass index and body fat percentage according to the student's age, gender, height and weight.

Grade Basis: L

Credit hours: 1.0

CJSA 1317 - Juvenile Justice System

A study of the juvenile justice process to include specialized juvenile law, role of the juvenile law, role of the juvenile courts, role of police agencies, role of correctional agencies, and theories concerning delinquency. 48 lecture hours.

Upon completion, students will be able to:

- Describe the juvenile law and the role of juvenile courts
- Explain the roles of police and correctional agencies concerning delinquency
- Review and contrast the theories of delinquent conduct

Grade Basis: L

Credit hours: 3.0

HALT 1353 - Landscape Computer Design

A course in computer-aided landscape design. Emphasis on the application of design concepts and techniques using software. Basic computer skills required. Prerequisite: HALT1422 (Landscape Design). 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Design landscape plans using computer software programs
- Print a report of all hardscape and softscape materials used in the design

Grade Basis: L

Credit hours: 3.0

HALT 1422 - Landscape Design

A study of the principles and elements of landscape design. Topics include client interview, site analysis, plan view, scale, plant selection, basic drawing and drafting skills, and plan preparation. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate procedures utilized in the development of a landscape plan
- Develop a landscape design

- Perform a site analysis and incorporate the information into the final design

Grade Basis: L

Credit hours: 4.0

HALT 1333 - Landscape Irrigation

Coverage of irrigation systems including equipment, design, performance, and maintenance. Topics include residential and small business applications, troubleshooting, repair, and technological advances in irrigation systems. 32 lecture hours + 32 lab hours.

Upon completion, students will be able to:

- Describe the basic installation techniques used to install an irrigation system
- Discuss the separation of zones for turf areas, shrubs, groundcovers, and other plant groups
- Prepare a design for an irrigation system

Grade Basis: L

Credit hours: 3.0

HALT 1325 - Landscape Plant Material

Study of the identification, characteristics, cultural requirements, and landscape uses of native and adapted plants (annuals, perennials, shrubs, trees, vines, groundcover, turf). 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify plants
- Select plants for various landscape situations
- List characteristics of plants
- Describe cultural requirements of plants

Grade Basis: L

Credit hours: 3.0

HALT 1325 - LANGUAGE, PHILOSOPHY AND CULTURE ELECTIVE

Grade Basis: L

Credit hours: 3.0

ITCC 2408 - CISCO Exploration III - LAN Switching and Wireless

This course helps students develop an in-depth understanding of how switches operate and are implemented in the LAN environment for small and large networks. Detailed explanations of LAN switch operations, VLAN implementation, Rapid Spanning Tree Protocol (RSTP), VLAN Trunking Protocol (VTP), Inter-VLAN routing, and wireless network operations. Analyze, configure verify, and troubleshoot VLANs, RSTP, VTP, and wireless networks. Campus network design and Layer 3 switching concepts are introduced. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify and correct common network problems at layers 1, 2, 3, and 7 using a layered model approach
- Select the appropriate media, cables, ports, and connectors to connect switches to other devices and hosts
- Perform and verify initial switch configuration tasks including remote access management
- Configure, verify, and troubleshoot VLANs, VLAN Trunking, Inter-VLAN routing, VTP, and RSTP
- Verify network status and switch operation using basic utilities (ping, traceroute, telnet, SSH, arp, ipconfig)
- Identify and describe the purpose of the components in a small wireless network (SSID, BSS, ESS)
- Identify the basic parameters to configure on a wireless network to ensure that devices connect to the correct point

Grade Basis: L

Credit hours: 4.0

BMGT 2309 - Leadership

Concepts of leadership and its relationship to management. Prepares the student with leadership and communication skills needed to motivate and identify leadership styles. 48 lecture hours.

Upon completion, students will be able to:

- Determine individual leadership styles
- Distinguish differences between leadership and management
- Explain the effects of leadership style in various organizational environments
- Apply principles of leadership

Grade Basis: L

Credit hours: 3.0

EDUC 1300 - Learning Framework

A study of: research and theory in the psychology of learning, cognition, and motivation; factors that impact learning, and application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of the college-level student academic strategies. Students use assessment instruments (e.g. learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

PSYC 1300 - Learning Framework

A study of the (1) research and theory in the psychology of learning, cognition, and motivation; (2) factors that impact learning, and (3) application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of the college-level student academic strategies. Students use assessment instruments (e.g. learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Restrictions:

- This course is cross-listed as EDUC1300. The student may register for either EDUC1300 or PSYC1300 but may receive credit for only one of the two.
-

PSYC 2314 - Lifespan Growth and Development

Lifespan Growth and Development is a study of social, emotional, cognitive and physical factors and influences of a developing human from conception to death. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

MATH 2318 - Linear Algebra

Introduces and provides models for application of the concepts of vector algebra. Topics include finite dimensional vector spaces and their geometric significance; representing and solving systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion; matrices; determinants; linear transformations; quadratic forms; eigenvalues and eigenvector; and applications in science and engineering.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 2414](#) - Calculus II
-

ITSC 1316 - Linux Installation and Configuration

Introduction to Linux operating system. Includes Linux installation, basic administration, utilities and commands, upgrading, networking, security, and application installation. Emphasizes hands-on setup, administration, and management of Linux. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Install, administer, and manage a Linux system
- Demonstrate proficiency with Linux utilities, commands, and applications
- Identify and resolve security-based issues; and integrate a Linux system into an existing network

Grade Basis: L

Credit hours: 3.0

AGMG 2301 - Livestock Business Management

Instruction in contracts, leases, laws and regulations, estate planning, and applications of personnel and management principles. 48 lecture hours.

Upon completion, students will be able to:

- Discuss contract terms related to livestock and real estate
- Explain laws and regulations pertaining to the livestock industry
- Illustrate the importance of estate planning
- Compare the personnel and management techniques employed in the livestock industry

Grade Basis: L

Credit hours: 3.0

AGRI 2321 - Livestock Evaluation I

Evaluation and grading of market cattle, swine, sheep, and goats, their carcasses, and wholesale cuts. Emphasis will be placed on value determination. Selection and evaluation of breeding cattle, sheep, swine, and goats with emphasis on economically important traits. 32 lecture hours + 48 laboratory hours.

Upon completion, students will be able to:

- Accurately evaluate and grade meat animals (cattle, swine, sheep, and goats), their carcasses, and wholesale cuts according to USDA and industry standards
- Determine market value for meat animals, carcasses, and whole cuts
- Evaluate and select breeding animals based upon their economic potential in common production scenarios
- Apply knowledge of both subjective and objective techniques, tools, and information in order to make evaluation, grading, and selection decisions in practical production scenarios

Grade Basis: L

Credit hours: 3.0

AGEQ 1371 - Local Needs-PRINCIPLES OF RANCH HORSE RIDING II

Introduction to the advanced principles of Ranch Horse riding. To include, but not limited to handling, saddling, bridling, mounting, riding, grooming, safety, health care, advanced rope handling, advanced cow handling and tactics for competing in Ranch Horse events. 32 lecture hours + 64 laboratory hours. At the conclusion of this course a student will be able to: Assess and rate individual horses based upon their performance and abilities as a versatile ranch horse Interpret horse reaction to various headgear/bit selections and further use this information in selecting the best headgear/bit for each individual horse Propose and implement a conditioning and training schedule for their own horse Demonstrate proper and safe rope handling from horseback Exhibit proper use of the mechanical cow for training purposes Employ tactics facilitated in the course during the working of live cattle.

Grade Basis: L

Credit hours: 2.0

AGEQ 2371 - Local Needs - Advanced Ranch Horse Riding

Instruction in advanced Ranch Horse skills focusing on the use of the horse to assist in the management of cattle as commonly utilized for cow/horse competitions. Skills taught will include reading cattle, roping, sorting, control of an individual cow and the training methods used on the horse to achieve these skills. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate industry recognized training methods for finishing horses in the area of cow work
- Exhibit the ability to rope live cattle and properly handle cattle in a manner which is safe for both horse and rider
- Summarize the fundamentals to be employed when reading cattle for handling purposes
- Show the ability to handle and manipulate the movement of an individual cow
- Identify and appraise the characteristics of individual horses and their abilities when performing cow work
- Demonstrate progressive ability in completing a competitive cow horse pattern

Grade Basis: L

Credit hours: 3.0

AGEQ 2372 - Local Needs - Advanced Reining

Advanced principles in training, working and showing reining horses will be taught. Topics include rules, judging, conditioning, and advanced showmanship. Students will also learn methods for keeping their horses healthy and in competitive condition during the rigors of traveling to and from shows. Showing in at least two competitions is required. Student must provide their own horse for training and or competition. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Calculate correct drug dosage for frequently used equine pharmaceuticals
- Design a vaccination protocol for different types of equine operations
- Interpret clinical pathology results
- Explain proper restraint methods of an equine patient for various veterinary procedures

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 2370](#) - Local Needs - Reining
-

AGEQ 1370 - Local Needs - Principles of Ranch Horse Riding I

Instruction in the basic principles of Ranch Horse riding. To include, but not limited to handling, saddling, bridling, mounting, riding, grooming, safety, basic health care, basic rope handling, basic cow handling and tactics for competing in Ranch Horse events. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Recognize and employ basic handling and riding safety practices

- Identify and care for equipment and tack
- Demonstrate proper leg, seat, and hand positions as they relate to basic principles of Ranch Horse riding
- Identify core areas of focus for training the versatile ranch horse
- Generalize rules and procedures related to Ranch Horse competitions

Grade Basis: L

Credit hours: 3.0

AGEQ 1371 - Local Needs - Principles of Ranch Horse Riding II

Introduction to the advanced principles of Ranch Horse riding. To include, but not limited to handling, saddling, bridling, mounting, riding, grooming, safety, health care, advanced rope handling, advanced cow handling and tactics for competing in Ranch Horse events. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Assess and rate individual horses based upon their performance and abilities as a versatile ranch horse
- Interpret horse reaction to various headgear/bit selections and further use this information in selecting the best headgear/bit for each individual horse
- Propose and implement a conditioning and training schedule for their own horse
- Demonstrate proper and safe rope handling from horseback
- Exhibit proper use of the mechanical cow for training purposes
- Employ tactics facilitated in the course during the working of live cattle

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [AGEQ 1370](#) - Local Needs - Principles of Ranch Horse Riding I
-

AGEQ 2370 - Local Needs - Reining

Fundamentals of selecting, training, working and showing reining horses will be taught. Topics include history, development, rules, judging, conditioning, training and showing reining horses. Showing in at least on competition is required. Student must provide their own horse for training and or competition 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe the kind of horse that is most likely to succeed in reining competition
- Recognize which families of horses are most likely to succeed as reining horses based on past success in show ring
- Demonstrate industry recognized training methods
- Explain and develop proper riding techniques

- Exhibit basic reining maneuvers and patterns
- Evaluate effective training equipment
- Distinguish the proper use and function of bits
- Develop proper showmanship and sportsmanship

Grade Basis: L

Credit hours: 3.0

DFTG 2306 - Machine Design

Theory and practice of design. Projects in problem-solving, including press fit, bolted and welded joints, and transmission components. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Utilize the steps used in the design process, terminology, mechanical processes to produce drawings

Grade Basis: L

Credit hours: 3.0

DFTG 2302 - Machine Drafting

Production of detail and assembly drawings of machines, threads, gears, utilizing tolerances, limit dimensioning, and surface finishes. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Interpret terms used in tolerancing
- Identify dimensions of two mating parts
- Draw spur and/or bevel gears
- Draw details and assemblies
- Identify interference and clearance fits
- Identify types of threads forms
- Interpret thread notes

Grade Basis: L

Credit hours: 3.0

MCHN 1343 - Machine Shop Mathematics

Designed to prepare the student with technical, applied mathematics that will be necessary in future machine shop-related courses. 48 lecture hours.

Upon completion, students will be able to:

- Identify conversion methods of numbering systems
- Convert fractions to decimals and back
- Use formulas to solve measurement problems

Grade Basis: L

Credit hours: 3.0

MCHN 2380 - Cooperative Education - Machine Tool Technology/ Machinist

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 224 practicum hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

CSME 1443 - Manicuring and Related Theory

Presentation of the theory and practice of nail technology. Topics include terminology, application, and workplace competencies related to nail technology. 32 lecture hours + 80 laboratory hours.

Grade Basis: L

Credit hours: 4.0

INMT 2380 - Cooperative Education - Manufacturing Technology

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Grade Basis: L

Credit hours: 3.0

AGRI 1325 - Marketing of Agriculture Products

Operations in the movement of agricultural commodities from producer to consumer, including the essential marketing functions of buying, selling, transporting, storing, financing, standardizing, pricing, and risk bearing. 48 lecture hours.

Upon completion, students will be able to:

- Explain the essential marketing functions of buying, selling, transporting, storing, financing, standardizing, pricing, and risk bearing
- Apply economic principles to the marketing of agricultural products
- Identify alternatives in marketing of agricultural commodities and products
- Examine the structure of agricultural markets

Grade Basis: L

Credit hours: 3.0

SOCI 2301 - Marriage and the Family

Sociological and theoretical analysis of the structures and functions of the family, the varied cultural patterns of the American family, and the relationships that exist among the individuals within the family, as well as the relationships that exist between the family and other institutions in society. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

PHED 1126 - Martial Arts I

This course is designed to instill confidence and abilities in the student for both physical and mental challenges. This course will also cover conditioning and self defense techniques.

