

Course Descriptions

The college continually strives to offer all courses listed in the catalog with extensive offerings at Del Rio and Eagle Pass as well as selected courses at other off-campus sites. However, some specialized courses are offered only on student demand or interest.

See the *Curricula* section for a complete explanation of the parts of a course description.

ABDR 1307 - Collision Repair Welding - 3 sem. hrs. (2-4-0)

A study of industry and standard welding and cutting procedures. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

ABDR 1331 - Basic Refinishing - 3 sem. hrs. (2-4-0)

An introduction to current refinishing products, shop safety, and equipment used in the automotive refinishing industry. Emphasis on surface preparation, masking techniques, and refinishing of trim and replacement parts. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ABDR 1419 - Basic Metal Repair - 4 sem. hrs. (2-6-0)

Covers metal principles and working techniques including proper tool usage and product application. Two lecture and six laboratory hours per week. Prerequisite: ABDR 1307. **Lab Fee: \$24**

ABDR 1441 - Structural Analysis and Damage Repair I - 4 sem. hrs. (2-6-0)

Training in the roughing and shaping procedures on automotive sheet metal necessary to perform body repairs. Emphasis on the alignment of component parts such as doors, hood, front-end assemblies, and deck lids. Capstone course that consolidates the student's learning experiences. Two lecture and six laboratory hours per week. Prerequisite: ABDR1307, ABDR 1315, ABDR 1419. **Lab Fee: \$24; End-of-Course Assessment Fee: \$30**

ABDR 1442 - Structural Analysis and Damage Repair II - 4 sem. hrs. (2-6-0)

Continuation of general repair and replacement procedures for damaged structural parts and collision damage. Two lecture and six laboratory hours per week. Prerequisite: ABDR 1441. **Lab Fee: \$24**

ABDR 1449 - Automotive Plastic and Sheet Molded Compound Repair - 4 sem. hrs. (2-6-0)

A comprehensive course in repair of interior and exterior plastics including the use of various types of adhesives and plastic welding. Two lecture and six laboratory hours per week. Prerequisite: ABDR 1315. **Lab Fee: \$24**

ABDR 1458 - Intermediate Refinishing - 4 sem. hrs. (2-6-0)

Expanded training in mixing and spraying of automotive topcoats. Emphasis on formula ingredient, reducing, thinning, and special spraying techniques. Introduction to partial panel refinishing techniques and current industry paint removal techniques. Two lecture and six laboratory hours per week. Prerequisite: ABDR 1331. **Lab Fee: \$24; Uniform Fee: \$50**

ABDR 2255 - Collision Repair Estimating - 2 sem. hrs. (1-2-0)

An advanced course in collision estimating and development of an accurate damage report utilizing estimating software. One lecture and two laboratory hours per week. Prerequisite: ABDR 1307, ABDR 1441. **Lab Fee: \$24**

ABDR 2280 - Cooperative Education - Autobody/Collision and Repair Technology/Technician - 2 sem. hrs. (1-0-7)

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. Capstone course that consolidates the student's learning experiences. One lecture and seven external hours per week. Prerequisite: None. Co-requisite: ABDR 2449, ABDR 2431, ABDR 2255. **Co-op Fee: \$24**

ABDR 2353 - Color Analysis and Paint Matching - 3 sem. hrs. (2-4-0)

Advanced course in color theory, analysis, tinting, and blending techniques for acceptable paint matching. Two lecture and four laboratory hours per week. Prerequisite: ABDR 1331 and ABDR 1458. Co-requisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

ABDR 2431 - Structural Analysis and Damage Repair III - 4 sem. hrs. (2-6-0)

Advanced concepts in the application of theories of auto body repair and replacement of major body units. Two lecture and six laboratory hours per week. Prerequisite: ABDR 1307, ABDR 1419. **Lab Fee: \$24**

ABDR 2441 - Major Collision Repair and Panel Replacement - 4 sem. hrs. (2-6-0)

Instruction in preparation of vehicles for major repair processes. This course covers interpreting information from damage reports, planning repair sequences, selecting appropriate tools, and organizing removed parts for reinstallation. Two lecture and six laboratory hours per week. Prerequisite: ABDR 1307, ABDR 1419. **Lab Fee: \$24**

ABDR 2449 - Advanced Refinishing - 4 sem. hrs. (2-6-0)

Application of multi-stage refinishing techniques. Advanced skill development solving refinishing problems. Application of multi-stage refinishing techniques with emphasis on formula mixing and special spraying techniques. Two lecture and six laboratory hours per week. Prerequisite: ABDR 1331, ABDR 1458. **Lab Fee: \$24; Uniform fee: \$50; End-of-Course Assessment Fee: \$30**

ACCT 2301 - Principles of Accounting I - Financial - 3 sem. hrs. (3-0-0) 5203015104

Accounting concepts and their application in transaction analysis and financial statement preparation; analysis of financial statements; and asset and equity accounting in proprietorships, partnerships, and corporations. Introduction to cost behavior, budgeting, responsibility accounting, cost control, and product costing. Emphasis on financial accounting. Accounting procedures and practices; the theory of accounts; the accounting cycle; preparation of classified financial statements; internal control; notes and interest; inventory systems; depreciation; payroll; accounting systems and concepts. Three lecture hours per week. Prerequisite: None.

