



**NORTH CENTRAL TEXAS COLLEGE**

*Course Descriptions*

**ACCOUNTING**

5203015125

**ACCT2301 PRINCIPLES OF ACCOUNTING I**

48 lecture hours .....3 credit hours

Fundamentals of financial accounting concepts and interpretation of accounting data; analysis of financial statements; income and cash flow analysis; nature of assets, liabilities and equities; understanding and use of the accounting process. Course will include computer applications. Recommended prerequisite: MATH1314 and COSC1400 or equivalent.

5203015125

**ACCT2302 PRINCIPLES OF ACCOUNTING II**

48 lecture hours .....3 credit hours

Prerequisite: ACCT2301  
Managerial use of accounting information; terminology, activity and cost behavior; use of accounting information for pricing; product and investment decisions, budgeting and quality control. Course will include computer applications. Recommended prerequisite: MATH1314 and COSC1400 or equivalent. Required prerequisite: ACCT2301.

**ACNT1303 INTRODUCTION TO ACCOUNTING I**

48 lecture hours .....3 credit hours

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. Course will include computer applications. Recommended prerequisite: COSC1400 or equivalent.

**ACNT1304 INTRODUCTION TO ACCOUNTING II**

48 lecture hours .....3 credit hours

Prerequisite: ACNT1303  
A study of accounting for merchandising, notes payable, notes receivable, valuation of receivables and equipment and valuation of inventories in a manual and computerized environment. Course will include computer applications. Recommended prerequisite: COSC1400 or equivalent.

**ACNT1313 COMPUTERIZED ACCOUNTING APPLICATIONS**

48 lecture hours .....3 credit hours

Prerequisite: ACNT 1303  
A study of utilizing the computer to develop and maintain accounting record keeping systems, make management decisions, and process common business applications with emphasis on utilizing a spreadsheet and/or data base package/program.

**ACNT1329 PAYROLL AND BUSINESS TAX ACCOUNTING**

48 lecture hours .....3 credit hours

Prerequisite: ACNT 1303  
A study of payroll procedures, tax entities, and reporting requirements of local, state, and federal taxing authorities in a manual and computerized environment. Course may include computer applications. Recommended prerequisite: COSC1400 or equivalent.

**ACNT1391 SPECIAL TOPICS IN ACCOUNTING (INTERNATIONAL ACCOUNTING)**

48 hour lecture hours .....3 credit hours

Prerequisite: ACNT 1303  
Topics address recently identified current events, skills, knowledge and/or attitudes and behavior pertinent to the technology or occupation and relevant to the professional development of the student. Course may include computer applications. Recommended prerequisite: COSC1400 or equivalent.

**ACNT2309 COST ACCOUNTING**

48 lecture hours .....3 credit hours

Prerequisite: ACNT1303  
A study of budgeting and cost control systems including a detailed study of manufacturing cost accounts and reports, job order costing, and process costing. Includes introduction to alternative costing methods such as activity-based and just-in-time costing. Course may include computer applications. Recommended prerequisite: COSC1400 or equivalent. Required prerequisite: ACNT1303.

**ACNT2330 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING**

48 lecture hours .....3 credit hours

Prerequisite: ACNT1303  
Basic concepts and techniques of fund accounting, financial reporting for governmental and not-for-profit entities. Accounting cycle for funds and account groups. Governmental and not-for-profit financial statements. Course may include computer applications. Recommended prerequisite: COSC1400 or equivalent.

**ACNT2331 INTERNAL CONTROL AND AUDITING**

48 lecture hours .....3 credit hours

Prerequisite: ACNT1303  
A study of internal control and auditing standards and processing used by internal auditors, managers, and independent public accountants. Course may include computer applications. Recommended prerequisite: COSC1400 or equivalent. Required prerequisite: ACNT1303.

**AGRICULTURE**

0101035201

**AGRI1131 THE AGRICULTURE INDUSTRY**

16 lecture hours .....1 credit hour

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

0101015101

**AGRI1309 COMPUTERS IN AGRICULTURE**

32 lecture hours + 32 laboratory hours .....3 credit hours

Use of computers in agricultural applications. Introduction to programming languages, word processing, electronic spreadsheets, and agricultural software.

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## AGRI1311 DAIRY SCIENCE

32 lecture hours + 32 laboratory hours ..... 3 credit hours

Survey of the dairy industry including dairy breeds, standards for selection and culling, herd replacements, feeding, management, physiology, and health maintenance. Food value for milk, tests for composition and quality, and use and processing of market milk and dairy products.

0101025101

## AGRI1325 MARKETING OF AGRICULTURE PRODUCTS

48 lecture hours ..... 3 credit hours

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.

0109075101

## AGRI1327 POULTRY SCIENCE

32 lecture hours + 32 laboratory hours ..... 3 credit hours

Introduction to the poultry industry. Practices and principles in the production and marketing of turkeys, layers, broilers, and specialized fowl. Management, automated equipment, product technology, incubation, and production economics.

## AGRI1413 PLANT PROTECTION

48 lecture hours + 32 laboratory hours ..... 4 credit hours

Principles and practices of controlling and preventing economic loss caused by plant pests. Includes instruction in entomology, plant pathology, weed science, crop science, environment toxicology, and related environmental protection measures.

0109015101

## AGRI1419 INTRODUCTORY ANIMAL SCIENCE

48 lecture hours + 32 laboratory hours ..... 4 credit hours

Scientific animal agriculture. Importance of livestock and meat industries. Selection, reproduction, nutrition, management, and marketing of beef cattle, swine, sheep, goats, and horses.

0109015201

## AGRI2221 LIVESTOCK EVALUATION

32 lecture hours + 48 laboratory hours ..... 2 credit hours

Selection, evaluation, and classification of livestock and livestock products. Comparative evaluation of breeding and market animals with emphasis on selection of superior animals. Oral reasons and written justification on placing classes will be emphasized. May be repeated for credit with prior approval of department chair.

0102045101

## AGRI2301 AGRICULTURAL POWER UNITS

16 lecture hours + 48 laboratory hours ..... 3 credit hours

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.

## AGRI2303 AGRICULTURAL CONSTRUCTION I

32 lecture hours + 64 laboratory hours ..... 3 credit hours

Selection, use, and maintenance of hand and power tools; arc and oxy-acetylene welding; and construction materials and principles.

0101035101

## AGRI2317 INTRODUCTION TO AGRICULTURAL ECONOMICS

48 lecture hours ..... 3 credit hours

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

## AGRI2321 LIVESTOCK EVALUATION I

32 lecture hours + 48 laboratory hours ..... 3 credit hours

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

0306015101

## AGRI2330 WILDLIFE CONSERVATION AND MANAGEMENT

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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

## ANTHROPOLOGY

4502015125

### ANTH2346 GENERAL ANTHROPOLOGY

48 lecture hours ..... 3 credit hours

Study of human beings, their antecedents and related primates, and their cultural behaviors and institution. Introduces the major sub-fields: physical and cultural anthropology, archaeology, linguistics and ethnology.

4502015325

### ANTH2351 CULTURAL ANTHROPOLOGY

48 lecture hours ..... 3 credit hours

Key concepts, methods and theory in the study of cultural diversity, social institutions, linguistics, and culture change among world peoples. Focus on understanding the forces that shape cultures and societies.

## ART

5007035130

### ARTS1301 ART APPRECIATION

48 lecture hours ..... 3 credit hours

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.

5007035230

### ARTS1303 ART HISTORY I

48 lecture hours ..... 3 credit hours

A critical and analytical study of the great historical works of art in architecture, sculpture, painting, and minor arts from the prehistoric times to the Renaissance.

5007035230

### ARTS1304 ART HISTORY II

48 lecture hours ..... 3 credit hours

Survey of the history of art from Renaissance to the present. Special consideration is given to the form and content of a work of art, as well as the social and cultural context in which the work is created.

5004015330

### ARTS1311 DESIGN I

32 lecture hours + 64 laboratory hours ..... 3 credit hours

A basic course in the theory and practice of design including fundamentals of line, form, space, texture and color with emphasis on two-dimensional form.

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5004015330  
**ARTS1312 DESIGN II**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 A continuation of ARTS1311 with emphasis on three-dimensional design.

5007055230  
**ARTS1316 DRAWING I**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 A beginning course using a variety of media and techniques exploring the descriptive and expressive possibilities of drawing objects and the environment.

5007055230  
**ARTS1317 DRAWING II**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 Expansion of ARTS1316 stressing greater facility in materials and techniques and an increase of graphic skills by means of line, full value, and creative studies.

5007085230  
**ARTS2316 PAINTING I**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 An introduction to the techniques of various mediums in painting. Exploring and dealing with the problems encountered in color and pictorial composition.

5007085230  
**ARTS2317 PAINTING II**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 A continuation of ARTS2316.

5007095130  
**ARTS2326 SCULPTURE I**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 Students are exposed to traditional and contemporary methods of sculpture. These methods include carving, modeling, mold making, casting, forge work, metal forming and fabrication, wood working and mixed media. Sculpture prepares students interested in working with any or all of these methods for professional careers requiring a creative component and knowledge of design, tools, processes, and equipment.

5007095130  
**ARTS2327 SCULPTURE II**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 A continuation of ARTS2326.

5007135130  
**ARTS2341 JEWELRY AND METALWORKING I**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 Design, construction and forming of metals and various materials using basic techniques.

5007135130  
**ARTS2342 JEWELRY AND METALWORKING II**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 Design in metal, using basic and advanced process.

5007115130  
**ARTS2346 CERAMICS I (POTTERY)**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 Pottery construction using coil and slab methods and use of the potter's wheel, compounding of glazes, glazing and firing.

5007115130  
**ARTS2347 CERAMICS II (POTTERY)**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 Continuation of ARTS2346 with opportunity to specialize in one area.

5007085330  
**ARTS2366 WATERCOLOR PAINTING I**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 Development of painting skills, techniques, and aesthetic sensibilities to artistic expression in watercolor medium.

**ARTS2367 WATERCOLOR PAINTING II**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 Continuation of Arts 2366

**GRAPH1357 DIGITAL IMAGING II**  
*Instructor approval required*  
 32 lecture hours + 32 laboratory hours .....3 credit hours  
 An in-depth investigation of digital imaging on the computer using imaging editing and/or image creation software. Manipulation, creation, and editing of digital images. Topics include: image capture, high-end work stations, image bit-depth, interaction with service bureaus and printing industries.

**GRAPH1359 OBJECT ORIENTED COMPUTER GRAPHICS**  
*Instructor approval required*  
 32 lecture hours + 32 laboratory hours .....3 credit hours  
 Mastery of the tools and transformation options of an industry standard draw program to create complex illustrations and follow them through to the color output stage. Mastery in the use of basic elements of good layout and design principles and use of the capabilities specific to vector (object oriented) drawing software to manipulate both text and graphics with emphasis on the use of bezier curves. Acquisition of images via scanning and the creative use of clip art is included.

**BIOLOGY**

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**BIOL1322 BASIC NUTRITION**  
 48 lecture hours .....3 credit hours  
 A study of the basic principles of nutrition in health and disease. The course is designed to develop a good background in the science of nutrition that can be used as a basis for decisions in the dietary planning for health and disease, provide for the acquisition of practical knowledge concerning selection of foods according to nutritive values, and provide the ability to apply techniques of education and dietary counseling so that the principles of normal and therapeutic nutrition can be interpreted to the layman.

2601015124  
**BIOL1408 GENERAL BIOLOGY**  
 48 lecture hours + 48 laboratory hours .....4 credit hours  
 A survey of key concepts including biological chemistry, cell structure and function, genetics, evolution and ecology. An overview of the plants and animals is included with special emphasis given to the morphology and physiology of man. The course includes the dissecting of fetal pigs. For non-science majors.

2603015124  
**BIOL1411 GENERAL BOTANY**  
 48 lecture hours + 48 laboratory hours .....4 credit hours  
 Fundamental structures and functions of plants with emphasis on their levels of organization. Physiology of seed plants with emphasis on photosynthesis, respiration, nutrition, reproduction and identification. Environmental features, agricultural and industrial importance and phylogenetic sequence included.

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## **BIOL1413 GENERAL ZOOLOGY**

48 lecture hours + 48 laboratory hours ..... 4 credit hours

A study of representatives of the animal kingdom with special consideration devoted to cytology, morphology, physiology and ecology of the organism. The course includes the dissecting of an assortment of animals. Laboratory and lecture are correlated for a more comprehensive understanding of the phylogenetic relationship within the animal kingdom.

2607065124

## **BIOL2401 HUMAN ANATOMY AND PHYSIOLOGY I**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

A study of the structure and function of the body and its relationship to health and disease. Designed to meet requirements of physical education and nursing education majors. Laboratory experience includes experiments in vertebrate physiology and the dissection of a mammal.

2607065124

## **BIOL2402 HUMAN ANATOMY AND PHYSIOLOGY II**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

A continuation of BIOL2401.

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## **BIOL2406 ENVIRONMENTAL BIOLOGY**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

An introduction to basic ecological principles and techniques. Aquatic and terrestrial communities will be studied with emphasis upon biotic interrelationships and the effects of pollution upon various biotic communities. The laboratory will combine experimental studies with field investigations.

2605015124

## **BIOL2420 MICROBIOLOGY**

*Prerequisite: BIOL1408 OR BIOL2401*

48 lecture hours + 32 laboratory hours ..... 4 credit hours

A study of the morphology, physiology and taxonomy of microorganisms. Special emphasis is placed upon the human immune system. Laboratory includes the fundamental procedures of sterilizations, cultures and identification of common bacteria.

## **BUSINESS & BUSINESS MANAGEMENT**

### **BMGT1191 SPECIAL TOPICS IN BUSINESS ADMINISTRATION AND MANAGEMENT, GENERAL**

16 lecture hours ..... 1 credit hour

Topics address recently identified current events, skills, knowledge, and/or attitudes 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.

### **BMGT1307 HIGH PERFORMANCE WORK TEAMS**

48 lecture hours ..... 3 credit hours

Basic principles of building and sustaining teams in organizations including team dynamics and process involvement.

### **BMGT1309 INFORMATION AND PROJECT MANAGEMENT**

32 lecture hours + 32 lab hours ..... 3 credit hours

Critical path methods for planning and controlling projects. Includes time/cost tradeoffs, resource utilization, stochastic consideration, task determination, time management, scheduling management, status reports, budget management, customer service, professional attitude, and project supervision.

### **BMGT1327 PRINCIPLES OF MANAGEMENT**

48 lecture hours ..... 3 credit hours

Concepts, terminology, principles, theories, and issues in the field of management. In addition, outcomes will include various theories, processes, and functions of management, current topics in management, and case studies of Fortune 500 Companies.

### **BMGT1345 COMMUNICATION SKILLS FOR MANAGERS**

48 lecture hours ..... 3 credit hours

Comprehensive study of advanced communication skills for managers in business and industry, including advanced techniques in reading, writing, listening, and speaking. Emphasis on clear, concise written and spoken communication in terms of business letters, memos, and reports, as well as oral presentations; techniques for time management; prioritizing reading materials, and comprehending the main ideas and salient details of technical materials, including journals and reports, and other work-related materials.

### **BMGT1391 SPECIAL TOPICS IN BUSINESS ADMINISTRATION AND MANAGEMENT**

48 lecture hours ..... 3 credit hours

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.

### **BMGT2303 PROBLEM SOLVING AND DECISION MAKING**

48 lecture hours ..... 3 credit hours

Decision making and problem solving processes in organizations, utilizing logical and creative problem solving techniques. Application of theory is provided by experimental activities such as small group discussions, case studies, and the use of other managerial decision aids.