Grade Basis: L

Credit hours: 1.0

PHED 1127 - Martial Arts II

This course is designed to instill confidence and abilities in the student for both physical and mental challenges. This course will also cover conditioning and self defense techniques.

Grade Basis: L

Credit hours: 1.0

VNSG 1230 - Maternal and Neonatal Nursing

Utilization of the nursing process in the assessment and management of the childbearing family. Emphasis on the bio-psycho-socio-cultural needs of the family during the phases of pregnancy, childbirth, and the neonatal period including abnormal conditions. 32 lecture hours.

Grade Basis: L

Credit hours: 2.0

MATH 0303 - PRE-ALGEBRA

This introductory course includes a general overview of basic arithmetic: fractions, decimals, and percent. Other topics include algebraic concepts, integers, solving equations, linear equations, graphing and polynomials. Simple geometric concepts are also discussed. This course is designed for those students with little or no algebra background. This course does not count toward graduation at NCTC. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

MATH 0305 - BEGINNING ALGEBRA

This course includes basic algebraic concepts and notations, algebraic expressions and equations, factoring polynomials and graphing. Some algebra is required. This course does not count toward graduation at NCTC. 48 Lecture hours

Grade Basis: L

Credit hours: 3.0

MATH 0310 - INTERMEDIATE ALGEBRA

A study of relations and functions, inequalities, factoring, polynomials, rational expressions, and quadratics with an introduction to complex numbers, exponential and logarithmic functions, determinants and matrices, and sequences and series. 48 Lecture hours

Grade Basis: L

Credit hours: 3.0

MATH 1314 - COLLEGE ALGEBRA

In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L
Credit hours: 3.0

MATH 1316 - PLANE TRIGONOMETRY

In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. Meets NCTC Core Curriculum Requirement

Grade Basis: L
Credit hours: 3.0

MATH 1324 - MATHEMATICS FOR BUSINESS & SOCIAL SCIENCES

The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L
Credit hours: 3.0

Restrictions:

- Must meet TSI College Readiness Standard for Mathematics
-

MATH 1325 - CALCULUS FOR BUSINESS & SOCIAL SCIENCES

This course is the basic study of limits and continuity, differentiation, optimization, and graphing, and integration of elementary functions, with emphasis on applications in business, economics, and social sciences. This course is not a substitute for MATH2413, Calculus I. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L
Credit hours: 3.0

Restrictions:

- Prerequisite: MATH 1314 or MATH 1324
-

MATH 1332 - CONTEMPORARY MATHEMATICS I

Intended for Non STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics,

probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology, and communication should be embedded throughout the course. Additional topics may be covered. Meets NCTC Core Curriculum Requirements

Grade Basis: L

Credit hours: 3.0

MATH 1342 - ELEMENTARY STATISTICS OR

Grade Basis: L

Credit hours: 3.0

MATH 1342 - ELEMENTARY STATISTICAL METHODS

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

MATH 1350 - FUNDAMENTALS OF MATHEMATICS I

This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the conceptual development of the following: sets, functions, numeration systems, number theory, and properties of the various number systems with an emphasis on problem solving and critical thinking. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 1314](#) - COLLEGE ALGEBRA
-

MATH 1351 - FUNDAMENTALS OF MATHEMATICS II

This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the concepts of geometry, measurement, probability, and statistics with an emphasis on problem solving and critical thinking. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 1314](#) - COLLEGE ALGEBRA
-

MATH 2318 - LINEAR ALGEBRA

Introduces and provides models for application of the concepts of vector algebra. Topics include finite dimensional vector spaces and their geometric significance, representing and solving systems of linear equations using multiple methods including Gaussian elimination and matrix inversion, matrices, determinants, linear transformations, quadratic forms, eigenvalues and eigenvector, and applications in science and engineering.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 2414](#) - CALCULUS II
-

MATH 2320 - DIFFERENTIAL EQUATIONS

Ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions, series solutions, singular points, transform methods, boundary value problems, and application of differential equations to real-world problems. 64 lecture hours

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 2414](#) - CALCULUS II
-

MATH 2412 - PRE-CALCULUS MATH

In-depth combined study of algebra, trigonometry, and other topics for calculus readiness. 80 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

MATH 2413 - CALCULUS I

Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation, applications of the derivative to maximizing or minimizing a function, the chain rule, mean value theorem, and rate of change problems, curve sketching, definite and indefinite integration of algebraic,

trigonometric, and transcendental functions, with an application to calculation of areas.
64 lecture hours Meets NCTC Core Curriculum Requirement.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 2412](#) - PRE-CALCULUS MATH
-

MATH 2414 - CALCULUS II

Differentiation and integration of transcendental functions; parametric equations and polar coordinates, techniques of integration, sequences and series, improper integrals.
64 lecture hours

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 2413](#) - CALCULUS I
-

MATH 2415 - CALCULUS III

Advanced topics in calculus, including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, and Jacobians, and application of the line integral including Green's Theorem, the Divergence Theorem, and Stokes' Theorem. 64 lecture hours

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 2414](#) - CALCULUS II
-

MATH 2415 - MATHEMATICS

Grade Basis: L

Credit hours: 3.0

MATH 1324 - Mathematics for Business and Social Sciences

The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple

and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 0310](#) - Intermediate Algebra
-

MATH XXXX - MATHEMATICS CORE

Grade Basis: L

Credit hours: 3.0

MCHN 1302 - PRINT READING FOR MACHINING TRADES

A study of blueprints for machining trades with emphasis on machine drawings. 48 lecture hours

Upon completion, students will be able to:

- Identify the elements of machine drawings; interpret dimensions, tolerances, and geometric aspects of blueprints
- Explain Geometric Dimensioning and Tolerancing (GD&T) symbols and their meanings

Grade Basis: L

Credit hours: 3.0

MCHN 1320 - PRECISION TOOLS & MEASUREMENT

An introduction to the modern science of dimensional metrology. Emphasis on the identification, selection, and application of various types of precision instruments associated with the machining trade. Practice of basic layout and piece part measurements while using standard measuring tools. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe common methods of measurement conversion
- Determine the degree of precision measurement required
- Identify various types of precision instruments and their applications
- List maintenance procedures on various types of measuring instruments
- Interpret and confirm blueprint requirements
- Convert between English and metric units

- Compute total tolerances of parts
- Calibrate various types of precision measuring instruments to a standard
- Select and use precision measurement tools

Grade Basis: L

Credit hours: 3.0

MCHN 1343 - MACHINE SHOP MATHEMATICS

Designed to prepare the student with technical, applied mathematics that will be necessary in future machine shop-related courses. 48 lecture hours

Upon completion, students will be able to:

- Identify conversion methods of numbering systems
- Convert fractions to decimals and back
- Use formulas to solve measurement problems

Grade Basis: L

Credit hours: 3.0

MCHN 1438 - BASIC MACHINE SHOP I

A course that introduces the student to machining fundamentals. The student begins by using basic machine tools including the lathe, milling machine, drill press, power saw, and bench grinder. Machine terminology, theory, math, part layout, and bench work using common measuring tools included. Emphasis is placed on shop safety, housekeeping, and preventative maintenance. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Demonstrate set-up and use of the lathe, milling machine, drill press, power saw, and bench grinder applying good housekeeping, proper safety, and preventative maintenance
- Use precision instruments to perform bench work including part layout, drilling, reaming, taping, press fitting, location of hole centers and surfaces
- Set up power saws for cutoff operation
- Demonstrate tooling maintenance, and hazardous material handling
- Perform preventative maintenance
- Interpret blueprints

Grade Basis: L

Credit hours: 4.0

MCHN 2303 - FUNDAMENTALS OF COMPUTER NUMERICAL CONTROLLED (CNC) MACHINE CONTROLS

Programming and operation of Computer Numerical Controlled (CNC) machine shop equipment. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Demonstrate operations of CNC machine controls
- Compare and contrast the differences between conventional and CNC machines
- Utilize CNC machine applications for machining operations

Grade Basis: L

Credit hours: 3.0

MCHN 2380 - COOPERATIVE EDUCATION - MACHINE TOOL TECHNOLOGY/MACHINIST

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 224 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

MCHN 2434 - OPERATION OF CNC MACHINING CENTERS

A study of CNC operations with an emphasis on vertical machining centers. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Set up and operate CNC machining centers
- Set machine and tool offsets for machining operations
- Edit the program as required

Grade Basis: L
Credit hours: 4.0

MCHN 2435 - ADVANCED CNC MACHINING

The study of advanced CNC operation with an emphasis on programming and operations of machining and turning centers. 32 lecture hours + 64 laboratory hours

Upon completion, students will be able to:

- Set up and operate CNC machining centers and CNC turning centers
- Select proper tooling with correct speeds and feeds
- Produce a part to specific tolerances

Grade Basis: L
Credit hours: 4.0

DFTG 1333 - Mechanical Drafting

Study of mechanical drawings using dimensioning and tolerances, sectioning techniques, orthographic projection, and pictorial drawings. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Develop a set of working drawings including assembly, detail, and pictorial

Grade Basis: L
Credit hours: 3.0

SRGT HITT 1205 - Medical Terminology

Study of the basic structure of medical words including prefixes, suffixes, roots, combining forms, plurals, pronunciation, spelling, and the definitions of medical terms. Emphasis is on building a professional vocabulary required for employment in the allied health care field. 2 lecture hours.

Grade Basis: L
Credit hours: 2.0

HITT 1205 - Medical Terminology

Study of medical terms through word origin and structure. Introduction to abbreviations and symbols, surgical and diagnostic procedures, and medical specialties.

Grade Basis: L
Credit hours: 2.0

MUSI 1300 - Methods and Materials of Music

A study of the child's voice, music reading, rhythmic development, creative music for children and some of the standard music literature and material that might be used by the elementary teacher in the classroom. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

METL 1301 - INTRODUCTION TO METALLURGY

A study of refining, mechanical, and physical properties of ferrous and non-ferrous materials including the theory of alloys, heat treatment, and testing. 48 lecture hours

Upon completion, students will be able to:

- Define the physical and mechanical properties of ferrous and non-ferrous metals
- Describe the steel making process
- Name and describe methods of destructive and nondestructive testing
- Explain the effects of hot working, cold working, welding, machining, and heat treating on metal properties
- Perform tests to pinpoint failures
- Define metallurgical terms and processes
- Recognize defects and their causes

Grade Basis: L

Credit hours: 3.0

BIOL 2420 - Microbiology (For Pre-Nursing or Health Science Majors)

This course covers basic microbiology and immunology and is primarily directed at pre-nursing, pre-allied health, and non-science majors. It provides an introduction to historical concepts of the nature of microorganisms, microbial diversity, the importance of microorganisms and acellular agents in the biosphere, and their roles in human and animal diseases. Major topics include bacterial structure as well as growth, physiology, genetics, and biochemistry of microorganisms. Emphasis is on medical microbiology, infectious diseases, and public health. This course covers basics of culture and identification of bacteria and microbial ecology. This course is primarily directed at pre-nursing and other pre-allied health majors and covers basics of microbiology. Emphasis is on medical microbiology, infectious diseases, and public health.

Grade Basis: L

Credit hours: 4.0

SOCI 2319 - Minority Studies

This course studies minority-majority group relations, addressing their historical, cultural, social, economic, and institutional development in the United States. Both sociological and social psychological levels of analysis will be employed to discuss issues including experiences of minority groups within the context of their cultural heritage and tradition, as well as that of the dominant culture. Core concepts to be examined include (but are not limited to) social inequality, dominance/subordination, prejudice, and discrimination. Particular minority groups discussed may include those based on poverty, race/ethnicity, gender, sexual orientation, age, disability, or religion.

Upon completion, students will be able to:

- Explain how the concept of social inequality pertains to minority group status defined in terms of identities that may include social class, race/ethnicity, gender, sexual orientation, age, disability, or religion
- Differentiate between important concepts and theories of prejudice and discrimination including the effects of prejudice and discrimination on the everyday lives of minority group members in the context of social institutions
- Analyze the history of culture, experiences of inequality, and current life opportunities of various minority groups in the United States with contrasting reference to other countries
- Analyze minority group interactions in the United States focusing on immigration and migration patterns, assimilation processes, and adjustments to American life

Grade Basis: L

Credit hours: 3.0

ELPT 1341 - Motor Control

Operating principles of solid-state and conventional controls along with their practical applications. Includes braking, jogging, plugging, safety interlocks, wiring, and schematic diagram interpretations. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify practical applications of jogging and plugging
- Describe the types of motor braking and their operating principles
- Explain different starting methods for large motors
- Demonstrate proper troubleshooting methods on circuits using wiring and schematic diagrams

Grade Basis: L

Credit hours: 3.0

ELPT 2305 - Motors and Transformers

Operation of single- and three-phase motors and transformers. Includes transformer banking, power factor correction, and protective devices. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Match the type of single-phase motor with its principles of operation
- Compare the operating characteristics of the three types of three-phase motors
- Explain the advantages of Wye and Delta connections in motor and transit applications
- Size overcurrent, short circuit, and ground fault protective devices
- Utilize nameplate information

Grade Basis: L

Credit hours: 3.0

MRKG 1301 - CUSTOMER RELATIONS

General principles of customer service including skills, knowledge, attitudes, and behaviors. Topics will include teamwork in an organization, internal and external customer relationships; communication in clear and professional manner and conflict resolution. 48 lecture hours

Upon completion, students will be able to:

- Examine internal and external customer relationship management (CRM) strategies

Grade Basis: L

Credit hours: 3.0

MRKG 1311 - PRINCIPLES OF MARKETING

Introduction to basic marketing functions; identification of consumer and organizational needs; explanation of economic, psychological, sociological, and global issues; and description and analysis of the importance of marketing research. 48 lecture hours.