### **BMGT2309 LEADERSHIP**

48 lecture hours ..... 3 credit hours

Concepts of leadership and its relationship to management. Prepares the student with leadership and communication skills needed to inspire and influence.

### **BUSG1301 INTRODUCTION TO BUSINESS.....**

48 lecture hours ..... 3 credit hours

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

### **BUSG1304 PERSONAL FINANCE**

48 lecture hours ..... 3 credit hours

The course will present a study of the financial problems encountered in managing family and business financial affairs. Topics include financial security for the family, budgeting, use of credit, home ownership, financial tangles, and savings and investment planning.

### **BUSG2305 BUSINESS LAW/CONTRACTS**

48 lecture hours ..... 3 credit hours

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

### **BUSG2307 LEGAL AND SOCIAL ENVIRONMENT OF BUSINESS**

48 lecture hours ..... 3 credit hours

The role of law in business and society including government regulations of business, legal reasoning, sources of law, social policy, legal institutions, antitrust, security regulations, consumer protection, environmental laws, worker health and safety, employment discrimination, and other laws affecting business.

**BUSG2380 COOPERATIVE EDUCATION – BUSINESS, GENERAL**

16 lecture hours + 224 laboratory hours .....3 credit hours

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.

**HRPO1301 CUSTOMER RELATIONS**

48 lecture hours .....3 credit hours

Topics address general principles of customer service including skills, knowledge, attitudes, and behaviors pertinent to the professional development of the student.

**HRPO2301 HUMAN RESOURCE MANAGEMENT**

48 lecture hours .....3 credit hours

Behavioral and legal approaches to the management of human resources in organizations.

**HRPO2307 ORGANIZATIONAL BEHAVIOR**

48 lecture hours .....3 credit hours

The analysis and application of organizational theory, group dynamics, motivation theory, leadership concepts and the integration of interdisciplinary concepts from the behavioral sciences.

**IBUS1305 INTRODUCTION TO INTERNATIONAL BUSINESS AND TRADE**

48 lecture hours .....3 credit hours

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.

**MRKG1301 CUSTOMER RELATIONS**

48 lecture hours.....3 credit hours

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.

**MRKG1311 PRINCIPLES OF MARKETING**

48 lecture hours .....3 credit hours

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.

**MRKG1313 PUBLIC RELATIONS**

48 lecture hours .....3 credit hours

Exploration of theories, techniques, and processes of public relations including means of influencing methods of building good will, analysis of media, obtaining publicity, and implementation of public relations programs. Course outcomes include the preparation and presentation of an activity using basic public relations principles.

**POFT2312 BUSINESS CORRESPONDENCE AND COMMUNICATION**

48 lecture hours .....3 credit hours

Emphasis is on the development of presentation skills and writing skills to produce effective business documents.

**CHEMISTRY**

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**CHEM1411 GENERAL CHEMISTRY I**

*Prerequisite:* Two years of high school algebra or concurrent enrollment in MATH1314 or consent of instructor

48 lecture hours + 48 laboratory hours .....4 credit hours

A survey of basic chemical concepts, theories and practices; fundamental laws, periodic table, valence, stoichiometry, states of matter, oxidation and reduction.

4005015239

**CHEM1412 GENERAL CHEMISTRY II***Prerequisite:* CHEM1411

48 lecture hours + 48 laboratory hours .....4 credit hours

A continuation of CHEM1411. Kinetics, thermodynamics, electrochemistry, acids and bases, chemical families, nuclear chemistry and introduction to organic chemistry.

4001015139

**CHEM1413 CHEMISTRY FOR THE HEALTH SCIENCES**

48 lecture hours + 48 laboratory hours .....4 credit hours

The course is designed for nursing students and others who plan careers in health-related fields. Topics in inorganic, organic and biological chemistry, including basic chemical concepts and theories, nomenclature and reactions of organic compounds, and introduction to the chemistry of carbohydrates, lipids, proteins, nucleic acids and metabolism.

4005045239

**CHEM2423 ORGANIC CHEMISTRY I***Prerequisite:* CHEM1412 or consent of instructor

48 lecture hours + 48 laboratory hours .....4 credit hours

An introduction to the chemistry of carbon compounds: nomenclature, functional groups, structure and spectroscopy, reaction mechanisms, radicals, kinetics and thermodynamics.

4005045239

**CHEM2425 ORGANIC CHEMISTRY II***Prerequisite:* CHEM2423

48 lecture hours + 48 laboratory hours .....4 credit hours

A continuation of CHEM2423. Aromatic systems, electrophilic and nucleophilic substitution, carboxylic acids and derivatives, amines and sulfides, reactive intermediates, carbonyl compounds and enolates, heterocyclic and biochemical compounds.

**COMPUTER INFORMATION SYSTEMS & TECHNOLOGY****EECT1300 TECHNICAL CUSTOMER SERVICE**

32 lecture hours + 32 lab hours .....3 credit hours

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.

**GAME1303 INTRO TO GAME DESIGN AND DEVELOPMENT**

48 lecture hours .....3 credit hours

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.

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## GAME1306 DESIGN AND CREATION OF GAMES

32 lecture hours + 32 lab hours ..... 3 credit hours

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.

## GAME1309 INTRODUCTION TO ANIMATION PROGRAMMING

32 lecture hours + 32 lab hours ..... 3 credit hours

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.

## GAME1343 GAME AND SIMULATION PROGRAMMING I

32 lecture hours + 32 lab hours ..... 3 credit hours

Game and simulation programming. Includes advanced pointer manipulation techniques and pointer applications, points and vectors, sound, and graphics.

## GAME1359 GAME AND SIMULATION PROGRAMMING II

32 lecture hours + 32 lab hours ..... 3 credit hours

Design and development of 2D game and simulation programs including user interface design, mathematical elements, image and file structure, and software development techniques. Introduces the basics of 3D graphics related to game and simulation programming.

## GAME2303 ARTIFICIAL INTELLIGENCE PROGRAMMING

32 lecture hours + 32 lab hours ..... 3 credit hours

Basic techniques in artificial intelligence related to game and simulation programming. Includes knowledge representation and inference techniques, expert systems, pathfinding algorithms, and search techniques for problem solving.

## GAME2342 GAME DEVELOPMENT USING C++

32 lecture hours + 32 lab hours ..... 3 credit hours

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

## GAME2359 GAME AND SIMULATION GROUP PROJECT

32 lecture hours + 32 lab hours ..... 3 credit hours

Creation of a game and/or simulation project utilizing a team approach. Includes the integration of design, art, audio, programming, and quality assurance.

## IMED1316 WEB PAGE DESIGN I

32 lecture hours + 32 lab hours ..... 3 credit hours

Instruction in web page design and related graphic design issues including mark-up languages, web sites, and browsers.

## IMED1345 INTERACTIVE MULTIMEDIA I

32 lecture hours + 32 lab hours ..... 3 credit hours

Exploration of the use of graphics and sound to create interactive multimedia applications and/or animations using industry standard authoring software.

## ITCC1401 EXPLORATION 1: NETWORK FUNDAMENTALS

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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.

## ITCC1404 EXPLORATION 2: ROUTING PROTOCOLS AND CONCEPTS

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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.

## ITCC2408 EXPLORATION 3: LAN SWITCHING AND WIRELESS

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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.

## ITCC2410 EXPLORATION 4: ACCESSING THE WAN

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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).

## ITNW1308 IMPLEMENTING AND SUPPORTING CLIENT OPERATION SYSTEMS

32 lecture hours + 32 laboratory hours ..... 3 credit hours

Skills development in the management of client as desktop operating systems.

## ITNW1337 INTRODUCTION TO THE INTERNET

32 lecture hours + 32 laboratory hours ..... 3 credit hours

Introduction to the Internet with emphasis on using the World Wide Web to locate, transfer, and publish information. Survey of emerging technologies on the Internet.

## ITNW1353 SUPPORTING NETWORK SERVER INFRASTRUCTURE

32 lecture hours + 32 laboratory hours ..... 3 credit hours

Installing, configuring, managing, and supporting a network infrastructure. Implementing routing; implementing, managing, and maintaining Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), securing Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates; and managing and monitoring network access.

## ITNW1354 IMPLEMENTING AND SUPPORTING SERVER ENVIRONMENT

32 lecture hours + 32 laboratory hours ..... 3 credit hours

Implement, administer, and troubleshoot information systems that incorporate servers in a networked computing environment. Manage accounts, run SNMP, and safeguard data in a Windows Server 2003 Environment.

## ITNW1358 NETWORK+

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

**ITSC1316 LINUX INSTALLATION AND CONFIGURATION**  
 32 lecture hours + 32 lab hours .....3 credit hours  
 Introduction to Linux operating system. Includes Linux installation, basic administration, utilities and commands, upgrading, networking, security, and application administration, utilities and commands, upgrading, networking, security, and application installation. Emphasizes hands-on setup, administration, and management of Linux.

**ITSC1325 PERSONAL COMPUTER HARDWARE**  
 32 lecture hours + 32 lab hours .....3 credit hours  
 A study of current personal computer hardware including personal computer assembly and upgrading, setup and configuration, and troubleshooting.

**ITSC2280 COOPERATIVE EDUCATION**  
 16 lecture hours + 112 laboratory hours .....2 credit hours  
 Career related activities encountered in the student's area of specialization are offered through an individual agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**ITSC2302 INTERMEDIATE WEB PROGRAMMING**  
 32 lecture hours + 32 lab hours .....3 credit hours  
 Intermediate applications for web authoring. Topics may include server side includes (SSI), Perl, HTML, Java, JavaScript and/or ASP.

**ITSC2331 INTEGRATED SOFTWARE APPLICATIONS III**  
 32 lecture hours + 32 laboratory hours .....3 credit hours  
 Designed for advanced users with emphasis on a wide range of productivity tasks including complex assignments that require advanced formatting and functionality.

**ITSE1302 COMPUTER PROGRAMMING**  
 32 lecture hours + 32 lab hours .....3 credit hours  
 An introduction to computer programming including design, development, testing, implementation, and documentation.

**ITSW1307 INTRODUCTION TO DATABASE**  
 32 lecture hours + 32 laboratory hours .....3 credit hours  
 Introduction to database theory and the practical applications of a database.

**ITSY1342 INFORMATION TECHNOLOGY SECURITY**  
 32 lecture hours + 32 lab hours .....3 credit hours  
 Instruction in security for network hardware, software, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses.

**COMPUTER SCIENCE**

5212025404  
**BCIS1305 BUSINESS COMPUTER APPLICATIONS**  
*Prerequisite: High School Algebra, Geometry, or Business Mathematics*  
 32 lecture hours + 32 laboratory hours .....3 credit hours  
 Computer terminology, hardware, software, operating systems, and information systems relating to the business environment. The main focus of this course is on business applications of software, including word processing, spreadsheets, databases, presentation graphics, and business-oriented utilization fo the Internet.

1102015507  
**COSC1436 PROGRAMMING FUNDAMENTALS I**  
*Prerequisite: COSC1400 or department exam*  
 48 lecture hours + 32 laboratory hours .....4 credit hours  
 Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing and debugging. This course assumes computer literacy.

1102025607  
**COSC1437 PROGRAMMING FUNDAMENTALS II**  
*Prerequisite: COSC1436*  
 48 lecture hours + 32 laboratory hours .....4 credit hours  
 Review of control structures and data types with emphasis on structured data types. Applies the object-oriented programming paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering.

1102015407  
**COSC2425 COMPUTER ORGANIZATION AND MACHINE LANGUAGE**  
*Prerequisite: COSC1436*  
 48 lecture hours + 32 laboratory hours .....4 credit hours  
 Basic computer organization; machine cycle, digital representation of data and instructions; assembly language programming, assembler, loader, macros, subroutines and program linkages.

1102015707  
**COSC2436 PROGRAMMING FUNDAMENTALS III**  
*Prerequisite: COSC1437*  
 48 lecture hours + 32 laboratory hours .....4 credit hours  
 Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees, and graphs) and algorithmic analysis.

**COSMETOLOGY**

**CSME1348 PRINCIPLES OF SKIN CARE**  
 32 lecture hours + 64 laboratory hours .....3 credit hours  
 An introduction to the theory and practice of skin care.

**CSME1401 ORIENTATION TO COSMETOLOGY**  
 32 lecture hours + 128 laboratory hours .....4 credit hours  
 An overview of the skills and knowledge necessary for the field of cosmetology.

**CSME1405 FUNDAMENTALS OF COSMETOLOGY**  
 32 lecture hours + 128 laboratory hours .....4 credit hours  
 A course in the basic fundamentals of cosmetology. Topics include service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, comb out, and salon management.

**CSME1410 INTRODUCTION TO HAIRCUTTING AND RELATED THEORY**  
 32 lecture hours + 128 laboratory hours .....4 credit hours  
 Introduction to the theory and practice of hair cutting. Topics include terminology, implements, section haircutting and finishing techniques.

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# NORTH CENTRAL TEXAS COLLEGE

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## **CSME1430 ORIENTATION TO NAIL TECHNOLOGY**

4 credit hours ..... 48 lecture hours  
An overview of the fundamental skills and knowledge necessary for the field of nail technology.

## **CSME1431 PRINCIPLES OF NAIL TECHNOLOGY I**

4 credit hours ..... 48 lecture hours  
A course in the principles of nail technology. Topics include anatomy, physiology, theory, and skills related to nail technology.

## **CSME1443 MANICURING AND RELATED THEORY**

4 credit hours ..... 48 lecture hours  
Presentation of the theory and practice of nail technology. Topics include terminology, application, and workplace competencies related to nail technology.

## **CSME1451 ARTISTRY OF HAIR, THEORY AND PRACTICE**

16 lecture hours + 144 laboratory hours ..... 4 credit hours  
Instruction in the artistry of hair design. Topics include theory, techniques, and application of hair design.

## **CSME1453 CHEMICAL REFORMATION AND RELATED THEORY**

32 lecture hours + 128 laboratory hours ..... 4 credit hours  
Presentation of the theory and practice of chemical reformation. Topics include terminology, application, and workplace competencies related to chemical reformation.

## **CSME1520 ORIENTATION TO FACIAL SPECIALIST**

48 lecture hours + 112 laboratory hours ..... 5 credit hours  
An overview of the skills and knowledge necessary for the field of facials and skin care.

## **CSME1521 PRINCIPLES OF FACIALS/ESTHETICS TECHNOLOGY I**

32 lecture hours + 144 laboratory hours ..... 5 credit hours  
Topics include the principles of Facial and Esthetic theory. Students will learn the basic concepts of massage as related to esthetic procedures and the chemistry of products used in this industry.

## **CSME1534 COSMETOLOGY INSTRUCTOR I**

32 lecture hours + 144 laboratory hours ..... 5 credit hours  
The fundamentals of instruction of cosmetology students.

## **CSME1535 ORIENTATION TO THE INSTRUCTION OF COSMETOLOGY**

32 lecture hours + 144 laboratory hours ..... 5 credit hours  
An overview of the skills and knowledge necessary for the instruction of cosmetology students.

## **CSME1541 PRINCIPLES OF NAIL TECHNOLOGY II**

5 credit hours ..... 32 lecture hours  
An advanced course in the principles of nail technology. Topics include terminology, applications, and advanced workplace competencies related to nail technology.

## **CSME1545 PRINCIPLES OF FACIALS/ESTHETICS TECHNOLOGY II**

32 lecture hours + 144 laboratory hours ..... 5 credit hours  
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 facials/esthetic technology.

## **CSME1547 PRINCIPLES OF SKIN CARE/FACIALS AND RELATED THEORY**

32 lecture hours + 144 laboratory hours ..... 5 credit hours  
Demonstrations will include facial services and methods with machines used in the field of esthetics. Advanced concepts of massage and product use and preparations in state testing for licensing will be reviewed.