Upon completion, students will be able to:

- Identify the marketing mix components in relation to market segmentation
- Explain the environmental factors which influence consumer and organizational decision-making processes
- Outline a marketing plan

Grade Basis: L

Credit hours: 3.0

MUEN 1131 - WIND ENSEMBLE

May be repeated for credit. Study and performance of a wide range of wind instrument repertoire (woodwind, brass, and percussion) from the Renaissance through the Twentieth Century. Open to all students. Audition required. 48 laboratory hours

Grade Basis: L

Credit hours: 1.0

MUEN 1135 - GUITAR ENSEMBLE

May be repeated for credit. Study and performance of a wide range of guitar repertoire from the Renaissance through the Twentieth Century. Open to all students. Audition required. 48 lecture hours

Grade Basis: L

Credit hours: 1.0

MUEN 1151 - COLLEGE ENSEMBLE

May be repeated for credit. Entrance by audition only from College Singers. This group will perform in connection with public relations activities and recruitment for the College. Travel in the service area will be required. 48 laboratory hours

Grade Basis: L

Credit hours: 1.0

MUEN 1154 - COLLEGE SINGERS

May be repeated for credit. Entrance by audition only. Study and performance of a broad range of music from Renaissance motets and madrigals to pop and show. This group will be involved in public relations activities for the college. 48 laboratory hours

Grade Basis: L

Credit hours: 1.0

MUEN 1171 - JAZZ BAND

May be repeated for credit. Consisting of 16-21 instrumentalists, the band performs both traditional and contemporary jazz literature. A number of performances are given both on and off campus including some travel. Open to all students. Audition required. 48 laboratory hours

Grade Basis: L

Credit hours: 1.0

MUSI 1116 - SIGHT SINGING & EAR TRAINING I

Reinforcement of theoretical concepts presented in MUSI1311 via singing, ear training, keyboard skills, and conducting experiences. 32 lecture hours

Grade Basis: L

Credit hours: 1.0

MUSI 1117 - SIGHT SINGING & EAR TRAINING II

Reinforcement of theoretical concepts presented in MUSI1312 via singing, ear training, keyboard skills, and conducting experiences. 32 lecture hours

Grade Basis: L

Credit hours: 1.0

MUSI 1181 - BEGINNING CLASS PIANO

Notation, clefs, key signatures, scales, time signatures, meter and rhythm, major and minor chords. Emphasis is placed on piano ensemble and solo literature of the simple type for the student's own pleasure. Open to all students and designed to meet the individual needs of the student. 32 lecture hours

Grade Basis: L

Credit hours: 1.0

MUSI 1182 - ADVANCED CLASS PIANO

Interpretation and a larger music vocabulary, opportunity to increase repertoire of piano ensemble literature to the student. 32 lecture hours

Grade Basis: L

Credit hours: 1.0

MUSI 1192 - BEGINNING CLASS GUITAR

Notation, key signatures, scales, time signatures, meter and rhythm, major and minor chords. Emphasis is placed on guitar ensemble and solo literature of the simple type for the student's own pleasure. Open to all students and designed to meet the individual needs of the student. 32 lecture hours

Grade Basis: L

Credit hours: 1.0

MUSI 1300 - METHODS & MATERIALS OF MUSIC

A study of the child's voice, music reading, rhythmic development, creative music for children and some of the standard music literature and material that might be used by the elementary teacher in the classroom. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

MUSI 1301 - FUNDAMENTALS OF MUSIC I

Introduction to the basic elements of music theory for non-music majors: scales, intervals, keys, triads, elementary ear training, keyboard harmony, notation, meter, and rhythm. Does not apply to a music major degree. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

MUSI 1306 - MUSIC APPRECIATION

Understanding music through the study of cultural periods, major composers, and musical elements. Illustrated with audio recordings and live performances. Does not apply to a music major degree. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

MUSI 1309 - MUSIC LITERATURE II

Survey of the principal musical forms and cultural periods as illustrated in the literature of major composers 48 lecture hours

Grade Basis: L

Credit hours: 3.0

MUSI 1310 - AMERICAN MUSIC

General survey of various styles of music in America. Topics may include jazz, ragtime, folk, rock, and contemporary art music. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

MUSI 1311 - MUSIC THEORY I

Analysis and writing of tonal melody and diatonic harmony up to and including the chords. Analysis and writing of small compositional forms. Correlated study at the keyboard. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

MUSI 1312 - MUSIC THEORY II

Continuation of MUSI 1311. Analysis and writing of tonal melody and diatonic harmony up to and including the chords. Analysis and writing of small compositional forms. Correlated study at the keyboard. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

MUSI 2116 - SIGHT SINGING & EAR TRAINING III

Singing more difficult tonal music including modal, ethnic, and 20th century materials. Aural study, including dictation of more complex rhythm, melody, chromatic harmony, and extended tertian structures. 16 lecture hours

Grade Basis: L

Credit hours: 1.0

MUSI 2117 - SIGHT SINGING & EAR TRAINING IV

Singing more difficult tonal music including modal, ethnic, and 20th century materials. Aural study, including dictation of more complex rhythm, melody, chromatic harmony, and extended tertian structures. 16 lecture hours

Grade Basis: L

Credit hours: 1.0

MUSI 2311 - MUSIC THEORY III

Advanced harmony part writing and keyboard analysis and writing of more advanced tonal harmony including chromaticism and extended tertian structures. Introduction to 20th century compositional procedures and survey of the traditional large forms of composition. Correlated study at the keyboard. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

MUSI 2312 - MUSIC THEORY IV

Advanced harmony part writing and keyboard analysis and writing of more advanced tonal harmony including chromaticism and extended tertian structures. Introduction to 20th century compositional procedures and survey of the traditional large forms of composition. Correlated study at the keyboard. 48 lecture hours

Grade Basis: L

Credit hours: 2.0

MUSI 1306 - Music Appreciation

Understanding music through the study of cultural periods, major composers, and musical elements. Illustrated with audio recordings and live performances. (Does not apply to a music major degree.) 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

MUSI 1308 - Music Literature I

Survey of the principal musical forms and cultural periods as illustrated in the literature of major composers. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

MUSI 1309 - Music Literature II

Survey of the principal musical forms and cultural periods as illustrated in the literature of major composers 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

MUSI 1311 - Music Theory I

Analysis and writing of tonal melody and diatonic harmony up to and including the chords. Analysis and writing of small compositional forms. Correlated study at the keyboard. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

MUSI 1312 - Music Theory II

Continuation of MUSI 1311. Analysis and writing of tonal melody and diatonic harmony up to and including the chords. Analysis and writing of small compositional forms. Correlated study at the keyboard. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MUSI 1311](#) - Music Theory I
 - [MUSI 1116](#) - Sight Singing and Ear Training I
-

MUSI 2311 - Music Theory III

Advanced harmony part writing and keyboard analysis and writing of more advanced tonal harmony including chromaticism and extended tertian structures. Introduction to 20th century compositional procedures and survey of the traditional large forms of composition. Correlated study at the keyboard. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MUSI 1312](#) - Music Theory II
 - [MUSI 1117](#) - Sight Singing and Ear Training II
-

MUSI 2312 - Music Theory IV

Advanced harmony part writing and keyboard analysis and writing of more advanced tonal harmony including chromaticism and extended tertian structures. Introduction to 20th century compositional procedures and survey of the traditional large forms of composition. Correlated study at the keyboard. 48 lecture hours.

Grade Basis: L

Credit hours: 2.0

Prerequisites:

- [MUSI 2311](#) - Music Theory III
 - [MUSI 2116](#) - Sight Singing and Ear Training III
-

ELPT 1325 - National Electrical Code I

An introductory study of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring design, protection, methods, and materials; equipment for general use; and basic calculations. 48 lecture hours.

Upon completion, students will be able to:

- Locate and interpret the sections in the NEC that pertain to electrical installations
- Calculate the size of conductors, boxes, raceways, and overcurrent protective devices for branch circuits supplying electrical equipment
- Calculate conductors, overcurrent protection, and service equipment as applied to building services
- Compute the size of branch circuits, feeders, and equipment for motors

Grade Basis: L

Credit hours: 3.0

PTRT 1317 - Natural Gas Processing I

An overview of natural gas processing operations. Topics include fundamentals of gas processing, the scientific principles and how they apply to the process, processing equipment, and procedures. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe the basic components of processing equipment
- Explain various gas plant operational procedures

Grade Basis: L

Credit hours: 3.0

PTRT 2323 - Natural Gas Production

An overview of the aspects of natural gas and oil production including various aspects of hydrocarbon production, processing equipment, and gas compression/transportation systems. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe gas well and casing head testing and metering systems
- Calculate gas volumes
- Describe the basic principles of hydrocarbon production
- Identify the basic components of field processing equipment

Grade Basis: L

Credit hours: 3.0

HALT 1372 - Naturalistic Horticulture

An organic approach to plant production, pest management, soil fertility, and plant health. Emphasis on sustainability, xeriscaping and landscaping using native plants as well as creating wildlife landscapes. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate and apply sustainable horticulture techniques and principles
- Explain the benefits of biodiversity in the garden
- Identify various Texas hardy plants
- Create living soils by identifying and cultivating microbial activity
- Design wildscapes to attract desired wildlife

Grade Basis: L

Credit hours: 3.0

HALT 1372 - LIFE AND PHYSICAL SCIENCES

Grade Basis: L

Credit hours: 4.0

NCBM 0100 - NON-COURSED BASED OPTION FOR MATHEMATICS

This course is a developmental education intervention and supports topics in MATH1332, MATH1342, or MATH1314. Course may include basic study skills such as note-taking, time management, learning styles and math anxiety, and test-taking strategies. Must be taken concurrently with a credit math course. This course does not count toward graduation at NCTC.

Grade Basis: L

NCBM 0200 - DEVELOPMENTAL MATHEMATICS - BASE, NCBO

This course is a BASE developmental education intervention and supports foundational topics in mathematics such as fractions, integers, decimals, percent, algebraic concepts, solving equations, graphing, and polynomials. This course is designed for those students with little algebra background. Course may include basic study skills, note-taking, time management, learning styles, math anxiety, and test-taking strategies. This course does not count toward graduation at NCTC. 32 lecture hours

Grade Basis: L

Restrictions:

- Must be taken concurrently with MATH0305
-

NCTC 1001 - FIRST YEAR EXPERIENCE

The First Year Experience Course is a one credit, 8 week course designed to provide students with the tools needed to persist and succeed at North Central Texas College. Topics covered in the course include: learning styles, study techniques, note-taking, test-taking, personal wellness and finance, time management, career and educational planning, and interpersonal skill development. First time college students (excluding dual credit) are required to pass NCTC 1001. The course does not satisfy requirements for any degree plan at NCTC, has no prerequisites, and is non-transferable.

Grade Basis: L

Credit hours: 1.0

ITNW 1358 - Network +

Identify and define terminology, hardware, and software components of computer networks; utilize equipment, protocols, and topologies to differentiate between various network systems; demonstrate skills in installing network hardware, software, and cable; troubleshoot network connectivity; configure network protocol; and install and configure network client software. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify and define terminology, hardware, and software components of computer networks
- Utilize equipment, protocols, and topologies to differentiate between various network systems
- Demonstrate skills in installing network hardware, software, and cable
- Troubleshoot network connectivity
- Configure network protocol
- Install and configure network client software

Grade Basis: L

Credit hours: 3.0

ITSY 2445 - Network Defense and Countermeasures

This is a practical application and comprehensive course that includes the planning, design, and construction of a complex network that will sustain an attack, document events, and mitigate the effects of the attack. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Assemble network defense tools
- Identify network traffic to determine differences between authorized and unauthorized activity on a network
- Respond to a breach in security through the use of countermeasures designed to minimize the impact of the breach on the network

- Document network events
- Present an analysis of network breach and plan for remediation

Grade Basis: L

Credit hours: 4.0

ITCC 1401 - CISCO Exploration I - Network Fundamentals

A course introducing the architecture, structure, functions, components, and models of the internet. Describes the use of OSI and TCP layered models to examine the nature and roles of protocols and services at the applications, network, data link, and physical layers. Covers the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations. Build simple LAN topologies by applying basic principles of cabling; perform basic configurations of network devices, including routers and switches; and implementing IP addressing schemes. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify and describe internet architecture, structure, functions, components, and models
- Describe the use of OSI and TCP layered models
- Identify and describe the nature and roles of protocols and services at the application, network, data link, and physical layers
- Describe principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations
- Build simple LAN topologies by applying basic principles of cabling, device configuration, and IP subnetting

Grade Basis: L

Credit hours: 4.0

MUEN 1141 - North Central Texas Chorus

May be repeated for credit. Open to all students. Study and performance of choral music concentrating especially on major works for chorus and orchestra. 48 laboratory hours.

Grade Basis: L

Credit hours: 1.0

POFT 1331 - Numeric Keypad Applications

Skill development in the operation of numeric keypad. Emphasis on the development of skills in using electronic calculators and other office machines. 32 lecture hours; 32 laboratory hours.

Upon completion, students will be able to:

- Demonstrate competency in the operation of a numeric keypad
- Develop speed and accuracy

Grade Basis: L

Credit hours: 3.0

VNSG 1400 - Nursing in Health and Illness I

Introduction to general principles of growth and development, primary health care needs of the client across the life span, and therapeutic nursing interventions. 80 lecture hours.

Grade Basis: L

Credit hours: 4.0

Restrictions:

- Must be admitted to the NCTC Vocational Nursing (LVN) program
-

VNSG 1509 - Nursing in Health and Illness II

Introduction to common health problems requiring medical and surgical interventions. 80 lecture hours.

Grade Basis: L

Credit hours: 5.0

VNSG 2510 - Nursing in Health and Illness III

Continuation of Nursing in Health and Illness II. Further study of common medical-surgical health problems of the client. 80 lecture hours.

Grade Basis: L

Credit hours: 5.0

BIOL 1322 - Nutrition & Diet Therapy I

This course introduces general nutritional concepts in health and disease and includes practical applications of that knowledge. Special emphasis is given to nutrients and nutritional processes including functions, food sources, digestion, absorption, and metabolism. Food safety, availability, and nutritional information including food labels, advertising, and nationally established guidelines are addressed.

Grade Basis: L

Credit hours: 3.0

PTRT 1321 - Oil Field Hydraulics

Presents hydraulics applicable to drilling, completion, and production. Includes calculating and evaluating the characteristics of the flowing and static fluids in various tubular and annular systems. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Calculate and determine the pressure loss inside a tubular system
- Discuss the advantages and disadvantages of the different hydraulic systems used in oil field applications

Grade Basis: L

Credit hours: 3.0

ITSY 2300 - Operating System Security

Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats and monitor network security implementations. Use best practices to configure operating systems to industry security standards. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify network security risks, security design, and monitoring solutions
- Identify sources of computer threats, evaluate potential practices, tools, and technologies to protect individual network systems
- Establish and sustain an operating system security plan utilizing systems and application security tools
- Implement procedures to secure and monitor audit logs and set system administrator alerts
- Develop an organizational operating system security plan that provides for periodic reviews of security policies, procedures, authorized users list, and software update patches

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [ITSY 1342](#) - Information Technology Security
-

MCHN 2434 - Operation of CNC Machining Centers

A study of CNC operations with an emphasis on vertical machining centers. 32 lecture hours + 64 laboratory hours.

Upon completion, students will be able to:

- Set up and operate CNC machining centers
- Set machine and tool offsets for machining operations
- Edit the program as required

Grade Basis: L

Credit hours: 4.0

MCHN 2434 - OR

Grade Basis: L

MCHN 2434 - OR

Grade Basis: L

MCHN 2434 - OR

Grade Basis: L

CHEM 2423 - Organic Chemistry I

Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. This laboratory-based course accompanies CHEM 2323, Organic Chemistry I. Laboratory activities will reinforce fundamental principles of organic chemistry, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Methods for the purification and identification of organic compounds will be examined.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [CHEM 1412](#) - General Chemistry II
-

CHEM 2425 - Organic Chemistry II

Advanced principles of organic chemistry will be studied, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. This laboratory-based course accompanies CHEM 2325, Organic Chemistry II. Laboratory activities reinforce advanced principles of organic chemistry, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules.

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [CHEM 2423](#) - Organic Chemistry I
-

HRPO 2307 - Organizational Behavior

The analysis and application of organizational theory, group dynamics, motivation theory, leadership concepts and the integration of interdisciplinary concepts from the behavioral sciences. 48 lecture hours.

Upon completion, students will be able to:

- Explain organizational theory as it relates to management practices, employee relations, and structure of the organization to fits its environment and operation
- Analyze leadership styles and determine their effectiveness in employee situations
- Identify methods in resolving organizational problems
- Describe the impact of corporate culture on employee behavior
- Analyze team dynamics, team building strategies, and cultural diversity

Grade Basis: L

Credit hours: 3.0

CSME 1401 - Orientation to Cosmetology

An overview of the skills and knowledge necessary for the field of cosmetology. 32 lecture hours + 128 laboratory hours. Demonstrate introductory skills Professional ethics, safety and sanitation Explain the laws and rules of the state

Grade Basis: L
Credit hours: 4.0

CSME 1420 - Orientation to Facial Specialist

An overview of the skills and knowledge necessary for the field of facials and skin care. Demonstrate facial and skin care skills Practice safety and sanitation according to the rules of the state licensing agency Practice professional ethics

Grade Basis: L
Credit hours: 4.0

CSME 1535 - Orientation to the Instruction of Cosmetology

An overview of the skills and knowledge necessary for the instruction of cosmetology students. 32 lecture hours + 144 laboratory hours. Identify teaching methodologies Observe lesson plan implementation Monitor various learning settings

Grade Basis: L
Credit hours: 5.0

OSHT 1320 - ENERGY INDUSTRIAL SAFETY

An overview for industrial workers of state/federal regulations and guidelines which require industrial safety training. Topics include the 29 C.F.R. 1910, 1926 and National Fire Protection Association (NFPA) 70E standards such as confined space entry, emergency action, lock out/tag out, arc flash, and other work related subjects. 48 lecture hours

Upon completion, students will be able to:

- Describe the basic components of safety, health, and environmental systems as defined by the Occupational Safety and Health Administration
- Describe Hazardous Waste Operator (HAZWOPER) standards
- Locate Material Safety Data Sheets (MSDS) and interpret the data
- Select and don Personal Protective Equipment (PPE)
- Perform lock out and tag out procedures
- Complete a confined space and hot work permit
- Select and employ fall protection equipment
- Fill out a Job Hazard Analysis (JHA)

Grade Basis: L
Credit hours: 3.0

EMSP 1356 - Patient Assessment and Airway Management

A detailed study of the knowledge and skills required to reach competence in performing patient assessment and airway management. 32 lecture + 32 laboratory hours.

Grade Basis: L

Credit hours: 3.0

RADR 1303 - Patient Care

An introduction in patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, and basic pharmacology. 32 lecture hours + 32 laboratory hours.

Grade Basis: L

Credit hours: 3.0

VNSG 1234 - Pediatrics

Study of childhood diseases and childcare from infancy through adolescence. Focus on the care of the well and the ill child utilizing the nursing process. 32 lecture hours.

Grade Basis: L

Credit hours: 2.0

ARTS - CREATIVE ARTS ELECTIVE

Grade Basis: L

Credit hours: 3.0

ITSC 1325 - Personal Computer Hardware

A study of current personal computer hardware including assembly, upgrading, setup, configuration, and troubleshooting. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Assemble/setup and upgrade personal computer systems
- Diagnose and isolate faulty components
- Optimize system performance
- Install and connect peripherals

Grade Basis: L

Credit hours: 3.0

PTRT 1324 - Petroleum Instrumentation

Study of instruments, instrument systems, terminology, process variables, and control loops as used in a petroleum environment. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe the oil field instrumentation
- Identify the basic instruments used with temperature, pressure, level, flow, and analytical field applications
- Describe the basic components of a control loop

Grade Basis: L

Credit hours: 3.0

PTRT 2380 - Cooperative Education - Petroleum Technology/ Technician

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 224 practicum hours.

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L

Credit hours: 3.0

VNSG 1331 - Pharmacology

Fundamentals of medications and their diagnostic, therapeutic, and curative effects. Includes nursing interventions associated with the various pharmacotherapeutic agents. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

PHED - PHYSICAL EDUCATION

Grade Basis: L

Credit hours: 1.0

PHED 1108 - BOWLING I

This course is designed to introduce the student to basic bowling skills, etiquette, safety procedures, and scoring.

Grade Basis: L

Credit hours: 1.0

PHED PHED 1109 - BOWLING II

This course is designed to introduce the student to basic bowling skills, etiquette, safety procedures, and scoring.

Grade Basis: L

Credit hours: 1.0

PHED 1110 - GOLF I

This course is designed to introduce the student to basic golf skills, etiquette, safety procedures, and swing.

Grade Basis: L

Credit hours: 1.0

PHED 1111 - GOLF II

This course is designed to introduce the student to basic golf skills, etiquette, safety procedures, and swing.

Grade Basis: L

Credit hours: 1.0

PHED 1114 - VARSITY SPORTS I

This course is designed to support the institutional mission to provide competitive athletic opportunities for student/athletes to pursue academic success, physical and emotional well-being and social development. Varsity athletes only.

Grade Basis: L

Credit hours: 1.0

PHED 1115 - VARSITY SPORTS II

This course is designed to support the institutional mission to provide competitive athletic opportunities for student/athletes to pursue academic success, physical and emotional well-being and social development. Varsity athletes only.

Grade Basis: L

Credit hours: 1.0

PHED 1116 - VARSITY CONDITIONING I

This course is designed to support the institutional mission to provide competitive athletic opportunities for student/athletes to pursue academic success, physical and emotional well-being and social development. Varsity athletes only.

Grade Basis: L

Credit hours: 1.0

PHED 1117 - VARSITY CONDITIONING II

This course is designed to support the institutional mission to provide competitive athletic opportunities for student/athletes to pursue academic success, physical and emotional well-being and social development. Varsity athletes only.

Grade Basis: L

Credit hours: 1.0

PHED 1118 - JOGGING/WALKING I

This course is designed to improve or maintains the student's cardiovascular endurance and knowledge of cardiovascular fitness such as heart rates, body mass index and body fat percentage according to the student's age, gender, height and weight.

Grade Basis: L

Credit hours: 1.0

PHED 1119 - JOGGING/WALKING II

This course is designed to improve or maintain the student's cardiovascular endurance and knowledge of cardiovascular fitness such as heart rates, body mass index and body fat percentage according to the student's age, gender, height and weight.

Grade Basis: L

Credit hours: 1.0

PHED 1120 - AEROBIC WORKOUT I

This course is designed to improve the student's maximum muscular and cardiovascular endurance.

Grade Basis: L

Credit hours: 1.0

PHED 1121 - AEROBIC WORKOUT II

This course is designed to improve the student's maximum muscular and cardiovascular endurance.

Grade Basis: L

Credit hours: 1.0

PHED 1124 - WEIGHT TRAINING I/JOGGING

This course is designed to improve the student's muscular strength, endurance, and cardiovascular endurance and introduce the student to the basic muscular groups.

Grade Basis: L

Credit hours: 1.0

PHED 1125 - WEIGHT TRAINING II/JOGGING

This course is designed to improve the student's muscular strength, endurance, and cardiovascular endurance and introduce the student to the basic muscular groups.

Grade Basis: L

Credit hours: 1.0

PHED 1126 - MARTIAL ARTS I

This course is designed to instill confidence and abilities in the student for both physical and mental challenges. This course will also cover conditioning and self defense techniques.

Grade Basis: L

Credit hours: 1.0

PHED 1127 - MARTIAL ARTS II

This course is designed to instill confidence and abilities in the student for both physical and mental challenges. This course will also cover conditioning and self defense techniques.

Grade Basis: L
Credit hours: 1.0

PHED 1134 - BASKETBALL I

This course is designed to teach the student the rules, skills, and fundamentals necessary to play the game and is designed to improve the student's physical fitness.

Grade Basis: L
Credit hours: 1.0

PHED 1135 - BASKETBALL II

This course is designed to teach the student the rules, skills, and fundamentals necessary to play the game and is designed to improve the student's physical fitness.

Grade Basis: L
Credit hours: 1.0

PHED 1140 - CARDIO FITNESS I

This course is designed to improve the student's maximum muscular and cardio vascular endurance through a variety of exercises and help teach the basics of the muscles used during physical activity in cardio and weight lifting and making healthy food choices and how they all work together for overall cardio fitness.

Grade Basis: L
Credit hours: 1.0

PHED 1141 - CARDIO FITNESS II

This course is designed to improve the student's maximum muscular and cardio vascular endurance through a variety of exercises and help teach the basics of the muscles used during physical activity in cardio and weight lifting and making healthy food choices and how they all work together for overall cardio fitness.

Grade Basis: L
Credit hours: 1.0

PHED 1146 - YOGA I

This course is designed to improve the student's body flexibility, muscular strength and endurance, breath capacity, posture, balance and concentration.

Grade Basis: L
Credit hours: 1.0

PHED 1147 - YOGA II

This course is designed to improve the student's body flexibility, muscular strength and endurance, breath capacity, posture, balance and concentration.

Grade Basis: L

Credit hours: 1.0

PHED 1148 - PILATES I

This course is designed to improve the student's knowledge of the basic principles of biomechanical body awareness, breath capacity, muscular endurance and stamina in accordance to the Pilates Principles.