## **CSME2237 ADVANCED COSMETOLOGY TECHNIQUES**

16 lecture hours + 64 laboratory hours ..... 2 credit hours  
Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services, and workplace competencies.

## **CSME2401 THE PRINCIPLES OF HAIR COLORING AND RELATED THEORY**

16 lecture hours + 144 laboratory hours ..... 4 credit hours  
Presentation of the theory and practice of hair color and chemistry. Topics include terminology, application, and workplace competencies related to hair color and chemistry.

## **CSME2410 INTERMEDIATE HAIRCUTTING AND RELATED THEORY**

16 lecture hours + 144 laboratory hours ..... 4 credit hours  
Advanced concepts and practice of haircutting. Topics include haircuts utilizing scissors, razor, and/or clippers.

## **CSME2415 COSMETOLOGY III**

48 lecture hours + 32 laboratory hours ..... 4 credit hours  
Presentation of assignments and evaluation techniques for a cosmetology program.

## **CSME2439 ADVANCED HAIR DESIGN**

16 lecture hours + 144 laboratory hours ..... 4 credit hours  
Advanced concepts in the theory and practice of hair design.

## **CSME2441 PREPARATION FOR TEXAS DEPARTMENT OF LICENSING AND REGULATIONS**

16 lecture hours + 128 laboratory hours ..... 4 credit hours  
Preparation for the Texas Department of Licensing and Regulations Operator Examination.

## **CSME2443 SALON DEVELOPMENT**

48 lecture hours + 48 laboratory hours ..... 4 credit hours  
Exploration of salon development. Topics include professional ethics and goals, salon operation, and record keeping.

## **CSME2514 COSMETOLOGY INSTRUCTOR II**

32 lecture hours + 144 laboratory hours ..... 5 credit hours  
A continuation of the fundamentals of instruction of cosmetology students.

## **CSME2530 NAIL ENHANCEMENT**

32 lecture hours ..... 5 credit hours  
A course in the general principles of the theory and application of artificial nails and related technology.

## **CSME2531 PRINCIPLES OF FACIALS/ESTHETICS TECHNOLOGY III**

32 lecture hours + 144 laboratory hours ..... 5 credit hours  
Advanced concepts and principles of skin care and other related technologies.

## **CSME2545 INSTRUCTIONAL THEORY AND CLINIC OPERATION**

32 lecture hours + 144 laboratory hours ..... 5 credit hours  
An overview of the objectives required by the Texas Department of Licensing and Regulations.

**DANCE**

5003015226

**DANC1141 BALLET DANCE TECHNIQUE I**

48 laboratory hours..... 1 credit hour

Introduction to ballet dance through a study of its vocabulary, style and technique. Fundamental exercises and analysis of time, space and dynamics as they apply to elements of dance with emphasis on structural alignment and integration.

**DANC1142 BALLET DANCE TECHNIQUE II**

48 laboratory hours..... 1 credit hour

Continuation of DANC1141.

5003015226

**DANC1145 MODERN DANCE TECHNIQUE I**

48 laboratory hours..... 1 credit hour

Introduction to modern dance through a study of its vocabulary, style and technique. Fundamental exercises and analysis of time, space and dynamics as they apply to elements of dance with emphasis on structural alignment and integration.

**DANC1146 MODERN DANCE TECHNIQUE II**

48 laboratory hours..... 1 credit hour

Continuation of DANC1145.

50003015226

**DANC1147 JAZZ DANCE TECHNIQUE I**

48 lecture hours ..... 1 credit hour

Introduction to jazz dance through a study of its vocabulary, style and technique. Fundamental exercises and analysis of time, space and dynamics as they apply to elements of dance with emphasis on structural alignment and integration.

**DANC1148 JAZZ DANCE TECHNIQUE II**

48 lecture hours ..... 1 credit hour

Continuation of DANC1147.

5003015226

**DANC1151 DANCE PERFORMANCE I**

48 laboratory hours..... 1 credit hour

An introductory laboratory course giving credit to students for their experiences in rehearsal and performance of dance as an art form. The course is threefold in content: studio rehearsals, technical and dress rehearsal, and performance.

5003015226

**DANC1152 DANCE PERFORMANCE II**

48 laboratory hours..... 1 credit hour

Continuation of DANC1151.

**DANC2147 JAZZ DANCE TECHNIQUE III**

48 lecture hours ..... 1 credit hour

Continuation of DANC1147 and DANC1148.

**DANC2148 JAZZ DANCE TECHNIQUE IV**

48 lecture hours ..... 1 credit hour

Continuation of DANC1147, DANC1148, and DANC2147.

5003015226

**DANC2151 DANCE PERFORMANCE III**

48 laboratory hours..... 1 credit hour

Continuation of DANC1151 and DANC 1152.

5003015226

**DANC2152 DANCE PERFORMANCE IV**

48 laboratory hours..... 1 credit hour

Continuation of DANC1151, DANC 1152 and DANC 2151.

5003015426

**DANC2303 DANCE APPRECIATION I**

48 lecture hours ..... 3 credit hours

The aesthetics of dance as a performing art. Emphasis placed on the development of an appreciation for dance as a form of communication and as a reflection of contemporary society (its interrelationships with culture and other art forms). Satisfied the Humanities/Visual and Performing Arts requirement of the College Core Curriculum.

5003015426

**DANC2304 DANCE APPRECIATION II**

48 lecture hours ..... 3 credit hours

Continuation of DANC2303.

**DRAFTING TECHNOLOGY**

**DFTG1305 TECHNICAL DRAFTING**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

**DFTG1309 BASIC COMPUTER-AIDED DRAFTING**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

**DFTG1317 ARCHITECTURAL DRAFTING/RESIDENTIAL**

*Prerequisite: DFTG1305*

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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

**DFTG1333 MECHANICAL DRAFTING**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

Course Description: Detail drawings with proper dimensioning and tolerances, use of sectioning techniques, pictorial drawings, including bill of materials.

**DFTG1358 ELECTRICAL/ELECTRONIC DRAFTING**

*Prerequisite: DFTG1305, DFTG1309*

32 lecture hours + 32 laboratory hours ..... 3 credit hours

A study of the principles of layout of 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.

**DFTG1391 SPECIAL TOPICS IN DRAFTING**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

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## DFTG2300 INTERMEDIATE ARCHITECTURAL DRAFTING—RESIDENTIAL

*Prerequisite:* DFTG1317

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
A continuation of principles and practices used in residential construction.

## DFTG2302 MACHINE DRAFTING

*Prerequisite:* DFTG1305, DFTG1309

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
Production of detail and assembly drawings of machines, threads, cams, tolerances and limit dimensioning, surface finishes, and precision drawings.

## DFTG2306 MACHINE DESIGN

*Prerequisite:* DFTG1305, DFTG1309

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
Theory and practice of design. Projects in problem-solving, including press fit, bolted and welded joints, and transmission components.

## DFTG2317 DESCRIPTIVE GEOMETRY

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
Examination of the graphical solution to problems involving points, lines, and planes in space.

## DFTG2319 INTERMEDIATE COMPUTER-AIDED DRAFTING

*Prerequisite:* DFTG1305, DFTG1309

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
A continuation of practices and techniques used in basic computer-aided drafting emphasizing advanced dimensioning techniques, the development and use of prototype drawings, construction of pictorial drawings, interfacing 2D and/or 3D environments and extracting data.

## DFTG2323 PIPE DRAFTING

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
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.

## DFTG2330 CIVIL DRAFTING

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
An in-depth study of drafting methods and principles used in civil engineering.

## DFTG2332 ADVANCED COMPUTER-AIDED DRAFTING

*Prerequisite:* DFTG1305, DFTG1309, DFTG2319

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
Exploration of the use of system customization for drawing production enhancement and the principles of data manipulation. Presentation of advanced applications, such as three-dimensional objects creation and linking graphic entities to external nongraphic data.

## DFTG2338 FINAL PROJECT

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
A drafting course in which students participate in a comprehensive project from conception to conclusion.

## DFTG2340 SOLID MODELING/DESIGN

*Prerequisite:* DFTG1305, DFTG1309

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
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.

## DFTG2358 ADVANCED MACHINE DESIGN

*Prerequisite:* DFTG1305, DFTG1309, DFTG2306

32 lecture hours + 32 laboratory hours ..... 3 credit hours  
Use of design process skills for the production of complete design package, which includes jig and fixture design, extrusion dies, and injection mold design.

## DRAMA

5005015226

### DRAM1120 THEATER PRACTICUM I

48 lecture hours ..... 1 credit hour  
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.

5005015226

### DRAM1121 THEATER PRACTICUM II

48 lecture hours ..... 1 credit hour  
Continuation of DRAM1120.

5009036126

### DRAM1161 MUSICAL THEATER

48 lecture hours ..... 1 credit hour  
Study and performance of works in the musical theatre repertoire. The student will get practical experience in the performance of musicals; study of the integration of music, acting and staging.

5009036126

### DRAM1162 MUSICAL THEATER II

48 lecture hours ..... 1 credit hour  
A continuation of DRAM 1161.

## DRAM1310 THEATRE APPRECIATION

48 lecture hours ..... 3 credit hours  
Theatre as an art form is presented from the historical, literary and production points of view in order to deepen the student's understanding and appreciation of Theatre. The course includes viewing and critiquing plays, musicals, motion pictures, and television dramas.

5005065326

### DRAM1323 BASIC THEATER PRACTICE

48 lecture hours ..... 3 credit hours  
Practicum in theater with emphasis on technique and procedures with experience gained in play productions. Each semester will have a different topic such as Shakespeare, Comedy, Tragedy, etc.

5005025126

### DRAM1330 STAGECRAFT

48 lecture hours ..... 3 credit hours  
This course studies and applies the basic techniques of set construction, theatrical lighting, sound technology, stage rigging and backstage organization. The student will be introduced to the various theatre disciplines outlined above and have the opportunity for actual hands-on experience with building basic theatrical scenery and handling theatre lighting and sound equipment.

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5005035126  
**DRAM1351 ACTING I**  
 48 lecture hours .....3 credit hours  
 This course introduces students to the skills and techniques of acting. Through improvisation and exercises, students learn character motivation and development, concentration, movement, line interpretation, vocal delivery and projection, blocking, and ensemble interaction. The course balances exercises that develop acting techniques and character development with exercises that release imaginative expression.

5005035126  
**DRAM1352 ACTING II**  
 48 lecture hours .....3 credit hours  
 With the focus on performance, this course employs the skills acquired in Acting I and emphasizes scene study and textural analysis, allowing students to concentrate on the method and technique of building a character. Performance of scenes and monologues offer challenges in textual interpretation, vocal expression, and physical embodiment.

5005015226  
**DRAM2120 THEATER PRACTICUM III**  
 48 lecture hours ..... 1 credit hour  
 Continuation of DRAM1120 and DRAM1121.

5005015226  
**DRAM2121 THEATER PRACTICUM IV**  
 48 lecture hours ..... 1 credit hour  
 Continuation of DRAM1120, DRAM1121 and DRAM2120.

5005025126  
**DRAM2331 STAGECRAFT II**  
 48 lecture hours .....3 credit hours  
 Course is a continuation of DRAM1330, but it allows the individual student the opportunity to specialize in a particular area of technical theater.

5005035226  
**DRAM2336 VOICE FOR THEATER**  
 48 lecture hours .....3 credit hours  
 Application of the performer's use of the voice as a creative instrument of effective communication. Encourages an awareness of the need for vocal proficiency and employs techniques designed to improve the performer's speaking abilities.

5005035126  
**DRAM2351 ACTING III**  
 48 lecture hours .....3 credit hours  
 The student will analyze known theatrical conventions such as the stage, costumes, and methods of speaking that would influence the presentation of a play in its particular period and develop acting techniques suitable for performing various styles and genres, such as Classical Greek, commedia del arte, French Classical and Shakespearean. Students will also develop and prepare audition pieces in this course.

5005035126  
**DRAM2352 ACTING IV**  
 48 lecture hours .....3 credit hours  
 This course is a continuation of DRAM 2351 and will include an advanced study of theories, styles, and methods with a strong emphasis on character development. The student will study various acting techniques to condition him to meet the demands of classical literature in an actual production.

5006025126  
**DRAM2366 FILM APPRECIATION**  
 48 lecture hours .....3 credit hours  
 An introductory course in motion pictures which surveys the film industry as a business, a means of communication, but most importantly as an art form. The course places an emphasis on the analysis of the visual and aural aspects of selected motion pictures, the dramatic aspects of narrative films, and the historical growth and sociological effect of film as an art.

## EDUCATION

4203015125  
**EDUC1300 LEARNING FRAMEWORK**  
 48 lecture hours ..... 3 credit hours  
 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 PSYC 1300. The student may register for either EDUC1300 or PSYC1300 but may receive credit for only one of the two.

1301015109  
**EDUC1301 INTRODUCTION TO THE TEACHING PROFESSION**  
*Prerequisite: ENGL1301*  
 48 lecture hours + 32 hour lab.....3 credit hours  
 An introduction to the teaching profession and the role of the school in a democratic society. Focus areas include: principles and foundations of curriculum development/alignment, school/classroom organizational philosophies, issues of race, ethnicity, gender, social class, cultures and disabilities. Field Experience Required: 32 hours of field-based activities, 16 of which must be observation hours in EC-12 schools.

1301015109  
**EDUC1325 MULTICULTURAL EDUCATION**  
*Prerequisite: ENGL1301*  
 48 lecture hours + 32 hour lab.....3 credit hours  
 An examination of cultural diversity found in society and reflected in the classroom. Topics include the study of major cultures and their influence on lifestyle, behavior, learning, intercultural communications and teaching, as well as psychosocial stressors encountered by diverse cultural groups.

1310015109  
**EDUC2301 INTRODUCTION SPECIAL POPULATIONS**  
*Prerequisite: EDUC1301*  
 48 lecture hours + 32 hour lab.....3 credit hours  
 A study of etiology and concepts relating to exceptional individuals. Overview of the unique physical, cognitive and behavioral needs of exceptional learners. Includes teacher's role in identification, referral procedures and implementation of effective educational practices as required by federal and state laws. Field Experience Required: 30 hours of field-based activities; 16 of which must be observation hours in EC-12 schools.

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# NORTH CENTRAL TEXAS COLLEGE

1301015209

## TECA1303 FAMILY AND COMMUNITY

48 lecture hours + 16 field experience hours.....3 credit hours

An introduction course for the teaching profession. Focus is on effective ways for home, school and community to contribute to the optimal development of a child and the role of schools in a democratic society. Field Experience Required: 16 hours.

1312025109

## TECA1311 INTRODUCTION TO EARLY CHILDHOOD EDUCATION

48 lecture hours + 16 field experience hours.....3 credit hours

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. Requires students to participate in minimum of 16 hours of field experiences with children from infancy through high school in a variety of settings with varied and diverse populations. Field Experience Required: 16 hours.

1301015309

## TECA1318 NUTRITION, HEALTH AND SAFETY OF YOUNG CHILDREN

48 lecture hours + 16 field experience hours.....3 credit hours

A study of the factors that impact the well-being of the young child including healthy behavior, food, nutrition, fitness, and safety practices. Focus on local and national standards and legal implications of relevant policies and regulations. Requires students to participate in a minimum of 16 hours of field experiences with children from infancy through high school in a variety of settings with varied and diverse populations. Field Experience Required: 16 hours.

1312025209

## TECA1354 HUMAN GROWTH AND DEVELOPMENT OF CHILDREN AND ADOLESCENTS

48 lecture hours .....3 credit hours

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

## ECONOMICS

1904025242

### ECON1303 CONSUMER ECONOMICS

48 lecture hours .....3 credit hours

The goal of this course is to familiarize students with consumer issues and make direct applications of economic concepts such as supply and demand, business fluctuations, and interest rates to consumer topics. Specifically, the course addresses the economic issues involved with purchases of homes, cars, and consumer durables. It explains both monetary and fiscal policy and how consumers are affected by government policy. Health, auto, and live insurance are discussed from theoretical and applied perspectives. Finally, personal investment, saving, and retirement goals and vehicles are introduced and discussed.

4506015142

### ECON2301 PRINCIPLES OF ECONOMICS (MACRO)

48 lecture hours .....3 credit hours

An introduction to the principles of macroeconomics. This course explores Classical, Keynesian and other models in economics. Emphasis given to national income, money and banking, monetary and fiscal policy, economic fluctuations and growth. Other topics include but not limited to introductory international trade and finance, employment, comparative economic systems and economic decision-making.

4506015142

### ECON2302 PRINCIPLES OF ECONOMICS (MICRO)

48 lecture hours .....3 credit hours

An introduction to the principles of microeconomics. Emphasis given to price theory, income distribution, costs and productions, and theory of the firm. Other topics include but not limited to introductory international trade and finance, comparative economic systems and techniques of economic analysis.

## EMERGENCY MEDICAL SERVICES

### EMSP1160 CLINICAL – EMERGENCY MEDICAL TECHNICIAN/ TECHNOLOGY

*Corequisite: EMSP1501*

48 clinical hours..... 1 credit hour

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.

### EMSP1261 CLINICAL I – EMERGENCY MEDICAL TECHNICIAN/PARAMEDIC

96 clinical hours.....2 credit hours

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.

### EMSP1338 INTRODUCTION TO ADVANCED PRACTICE

32 lecture + 32 laboratory hours.....3 credit hours

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.

### EMSP1355 TRAUMA MANAGEMENT

32 lecture + 32 laboratory hours.....3 credit hours

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

### EMSP1356 PATIENT ASSESSMENT AND AIRWAY MANAGEMENT

32 lecture + 32 laboratory hours.....3 credit hours

A detailed study of the knowledge and skills required to reach competence in performing patient assessment and airway management.

### EMSP1501 EMERGENCY MEDICAL TECHNICIAN

*Prerequisite: Current AHA Health Care Provider CPR or equivalent*

*Corequisite: EMSP1160*

32 lecture + 96 laboratory hours.....5 credit hours

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.

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**EMSP2135 ADVANCED CARDIAC LIFE SUPPORT**  
*Corequisite: EMSP2544*  
 32 laboratory hours..... 1 credit hour  
 Skill development for EMS personnel practicing on a critical care paramedic ambulance. Establishes a systematic approach for management of the patient experiencing cardiac difficulties according to American Heart Association protocols.

**EMSP2262 CLINICAL II – EMERGENCY MEDICAL TECHNICIAN/ PARAMEDIC**  
 96 clinical hours.....2 credit hours  
 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.

**EMSP2332 MASS DISASTER RESPONSE**  
 16 lecture hours + 32 laboratory hours .....3 credit hours  
 Preparation for first response to nuclear, biological, or chemical, biological, and radiological agents that may be employed by terrorists.

**EMSP2352 EMERGENCY MEDICAL SERVICES RESEARCH**  
 48 lecture.....3 credit hours  
 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.

**EMSP2434 MEDICAL EMERGENCIES**  
 48 lecture + 32 laboratory hours.....4 credit hours  
 A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with medical emergencies.

**EMSP2553 EMERGENCY MEDICAL SERVICES CERTIFICATION FOR THE REGISTERED NURSE/PHYSICIAN’S ASSISTANT/REGISTERED RESPIRATORY THERAPIST/LICENSED NURSE PRACTITIONER**  
*Prerequisite: Currently licensed RN/PA/RRT/LNP with 36 months work experience and a college degree*  
*Corequisite: EMSP2563*  
 64 lecture hours + 32 skills hours .....5 credit hours  
 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.

**EMSP2563 \*CLINICAL – EMT-P INTERNSHIP**  
*\*Denotes CAPSTONE Experience*  
 256 clinical hours.....5 credit hours  
 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.

**EMSP2544 CARDIOLOGY**  
*Corequisite: EMSP2135*  
 80 lecture hours .....5 credit hours  
 A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies.

**ENGLISH (COLLEGE PREPARATORY)**  
 (ENGL COURSE NUMBERS BELOW 1000):

*Note: NCTC offers a number of courses (listed below) designed to help you acquire the skills necessary for success in college-level courses. The courses are widely offered in Texas community/junior colleges, and the policy statewide is that these will not transfer as college-level courses nor will they count toward graduation at accredited Texas colleges and universities. It is important that you understand that such courses are designed to help you overcome academic deficiencies that are likely to hinder you in your pursuit of a college degree. Attendance in College Preparatory Studies is mandatory when a student has not passed the THEA exam. After THREE hours of absenteeism, a student may be warned and referred to the Director of College Preparatory Studies. At SIX hours of absenteeism, a student may be dropped from his/her College Preparatory class. If the student is dropped from the only College Preparatory class in which he/she is enrolled, the student will be DROPPED from all remaining courses for that semester.*

3201085335  
**ENGL0300 FUNDAMENTALS OF ENGLISH I**  
*Corequisite: EDUC1300 or PSYC1300*  
 48 lecture hours ..... 3 credit hours  
 A course designed for students who have demonstrated, by scores on placement tests and their writing samples, their need for the beginning level of Fundamentals of English. Students will practice formulating simple and compound sentences and learn tense formation, basic subject-verb agreement, end punctuation, dictionary skills, prefixes, roots, suffixes, and basic spelling rules and skills. Students will gain skill in writing clear, logically developed paragraphs using standard American English. Does not count toward graduation at NCTC.

3201085335  
**ENGL0305 FUNDAMENTALS OF ENGLISH II**  
*Prerequisite: Satisfactory placement score OR passed ENGL0300 with a “C” or better.*  
 48 Lecture hours ..... 3 credit hours  
 A course designed for students who have demonstrated by scores on placement tests and their writing samples that they should be capable of starting at the second level of Fundamentals of English. Fundamentals of English II will review skills from the first level and then will help students gain practice in recognizing, writing, and revising clear, correct compound and complex sentences; in mastering subject-verb agreement and pronoun usage; in using all punctuation; and in overcoming major spelling problems. This course, building on paragraph skills taught in Fundamentals of English I, will teach students to write short essays in standard American English. Does not count toward graduation at NCTC.

# NORTH CENTRAL TEXAS COLLEGE

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## ENGLISH (COLLEGE-LEVEL)

(ENGL COURSE NUMBERS ABOVE 1000):

2304015135

### ENGL1301 COMPOSITION I

*Prerequisite: Satisfactory placement test score or passing grade in ENGL0305.*

48 lecture hours .....3 credit hours

Principles and techniques of expository and persuasive writing; critical thinking and textual analysis; essays and research methods.

230415135

### ENGL1302 COMPOSITION II

*Prerequisite: ENGL1301*

48 lecture hours .....3 credit hours

Continuation of ENGL1301. Advanced techniques of expository and persuasive writing; critical thinking and textual analysis; essays and research methods.

2305015135

### ENGL2307 CREATIVE WRITING

*Prerequisite: ENGL1302 OR special permission of instructor.*

48 lecture hours .....3 credit hours

Elective for students interested in original and imaginative writing; a study of one or more of the genres of poetry, short story, novel, drama, screenplay with practice in the writing of one or more genres.

2305015135

### ENGL2308 ADVANCED CREATIVE WRITING

*Prerequisite: ENGL2307*

48 lecture hours .....3 credit hours

Elective for students interested in advanced practice in original and imaginative writing; a study of one or more of the genres of poetry, short story, novel, drama, and screenplay.

2311015135

### ENGL2311 TECHNICAL WRITING

*Prerequisite: ENGL1301*

48 lecture hours .....3 credit hours

The study of the fundamentals of clear writing in general. A study of presentations of technical information to non-technical audiences through samples of such writing and through practice in specific tasks, such as process analyses, object descriptions, instructions, reports, manuals and business correspondence.

2308015135

### ENGL2322 BRITISH LITERATURE I

*Prerequisite: ENGL1302*

48 lecture hours .....3 credit hours

General survey of major British literary masterpieces from the Anglo-Saxon period through the 18th century; reports and essays.

2308015135

### ENGL2323 BRITISH LITERATURE II

*Prerequisite: ENGL1302*

48 lecture hours .....3 credit hours

General survey of major British literary masterpieces from the beginning of the Romantic period to the present century; reports and essays.

2307015135

### ENGL2327 AMERICAN LITERATURE I

*Prerequisite: ENGL1302*

48 lecture hours .....3 credit hours

The study of major writers and their works from the colonial period through the Civil War Period, including the philosophical and cultural background to the works; reports and essays.

2307015135

### ENGL2328 AMERICAN LITERATURE II

*Prerequisite: ENGL1302*

48 lecture hours .....3 credit hours

The study of major writers and their works from the Civil War Period to the present, including the philosophical and cultural background to the works; reports and essays.

2303015235

### ENGL2332 WORLD LITERATURE I

*Prerequisite: ENGL1302*

48 lecture hours .....3 credit hours

Study of selected masterpieces of world literature from the ancient world through the Renaissance; reports and essays.

2303015235

### ENGL2333 WORLD LITERATURE II

*Prerequisite: ENGL1302*

48 lecture hours .....3 credit hours

Study of selected masterpieces of world literature from the Neo-Classical period to the present day; reports and essays.

### ENGL2341 FICTION

*Prerequisite: ENGL 1302*

48 Lecture hours .....3 credit hours

Studies in the literary genre of fiction. Emphasis on critical analysis; reports and essays.

### ENGL2341 FILM

*Prerequisite: ENGL 1302*

48 Lecture hours .....3 credit hours

Studies in film. Emphasis on critical analysis; reports and essays.

### ENGL2341 POETRY

*Prerequisite: ENGL 1302*

48 Lecture hours .....3 credit hours

Studies in the literary genre of poetry. Emphasis on critical analysis; reports and essays.

### ENGL2341 DRAMA

*Prerequisite: ENGL 1302*

48 Lecture hours .....3 credit hours

Studies in the literary genre of drama. Emphasis on critical analysis; reports and essays.

### ENGL2342 CLASSICAL BACKGROUNDS I

*Prerequisite: ENGL 1302*

48 Lecture hour .....3 credit hours

Analysis of mythological and philosophical roots of modern literature. Emphasis on critical reading; reports and essays.

### ENGL2343 CLASSICAL BACKGROUNDS II

*Prerequisite: ENGL 1302*

48 Lecture hours .....3 credit hours

Advanced analysis of mythological and philosophical roots of modern literature. Emphasis on critical reading; reports and essays.

**EQUINE SCIENCE**

**AGAH1402 PRINC. OF FITTING AND GROOMING LIVESTOCK**

*Prerequisite: AGEQ1401*

32 lecture hours + 112 laboratory hours ..... 4 credit hours

Students will develop skill development necessary to fit and groom Livestock in preparation for competition or as a tool in marketing. Includes proper aspects of feeding, working, and grooming with hands-on activities assigned. This class meets five days a week, in addition to weekends.

**AGEQ1271 LOCAL NEEDS**

16 lecture hours + 32 laboratory hours .....2 credit hours

Local Needs course developed to respond to unique local or regional conditions. Courses will include topics in the Equine Field related to science, business, riding, or training.

**AGEQ1291 SPECIAL TOPICS II**

16 lecture hours + 32 laboratory hours .....2 credit hours

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.

**AGEQ1300 ENGLISH EQUITATION I**

*Course Requires Approval of Instructor*

16 lecture + 32 laboratory hours..... 3 credit hours

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.

**AGEQ1305 EQUINE ENTERPRISE MANAGEMENT**

48 lecture hours .....3 credit hours

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.

**AGEQ1315 HORSE EVALUATION I**

32 lecture hours + 32 laboratory hours .....3 credit hours

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.

**AGEQ1319 HORSEMANSHIP I**

*Course requires approval by instructor.*

16 lecture + 32 laboratory hours.....3 credit hours

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.

**AGEQ 1322 FUNDAMENTALS OF RIDING INSTRUCTION**

48 lecture hours ..... 3 credit hours

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.

**AGEQ1371 LOCAL NEEDS**

16 lecture hours + 32 laboratory hours .....3 credit hours

Local Needs course developed to respond to unique local or regional conditions. Courses will include topics in the Equine Field related to science, business, riding, or training.

**AGEQ1391 SPECIAL TOPICS III**

16 lecture hours + 32 laboratory hours .....3 credit hours

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.

**AGEQ1401 EQUINE BEHAVIOR AND TRAINING I**

*Course requires approval by instructor.*

16 lecture hours + 144 laboratory hours .....4 credit hours

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.

**AGEQ1411 EQUINE SCIENCE I (HORSE PRODUCTION AND MANAGEMENT)**

48 lecture hours + 32 laboratory hours .....4 credit hours

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.

**AGEQ1450 EQUINE REPRODUCTION**

*Prerequisites: AGEQ2305; AGAH1443, AGEQ2311*

32 lecture hours + 64 laboratory hours ..... 4 credit hours

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.

**AGEQ2215 HORSE EVALUATION II**

*Prerequisite: AGEQ1315*

16 lecture hours + 32 laboratory hours .....2 credit hours

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.

**AGEQ2259 ENGLISH EQUITATION II**

*Prerequisite: AGEQ1300*

16 lecture hours + 32 Laboratory hours ..... 2 credit hours

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.

**AGEQ2310 EQUINE BUSINESS MANAGEMENT**

48 lecture hours .....3 credit hours

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.

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# NORTH CENTRAL TEXAS COLLEGE

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## **AGEQ2311 EQUINE SCIENCE II (ADVANCED HORSE PRODUCTION AND MANAGEMENT)**

48 lecture hours ..... 3 credit hours

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.

## **AGEQ2339 HORSEMANSHIP II**

*Prerequisites: AGEQ1319*

16 lecture hours + 32 laboratory hours ..... 2 credit hours

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.

## **AGEQ2386 INTERNSHIP – EQUINE SCIENCE**

16 lecture hours + 272 practicum hours ..... 3 credit hours

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.

## **AGEQ2401 EQUINE BEHAVIOR AND TRAINING II**

*Prerequisite: AGEQ1401; AGEQ1319*

16 lecture hours + 144 laboratory hours ..... 4 credit hours

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.

## **FARM AND RANCH MANAGEMENT**

### **AGAH1191 SPECIAL TOPICS IN ANIMAL SCIENCES, GENERAL**

16 lecture hours ..... 1 credit hour

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.

### **AGAH1290 ARTIFICIAL INSEMINATION**

16 lecture hours + 32 laboratory hours ..... 2 credit hours

A course to train a person to artificially inseminate cattle. In addition to spending many hours learning the inseminating technique itself, various management practices to ensure 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.

### **AGAH1291 SPECIAL TOPICS IN ANIMAL SCIENCES, GENERAL**

16 lecture hours + 32 laboratory hours ..... 2 credit hours

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.

## **AGAH1443 ANIMAL HEALTH**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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.

## **AGAH1453 BEEF CATTLE PRODUCTION**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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.

## **AGAH2271 PALPATION**

16 lecture hours + 32 laboratory hours ..... 2 credit hours

A course to train a person to pregnancy test cattle. The pregnancy examination involves a rectal palpation of the reproductive tract for signs of pregnancy, or to determine open or non-pregnant females.