Grade Basis: L

Credit hours: 1.0

PHED 1149 - PILATES II

This course is designed to improve the student's knowledge of the basic principles of biomechanical body awareness, breath capacity, muscular endurance and stamina in accordance to the Pilates Principles.

Grade Basis: L

Credit hours: 1.0

PHED 1301 - INTRODUCTION TO PHYSICAL FITNESS & SPORT

Orientation to the field of physical fitness and sport. Includes the study and practice of activities and principles that promote physical fitness. 48 lecture hours. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

PHED 1308 - SPORTS OFFICIATING

Instruction in rules, interpretation, and mechanics of officiating selected sports. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

PHED 1321 - COACHING, SPORTS & ATHLETICS

Study of the history, theories, philosophies, rules, and terminology of competitive sports. Includes coaching techniques.

Grade Basis: L
Credit hours: 3.0

PHED 1338 - CONCEPTS OF PHYSICAL FITNESS

Concepts and use of selected physiological variable of fitness, individual testing and consultation, and the organization of sports and fitness programs. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

PHED 2101 - RACQUETBALL

This course is designed to instruct the student in rules, terminology, court dimensions and the playing of singles, doubles, cut-throat, and tournament formatting.

Grade Basis: L

PHED 2356 - CARE & PREVENTION OF ATHLETIC INJURIES

Prevention and care of athletic injuries with emphasis on qualities of a good athletic trainer, avoiding accidents and injuries, recognizing signs and symptoms of specific sports injuries and conditions, immediate and long-term care of injuries, and administration procedures in athletic training. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

PHIL 1301 - INTRODUCTION TO PHILOSOPHY

A study of major issues in philosophy and/or the work of major philosophical figures in philosophy. Topics in philosophy may include theories of reality, theories of knowledge, theories of value, and their practical applications. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L
Credit hours: 3.0

PHIL 2303 - INTRODUCTION TO FORMAL LOGIC

The purpose of the course is to introduce the student symbolic logic, including syllogisms, propositional and predicate logic, and logical proofs in a system of rules. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

PHIL 2306 - INTRODUCTION TO ETHICS

The systematic evaluation of classical and/or contemporary ethical theories concerning the good life, human conduct in society, morals, and standards of value. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

PHYS 1401 - COLLEGE PHYSICS I

Fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces with emphasis on problem solving. 48 Lecture hours + 48 laboratory hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 1314](#) - COLLEGE ALGEBRA
- [MATH 1316](#) - PLANE TRIGONOMETRY

Restrictions:

- MATH1314 and MATH1316 or MATH2312/2412
-

PHYS 1402 - COLLEGE PHYSICS II

Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. 48 lecture hours + 48 laboratory hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [PHYS 1401](#) - COLLEGE PHYSICS I
-

PHYS 1415 - PHYSICAL SCIENCE

Course, is designed for non-science majors. Surveys topics from physics, chemistry, geology, astronomy, and meteorology. 48 lecture hours + 32 laboratory hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

PHYS 2425 - UNIVERSITY PHYSICS I

Fundamental principles of physics, using calculus, for science, computer science, and engineering majors; the principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics; and emphasis on problem solving. Basic laboratory experiments supporting theoretical principles involving the principles and applications of classical mechanics, including harmonic motion and physical systems; experimental design, data collection and analysis, and preparation of laboratory reports. 48 lecture hours + 48 laboratory hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 2413](#) - CALCULUS I
-

PHYS 2426 - UNIVERSITY PHYSICS II

A continuation of PHYS2425. Principles of physics for science, computer science, and engineering majors, using calculus, involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics. Laboratory experiments supporting theoretical principles presented in the lecture involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light and optics, experimental design, data collection and analysis, and preparation of laboratory reports. 48 lecture hours + 48 laboratory hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 2414](#) - CALCULUS II
 - [PHYS 2425](#) - UNIVERSITY PHYSICS I
-

PHYS 1415 - Physical Science

Course, is designed for non-science majors. Surveys topics from physics, chemistry, geology, astronomy, and meteorology. 48 lecture hours + 32 laboratory hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 0305](#) - Beginning Algebra
-

PHED 1148 - Pilates I

This course is designed to improve the student's knowledge of the basic principles of biomechanical body awareness, breath capacity, muscular endurance and stamina in accordance to the Pilates Principles.

Grade Basis: L

Credit hours: 1.0

PHED 1149 - Pilates II

This course is designed to improve the student's knowledge of the basic principles of biomechanical body awareness, breath capacity, muscular endurance and stamina in accordance to the Pilates Principles.

Grade Basis: L

Credit hours: 1.0

DFTG 2323 - Pipe Drafting

A study of pipe fittings, symbols, specifications and their applications to a piping process system. Creation of symbols and their usage in flow diagrams, plans, elevations, and isometrics. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Create drawings of foundations, structural supports, and process equipment
- Identify symbols and research specifications
- Generate a bill of material list
- Use charts and standards
- Generate isometric drawings
- Calculate measurements for pipe fittings

Grade Basis: L

Credit hours: 3.0

MATH 1316 - Plane Trigonometry

In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [MATH 1314](#) - College Algebra

MATH 1316 - PLANT OR CROP SCIENCE

Grade Basis: L

Credit hours: 4.0

POFI 1349 - SPREADSHEETS

Skill development in concepts, procedures, and application of spreadsheets. This course is designed to be repeated multiple times to improve student proficiency. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Identify spreadsheet terminology and concepts
- Calculate data using formulas and functions
- Create and modify workbooks
- Insert graphics
- Generate charts and reports
- Create and use special functions

Grade Basis: L

Credit hours: 3.0

POFI 2301 - WORD PROCESSING

Word processing software focusing on business applications. This course is designed to be repeated multiple times to improve student proficiency. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Apply basic and advanced formatting skills and special functions to produce documents

Grade Basis: L

Credit hours: 3.0

POFI 2331 - DESKTOP PUBLISHING FOR THE OFFICE

In-depth coverage of desktop publishing terminology, text editing, and use of design principles to create publishing material using word processing desktop publishing features. Emphasis on layout techniques, graphics, and multiple page displays. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Define desktop publishing terminology
- Manipulate text and graphics to create a balanced and focused layout
- Create fliers, brochures, and multiple page documents

Grade Basis: L

Credit hours: 3.0

POFT 1220 - JOB SEARCH SKILLS

Skills to seek and obtain employment in business and industry. 32 lecture hours + 16 lab hours

Upon completion, students will be able to:

- Assess career aptitudes
- Describe job search procedures
- Prepare employment documents
- Create a professional portfolio

Grade Basis: L

Credit hours: 2.0

POFT 1309 - ADMINISTRATIVE OFFICE PROCEDURES I

Study of current office procedures, duties, and responsibilities applicable to an office environment. 48 lecture hours

Upon completion, students will be able to:

- Develop time management techniques
- Demonstrate communication skills
- Identify the basic skills of an office professional

Grade Basis: L
Credit hours: 3.0

POFT 1319 - RECORDS & INFORMATION MANAGEMENT I

Introduction to basic records information management systems including manual and electronic filing. 48 lecture hours

Upon completion, students will be able to:

- Identify the stages in the life cycle of a record
- File and retrieve records using filing systems
- Differentiate between manual and electronic filing

Grade Basis: L
Credit hours: 3.0

POFT 1325 - BUSINESS MATH & MACHINE APPLICATIONS

Skill development in business math problem-solving using electronic technology. 48 lecture hours

Upon completion, students will be able to:

- Solve business math application problems using technology

Grade Basis: L
Credit hours: 3.0

POFT 1328 - BUSINESS PRESENTATIONS

Skill development in planning and conducting business presentations on an individual and/or group basis including communication and media skills. This course is designed to be repeated multiple times to improve student proficiency. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Deliver business presentations
- Develop visual aids using presentation software
- Analyze audiences
- Use active listening and feedback skills

Grade Basis: L
Credit hours: 3.0

POFT 1329 - BEGINNING KEYBOARDING

Skill development in keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents. 48 lecture hours

Upon completion, students will be able to:

- Demonstrate keyboarding techniques
- Apply proofreading and editing skills
- Create basic business documents

Grade Basis: L

Credit hours: 3.0

POFT 1331 - NUMERIC KEYPAD APPLICATIONS

Skill development in the operation of numeric keypad. Emphasis on the development of skills in using electronic calculators and other office machines. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Demonstrate competency in the operation of a numeric keypad
- Develop speed and accuracy

Grade Basis: L

Credit hours: 3.0

POFT 2312 - BUSINESS CORRESPONDENCE & COMMUNICATION

Development of writing and presentation skills to produce effective business communications. 48 lecture hours

Upon completion, students will be able to:

- Create effective business documents
- Evaluate business documents
- Apply ethical communication practices

Grade Basis: L

Credit hours: 3.0

POFT 2331 - ADMINISTRATIVE PROJECT SOLUTIONS

Advanced concepts of project management and office procedures integrating software applications, critical thinking, and problem-solving skills. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Manage business projects using technology, critical thinking, and problem-solving skills

Grade Basis: L

Credit hours: 3.0

POFT 2380 - COOPERATIVE EDUCATION - ADMINISTRATIVE ASSISTANT & SECRETARIAL SCIENCE

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 320 practicum hours

Grade Basis: L

Credit hours: 3.0

CRIJ 2328 - Police Systems and Practices

This course examines the establishment, role and function of police in a democratic society. It will focus on types of police agencies and their organizational structure, police-community interaction, police ethics, and use of authority. 48 lecture hours.

Upon completion, students will be able to:

- Describe the types of police agencies and explain the role of police in America within the context of a democratic society
- Describe means and methods utilized to ensure police accountability
- Explain the historical development of policing
- Describe the selection process for police officers
- Compare and contrast organizational structures, policies, strategies and tactics employed to ensure police effectiveness, efficiency and equity

Grade Basis: L

Credit hours: 3.0

GAME 2308 - Portfolio for Game Development

Design and management of an industry standard portfolio. Includes techniques in self-promotion, resume writing, portfolio distribution systems, and interviewing. Note: Department Chair approval is required unless student is in the last semester of their Application Development degree At the conclusion of the course a student will be able

to: Design a professional portfolio for various delivery systems create resume, business card, webpage demo reel and hard copy

Grade Basis: L

Credit hours: 3.0

RADR 1266 - Practicum I

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Grade Basis: L

Credit hours: 2.0

RADR 1267 - Practicum II

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Grade Basis: L

Credit hours: 2.0

RADR 2366 - Practicum III

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Grade Basis: L

Credit hours: 3.0

RADR 2367 - Practicum IV

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Grade Basis: L

Credit hours: 3.0

MATH 0303 - Pre-Algebra

This introductory course includes a general overview of basic arithmetic: fractions, decimals, and percent. Other topics include algebraic concepts, integers, solving equations, linear equations, graphing and polynomials. Simple geometric concepts are also discussed. This course is designed for those students with little or no algebra background. This course does not count toward graduation at NCTC. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

MATH 2412 - Pre-Calculus Mathematics

In-depth combined study of algebra, trigonometry, and other topics for calculus readiness. 80 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [MATH 1314](#) - College Algebra
-

MCHN 1320 - Precision Tools and Measurement

An introduction to the modern science of dimensional metrology. Emphasis on the identification, selection, and application of various types of precision instruments associated with the machining trade. Practice of basic layout and piece part measurements while using standard measuring tools. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe common methods of measurement conversion
- Determine the degree of precision measurement required
- Identify various types of precision instruments and their applications
- List maintenance procedures on various types of measuring instruments
- Interpret and confirm blueprint requirements
- Convert between English and metric units
- Compute total tolerances of parts
- Calibrate various types of precision measuring instruments to a standard
- Select and use precision measurement tools

Grade Basis: L

Credit hours: 3.0

CSME 2441 - Preparation for Texas Licensing and Regulations

Preparation for the state licensing examination. 16 lecture hours + 128 laboratory hours. Review for the written state licensing exam Prepare for the practical state licensing exam Practice safety and sanitation according to the laws and rules of the state licensing agency

Grade Basis: L

Credit hours: 4.0

ACCT 2301 - Principles of Financial Accounting

This course is an introduction to the fundamental concepts of financial accounting as prescribed by U.S. generally accepted accounting principles (GAAP) and applied to transactions and events that affect business organizations. Students will examine the procedures and systems to accumulate, analyze, measure, and record financial transactions. Students will use recorded financial information to prepare a balance sheet, income statement, statement of cash flows, and statement of shareholders' equity to communicate the business entity's results of operations and financial position to users of financial information who are external to the company. Students will study the nature of assets, liabilities, and owners' equity while learning to use reported financial information for purposes of making decisions about the company. Students will be exposed to International Financial Reporting Standards (IFRS). 48 lecture hours

Upon completion, students will be able to:

- Use basic accounting terminology and the assumptions, principles, and constraints of the accounting environment
- Identify the difference between accrual and cash basis accounting
- Analyze and record business events in accordance with U.S. generally accepted accounting principles (GAAP)
- Prepare adjusting entries and close the general ledger
- Prepare financial statements in an appropriate U.S. GAAP format, including the following: income statement, balance sheet, statement of cash flows, and statement of shareholders' equity
- Analyze and interpret financial statements using financial analysis techniques
- Describe the conceptual differences between International Financial Reporting Standards and U.S. generally accepted accounting principles

Grade Basis: L

Credit hours: 3.0

Restrictions:

- Recommended co-requisite: MATH1324 - Mathematics for Business & Social Sciences

BMGT 1327 - Principles of Management

Concepts, terminology, principles, theories, and issues in the field of management. 48 lecture hours.