## **AGAH2313 PRINCIPLES OF FEEDS AND FEEDING**

48 lecture hours ..... 3 credit hours

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.

## **AGCR1419 SOIL SCIENCE**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

Introduction to the physical, chemical, and biological properties of soils. Topics include the relationship between crops and soils, conservation of soil and water resources, and the economic use of fertilizer.

## **AGCR1441 FORAGE AND PASTURE MANAGEMENT**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

Study of the production and management of forage crops and pastures including establishment, fertilization, weed control, grazing systems, hay, seed production, and harvesting.

## **AGCR2401 AGRICULTURAL CHEMICALS**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

Instruction in the identification, biology and integrated management of pests affecting crops, livestock, and buildings. Emphasis on classification, chemistry, environmental impact, and safe application of chemical pesticides.

## **AGME1415 FARM AND RANCH SHOP SKILLS I**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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.

## **AGME1449 FARM AND RANCH EQUIPMENT**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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.

## **AGMG2301 LIVESTOCK BUSINESS MANAGEMENT**

48 lecture hours ..... 3 credit hours

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

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**AGMG2480 COOPERATIVE EDUCATION-AGRICULTURAL BUSINESS AND MANAGEMENT, GENERAL**

16 lecture hours + 336 practicum hours..... 4 credit hours  
 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. This course may be repeated if topics and learning outcomes vary. THIS COURSE SERVES AS THE EXTERNAL LEARNING EXPERIENCE OR CAPSTONE EXPERIENCE.

**RELE1331 FARM AND RANCH REAL ESTATE**

48 lecture hours ..... 3 credit hours  
 This course focuses on land value, land use, federal subsidies, environmental compliance issues, soil conservation, and highest and best use of land.

**FRENCH**

**FREN1411 BEGINNING FRENCH I**

48 lecture hours + 32 laboratory hours ..... 4 credit hours  
 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.

**FREN1412 BEGINNING FRENCH II**

*Prerequisite: FREN 1411 or one year of high school French*  
 48 lecture hours + 32 laboratory hours ..... 4 credit hours  
 Continuation of FREN 1411 with emphasis on elementary listening, speaking, reading and writing skills. Includes basic vocabulary, grammatical structures, and culture.

**FREN2311 INTERMEDIATE FRENCH I**

*Prerequisite: SPAN 1412 or two years of high school French*  
 48 lecture hours ..... 3 credit hours  
 Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture.

**FREN2312 INTERMEDIATE FRENCH II**

*Prerequisite: SPAN 2311 or two years of high school French*  
 48 lecture hours ..... 3 credit hours  
 Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture.

**GOVERNMENT**

4510025142

**GOVT2305 AMERICAN NATIONAL GOVERNMENT**

48 lecture hours ..... 3 credit hours  
 A survey of the political system of the United States including: the United States Constitution, the three branches of the government; political theory, political parties, interest groups and the media. This course is required for graduation and teacher certification.

4510025142

**GOVT2306 AMERICAN, STATE AND LOCAL GOVERNMENT**

48 lecture hours ..... 3 credit hours  
 A survey of the state and local political structures of Texas including: the geographical and political environment of Texas, the three branches of state government, the federal system, county and municipal governments, special districts, the Texas Constitution and a comparison of Texas' political system with other states. This course is required for graduation and teacher certification.

**GRAPHIC ARTS**

**GRPH1357 DIGITAL IMAGING II**

*Instructor approval required*  
 32 lecture hours + 32 laboratory hours ..... 3 credit hours  
 An in-depth investigation of digital imaging on the computer using imaging editing and/or image creation software. Manipulation, creation, and editing of digital images. Topics include: image capture, high-end work stations, image bit-depth, interaction with service bureaus and printing industries.

**GRPH1359 OBJECT-ORIENTED COMPUTER GRAPHICS**

*Instructor approval required*  
 32 lecture hours + 32 laboratory hours ..... 3 credit hours  
 Mastery of the tools and transformation options of an industry standard draw program to create complex illustrations and follow them through to the color output stage. Mastery in the use of basic elements of good layout and design principles and use of the capabilities specific to vector (object oriented) drawing software to manipulate both text and graphics with emphasis on the use of Bezier curves. Acquisition of images via scanning and the creative use of clip art is included.

**HISTORY**

4508025142

**HIST1301 U.S. HISTORY TO 1865**

48 lecture hours ..... 3 credit hours  
 A general survey of American history from the earliest discovery period through the Civil War and Reconstruction. This course is required for graduation and teacher certification.

4508025142

**HIST1302 U.S. HISTORY FROM 1865**

48 lecture hours ..... 3 credit hours  
 A continuation of HIST 1301. A general survey of American history from Reconstruction to the present. This course is required for graduation and teacher certification.

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**HIST2301 TEXAS HISTORY**

48 lecture hours ..... 3 credit hours  
 Survey of Texas from the Spanish exploration to the present. Special emphasis on economic, social, political and military history of Texas Revolution and Republic.

4508015342

**HIST2321 HISTORY OF CIVILIZATION**

48 lecture hours ..... 3 credit hours  
 A general survey of the origins, development and significance of various cultures from prehistoric times to about 1650. This course is required for history majors and recommended for all education majors.

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4508015342

**HIST2322 HISTORY OF CIVILIZATION**

48 lecture hours ..... 3 credit hours

A continuation of HIST2321. A survey of the history of civilization from 1650 to the present, including the development of nationalism, imperialism and contemporary developments. This course is required for history majors and recommended for all education majors.

**HORTICULTURE MANAGEMENT**

**AGRI1131 THE AGRICULTURE INDUSTRY**

16 lecture hours ..... 1 credit hour

Insights into agriculture curricula from standpoint of professional and managerial careers in agriculture; survey of field of agriculture and vocational guidance. Recommended for all freshman agriculture majors.

**AGCR1419 SOIL SCIENCE**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

The principles of soil characteristics, properties and development. The relationships between crops and soils; practical use and conservation of soil and water and economic use of fertilizers.

**AGCR2401 AGRICULTURE CHEMICALS**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

Instruction in the identification, biology and integrated management of pests affecting crops, livestock, and buildings. Emphasis on classification, chemistry, environmental impact, and safe application of chemical pesticides. Students will identify pests; solve chemical pesticide application calculations; recognize the environmental impact of pest management practices; explain and interpret a chemical pesticide label; employ integrated pest management principles; and summarize pesticide laws and regulations.

**FMKT1301 FLORAL DESIGN**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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. Required \$100 lab fee.

**FMKT2331 ADVANCED FLORAL DESIGN**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

**HALT1309 INTERIOR PLANTS**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

**HALT1325 LANDSCAPE PLANT MATERIAL**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

Study of the identification, characteristics, cultural requirements, and landscape uses of native and adapted plants (annuals, perennials, shrubs, trees, vines, groundcover, turf).

**HALT1353 LANDSCAPE COMPUTER DESIGN**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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).

**HALT1392 NATURALISTIC GARDENING (SPECIAL TOPICS IN HORTICULTURAL SCIENCE)**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

**HALT1422 LANDSCAPE DESIGN**

48 lecture hours + 32 laboratory hours ..... 4 credit hours

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.

**HALT2302 GREENHOUSE CROP PRODUCTION**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

In-dept 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.

**HALT2307 HORTICULTURE FOOD CROPS**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

**HALT2308 GREENHOUSE MANAGEMENT**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

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.

**HALT2331 ADVANCED LANDSCAPE DESIGN**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

In-depth coverage of advanced practices in landscape planning for commercial and residential landscapes. Topics include advanced design analysis, architectural elements, space articulation, and land engineering concepts.

**HALT2480 COOPERATIVE EDUCATION**

16 lecture hours + 336 practicum hours ..... 4 credit hours

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.*

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**HORT1401 HORTICULTURE**

48 lecture hours + 32 laboratory hours.....4 credit hour

A scientific and practical approach to plant production and growth. Principles of propagating plants, including vegetables, ornamentals and fruits. Also methods of handling seed; starting plants by the use of cuttings, layers, buds, grafts and bulbs; ways of propagating specific plants; factors influencing growth of plants after transplanting. Topics such as sites, soils, fertilizers, pruning, nutrition, pests and greenhouse production will be covered.

**HUMANITIES**

2401035135

**HUMA1371 SPECIAL TOPICS - COOKE COUNTY HISTORY, CULTURE AND ECONOMICS**

48 lecture hours .....3 credit hours

This is a non-traditional interdisciplinary course with an emphasis on local history. Classroom lecture will be minimal since this is primarily an activities course. Much of the student's grade will be based on a portfolio which the student will compile during the course. A student will need dependable transportation to visit various historic sites in Gainesville and rural areas of the county. Our "lab" will include cemeteries, public buildings, various resource persons, and the outdoors.

2401035135

**HUMA1371 SPECIAL TOPICS - HOLLYWOOD DOES HISTORY**

48 lecture hours .....3 credit hours

A non-traditional look at history as seen through the eyes of Hollywood. Course activities will include viewing films and documentaries, library research, and evaluating the historical accuracy and analyzing the artistic merit of selected films.

2401035135

**HUMA1371 SPECIAL TOPICS - LITERATURE IN FILM**

48 lecture hours .....3 credit hours

A study of film as a genre of modern literature. Students will watch a number of films and participate in discussions regarding the nature of modern literature; its evolution from simple text into complex multimedia expression. Counts as a Humanities elective.

2401035135

**HUMA1371 SPECIAL TOPICS - WOMEN IN POLITICS**

48 lecture hours .....3 credit hours

A look at the women's movement in the 1990s and its influence on the American political process. Activities will include traditional and non-traditional research methods.

2401035135

**HUMA1371 SPECIAL TOPICS - GREAT AMERICANS**

48 lecture hours .....3 credit hours

A survey course exploring the accomplishments and challenges of various leaders in American history with special emphasis on their economic, political and social impact. This course is for Elective Credit only. It does NOT satisfy core requirements.

2401035135

**HUMA1371 SPECIAL TOPICS - HUMAN RIGHTS IN A MULTICULTURAL WORLD**

48 lecture hours .....3 credit hours

An interdisciplinary study of the development of the human rights movement in a multicultural environment. Students will consider how a variety of materials—literary works, films, essays, music and the visual arts—contribute to social change, as concepts of universal human rights evolve in a variety of cultural contexts. Activities include using the Internet to explore national and international issues, collecting and evaluating samples of media coverage, and sharing relevant works from around the world. Students will develop semester projects presenting their own ideas and formulating their own expressions of the meaning of human rights and human dignity. This course has been approved to satisfy the Humanities/Visual Performing Arts Core Requirement.

2401035135

**HUMA1371 SPECIAL TOPICS - HOLOCAUST**

48 lecture hours .....3 credit hours

Study of the historical framework of WWII Holocaust and discussion of memoirs and other testimonies from victims and rescuers. The course also includes discussion of film, a visit to the Dallas Holocaust Museum, a research project and its presentation.

**ITALIAN**

16.0902.51 13

**ITAL1411 ELEMENTARY ITALIAN I**

48 lecture hours + 32 laboratory hours .....4 credit hours

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 Italian-speaking communities.

16.0902.51 13

**ITAL1412 ELEMENTARY ITALIAN II**

*Prerequisite: ITAL 1411 or one year of high school Italian*

48 lecture hours + 32 laboratory hours .....4 credit hours

Continuation of ITAL1411 with emphasis on elementary listening, speaking, reading, and writing skills applied to two main communicative goals: narration of present or past situations and events, and expression of feelings, hypotheses and opinions. Daily life situations and events and the understanding of the Italian-speaking communities are main thematic components of the course.

**LAW ENFORCEMENT**

**CJCR1304 PROBATION AND PAROLE**  
 48 lecture hours ..... 3 credit hours  
 A survey of the structure, organization, and operation of probation and parole services. Emphasis on applicable state statutes and administrative guidelines.

**CJLE1327 INTERVIEWING AND REPORT WRITING FOR CRIMINAL JUSTICE PROFESSIONS**  
 48 lecture hours ..... 3 credit hours  
 Instruction and skill development in interviewing, note-taking, and report writing in the criminal justice context. Development of skills to conduct investigations by witnesses, victims, and suspects properly. Organization of information regarding incidents into effective written reports.

**CJSA1308 CRIMINALISTICS I**  
 48 lecture hours ..... 3 credit hours  
 Introduction to the field of criminalistics. The topics include the application of scientific and technical methods in the investigation of crime including location, identification, and handling of evidence for scientific analysis.

**CJSA1317 JUVENILE JUSTICE SYSTEM**  
 48 lecture hours ..... 3 credit hours  
 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.

**CJSA1325 CRIMINOLOGY**  
 48 lecture hours ..... 3 credit hours  
 Current theories and empirical research pertaining to crime and criminal behavior and its causes, methods of prevention, systems of punishment, and rehabilitation.

**CJSA1342 CRIMINAL INVESTIGATION**  
 48 lecture hours ..... 3 credit hours  
 Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation.

**CJSA1348 ETHICS IN CRIMINAL JUSTICE**  
 48 lecture hours ..... 3 credit hours  
 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.

**CJSA1393 INTRODUCTION TO FORENSICS**  
 48 lecture hours ..... 3 credit hours  
 An introductory course in the collection, perservation and analysis of forensic evidence and the study of developments in crime scene techniques. Through lecture and practical experience, students will gain a basic knowledge of processing a crime scene, types and significance of physical evidence and analysis of evidence such as hair, fiber, trace, tool, firearms and explosives.

**CJSA2300 LEGAL ASPECTS OF LAW ENFORCEMENT**  
 48 lecture hours ..... 3 credit hours  
 Police authority, responsibility, constitutional constraints, laws of arrest, search and seizure, and police liability.

**CJSA2334 CONTEMPORARY ISSUES IN CRIMINAL JUSTICE**  
 48 lecture hours ..... 3 credit hours  
 A series of lectures and class participation excercises presenting selected topics currently confronting criminal justice personnal and the public they serve.

**CRIJ1301 INTRODUCTION TO CRIMINAL JUSTICE**  
 48 lecture hours ..... 3 credit hours  
 History and philosophy of criminal justice and ethical considerations; crime defined; its nature and impact; overview of the criminal justice system; law enforcement; court system; prosecution and defense; trial process; and corrections.

**CRIJ1306 COURT SYSTEM AND PRACTICES**  
 48 lecture hours ..... 3 credit hours  
 Examination of the role of the judiciary in the criminal justice system. Topics include the structure of the American court system, prosecution, right to counsel, pretrial release, grand jury process, adjudication process, types and rules of evidence, and sentencing concepts.

**CRIJ1310 FUNDAMENTALS OF CRIMINAL LAW**  
 48 lecture hours ..... 3 credit hours  
 A study of the nature of criminal law; philosophical and historical development; major definitions and concepts; classification of crime; elements of crimes and penalties using Texas statutes as illustrations; criminal responsibility. (TCLEOSE)

**CRIJ2313 CORRECTIONAL SYSTEMS AND PRACTICES**  
 48 lecture hours ..... 3 credit hours  
 A study of the roles of corrections in the criminal justice system. Topics include organization and theory of correctional systems, institutional operations, management, alternatives to institutionalization, treatments and rehabilitation, and current and future issues.

**CRIJ2328 POLICE SYSTEMS AND PRACTICES**  
 48 lecture hours ..... 3 credit hours  
 Exploration of the profession of police officer. Topics include organization of law enforcement systems, the police role, police discretion, ethics, police-community interaction, and current and future issues.

**MATHEMATICS (COLLEGE PREPARATORY)**  
 (COURSE NUMBERS UNDER 1000):

*Note: NCTC offers a number of courses (listed below) designed to help you acquire the skills necessary for success in college-level courses. The courses are widely offered in Texas community/junior colleges, and the policy statewide is that these will not transfer as college-level courses nor will they count toward graduation at accredited Texas colleges and universities. It is important that you understand that such courses are designed to help you overcome academic deficiencies that are likely to hinder you in your pursuit of a college degree. Attendance in College Preparatory Studies is mandatory when a student has not passed the THEA exam. After THREE hours of absenteeism, a student may be warned and referred to the Director of College Preparatory Studies. At SIX hours of absenteeism, a student may be dropped from his/her College Preparatory class. If the student is dropped from the only College Preparatory class in which he/she is enrolled, the student will be DROPPED from all remaining courses for that semester.*

3201045137  
**MATH0303 PRE-ALGEBRA**  
 Corequisite: EDUC1300 or PSYC1300  
 48 lecture hours ..... 3 credit hours  
 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.

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3201045137

**MATH0305 BEGINNING ALGEBRA**

*Prerequisite: MATH0303 passed with a "C" or better or satisfactory placement score.*

48 Lecture hours ..... 3 credit hours

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.

3201045237

**MATH0310 INTERMEDIATE ALGEBRA**

*Prerequisite: MATH0305 passed with a "C" or better or satisfactory placement score.*

48 Lecture hours ..... 3 credit hours

Concepts instructed in this course are algebraic expressions including polynomials and rational expressions, linear expressions and inequalities, exponents and radicals, quadratic equations and inequalities, functions and relations, conic sections, and systems of equations and inequalities. This course does not count toward graduation at NCTC.

**MATHEMATICS (COLLEGE-LEVEL)  
(COURSE NUMBERS ABOVE 1000):**

2701015437

**MATH1314 COLLEGE ALGEBRA**

*Prerequisite: MATH0310 or satisfactory placement test score*

48 lecture hours ..... 3 credit hours

Equations and inequalities; functions and graphs; polynomial functions; exponential and logarithmic functions; systems of equations; sequences and series; applications.

2701015337

**MATH1316 TRIGONOMETRY**

*Prerequisite: MATH1314*

48 lecture hours ..... 3 credit hours

Trigonometric functions and graphs; radian measure; identities; equations; solution of right and oblique triangles; inverse trigonometric functions; vectors; complex numbers; applications.

2703015237

**MATH1324 MATHEMATICS FOR BUSINESS ANALYSIS**

*Prerequisite: MATH0310 or satisfactory placement test score*

48 lecture hours ..... 3 credit hours

Designed for a four-year degree in Business Administration. Equations and inequalities; functions and graphs; exponential and logarithmic functions; matrix algebra; linear programming; sets and probability; mathematics of finance; applications.

2703015237

**MATH1325 BUSINESS CALCULUS**

*Prerequisite: MATH 1324 or MATH1314*

48 lecture hours ..... 3 credit hours

Limits and derivatives; indefinite and definite integrals; curve sketching; optimization and other applications.

2701015137

**MATH1332 COLLEGE MATHEMATICS**

*Prerequisite: MATH0310 or satisfactory placement test score*

48 lecture hours ..... 3 credit hours

Sets; logic; number systems; number theory; functions; measurement; geometric concepts; introductory probability and statistics.

2705015137

**MATH1342 ELEMENTARY STATISTICS**

*Prerequisite: MATH0310 or satisfactory placement test score*

48 lecture hours ..... 3 credit hours

Presentation and interpretation of data; sampling; analysis of variance; probability; binomial and normal distributions; estimation and testing of hypotheses; correlation and regression; the use of statistical software.

2701015537

**MATH1348 ANALYTIC GEOMETRY**

*Prerequisite: MATH2412 or both MATH1314 and MATH1316*

48 lecture hours ..... 3 credit hours

Lines, circles and other conic sections; vectors, transformation of coordinates; curve sketching; polar coordinates; parametric equations; solid analytic geometry; cylindrical and spherical coordinates; applications.

2701015619

**MATH1350 FUNDAMENTALS OF MATHEMATICS I**

*Prerequisite: MATH1314 with grade of C or better*

48 lecture hours ..... 3 credit hours

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 a required part of the approved field of study curriculum for middle grades (4 through 8) teacher certification. This course may also be appropriate for early childhood education majors.)

2701015619

**MATH1351 FUNDAMENTALS OF MATHEMATICS II**

*Prerequisite: MATH1314 with grade of C or better*

48 lecture hours ..... 3 credit hours

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 a required part of the approved field of study curriculum for middle grades (4 through 8) teacher certification. This course may also be appropriate for early childhood education majors.)

2701015537

**MATH2412 PRE-CALCULUS MATHEMATICS**

*Prerequisite: MATH0310 or satisfactory placement test score*

80 lecture hours ..... 4 credit hours

Polynomial and rational functions; exponential and logarithmic functions; trigonometric functions; graphs and introductory analytic geometry; applications. A course to prepare science and engineering majors for the study of calculus.

2701015937

**MATH2413 CALCULUS I**

*Prerequisite: MATH2412 or both MATH1314 and MATH1316*

64 lecture hours ..... 4 credit hours

Limits and continuity; differentiation and integration of algebraic and trigonometric functions; applications of differentiation; approximation and numerical integration; Fundamental Theorem of Calculus.

2701015937

**MATH2414 CALCULUS II**

*Prerequisite: MATH2413*

64 lecture hours ..... 4 credit hours

A continuation of MATH2413. Applications of integration; differentiation and integration of transcendental functions; techniques of integration; sequences and series; plane analytic geometry.

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# NORTH CENTRAL TEXAS COLLEGE

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## MATH2415 CALCULUS III

Prerequisite: MATH2414

64 lecture hours ..... 4 credit hours

A continuation of MATH2414. Vectors in 2 and 3 dimensions; vector-valued functions and motion in space; partial differentiation and multiple integration and applications; 3-dimensional analytic geometry; polar, cylindrical and spherical coordinates.

## MUSIC

**NOTE: Music majors are advised to consult with major instructor before registration.**

5009045630

### MUSI1116 SIGHT SINGING AND EAR TRAINING I

Prerequisite: MUSI1301 or satisfactory score on placement exam.

Must be taken concurrently with MUSI1311 and MUSI1174 or 1274.

32 lecture hours ..... 1 credit hour

Reinforcement of theoretical concepts presented in MUSI1311 via singing, ear training, keyboard skills, and conducting experiences.

5009045630

### MUSI1117 SIGHT SINGING AND EAR TRAINING II

Prerequisites: MUSI1311 and MUSI1116

Must be taken concurrently with MUSI1312 and MUSI1174 or 1274

32 lecture hours ..... 1 credit hour

Reinforcement of theoretical concepts presented in MUSI1312 via singing, ear training, keyboard skills, and conducting experiences.

5009036130

### MUSI1159 MUSIC THEATER WORKSHOP

32 lecture hours + 48 laboratory hours ..... 1 credit hour

A course established to give the young singing actor practical experience in the performance of operas, operettas or musicals; study of the integration of music, acting and staging.

5009085330

### MUSI1262 DICTION I

32 lecture hours ..... 2 credit hours

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

5009045430

### MUSI1300 METHODS AND MATERIALS OF MUSIC

Prerequisite: MUSI1301

48 lecture hours ..... 3 credit hours

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.

5009045530

### MUSI1301 MUSIC FUNDAMENTALS

48 lecture hours ..... 3 credit hours

Introduction to elements of music, staff, clefs, key signatures, scales, time signatures and notation; meter and rhythm; theory applications at keyboard. Credit in this course may not be applied to a music degree. Primarily designed to meet the needs of elementary education majors, this course is open to all interested students.

5009025130

### MUSI1306 MUSIC APPRECIATION

48 lecture hours ..... 3 credit hours

An introductory course for non-music majors covering elements of music, a brief study of musical forms, historical periods and composers. An effort is made to develop the listening repertoire. This is not a performance course, and the ability to read music is not required.

5009025230

### MUSI1308 MUSIC LITERATURE

48 lecture hours ..... 3 credit hours

A survey of music literature in all styles and periods with detailed study of selective works, followed by a study of composers and an analysis of standard repertoire from the ancient Greeks to the Renaissance.

5009025230

### MUSI1309 MUSIC LITERATURE

48 lecture hours ..... 3 credit hours

A survey of music literature in all styles and periods with detailed study of selective works, followed by a study of composers and an analysis of standard repertoire from the Renaissance to the present.

5009025230

### MUSI1310 AMERICAN MUSIC

48 lecture hours ..... 3 credit hours

General survey of various styles of music in America. Topics may include jazz, ragtime, folk, rock, and contemporary art music.

5009045130

### MUSI1311 THEORY I

Prerequisite(s): MUSI1301 or satisfactory score on placement exam.

Must be taken concurrently with MUSI1116 and MUSI1174 or 1274.

48 lecture hours ..... 3 credit hours

Introduction to analysis, part writing, figured bass realization, and harmonization beginning with melody and three- or four-part exercises.

5009045130

### MUSI1312 THEORY II

Prerequisite(s): MUSI1311 and MUSI1116

Must be taken concurrently with MUSI1117 and MUSI1174 or 1274

48 lecture hours ..... 3 credit hours

Continuation of analysis, part writing, figured bass realization, and harmonization covering harmonic vocabulary of 18<sup>th</sup> Century music and smaller forms of the Baroque period.

5009045730

### MUSI2116 ADVANCED SIGHT SINGING AND EAR TRAINING I

Prerequisite(s): MUSI1312 and MUSI1117

Must be taken concurrently with MUSI2311 and MUSI1174 or 1274

16 lecture hours ..... 1 credit hour

Reinforcement of theoretical concepts presented in MUSI2311 via singing, ear training, keyboard skills, and conducting experiences.

5009045730

### MUSI2117 ADVANCED SIGHT-SINGING AND EAR TRAINING II

Prerequisite(s): MUSI2311 and MUSI2116

Must be taken concurrently with MUSI2312 and MUSI1174 or 1274

16 lecture hours ..... 1 credit hour

Reinforcement of theoretical concepts presented in MUSI2312 via singing, ear training, keyboard skills, and conducting experiences.

5009085330

### MUSI2262 DICTION II

32 lecture hours ..... 2 credit hours

Study of the International Phonetic alphabet and the phonetics of French and German to promote the ability to sing in those languages.

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5009045230

**MUSI2311 THEORY III**

*Prerequisite(s): MUSI1312 and MUSI1117*

*Must be taken concurrently with MUSI2116 and MUSI1174 or 1274*

48 lecture hours ..... 3 credit hours

Analysis, part writing, figured bass realization and harmonization covering harmonic vocabulary of the late eighteenth and nineteenth centuries, larger forms of the Baroque era and forms of the Classic and Romantic eras.

5009045230

**MUSI2312 THEORY IV**

*Prerequisite(s): MUSI2311 and MUSI2116*

*Must be taken concurrently with MUSI2117 and MUSI1174 or 1274*

48 lecture hours ..... 3 credit hours

Analysis, part writing and harmonization covering musical practice of the late Romantic and Twentieth Century periods.

**Music – Applied Instruction**

*NOTE: All Applied Instruction music classes require the following: For one-semester-credit-hour course 16 one-half hour lessons and 96 practice hours per semester. For two-semester-credit-hour course 16 one-hour lessons and 160 practice hours per semester.*

*EACH COURSE MAY BE REPEATED FOR CREDIT.*

5009035430

MUAP1172	Applied Guitar.....	1 credit hour
MUAP1272	Applied Guitar.....	2 credit hours
MUAP1173	Applied Strings.....	1 credit hour
MUAP1273	Applied Strings.....	2 credit hours
MUAP1174	Applied Piano.....	1 credit hour
MUAP1274	Applied Piano.....	2 credit hours
MUAP1175	Applied Organ.....	1 credit hour
MUAP1275	Applied Organ.....	2 credit hours
MUAP1176	Applied Voice.....	1 credit hour
MUAP1276	Applied Voice.....	2 credit hours
MUAP1177	Applied Brass.....	1 credit hour
MUAP1277	Applied Brass.....	2 credit hours
MUAP1178	Applied Percussion.....	1 credit hour
MUAP1278	Applied Percussion.....	2 credit hours
MUAP1179	Applied Woodwinds.....	1 credit hour
MUAP1279	Applied Woodwinds.....	2 credit hours

**Music – Class Instruction**

5009075130

**MUSI1181 BEGINNING CLASS PIANO**

32 lecture hours ..... 1 credit hour

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.

5009075130

**MUSI1182 ADVANCED CLASS PIANO**

32 lecture hours ..... 1 credit hour

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

5009085130

**MUSI1183 CLASS VOICE**

*May be repeated for credit.*

32 lecture hours ..... 1 credit hour

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.

5009035130

**MUSI1192 BEGINNING CLASS GUITAR**

32 lecture hours ..... 1 credit hour

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.

5009035130

**MUSI1193 ADVANCED CLASS GUITAR**

32 lecture hours ..... 1 credit hour

Interpretation and a larger music vocabulary; opportunity to increase repertoire of guitar ensemble literature pleasing to the student.

**Music – Performing Organizations**

5009035630

**MUEN1131 WIND ENSEMBLE**

48 laboratory hours..... 3 credit hours

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). Satisfies the college core curriculum requirement.

5009035630

**MUEN1135 GUITAR ENSEMBLE**

48 lecture hours ..... 1 credit hour

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). Satisfies college core curriculum.

5009035730

**MUEN1141 NORTH CENTRAL TEXAS CHORUS**

48 laboratory hours..... 1 credit hour

May be repeated for credit. Open to all students. Study and performance of choral music concentrating especially on major works for chorus and orchestra.

5009035830

**MUEN1151 COLLEGE ENSEMBLE**

48 laboratory hours..... 1 credit hour

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.

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# NORTH CENTRAL TEXAS COLLEGE

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5009035830

## MUEN1154 COLLEGE SINGERS

48 laboratory hours..... 1 credit hour

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.

5009035530

## MUEN1171 JAZZ BAND

48 laboratory hours..... 1 credit hour

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). Satisfies the college core curriculum requirement.

## NURSING

### RNSG1163 CLINICAL – PSYCHIATRIC NURSING

48 clinical hours..... 1 credit hour

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 clients along the mental health/mental illness continuum.

### RNSG1213 INTRODUCTION TO THE PROFESSION OF NURSING

*Concurrent with: RNSG1219, RNSG1300 and RNSG1361*

32 lecture hours; 16 laboratory hours .....2 credit hours

Overview of the various roles of professional nursing within the health care system and the roles of the health care team. Identification of how current events, attitudes, behaviors, and technology impact the nursing role and the role of nursing students in the health care setting.

### RNSG1219 INTEGRATED NURSING SKILLS I

*Concurrent with: RNSG1213, RNSG1300 and RNSG1361*

16 lecture hours; 48 laboratory hours .....2 credit hours

Study of the concepts and principles essential for demonstrating competence in the performance of basic nursing skills for care of diverse clients across the life span. Topics include knowledge, judgement, skills, and professional values within a legal/ethical framework.

### RNSG1227 TRANSITION FROM VOCATIONAL TO PROFESSIONAL NURSING

*Prerequisite: Must be a currently licensed vocational/practical nurse and must have been accepted into the Associate Degree Nursing program.*

*Concurrent with: RNSG1262, RNSG1300, and RNSG2504*

32 lecture hours .....2 credit hours

Topics include health promotion, expanded assessment, analysis of data, nursing process, pharmacology, multidisciplinary teamwork, communication, and applicable competencies in knowledge, judgement, skills, and professional values within a legal/ethical framework throughout the life span.

### RNSG1262 CLINICAL NURSING FOR TRANSITION STUDENTS

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

*Concurrent with RNSG1227*

128 clinical hours.....2 credit hours

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.