Upon completion, students will be able to:

- Explain various theories, processes, and functions of management
- Apply theories to a business environment
- Identify leadership roles in organizations
- Describe elements of the communication process

Grade Basis: L
Credit hours: 3.0

ACCT 2302 - Principles of Managerial Accounting

This course is an introduction to the fundamental concepts of managerial accounting appropriate for all organizations. Students will study information from the entity's accounting system relevant to decisions made by internal managers, as distinguished from information relevant to users who are external to the company. The emphasis is on the identification and assignment of product costs, operational budgeting and planning, cost control, and management decision making. Topics include product costing methodologies, cost behavior, operational and capital budgeting, and performance evaluation. 48 lecture hours.

Upon completion, students will be able to:

- Identify the role and scope of financial and managerial accounting and the use of accounting information in the decision making process of managers
- Define operational and capital budgeting, and explain its role in planning, control, and decision making
- Prepare an operating budget, identify its major components, and explain the interrelationships among its various components
- Explain methods of performance evaluation
- Use appropriate financial information to make operational decisions
- Demonstrate use of accounting data in the areas of product costing, cost behavior, cost control, and operational and capital budgeting for management decisions

Grade Basis: L
Credit hours: 3.0

Prerequisites:

- [ACCT 2301](#) - Principles of Financial Accounting
-

MRKG 1311 - Principles of Marketing

Introduction to basic marketing functions, identification of consumer and organizational needs, explanation of economic, psychological, sociological, and global issues, and description and analysis of the importance of marketing research. 48 lecture hours.

Upon completion, students will be able to:

- Identify the marketing mix components in relation to market segmentation
- Explain the environmental factors which influence consumer and organizational decision-making processes
- Outline a marketing plan

Grade Basis: L

Credit hours: 3.0

CSME 1421 - Principles of Facial and Skin Care Technology I

An introduction to the principles of facial and skin care technology. Topics include anatomy, physiology, theory and related skills of facial and skin care technology. Explain the basic anatomy and physiology of the skin Demonstrate the related skills of skin care and cosmetics

Grade Basis: L

Credit hours: 4.0

CSME 2431 - Principles of Facial and Skin Care Technology III

Advanced concepts and principles of skin care and other related technologies. Demonstrate professional ethics Design salon management Perform advanced skin care services Exhibit related skills in preparation for the state licensing examination

Grade Basis: L

Credit hours: 4.0

AGAH 2313 - Principles of Feeds and Feeding

Study of the role and application of feed nutrients and additives. Topics include comparative aspects of digestion, absorption, and metabolism of nutrients. Emphasis on identification of nutrient requirements and formulation of dietary feeding regimen. 48 lecture hours + 16 hours.

Upon completion, students will be able to:

- Outline the roles and functions of feed nutrients and non-nutritive feed additives
- Describe and compare digestion, absorption, and metabolism
- Compute dietary feeding regimens
- Identify nutritional problems as related to digestive systems

Grade Basis: L

Credit hours: 3.0

CSME 2501 - The Principles of Hair Coloring and Related Theory

Presentation of the theory and practice of hair color and chemistry. Topics include terminology, application, and workplace competencies related to hair color and chemistry. 16 lecture hours + 144 laboratory hours. Define terminology Demonstrate hair color application Practice safety and sanitation according to the laws and rules of the state licensing agency Practice workplace competencies related to hair color

Grade Basis: L

Credit hours: 4.0

RADR 1313 - Principles of Radiographic Imaging I

Radiographic image quality and the effects of exposure variables. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

ECON 2301 - Principles of Macroeconomics

An analysis of the economy as a whole including measurement and determination of Aggregate Demand and Aggregate Supply, national income, inflation, and unemployment. Other topics include international trade, economic growth, business cycles, and fiscal policy and monetary policy. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

ECON 2302 - Principles of Microeconomics

Analysis of the behavior of individual economic agents, including consumer behavior and demand, producer behavior and supply, price and output decisions by firms under various market structures, factor markets, market failures, and international trade. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

RADR 2205 - Principles of Radiographic Imaging II

A continuation of the study of radiographic imaging technique formulation, image quality assurance, and the synthesis of all variables in image production. 48 lecture hours.

Grade Basis: L

Credit hours: 2.0

CSME 1248 - Principles of Skin Care

An introduction of the theory and practice of skin care. 16 lecture hours + 64 laboratory hours Define terminology related to skin care treatments Demonstrate skin care procedures Practice safety and sanitation according to the laws and rules of the state licensing agency Exhibit workplace competencies in skin care

Grade Basis: L

Credit hours: 2.0

CSME 1447 - Principles of Skin Care, Facials & Related Theory

In-depth coverage of the theory and practice of skin care, facials, and cosmetics. 32 lecture hours + 144 laboratory hours. Define terminology related to the skin, products, and treatments Demonstrate applications related to skin care and cosmetics Practice safety and sanitation according to the laws and rules of the state licensing agency Exhibit workplace competencies in skin care cosmetics

Grade Basis: L

Credit hours: 4.0

CJCR 1304 - Probation and Parole

A survey of the structure, organization, and operation of probation and parole services. Emphasis on applicable state statutes and administrative guidelines. 48 lecture hours.

Upon completion, students will be able to:

- Describe the professional qualifications for employment as a probation or parole practitioner
- Demonstrate skills in management and treatment practices
- Create and develop community relations strategies

Grade Basis: L

Credit hours: 3.0

VNSG 1219 - Professional Development

Study of the importance of professional growth. Topics include the role of the LVN in the multidisciplinary healthcare team, professional organizations, continuing education, delegating authority, resume writing, and job interviewing. 32 lecture hours.

Grade Basis: L

Credit hours: 2.0

ELPT 2319 - Programmable Logic Controllers I

Fundamental concepts of programmable logic controllers, principles of operation, and numbering systems as applied to electrical controls. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify and describe digital logic circuits and explain numbering systems
- Explain the operation of programmable logic controllers

- Convert ladder diagrams into programs
- Incorporate timers and counters utilizing programmable logic controllers
- Execute and evaluate programs

Grade Basis: L

Credit hours: 3.0

PSYC 1300 - LEARNING FRAMEWORK

A study of the (1) research and theory in the psychology of learning, cognition, and motivation; (2) factors that impact learning, and (3) application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of the college-level student academic strategies. Students use assessment instruments (e.g. learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. This course is cross-listed as EDUC1300. The student may register for either EDUC1300 or PSYC1300 but may receive credit for only one of the two. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

PSYC 2301 - GENERAL PSYCHOLOGY

General Psychology is a survey of the major psychological topics, theories, and approaches to the scientific study of behavior and mental processes. 48 lecture hours
Meets NCTC Core Curriculum Requirement

Upon completion, students will be able to:

- Identify various research methods and their characteristics used in the scientific study of psychology
- Describe the historical influences and early schools of thought that shaped the field of psychology
- Describe some of the prominent perspectives and approaches used in the study of psychology
- Use terminology unique to the study of psychology
- Describe accepted approaches and standards in psychological assessment and evaluation
- Identify factors in physiological and psychological processes involved in human behavior

Grade Basis: L

Credit hours: 3.0

PSYC 2306 - HUMAN SEXUALITY

This course will provide an overview of the broad field of human sexuality. Topics will be covered from various perspectives - biological, sociological, anthropological, etc., but will focus primarily on the psychological perspective. The goal is for each student to learn factual, scientifically-based information that will provoke thought and contribute to his/her own decision-making on sexual issues outside of the classroom. 48 lecture hours

Upon completion, students will be able to:

- Identify various research methods and their characteristics used in the scientific study of psychology
- Describe the historical influences and early schools of thought that shaped the field of psychology
- Describe some of the prominent perspectives and approaches used in the study of psychology
- Use terminology unique to the study of psychology
- Describe accepted approaches and standards in psychological assessment and evaluation
- Identify factors in physiological and psychological processes involved in human behavior

Grade Basis: L

Credit hours: 3.0

PSYC 2314 - LIFESPAN GROWTH & DEVELOPMENT

Lifespan Growth and Development is a study of social, emotional, cognitive and physical factors and influences of a developing human from conception to death. 48 lecture hours Meets NCTC Core Curriculum Requirement

Upon completion, students will be able to:

- Describe the stages of the developing person at different periods of the life span from birth to death
- Discuss the social, political, economic, and cultural forces that affect the development process of the individual
- Identify factors of responsible personal behavior with regard to issues such as sexual activity, substance abuse, marriage and parenting
- Explain the biosocial, cognitive, and psychological inclusions throughout the lifespan as an ongoing set of processes involving both continuity and change
- Describe the different development perspectives of the major theories of development (i.e. cognitive, learning, humanistic and psychodynamic)
- Identify examples of some of the cultural and ethnic differences that influence development throughout the lifespan
- Discuss the various causes or reasons for disturbances in the developmental process

Grade Basis: L
Credit hours: 3.0

PSYC 2315 - PSYCHOLOGY OF ADJUSTMENT

Study of the processes involved in adjustment of individuals to their personal and social environments. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

PSYC 2316 - PSYCHOLOGY OF PERSONALITY

Study of various approaches to determinants, development, and assessment of personality. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

PSYC 2319 - SOCIAL PSYCHOLOGY

Study of individual behavior within the social environment. May include topics such as the socio-psychological process, attitude formation and change, interpersonal relations, and group processes. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

PSYC 2315 - Psychology of Adjustment

Study of the processes involved in adjustment of individuals to their personal and social environments. 48 lecture hours.

Grade Basis: L
Credit hours: 3.0

PSYC 2316 - Psychology of Personality

Study of various approaches to determinants, development, and assessment of personality. 48 lecture hours.

Grade Basis: L
Credit hours: 3.0

PTRT 1301 - INTRODUCTION TO PETROLEUM INDUSTRY

An introduction to the various aspects of petroleum industry including equipment, systems, instrumentation, operations, and the various scientific principles. Addresses a variety of petroleum technologies: exploration, drilling, production, transportation, marketing, and chemical processing industries. 48 lecture hours

Upon completion, students will be able to:

- Identify the concepts of exploration, production, refining, marketing, and transportation
- Describe the terms and phrases associated with the petroleum industry

Grade Basis: L

Credit hours: 3.0

PTRT 1303 - DRILLING

A study of practices and procedures that are involved in drilling operations. Topics on rig equipment, casing design, fishing, and proper procedures to successfully drill a well are discussed. 48 lecture hours

Upon completion, students will be able to:

- Describe fundamentals operations in the drilling industry
- Identify the five major systems and equipment of a drilling rig
- Describe specific down-hole problems; and explain solutions

Grade Basis: L

Credit hours: 3.0

PTRT 1307 - RECOVERY & PRODUCTION METHODS

Petroleum recovery and production methods. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe natural reservoir drive mechanisms, and artificial lift methods
- Identify the components of surface systems, identify factors used to select and describe basic life and recovery methods

Grade Basis: L

Credit hours: 3.0

PTRT 1313 - INDUSTRIAL SAFETY

An overview for petroleum and manufacturing workers of state/federal regulations and guidelines which require industrial safety training. Topics include the 29 C.F.R. 1910, 1926 standards. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe the basic components of safety, health, and environmental systems as applied to oil and gas operations

Grade Basis: L

Credit hours: 3.0

PTRT 1317 - NATURAL GAS PROCESSING I

An overview of natural gas processing operations. Topics include fundamentals of gas processing, the scientific principles and how they apply to the process, processing equipment, and procedures. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe the basic components of processing equipment
- Explain various gas plant operational procedures

Grade Basis: L

Credit hours: 3.0

PTRT 1321 - OIL FIELD HYDRAULICS

Presents hydraulics applicable to drilling, completion, and production. Includes calculating and evaluating the characteristics of the flowing and static fluids in various tubular and annular systems. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Calculate and determine the pressure loss inside a tubular system
- Discuss the advantages and disadvantages of the different hydraulic systems used in oil field applications

Grade Basis: L

Credit hours: 3.0

PTRT 1324 - PETROLEUM INSTRUMENTATION

Study of instruments, instrument systems, terminology, process variables, and control loops as used in a petroleum environment. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe the oil field instrumentation
- Identify the basic instruments used with temperature, pressure, level, flow, and analytical field applications
- Describe the basic components of a control loop

Grade Basis: L

Credit hours: 3.0

PTRT 1391 - SPECIAL TOPICS IN PETROLEUM-SCADA

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. 48 lecture hours Learning outcomes/objectives are determined by local occupational need and business and industry trends.