### RNSG1300 HEALTH ASSESSMENT ACROSS THE LIFESPAN

*Concurrent with RNSG1219, RNSG1213, and RNSG1361 OR RNSG1227, RNSG2504, and RSG1262*

16 lecture hours; 48 laboratory hours .....3 credit hours

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

### RNSG1361 CLINICAL NURSING I

*Concurrent with: RNSG1219, RNSG1213, and RNSG1300*

144 clinical hours.....3 credit hours

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 a systematic, problem-solving process to provide basic nursing care.

### RNSG1562 CLINICAL NURSING II

*Concurrent with: RNSG2504*

256 clinical hours.....5 credit hours

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. Provides the student with nursing skills essential for care of clients with common health care needs.

### RNSG2504 INTEGRATED CARE OF THE CLIENT WITH COMMON HEALTH CARE NEEDS

*Concurrent with: RNSG1562*

64 lecture hours; 32 laboratory hours .....5 credit hours

Application of a systematic problem-solving process and critical thinking skills to provide nursing care to diverse clients/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 multidisciplinary health care team. Content includes applicable competencies in knowledge, judgement, skills, and professional values within a legal/ethical framework.

### RNSG2514 INTEGRATED CARE OF THE CLIENT WITH COMPLEX HEALTH CARE NEEDS

*Concurrent with: RNSG2561*

64 lecture hours; 32 laboratory hours .....5 credit hours

Application of a systematic problem solving process and critical thinking skills to provide comprehensive nursing care to diverse clients/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. Topics include the role of the nurse as client advocate and coordinator of care and applicable competencies in knowledge, judgement, skills, and professional values within a legal/ethical framework.

### RNSG2535 INTEGRATED CLIENT CARE MANAGEMENT

*Concurrent with: RNSG2562*

64 lecture hours; 32 laboratory hours .....5 credit hours

Application of critical assessment skills, critical thinking, and independent nursing interventions to care for diverse clients/families throughout the life span whose health care needs may be difficult to predict. Emphasis on collaborative clinical decision-making, nursing leadership skills, and client management. Topics include the significance of professional development, trends in nursing and health care, and applicable knowledge, judgement, skills, and professional values within a legal/ethical framework.

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**RNSG2561 CLINICAL NURSING III**

*Concurrent with: RNSG2514*

256 clinical hours.....5 credit hours

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. Provides the student with nursing skills essential for care of patients/clients with complex health care needs.

**RNSG2562 CLINICAL NURSING IV**

*Concurrent with: RNSG2535*

256 clinical hours.....5 credit hours

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. Provides the student with nursing skills essential for prioritizing, managing and integrating the care of clients with health care needs that are difficult to predict. Emphasis is on collaborative clinical decision-making, nursing leadership skills, and client management.

**OFFICE SYSTEMS TECHNOLOGY**

**ITSW1313 INTRODUCTION TO DATA ENTRY**

*Prerequisite: BCIS1305 or equivalent.*

32 lecture hours + 32 laboratory hours .....3 credit hours

Training in data input. Includes source documents, conversion of source data into computer input media, input record layout design, and input coding.

**ITSW2337 DATABASES**

*Prerequisite: POFT1329 and COSC1400*

32 lecture hours + 32 laboratory hours .....3 credit hours

In-depth coverage of database software application.

**POFI1349 SPREADSHEETS**

32 lecture hours + 32 laboratory hours .....3 credit hours

In-depth coverage in the use of a spreadsheet software application.

**POFI2301 WORD PROCESSING**

32 lecture hours + 32 laboratory hours .....3 credit hours

In-depth coverage of word processing software application.

**POFI2331 DESKTOP PUBLISHING FOR THE OFFICE**

32 lecture hours + 32 laboratory hours .....3 credit hours

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.

**POFM1327 MEDICAL INSURANCE**

*Prerequisite: Medical Terminology; basic keyboarding and computer skills*

48 lecture hours .....3 credit hours

A survey of medical insurance including the life cycle of various claim forms, terminology, litigation, patient relations and ethical issues.

**POFT1309 ADMINISTRATIVE OFFICE PROCEDURES I**

48 lecture hours .....3 credit hours

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

**POFT1319 RECORDS AND INFORMATION MANAGEMENT I**

48 lecture hours .....3 credit hours

Introduction to basic records information management. Includes the life cycle of a record, manual and electronic records management, and basic filing procedures and rules.

**POFT1325 BUSINESS MATH AND MACHINE APPLICATIONS**

48 lecture hours .....3 credit hours

Skill development in the use of electronic calculators and business mathematical functions. Emphasis on business problem-solving skills using spreadsheet software and/or electronic calculator/keyboard.

**POFT1328 BUSINESS AND PROFESSIONAL PRESENTATIONS**

48 lecture hours .....3 credit hours

Skill development in planning and conducting business presentations on an individual and/or group basis including communication and media skills.

**POFT1329 KEYBOARDING AND DOCUMENT FORMATTING**

48 lecture hours .....3 credit hours

Skill development in the operation of the keyboard by touch applying proper keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels formatting basic documents.

**POFT1331 BUSINESS MACHINE APPLICATIONS**

32 lecture hours; 32 laboratory hours .....3 credit hours

Skill development in the operation of machines used in a business environment. Emphasis on the development of skills in using electronic calculators and other office machines.

**POFT1349 ADMINISTRATIVE OFFICE PROCEDURES II**

*Prerequisite: POFT1309 Administrative Office Procedures I, or Departmental Approval*

48 lecture hours .....3 credit hours

Advanced office application with special emphasis on decision-making, goal setting, management theories, and critical thinking.

**POFT2280 COOPERATIVE EDUCATION - ADMINISTRATIVE ASSISTANT AND SECRETARIAL SCIENCE**

16 lecture hours + 112 laboratory hours .....2 credit hours

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.

**POFT2312 BUSINESS CORRESPONDENCE AND COMMUNICATION**

48 lecture hours .....3 credit hours

Compose and produce effective business documents appropriate to meet industry standards; apply critical evaluation techniques to business documents; and demonstrate the importance of coherent, ethical communication principles in business and industry.

**SRGT1201 MEDICAL TERMINOLOGY**

32 lecture hours .....2 credit hours

Study of the basic structure of medical works 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 within the allied health care field.

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**OIL AND GAS PRODUCTION TECHNOLOGY**

**OSHT2401 OSHA REGULATIONS - GENERAL INDUSTRY**

64 lecture hours .....4 credit hours

A study of Occupational Safety and Health Administration (OSHA) regulations pertinent to general industry. End-of-Course Outcomes: Identify the OSHA regulations which apply to general industry; and exhibit proficiency in retrieving specific information from Title 29 C.F.R. Part 1910 regulations.

**PTRT1301 INTRODUCTION TO PETROLEUM INDUSTRY**

48 lecture hours .....3 credit hours

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. End-of-Course Outcomes: Identify the concepts of exploration, production, refining, marketing, and transportation; and describe the terms and phrases associated with the petroleum industry.

**PTRT1307 RECOVERY AND PRODUCTION METHODS**

48 lecture hours .....3 credit hours

Petroleum recovery and production methods. End-of-Course Outcomes: Describe natural flow and artificial lift methods; identify the components of lift systems; and describe basic recovery methods.

**PTRT1309 CORROSION BASICS**

48 lecture hours .....3 credit hours

Principles of corrosion such as basic electrochemistry processes. Addresses the deterioration of materials, devices, or pieces of oil field (or other) machinery/equipment. Emphasis on terminology associated with metallic and nonmetallic corrosion. End-of-Course Outcomes: Distinguish between the causes of corrosion; state methods by which corrosion can be identified, monitored, and controlled. Communicate potential field problems and recommend the most reliable solutions.

**PTRT1313 INDUSTRIAL SAFETY**

48 lecture hours .....3 credit hours

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 such as confined space entry, emergency action, lock out/tag out, and other work related subjects. End-of-Course Outcomes: Describe the basic components of safety, health, and environmental systems as defined by the Occupational Safety and Health Administration.

**PTRT1317 NATURAL GAS PROCESSING I**

48 lecture hours .....3 credit hours

An overview of natural gas processing operations. Fundamentals of gas processing, the scientific principles and how they apply to the process, processing equipment, and procedures from raw material to the refined product. End-of-Course Outcomes: Describe the basic components of processing equipment; and explain various gas plant operational procedures.

**PTRT1321 OIL FIELD HYDRAULICS**

48 lecture hours .....3 credit hours

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. End-of-Course Outcomes: Calculate and determine the pressure loss inside a tubular system; and discuss the advantages and disadvantages of the different hydraulic systems used in oil field applications.

**PTRT1324 PETROLEUM INSTRUMENTATION**

48 lecture hours .....3 credit hours

Study of instruments, instrument systems, terminology, process variables, and control loops as used in a petroleum environment. End-of-Course Outcomes: Describe the basic instrumentation used in modern process control; identify the basic instruments used with temperature, pressure, levels, flow, and analytical applications; and describe the basic components of a control loop.

**PTRT2323 NATURAL GAS PRODUCTION**

48 lecture hours .....3 credit hours

An overview of the aspects of natural gas and oil production including various aspects of hydrocarbon production, processing equipment, and gas compression/transportation systems. End-of-Course Outcomes: Describe gas well and casing head testing and metering systems; calculate gas volumes; describe the basic principles of hydrocarbon production; and identify the basic components of processing equipment.

**PTRT2331 WELL COMPLETIONS**

48 lecture hours .....3 credit hours

Drilling and wellbore analysis data to develop a well completion plan. End-of-Course Outcomes: Calculate production and completion data; and develop a plan of action for completing a well.

**PTRT2332 ARTIFICIAL LIFT**

48 lecture hours .....3 credit hours

Practical aspects of artificial lift in production systems. End-of-Course Outcomes: Analyze the characteristics of a particular reservoir; select the type of artificial lift required; and design artificial lift systems.

**PTRT2336 WELL WORKOVER**

48 lecture hours .....3 credit hours

In-depth study and analysis of the various problems associated with the producing wellbore. Students discuss and evaluate the economics of working over an oil or gas well. End-of-Course Outcomes: Perform basic downhole calculations; prepare a schedule and select procedures; and determine the economics of the workover procedure.

**PTRT2340 WELL STIMULATION**

48 lecture hour .....3 credit hours

Variables necessary for stimulating oil or gas wells to increase production. Includes factors in determining the economics of a producing well as to fracture oil acidize the pay zones. End-of-Course Outcomes: Analyze different producing zones and determine stimulation techniques; and calculate pressures and volumes to stimulate a well.

**PTRT2341 PIPELINING**

48 lecture hours .....3 credit hours

An overview of the construction, repair, and maintenance of pipeline systems: product, oil, natural gas, salt water, and fresh water. Appropriate types of lines for various applications will be discussed. End-of-Course Outcomes: Determine the size and type of tubular to transport product; and calculate the volumes and pressures inside various pipelines.

**PTRT2343 REFINING METHODS**

48 lecture hours .....3 credit hours

An analysis of petroleum refining technologies from well head to gasoline pump. End-of-Course Outcomes: Explain the complete route of crude oil from well head to the gasoline pump; and analyze the different distillation processes for crude oil.

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**PTRT2359 PETROLEUM COMPUTER APPLICATIONS**  
 48 lecture hour ..... 3 credit hour  
 Computer applications used in the petroleum industry. Includes the automation of open and closed loop systems. End-of-Course Outcomes: Describe the different computer systems used to monitor and control petroleum processes; and operate and troubleshoot components and operating systems of modern process control.

**PTRT2380 COOPERATIVE EDUCATION - PETROLEUM TECHNOLOGY/TECHNICIAN**  
 240 hours .....3 credit hours  
 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. End-of-Course Outcomes: 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 and 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.

**PHILOSOPHY**

38.0101.51 12  
**PHIL1301 INTRODUCTION TO PHILOSOPHY**  
 48 lecture hours .....3 credit hours  
 Introduction to the study of ideas and their logical structure, including arguments and investigations about abstract and real phenomena. Includes introduction to the history, theories, and methods of reasoning from the Pre-Socratics to present.

38.0101.53 12  
**PHIL2303 INTRODUCTION TO LOGIC**  
 48 lecture hours .....3 credit hours  
 Nature and methods of clear and critical thinking and methods of reasoning such as deduction, induction, scientific reasoning and fallacies.

38.0101.53 12  
**PHIL2306 INTRODUCTION TO ETHICS**  
 48 lecture hours .....3 credit hours  
 Classical and contemporary theories concerning human conduct in society and moral and ethical standards.

**PHYSICAL EDUCATION & RECREATION**

*NOTE: All students are encouraged to take four semesters of physical education activity courses at NCTC. Level-I activity courses teach the fundamentals, rules, etc. of the activity. Level-II activity courses deal with advanced skills and techniques of the activity. All activity courses meet for 48 activity hours and earn 1 credit hour.*

**PHED1338 CONCEPTS OF PHYSICAL FITNESS**  
 48 lecture hours ..... 3 credit hours  
 This course will introduce the basic concepts of fitness, nutrition, exercise physiology, psychology, epidemiology, health promotion and disease prevention. The students will gain knowledge to make intelligent choices that contribute to a healthy lifestyle. The course will incorporate both lecture and physical activity laboratories.

5109135216  
**PHED2356 CARE AND PREVENTION OF ATHLETIC INJURIES**  
 48 lecture hours ..... 3 credit hours  
 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.

- 3601085128
- PHED1108 BOWLING I**
- PHED1109 BOWLING II**
- PHED1110 GOLF I**
- PHED1111 GOLF II**
- PHED1114 VARSITY SPORTS I**
- PHED1115 VARSITY SPORTS II**
- PHED1116 VARSITY CONDITIONING I**
- PHED1117 VARSITY CONDITIONING II**
- PHED1118 JOGGING/WALKING I\***
- PHED1119 JOGGING/WALKING II\***
- PHED1120 AEROBIC WORKOUT I**
- PHED1121 AEROBIC WORKOUT II**
- PHED1124 WEIGHT TRAINING I/JOGGING**
- PHED1125 WEIGHT TRAINING II/JOGGING**
- PHED1126 MARTIAL ARTS I**
- PHED1127 MARTIAL ARTS II**
- PHED1134 BASKETBALL I**
- PHED1135 BASKETBALL II**
- PHED1140 CARDIO FITNESS I**
- PHED1141 CARDIO FITNESS II**
- PHED1146 YOGA I**
- PHED1147 YOGA II**
- PHED2100 RACQUETBALL I**
- PHED2101 RACQUETBALL II**

*\*Note: PHED1118 Jogging/Walking I and PHED1119 Jogging/Walking II students are only allowed to enroll in one course per semester.*

**PHYSICAL SCIENCE**

**PHYS1415 PHYSICAL SCIENCE**  
 48 lecture hours + 32 laboratory hours ..... 4 credit hours  
 An introduction to the principles and applications of mechanics, heat, sound, light, electricity and atomic nature of matter. Recommended for elementary education majors and business majors.

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**PHYSICS**

4008015339

**PHYS1401 GENERAL PHYSICS I**

*Prerequisite: Background in algebra AND trigonometry  
Offered during the fall semester.*

48 lecture hours + 48 laboratory hours ..... 4 credit hours

General introductory physics for students majoring in biology, dentistry, medicine, pharmacy and veterinary medicine and others who require a two-semester course in physics. A study of mechanics, wave motion and sound.

4008015339

**PHYS1402 GENERAL PHYSICS II**

*Prerequisite: PHYS1401*

*Offered during the spring semester.*

48 lecture hours + 48 laboratory hours ..... 4 credit hours

A continuation of PHYS1401, including the study of thermodynamics, electricity and magnetism, light and optics.

4008015439

**PHYS2425 ENGINEERING PHYSICS I**

*Prerequisite: MATH2413 (or concurrent enrollment in MATH2413)*

*Offered during the fall semester.*

48 lecture hours + 48 laboratory hours ..... 4 credit hours

For pre-engineering, physics, mathematics and chemistry majors. A study of mechanics.

4008015439

**PHYS2426 ENGINEERING PHYSICS II**

*Prerequisite: PHYS2425 and MATH 2414 (or concurrent enrollment in MATH2414)*

48 lecture hours; 48 laboratory hours ..... 4 credit hours

A continuation of PHYS2425. Heat and thermodynamics; electricity; magnetism.

**PSYCHOLOGY**

4203015125

**PSYC1300 LEARNING FRAMEWORK**

48 lecture hours ..... 3 credit hours

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.

4201015140

**PSYC2301 INTRODUCTION TO GENERAL PSYCHOLOGY**

48 lecture hours ..... 3 credit hours

An introduction to the scientific study of human and animal behavior, with the emphasis on the basic processes of learning, perception, motivation, emotion, personality and adjustment.

4201015342

**PSYC2306 HUMAN SEXUALITY**

48 lecture hours ..... 3 credit hours

The study of psychological, sociological, and physiological aspects of human sexuality.

4207015140

**PSYC2314 DEVELOPMENTAL PSYCHOLOGY**

48 lecture hours ..... 3 credit hours

A study of physical, cognitive, personality and interpersonal development of a person from conception to the end of the life cycle, with an emphasis on developmental principles and tasks.

4201015625

**PSYC2315 PSYCHOLOGY OF ADJUSTMENT**

48 lecture hours ..... 3 credit hours

Study of the processes involved in adjustment of individuals to their personal and social environments.

4215015140

**PSYC2319 SOCIAL PSYCHOLOGY**

48 lecture hours ..... 3 credit hours

A study of the social and cultural bases of human behavior, interpersonal influences, group membership and the relations between persons and social systems.

4201015540

**PSYC2371 CURRENT ISSUES IN PSYCHOLOGY**

48 lecture hours ..... 3 credit hours

An in-depth study of specific contemporary issues in psychology such as gerontology, sex-roles, and death and dying.

**RADIOLOGICAL TECHNOLOGY**

**RADR1160 CLINICAL I**

80 clinical hours ..... 1 credit hour

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.

**RADR1213 PRINCIPLES OF RADIOGRAPHY I**

32 lecture hours + 32 laboratory hours ..... 2 credit hours

An introduction to radiographic image qualities and the effects of exposure variables upon these qualities.

**RADR1301 INTRODUCTION TO RADIOGRAPHY**

48 lecture hours ..... 3 credit hours

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.

**RADR1303 PATIENT CARE**

32 lecture hours + 32 laboratory hours ..... 3 credit hours

An introduction in patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, and basic pharmacology.

**RADR1311 BASIC RADIOGRAPHIC PROCEDURES**

32 lecture hours + 64 laboratory hours ..... 3 credit hours

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.

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**RADR1361 CLINICAL II**  
 288 clinical hours.....3 credit hours  
 An introductory 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.

**RADR1362 CLINICAL III**  
 288 clinical hours.....3 credit hours  
 An intermediate 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.

**RADR2217 RADIOGRAPHIC PATHOLOGY**  
 32 lecture hours .....2 credit hours  
 A presentation of the disease process and common diseases and their appearance on medical images.

**RADR2236 SPECIAL PATIENT APPLICATIONS**  
 32 lecture hours + 16 laboratory hours .....2 credit hours  
 An advanced discussion of pediatrics, geriatrics, trauma, history recordation and abbreviation and ECG. Plebotomy and venipuncture will be discussed and practiced.

**RADR2305 PRINCIPLES OF RADIOGRAPHY II**  
 48 lecture hours .....3 credit hours  
 A continuation of the study of radiographic imaging technique formulation, image quality assurance, and the synthesis of all variables in image production.

**RADR2309 RADIOGRAPHIC IMAGING EQUIPMENT**  
 48 lecture hours .....3 credit hours  
 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.

**RADR2313 RADIATION BIOLOGY AND PROTECTION**  
 48 lecture hours .....3 credit hours  
 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.

**RADR2333 ADVANCED MEDICAL IMAGING**  
 48 lecture hours .....3 credit hours  
 An exploration of specialized imaging modalities.

**RADR2335 RADIOGRAPHIC TECH SEMINAR**  
 48 lecture hours .....3 credit hours  
 A capstone course focusing on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning.

**RADR2401 INTERMEDIATE RADIOGRAPHY PROCEDURES**  
 32 lecture hours + 64 laboratory hours .....4 credit hours  
 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.

**RADR2461 CLINICAL IV**  
 384 clinical hours.....4 credit hours  
 An advanced 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.

**RADR2462 CLINICAL V**  
 384 clinical hours.....4 credit hours  
 A capstone 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.

**READING (COLLEGE PREPARATORY)**

*Note: NCTC offers a number of courses (listed below) designed to help you acquire the skills necessary for success in college-level courses. The courses are widely offered in Texas community/junior colleges, and the policy statewide is that these will not transfer as college-level courses nor will they count toward graduation at accredited Texas colleges and universities. It is important that you understand that such courses are designed to help you overcome academic deficiencies that are likely to hinder you in your pursuit of a college degree. Attendance in College Preparatory Studies is mandatory when a student has not passed the THEA exam. After THREE hours of absenteeism, a student may be warned and referred to the Director of College Preparatory Studies. At SIX hours of absenteeism, a student may be dropped from his/her College Preparatory class. If the student is dropped from the only Developmental class in which he/she is enrolled, the student will be DROPPED from all remaining courses for that semester.*

3201085235  
**READ0300 READING TECHNIQUES I**  
*Corequisite: EDUC1300 or PSYC1300*  
 48 lecture hours .....3 credit hours  
 A course designed to raise the reading skills of students who have been assessed. Emphasis is placed on the development of word attack skills, word recognition, basic vocabulary, pronunciation, and reading comprehension. Does not count toward graduation at NCTC.

3201085235  
**READ0305 READING TECHNIQUES II**  
*Prerequisite: READ0300 passed with a "C" or better or satisfactory placement score.*  
 48 Lecture hours .....3 credit hours  
 A course intended to continue elevation of reading skills with particular emphasis on critical and analytical strategies. This course does not count toward graduation at NCTC.

**SOCIOLOGY**

4511015142  
**SOCI1301 INTRODUCTION TO SOCIOLOGY**  
 48 lecture hours .....3 credit hours  
 A study of the nature of human society, cultural heritage, collective behavior, community and social organizations, nature of social change and methods and processes of social control.

4511015242  
**SOCI1306 CONTEMPORARY SOCIAL PROBLEMS**  
 48 lecture hours .....3 credit hours  
 The sociological analysis of current social problems such as crime and delinquency, community problems, race relations, drug addiction and population, etc.

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4511015442

**SOCI2301 MARRIAGE AND FAMILY RELATIONS**

48 lecture hours ..... 3 credit hours  
A study of marriage and family life including the problems of courtship, mate selection and marriage adjustment.

513015216

**SOCI2340 DRUG USE AND ALCOHOL ABUSE**

48 lecture hours ..... 3 credit hours  
A comprehensive examination of the history, pharmacology, law, treatment, psychological effects, policy issues and sociological issues related to drug/alcohol use and abuse in the United States and on a global scale.

4511015742

**SOCI2371 CURRENT ISSUES IN SOCIOLOGY**

48 lecture hours ..... 3 credit hours  
Comprehensive examination of specific contemporary topics in sociology such as cultural diversity, urbanization, globalization, sociobiology and/or gerontology. (May be repeated for credit as subjects change.)

**SPANISH**

**SPAN1411 ELEMENTARY SPANISH I**

48 lecture hours + 32 laboratory hours ..... 4 credit hours  
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 Spanish-speaking communities.

**SPAN1412 ELEMENTARY SPANISH II**

*Prerequisite: SPAN1411 or one year of high school Spanish*

48 lecture hours + 32 laboratory hours ..... 4 credit hours  
Continuation of SPAN1411 with emphasis on elementary listening, speaking, reading and writing skills applied to two main communicative goals: narration of present or past situations and events, and expression of feelings, hypotheses and opinions. Daily life situations and events and the understanding of the Spanish-speaking communities main thematic components of the course.

**SPAN2311 INTERMEDIATE SPANISH I**

*Prerequisite: SPAN1412 or two years of high school Spanish*

48 lecture hours ..... 3 credit hours  
Emphasis on conversation about present or past situations and events, and on the expression of feelings, hypotheses and opinions. Gradual introduction to composition and the reading of authentic texts in Spanish, taken from literature, history or a variety of disciplines. Practice of listening to conversations and speeches in Spanish from audio-visual sources.

**SPAN2312 INTERMEDIATE SPANISH II**

*Prerequisite: SPAN2311 or three years of high school Spanish*

48 lecture hours ..... 3 credit hours  
Equal emphasis on systematic conversation and oral presentations, the reading of authentic texts, the writing of compositions and the listening to conversations and speeches from audio-visual sources. A variety of topics are included in this course and the level of complexity is average.

**SPEECH**

**SPCH1311 INTRODUCTION TO SPEECH COMMUNICATION**

48 lecture hours ..... 3 credit hours  
Theories and practice of communication in interpersonal, small group, and public speech.

2310015135

**SPCH1315 PUBLIC SPEAKING**

48 lecture hours ..... 3 credit hours  
The process of oral communication and its relation to communication in general. Emphasis is placed on developing the students' abilities in organization and presentation of ideas. Suggested activities include group discussion, oral interpretation of literature and extemporaneous speaking. There is evaluation of both listening and speaking experiences.

2310015435

**SPCH1318 INTERPERSONAL COMMUNICATION**

48 lecture hours ..... 3 credit hours  
Introduces communication concepts and provides speech interaction in one-to-one and small group situations. Provides experiential settings for a variety of environments, for the reduction of communication barriers, for conflict resolution, and for leadership and decision-making. Emphasizes interpersonal perception and listening skills related to self-concept.

**SPCH1321 BUSINESS AND PROFESSIONAL SPEECH**

48 lecture hours ..... 3 credit hours  
Study of the theory and practice of speech communication in business and professional situations. Emphasis is placed on interpersonal communication technique, leadership strategy, small group communication, conflict management, and the skills necessary to conduct successful interviews, build teams (problem solving), and formal presentations.

**SURGICAL TECHNOLOGY**

**SRGT1201 MEDICAL TERMINOLOGY**

2 lecture hours ..... 2 credit hours  
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.

**SRGT1261 CLINICAL – SURGICAL/OPERATING ROOM TECHNICIAN (INTRODUCTORY)**

96 clinical hours..... 2 credit hours  
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.

**SRGT1441 SURGICAL PROCEDURES I**

48 lecture hours + 32 laboratory hours ..... 4 credit hours  
Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the general, OB/GYN, genitourinary, and orthopedic surgical specialties incorporating instruments, equipment, and supplies required for safe patient care.

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**SRGT1442 SURGICAL PROCEDURES II**

48 lecture hours + 32 laboratory hours ..... 4 credit hours  
 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 specialties incorporating instruments, equipment, and supplies required for safe patient care.

**SRGT1505 INTRODUCTION TO SURGICAL TECHNOLOGY**

64 lecture hours + 32 laboratory hours ..... 5 credit hours  
 Orientation to surgical technology theory, surgical pharmacology and anesthesia technological sciences, and patient care concepts.

**SRGT1509 FUNDAMENTALS OF PERIOPERATIVE CONCEPTS AND TECHNIQUES**

64 lecture hours + 32 laboratory hours ..... 5 credit hours  
 In-depth coverage of perioperative concepts such as aseptic principles and practices, infectious processes, wound healing, and creation and maintenance of the sterile field.

**SRGT1661 CLINICAL – SURGICAL/OPERATING ROOM TECHNICIAN (INTERMEDIATE)**

288 clinical hours..... 6 credit hours  
 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.

**SRGT1662 CLINICAL – SURGICAL/OPERATING ROOM TECHNICIAN (ADVANCED)**

288 clinical hours..... 6 credit hours  
 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.

**VOCATIONAL NURSING**

**NOTICE: The Vocational Nursing Program reserves the right to change the curriculum and program requirements as deemed necessary for maintenance of high quality education.**

**VNSG1219 PROFESSIONAL DEVELOPMENT**

*Prerequisite: Successful completion of all courses in Level I and Level II*  
 32 lecture hour ..... 2 credit hours  
 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, resumé writing, and job interviewing.

**VNSG1227 ESSENTIALS OF MEDICATION ADMINISTRATION**

*Prerequisite: Admission to the Vocational Nursing Program*  
 32 lecture hours ..... 2 credit hours  
 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.

**VNSG1230 MATERNAL-NEONATAL NURSING**

*Prerequisite: Successful completion of all courses in Level I for fall admission. Successful completion of all courses in Level I and Level II for spring admission.*  
 32 lecture hours ..... 2 credit hours  
 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.

**VNSG1234 PEDIATRICS**

*Prerequisite: Successful completion of all courses in Level I for fall admission. Successful completion of all courses in Level I and Level II for spring admission.*  
 32 lecture hours ..... 2 credit hours  
 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.

**VNSG1323 BASIC NURSING SKILLS**

*Prerequisite: Admission to the Vocational Nursing Program*  
 80 lecture hours + 32 laboratory hours ..... 3 credit hours  
 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.

**VNSG1331 PHARMACOLOGY**

*Prerequisite: Successful completion of all courses in Level I.*  
 48 lecture hours ..... 3 credit hours  
 Fundamentals of medications and their diagnostic, therapeutic, and curative effects. Includes nursing interventions associated with the various pharmacotherapeutic agents.

**VNSG1360 CLINICAL I**

*Prerequisite: Admission to the Vocational Nursing Program*  
 240 clinical hours..... 3 credit hours  
 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.

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## VNSG1363 CLINICAL II – SPRING ADMISSION

*Prerequisite: Successful completion of all courses in Level I.*

240 clinical hours..... 3 credit hours

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.

## VNSG1400 NURSING IN HEALTH AND ILLNESS I

*Prerequisite: Admission to the Vocational Nursing Program*

80 lecture hours ..... 4 credit hours

Introduction to general principles of growth and development, primary health care needs of the client across the life span, and therapeutic nursing interventions.

## VNSG1420 ANATOMY AND PHYSIOLOGY FOR ALLIED HEALTH

64 lecture hours ..... 4 credit hours

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

## VNSG1463 CLINICAL II – FALL ADMISSION

*Prerequisite: Successful completion of all courses in Level I.*

336 clinical hours..... 4 credit hours

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.

## VNSG1509 NURSING IN HEALTH AND ILLNESS II

*Prerequisite: Successful completion of all courses in Level I.*

80 lecture hours ..... 5 credit hours

Introduction to common health problems requiring medical and surgical interventions.

## VNSG1510 NURSING IN HEALTH AND ILLNESS III

*Prerequisite: Successful completion of all Level I and Level II courses*

80 lecture hours ..... 5 credit hours

Continuation of Nursing in Health and Illness II. Further study of common medical-surgical health problems of the client.

## VNSG2360 CLINICAL III – FALL ADMISSION

*Prerequisite: Successful completion of all Level I and Level II courses*

240 clinical hours..... 3 credit hours

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.

## VNSG2460 CLINICAL III – SPRING ADMISSION

*Prerequisite: Successful completion of all Level I and Level II courses*

336 clinical hours..... 4 credit hours

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.