Grade Basis: L

Credit hours: 3.0

PTRT 2323 - NATURAL GAS PRODUCTION

An overview of the aspects of natural gas and oil production including various aspects of hydrocarbon production, processing equipment, and gas compression/transportation systems. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Describe gas well and casing head testing and metering systems
- Calculate gas volumes
- Describe the basic principles of hydrocarbon production
- Identify the basic components of field processing equipment

Grade Basis: L

Credit hours: 3.0

PTRT 2331 - WELL COMPLETIONS

Drilling and wellbore analysis data to develop a well completion plan. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Analyze production and completion data
- Develop a plan of action for completing a well

Grade Basis: L
Credit hours: 3.0

PTRT 2380 - COOPERATIVE EDUCATION - PETROLEUM TECHNOLOGY/TECHNICIAN

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 16 lecture hours + 224 practicum hours

Upon completion, students will be able to:

- Apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry
- Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry

Grade Basis: L
Credit hours: 3.0

SPCH 1315 - Public Speaking

Application of communication theory and practice to the public speaking context, with emphasis on audience analysis, speaker delivery, ethics of communication, cultural diversity, and speech organizational techniques to develop students' speaking abilities, as well as ability to effectively evaluate oral presentations. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L
Credit hours: 3.0

INMT 2303 - Pumps, Compressors and Mechanical Drives

A study of the theory and operations of various types of pumps and compressors. Topics include mechanical power transmission systems including gears, v-belts, and chain drives.

Grade Basis: L
Credit hours: 3.0

PHED 2101 - Racquetball II

This course is designed to instruct the student in rules, terminology, court dimensions and the playing of singles, doubles, cut-throat, and tournament formatting.

Grade Basis: L

RADR 2313 - Radiation Biology and Protection

A study of the effects of radiation exposure on biological systems, typical medical exposure levels, methods for measuring and monitoring radiation, and methods for protecting personnel and patients from excessive exposure. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

RADR 2209 - Radiographic Imaging Equipment

A study of the equipment and physics of x-ray production, basic x-ray circuits, and the relationship of equipment components to the imaging process. 48 lecture hours.

Grade Basis: L

Credit hours: 2.0

RADR 2217 - Radiographic Pathology

A presentation of the disease process and common diseases and their appearance on medical images. 32 lecture hours.

Grade Basis: L

Credit hours: 2.0

RADR 2335 - Radiologic Technology Seminar

A capstone course focusing on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

RADR 1160 - CLINICAL I

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 80 clinical hours

Grade Basis: L
Credit hours: 1.0

RADR 1201 - INTRODUCTION TO RADIOGRAPHY

An overview of the historical development of radiography, basic radiation protection, an introduction to medical terminology, ethical and legal issues for health care professionals, and an orientation to the program and the health care system. 32 lecture hours

Grade Basis: L
Credit hours: 2.0

RADR 1166 - PRACTICUM I

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Grade Basis: L
Credit hours: 1.0

RADR 1267 - PRACTICUM II

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Grade Basis: L
Credit hours: 2.0

RADR 1303 - PATIENT CARE

An introduction in patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, and basic pharmacology. 32 lecture hours + 32 laboratory hours

Grade Basis: L
Credit hours: 3.0

RADR 1313 - PRINCIPLES OF RADIOGRAPHIC IMAGING I

Radiographic image quality and the effects of exposure variables. 48 lecture hours

Grade Basis: L
Credit hours: 3.0

RADR 1411 - BASIC RADIOGRAPHIC PROCEDURES

An introduction to radiographic positioning terminology, the proper manipulation of equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of basic anatomy. 48 lecture hours + 64 laboratory hours

Grade Basis: L

Credit hours: 4.0

RADR 2205 - PRINCIPLES OF IMAGING II

A continuation of the study of radiographic imaging technique formulation, image quality assurance, and the synthesis of all variables in image production. 48 lecture hours

Grade Basis: L

Credit hours: 2.0

RADR 2209 - RADIOGRAPHIC IMAGING EQUIPMENT

A study of the equipment and physics of x-ray production, basic x-ray circuits, and the relationship of equipment components to the imaging process. 48 lecture hours

Grade Basis: L

Credit hours: 2.0

RADR 2217 - RADIOGRAPHIC PATHOLOGY

A presentation of the disease process and common diseases and their appearance on medical images. 32 lecture hours

Grade Basis: L

Credit hours: 2.0

RADR 2401 - INTERMEDIATE RADIOGRAPHY PROCEDURES

A continuation of study of the proper manipulation of radiographic equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of anatomy. 32 lecture hours + 64 laboratory hours

Grade Basis: L

Credit hours: 4.0

RADR 2313 - RADIATION BIOLOGY & PROTECTION

A study of the effects of radiation exposure on biological systems, typical medical exposure levels, methods for measuring and monitoring radiation, and methods for protecting personnel and patients from excessive exposure. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

RADR 2333 - ADVANCED MEDICAL IMAGING

An exploration of specialized imaging modalities. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

RADR 2335 - RADIOLOGIC TECH SEMINAR

A capstone course focusing on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

RADR 2466 - PRACTICUM III

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Grade Basis: L

Credit hours: 4.0

RADR 2267 - PRACTICUM IV

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Grade Basis: L

Credit hours: 2.0

RBPT 1300 - FUNDAMENTALS OF RESIDENTIAL BUILDING SCIENCE

A study of the house as a complex interrelated system of people, building technologies, and the environment. Emphasizes residential building techniques and how they

affect the needs for energy, water, and materials while providing a safe, healthy, and comfortable home. 32 lecture hours + 32 laboratory hours

Upon completion, students will be able to:

- Discuss the whole house approach to home construction using basic strategies to build energy-efficient, safe, and healthy homes with a variety of materials
- Explain the movement in different climates of heat, moisture, and air through the building enclosure
- Identify methods homeowners and building professionals use to contribute to the construction of resource-efficient, safe, healthy, and comfortable homes while minimizing the impact on the environment

Grade Basis: L

Credit hours: 3.0

READ 0300 - READING TECHNIQUES I

A course designed to enable college students to become more aware of themselves as readers and to develop strategies and skills to meet the demands of college reading. Emphasis is placed on comprehension. Specific strategies covered include vocabulary development, active reading strategies, outlining skills (including identifying the main idea, supporting details and patterns of organizations). This course does not count toward graduation of NCTC. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

READ 0305 - READING TECHNIQUES II

A course intended to continue the improvement of reading skills with particular emphasis on critical and analytical reading strategies. The course begins with a review of active reading strategies for informational texts and ends with an emphasis on critical reading of persuasive texts. Critical reading skills covered include identifying an author's purpose, tone, bias, and logic. This course does not count toward graduation at NCTC. 48 Lecture hours

Grade Basis: L

Credit hours: 3.0

READ 0300 - Reading Techniques I

A course designed to enable college students to become more aware of themselves as readers and to develop strategies and skills to meet the demands of college reading. Emphasis is placed on comprehension. Specific strategies covered include vocabulary development, active reading strategies, outlining skills (including identifying the main

idea, supporting details and patterns of organizations). This course does not count toward graduation of NCTC. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [EDUC 1300](#) - Learning Framework
 - [PSYC 1300](#) - Learning Framework
-

READ 0305 - Reading Techniques II

A course intended to continue the improvement of reading skills with particular emphasis on critical and analytical reading strategies. The course begins with a review of active reading strategies for informational texts and ends with an emphasis on critical reading of persuasive texts. Critical reading skills covered include identifying an author's purpose, tone, bias, and logic. This course does not count toward graduation at NCTC. 48 Lecture hours.

Grade Basis: L

Credit hours: 3.0

Prerequisites:

- [READ 0300](#) - Reading Techniques I
-

POFT 1319 - Records and Information Management I

Introduction to basic records information management systems including manual and electronic filing. 48 lecture hours.

Upon completion, students will be able to:

- Identify the stages in the life cycle of a record
- File and retrieve records using filing systems
- Differentiate between manual and electronic filing

Grade Basis: L

Credit hours: 3.0

PTRT 1307 - Recovery and Production Methods

Petroleum recovery and production methods. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe natural reservoir drive mechanisms, and artificial lift methods

- Identify the components of surface systems, identify factors used to select and describe basic life and recovery methods

Grade Basis: L

Credit hours: 3.0

HART 1307 - Refrigeration Principles

An introduction to the refrigeration cycle, heat transfer theory, temperature/pressure relationship, refrigerant handling, refrigeration components, and safety. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify refrigeration components
- Explain operation of the basic refrigeration cycle and heat transfer
- Demonstrate proper application and/or use of tools, test equipment, and safety procedures

Grade Basis: L

Credit hours: 3.0

HART 1341 - Residential Air Conditioning

A study of components, applications, and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair, and charging of air conditioning systems. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify various types of system applications
- Perform charging, recovery, and evacuation procedures of an installed system; perform component and part diagnostics and replacement
- Perform system maintenance

Grade Basis: L

Credit hours: 3.0

HART 2445 - Residential Air Conditioning Systems Designs

Study of the properties of air and results of cooling, heating, humidifying or dehumidifying; heat gain and heat loss calculations including equipment selection and balancing the air system. 32 lecture hours + 64 lecture hours.

Upon completion, students will be able to:

- Calculate heat loss and heat gain

- Size heating and cooling equipment to the structure
- Read and interpret detailed HVAC design plans
- Perform a load calculation using industry standards
- Design a complete air distribution system including ventilatins requirements and indoor air quality

Grade Basis: L

Credit hours: 4.0

RNSG 1163 - CLINICAL - PSYCHIATRIC NURSING

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Emphasis is on nursing skills essential for the care of patients along the mental health and mental illness continuum. 48 clinical hours

Grade Basis: L

Credit hours: 1.0

RNSG 1219 - INTEGRATED NURSING SKILLS I

Study of the concepts and principles necessary to perform basic nursing skills for care of diverse patients across the life span; demonstrate competence in the performance of nursing procedures. Content includes knowledge, judgment, skills, and professional values within a legal and ethical framework. 16 lecture hours + 48 laboratory hours

Grade Basis: L

Credit hours: 2.0

RNSG 1227 - TRANSITION TO PROFESSIONAL NURSING

Content includes health promotion, expanded assessment, analysis of data, critical thinking skills, and systematic problem solving process, pharmacology, interdisciplinary teamwork communication, and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework throughout the lifespan. 32 lecture hours

Grade Basis: L

Credit hours: 2.0

RNSG 1261 - CLINICAL NURSING I

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 144 clinical hours

Grade Basis: L

Credit hours: 2.0

RNSG 1262 - CLINICAL NURSING FOR TRANSITION STUDENTS

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Emphasis is on preparation for transition from vocational to professional nursing. 128 clinical hours

Grade Basis: L

Credit hours: 2.0

RNSG 1300 - HEALTH ASSESSMENT ACROSS THE LIFESPAN

Development of skills and techniques required for a comprehensive nursing health assessment of patients across the lifespan: pediatric, adult, and geriatric. Includes assessment of patients' health promotion and maintenance, illness and injury prevention and restoration, and application of the nursing process within a legal/ethical framework. 16 lecture hours + 48 laboratory hours

Grade Basis: L

Credit hours: 3.0

RNSG 1423 - INTRODUCTION TO PROFESSIONAL NURSING FOR INTEGRATED PROGRAMS

Introduction to the profession of nursing including the roles of the professional nurse as provider of patient-centered care, patient safety advocate, member of health care team, and member of the profession with emphasis on health promotion and primary disease prevention across the life span, essential components of the nursing health assessment, identification of deviations from expected health patterns, the application of a systematic, problem-solving process to provide basic nursing care to diverse patients across the lifespan, and applicable competencies in knowledge, judgment, skills, and professional values within a legal and ethical framework. 48 lecture hours + 16 lab hours

Grade Basis: L

Credit hours: 4.0

RNSG 1462 - CLINICAL NURSING II

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 256 clinical hours

Grade Basis: L

Credit hours: 4.0

RNSG 2404 - INTEGRATED CARE OF THE PATIENT WITH COMMON HEALTH CARE NEEDS

Application of a systematic problem-solving process, critical thinking skills and concepts to provide nursing care to diverse patients and families across the life span with common health care needs including, but not limited to, common childhood/adolescent diseases, uncomplicated perinatal care, mental health concepts, perioperative care, frequently occurring adult health problems and health issues related to aging. Emphasis on secondary disease prevention and collaboration with members of the interdisciplinary health care team. Content includes roles of the professional nurse and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. 64 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

RNSG 2414 - INTEGRATED CARE OF THE PATIENT WITH COMPLEX HEALTH CARE NEEDS

Application of a systematic problem solving process, critical thinking skills and concepts to provide comprehensive nursing care to diverse patients and families across the life span with complex health care needs including, but not limited to, complex childhood/adolescent diseases, complicated perinatal care, acute mental illness, complex perioperative care, serious adult health problems and health issues related to aging. Emphasis on tertiary disease prevention, health maintenance/restoration and collaboration with members of the multidisciplinary health care team. Content includes the roles of the professional nurse and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. 64 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

RNSG 2435 - INTEGRATED PATIENT CARE MANAGEMENT

Application of independent nursing interventions to care for diverse patients and families throughout the life span whose health care needs may be difficult to predict. Emphasis on collaborative clinical reasoning, nursing leadership skills, and patient management. Content includes the significance of professional development, trends in nursing and health care, and applicable knowledge, judgment, skills, and professional values within a legal/ethical framework. 64 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

RNSG 2461 - CLINICAL NURSING III

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 256 clinical hours

Grade Basis: L

Credit hours: 4.0

RNSG 2462 - CLINICAL NURSING IV

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 256 clinical hours

Grade Basis: L

Credit hours: 4.0

ITCC 1404 - CISCO Exploration II - Routing Protocols and Concepts

This course describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. Recognize and correct common routing issues and problems. Model and analyze routing processes. 48 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Describe the purpose, nature, and operations of a router
- Describe the purpose and nature of routing tables
- Describe the purpose and procedure of configuring static routes
- Design and implement a classless IP addressing scheme for a given network
- Describe the basis features and concepts of link-state routing protocols
- Configure and verify basic RIPv1, RIPv2, single area OSPF, and EIGRP operations in a small routed network

Grade Basis: L

Credit hours: 4.0

Prerequisites:

- [ITCC 1401](#) - CISCO Exploration I - Network Fundamentals
-

CSME 2343 - Salon Development

Procedures necessary for salon development. Topics include professional ethics, goal setting, salon operation, and record keeping. Create a salon portfolio or business plan
Demonstrate organizational skills related to salon operation and management

Grade Basis: L

Credit hours: 3.0

CSME 2343 - LIFE AND PHYSICAL SCIENCES

Grade Basis: L

Credit hours: 4.0

MUSI 1116 - Sight Singing and Ear Training I

Reinforcement of theoretical concepts presented in MUSI1311 via singing, ear training, keyboard skills, and conducting experiences. 32 lecture hours.

Grade Basis: L

Credit hours: 1.0

Prerequisites:

- [MUSI 1301](#) - Fundamentals of Music I
-

MUSI 1117 - Sight Singing and Ear Training II

Reinforcement of theoretical concepts presented in MUSI1312 via singing, ear training, keyboard skills, and conducting experiences. 32 lecture hours.

Grade Basis: L

Credit hours: 1.0

Prerequisites:

- [MUSI 1311](#) - Music Theory I
 - [MUSI 1116](#) - Sight Singing and Ear Training I
-

MUSI 2116 - Sight Singing and Ear Training III

Singing more difficult tonal music including modal, ethnic, and 20th century materials. Aural study, including dictation of more complex rhythm, melody, chromatic harmony, and extended tertian structures. 16 lecture hours.

Grade Basis: L

Credit hours: 1.0

Prerequisites:

- [MUSI 1312](#) - Music Theory II
 - [MUSI 1312](#) - Music Theory II
-

MUSI 2117 - Sight Singing and Ear Training IV

Singing more difficult tonal music including modal, ethnic, and 20th century materials. Aural study, including dictation of more complex rhythm, melody, chromatic harmony, and extended tertian structures. 16 lecture hours.

Grade Basis: L

Credit hours: 1.0

Prerequisites:

- [MUSI 2311](#) - Music Theory III
 - [MUSI 2116](#) - Sight Singing and Ear Training III
-

HALT 2321 - Small Farming

Instruction in small farming techniques with emphasis on horticulture science including comprehensive and profitable guidelines. Topics include herbs, fruits, nut, and vegetable crops. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify major physical and biological factors that affect crops
- Utilize innovative production techniques for a small farming operation
- Demonstrate creative marketing techniques for small farming operations
- Design productive and profitable small farming operations

Grade Basis: L

Credit hours: 3.0

SOCI 1301 - INTRODUCTION TO SOCIOLOGY

The scientific study of human society, including ways in which groups, social institutions, and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts, and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity, and deviance. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

SOCI 1306 - SOCIAL PROBLEMS

Application of sociological principles and theoretical perspectives to major social problems in contemporary society such as inequality, crime and violence, substance abuse, environmental issues, deviance, or family problems. 48 lecture hours Meets NCTC Core Curriculum Requirement

Upon completion, students will be able to:

- Describe how the sociological imagination can be used to explain the emergence and implications of contemporary social problems
- Explain the nature of social problems from at least one sociological perspective, e.g., critical, functional, interpretive, etc.
- Identify multidimensional aspects of social problems including the global, political, economic, and cultural dimensions of social problems
- Discuss how “solutions” to social problems are often contentious due to diverse values in society
- Describe how the proposed “solutions” to a social problem, including social policies, may bring rise to other social problems

Grade Basis: L

Credit hours: 3.0

SOCI 2301 - MARRIAGE & THE FAMILY

Sociological and theoretical analysis of the structures and functions of the family, the varied cultural patterns of the American family, and the relationships that exist among the individuals within the family, as well as the relationships that exist between the family and other institutions in society. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

SOCI 2319 - MINORITY STUDIES

This course studies minority-majority group relations, addressing their historical, cultural, social, economic, and institutional development in the United States. Both sociological and social psychological levels of analysis will be employed to discuss issues including experiences of minority groups within the context of their cultural heritage and tradition, as well as that of the dominant culture. Core concepts to be examined include (but are not limited to) social inequality, dominance/subordination, prejudice, and discrimination. Particular minority groups discussed may include those based on poverty, race/ethnicity, gender, sexual orientation, age, disability, or religion.

Upon completion, students will be able to:

- Explain how the concept of social inequality pertains to minority group status defined in terms of identities that may include social class, race/ethnicity, gender, sexual orientation, age, disability, or religion
- Differentiate between important concepts and theories of prejudice and discrimination including the effects of prejudice and discrimination on the everyday lives of minority group members in the context of social institutions
- Analyze the history of culture, experiences of inequality, and current life opportunities of various minority groups in the United States with contrasting reference to other countries
- Analyze minority group interactions in the United States focusing on immigration and migration patterns, assimilation processes, and adjustments to American life

Grade Basis: L

Credit hours: 3.0

SOCI 2326 - SOCIAL PSYCHOLOGY

Study of individual behavior within the social environment. May include topics such as the socio-psychological process, attitude formation and change, interpersonal relations, and group processes. 48 lecture hours. Cross-listed as PSYC 2319

Grade Basis: L

Credit hours: 3.0

SOCI 2340 - DRUG USE & ABUSE

Study of the use and abuse of drugs in today's society. Emphasizes the physiological, sociological, and psychological factors. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

SOCI 2340 - SOCIAL AND BEHAVIORAL SCIENCES

Grade Basis: L

Credit hours: 3.0

SOCI 1306 - Social Problems

Application of sociological principles and theoretical perspectives to major social problems in contemporary society such as inequality, crime and violence, substance abuse, environmental issues, deviance, or family problems. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

PSYC 2319 - Social Psychology

Study of individual behavior within the social environment. May include topics such as the socio-psychological process, attitude formation and change, interpersonal relations, and group processes. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

Restrictions:

- Cross-listed as SOCI 2326
-

SOCI 2326 - Social Psychology

Study of individual behavior within the social environment. May include topics such as the socio-psychological process, attitude formation and change, interpersonal relations, and group processes. 48 lecture hours. Cross-listed as PSYC 2319

Grade Basis: L

Credit hours: 3.0

SOCI 2326 - SOCIAL AND BEHAVIORAL SCIENCES CORE

Grade Basis: L

Credit hours: 3.0

DFTG 2340 - Solid Modeling and Design

A computer-aided modeling course. Development of three-dimensional drawings and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Create three-dimensional solid model objects
- Generate pictorial and orthographic drawings

Grade Basis: L

Credit hours: 3.0

SPAN 1411 - BEGINNING SPANISH I

Basic Spanish language skills in listening, speaking, reading, and writing within a cultural framework. Students will acquire the vocabulary and grammatical structures

necessary to communicate and comprehend at the beginner level. 48 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

SPAN 1412 - BEGINNING SPANISH II

Continued development of basic Spanish language skills in listening, speaking, reading, and writing within a cultural framework. Students acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the high beginner to low intermediate level. 48 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

SPAN 2311 - INTERMEDIATE SPANISH I

The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis on comprehension, appreciation, and interpretation of the cultures of the Spanish-speaking world. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

SPAN 2312 - INTERMEDIATE SPANISH II

The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis on comprehension, appreciation, and interpretation of the cultures of the Spanish-speaking world. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

SPCH 1315 - PUBLIC SPEAKING

Application of communication theory and practice to the public speaking context, with emphasis on audience analysis, speaker delivery, ethics of communication, cultural diversity, and speech organizational techniques to develop students' speaking abilities, as well as ability to effectively evaluate oral presentations. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

SPCH 1318 - INTERPERSONAL COMMUNICATION

Application of communication theory to interpersonal relationship development, maintenance, and termination in relationship contexts including friendships, romantic partners, families, and relationships with co-workers and supervisors. 48 lecture hours
Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

SPCH 1321 - BUSINESS & PROFESSIONAL COMMUNICATION

Study and application of communication within the business and professional context. Special emphasis will be given to communication competencies in presentations, dyads, teams and technologically mediated formats. 48 lecture hours Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

SPCH XXXX - COMMUNICATIONS CORE

Grade Basis: L

Credit hours: 3.0

DFTG 1391 - Special Topics in Drafting and Design Technology

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Learning outcomes/objectives are determined by local occupational need and business and industry trends

Grade Basis: L

Credit hours: 3.0

AGEQ 1391 - Special Topics III

This course will address recently identified current events, skills, knowledge, and behaviors pertinent to the equine industry and relevant to the professional development of the student. 16 lecture hours + 64 laboratory hours. At the conclusion of the course

a student will be able to: Learning outcomes/objectives are determined by local occupational need and business and industry trends.

Grade Basis: L

Credit hours: 3.0

AGAH 1291 - Special Topics in Animal Sciences - General

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. 16 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Learning outcomes/objectives are determined by local occupational need and business and industry trends

Grade Basis: L

Credit hours: 2.0

PTRT 1391 - Special Topics in Petroleum - SCADA

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. 48 lecture hours.

Upon completion, students will be able to:

- Learning outcomes/objectives are determined by local occupational need and business and industry trends

Grade Basis: L

Credit hours: 3.0

PHED 1308 - Sports Officiating I

Instruction in rules, interpretation, and mechanics of officiating selected sports. 48 lecture hours

Grade Basis: L

Credit hours: 3.0

POFI 1349 - Spreadsheets

Skill development in concepts, procedures, and application of spreadsheets. This course is designed to be repeated multiple times to improve student proficiency. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Identify spreadsheet terminology and concepts
- Calculate data using formulas and functions
- Create and modify workbooks
- Insert graphics
- Generate charts and reports
- Create and use special functions

Grade Basis: L

Credit hours: 3.0

SRGT 1261 - CLINICAL - SURGICAL/OPERATING ROOM TECHNICIAN - INTRODUCTORY

A basic type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional, faculty or preceptor, generally in a clinical setting. Clinical education is an unpaid learning experience. 96 clinical hours

Grade Basis: L

Credit hours: 2.0

SRGT 1441 - SURGICAL PROCEDURES I

Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the general, OB/GYN, genitourinary, and orthopedic surgical specialities incorporating instruments, equipment, and supplies required for safe patient care. 48 lecture hours + 32 laboratory hours

Grade Basis: L

Credit hours: 4.0

SRGT 1442 - SURGICAL PROCEDURES II

Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the thoracic, peripheral vascular, plastic/reconstructive, EENT, cardiac, and neurological surgical specialities incorporating instruments, equipment, and supplies required for safe patient care. 48 lecture hours + 32 laboratory hours

Grade Basis: L
Credit hours: 4.0

SRGT 1505 - INTRODUCTION TO SURGICAL TECHNOLOGY

Orientation to surgical technology theory, surgical pharmacology and anesthesia technological sciences, and patient care concepts. 64 lecture hours + 32 laboratory hours

Grade Basis: L
Credit hours: 5.0

SRGT 1509 - FUNDAMENTALS OF PERIOPERATIVE CONCEPTS & TECHNIQUES

In-depth coverage of perioperative concepts such as aseptic principles and practices, infectious processes, wound healing, and creation and maintenance of the sterile field. 64 lecture hours + 32 laboratory hours

Grade Basis: L
Credit hours: 5.0

SRGT 1661 - CLINICAL - SURGICAL/OPERATING ROOM TECHNICIAN - INTERMEDIATE

An intermediate type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. 288 clinical hours

Grade Basis: L
Credit hours: 6.0

SRGT 1662 - CLINICAL - SURGICAL/OPERATING ROOM TECHNICIAN - ADVANCED

An advanced type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. 288 clinical hours

Grade Basis: L

Credit hours: 6.0

DRAM 1330 - Stagecraft I

Study and application of the methods and components of theatrical production which may include one or more of the following; theater facilities, scenery construction and painting, properties, lighting, costume, makeup, sound, and theatrical management. 48 lecture hours. Meets NCTC Core Curriculum Requirement

Grade Basis: L

Credit hours: 3.0

DRAM 2331 - Stagecraft II

Course is a continuation of DRAM1330, but it allows the individual student the opportunity to specialize in a particular area of technical theater. 48 lecture hours.

Grade Basis: L

Credit hours: 3.0

ITNW 1353 - Supporting Network Server Infrastructure

Installing, configuring, managing, and supporting a network infrastructure. 32 lecture hours + 32 laboratory hours.

Upon completion, students will be able to:

- Install and configure DHCP, DNS, remote access, network security using public key infrastructure
- Integrate network services
- Deploy operating systems using remote installation services

Grade Basis: L

Credit hours: 3.0

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