ACCT 2302 - Principles of Accounting II - Managerial - 3 sem. hrs. (3-0-0) 5203015104

Accounting concepts and their application in transaction analysis and financial statement preparation; analysis of financial statements; and asset and equity accounting in proprietorships, partnerships, and corporations. Introduction to cost behavior, budgeting, responsibility accounting, cost control, and product costing. Emphasis on managerial uses of accounting data. Accounting procedures and practices applicable to partnership and corporation; stocks and bonds; departmental - branch and manufacturing accounting; managerial uses of accounting data; cost systems; budgeting; statement analysis and interpretation flow of funds and cash; and tax considerations. Three lecture hours per week. Prerequisite: ACCT 2401 or 2301.

ACCT 2401 - Principles of Accounting I - Financial - 4 sem. hrs. (3-3-0) 5203015104

Accounting concepts and their application in transaction analysis and financial statement preparation; analysis of financial statements; and asset and equity accounting in proprietorships, partnerships, and corporations. Introduction to cost behavior, budgeting, responsibility accounting, cost control, and product costing. Emphasis on financial accounting. Accounting procedures and practices; the theory of accounts; the accounting cycle; preparation of classified financial statements; internal control; notes and interest; inventory systems; depreciation; payroll; accounting systems and concepts. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ACCT 2402 - Principles of Accounting II - Managerial - 4 sem. hrs. (3-3-0) 5203015104

Accounting concepts and their application in transaction analysis and financial statement preparation; analysis of financial statements; and asset and equity accounting in proprietorships, partnerships, and corporations. Introduction to cost behavior, budgeting, responsibility accounting, cost control, and product costing. Emphasis on managerial uses of accounting data. Accounting procedures and practices applicable to partnership and corporation; stocks and bonds; departmental - branch and manufacturing accounting; cost systems; budgeting; statement analysis and interpretation flow of funds and cash; and tax considerations. Three lecture and three laboratory hours per week. Prerequisite: ACCT 2401. **Lab Fee: \$24**

ACNT 1311 - Introduction to Computerized Accounting - 3 sem. hrs. (2-3-0)

Introduction to utilizing the computer in maintaining accounting records, making management decisions, and processing common business applications with primary emphasis on a general ledger package. Record keeping using Quickbooks software. Two lecture and three laboratory hours per week. Prerequisite: ACCT 2401. **Lab Fee: \$24**

ACNT 1403 - Introduction to Accounting I - 4 sem. hrs. (3-3-0)

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. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AGAH 1323 - Wildlife Conservation and Management - 3 sem. hrs. (3-1-0)

Study of the principles and practices used in the production and improvement of North American wildlife resources. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

AGCR 1307 - Range Management - 3 sem. hrs. (2-4-0)

Study of the practical problems of managing native pastures and range lands. Topics include range land ecology, stocking rates, rotation systems, toxic plants, range reseeding, brush control, and ecological and physiological responses of range vegetation to grazing. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AGMG 1318 - Introduction to Agricultural Economics - 3 sem. hrs. (3-0-0)

Study of the fundamental economic principles and their application to the problems of the industry of agriculture. Three lecture hours per week. Prerequisite: None.

AGMG 1371 - Wildlife Resources - 3 sem. hrs. (2-3-0)

An introduction to wildlife resources of the United States with specific reference to Texas. The history of game management, endangered species, and methods for maintenance and increase of wildlife. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AGMG 2312 - Marketing of Agricultural Products - 3 sem. hrs. (3-0-0)

Study of 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. Three lecture hours per week. Prerequisite: None.

AGRI 1231 - The Agricultural Industry - 2 sem. hrs. (2-0-0) 0101035201

Overview of world agriculture, nature of the industry, resource conservation, and the American agricultural system, including production, distribution, and marketing. Two lecture hours per week. Prerequisite: None.

AGRI 1307 - Agronomy - 3 sem. hrs. (2-3-0) 0111025101

Principles and practices in the development, production, and management of field crops including plant breeding, plant diseases, soils, insect control, and weed control. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AGRI 1309 - Computers in Agriculture - 3 sem. hrs. (2-2-0) 0101015101

Use of computers in agricultural applications. Introduction to programming languages, word processing, electronic spreadsheets, and agricultural software. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AGRI 1315 - Horticulture - 3 sem. hrs. (2-3-0) 0106015111

Structure, growth, and development of horticultural plants from a practical and scientific approach. Environmental effects, basic principles of propagation, greenhouse and outdoor production, nutrition, pruning, chemical control of growth, pest control, and landscaping. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AGRI 1325 - Marketing of Agricultural Products - 3 sem. hrs. (3-0-0) 0101025101

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. Three lecture hours per week. Prerequisite: None.

AGRI 1329 - Principles of Food Science - 3 sem. hrs. (2-2-0) 0110015101

Biological and scientific aspects of modern industrial food supply systems. Food classification, modern processing, and quality control. The on-hoof and carcass evaluation of domestic meat animals in relation to quality and yield grades. The subsequent slaughter and processing of the animals with emphasis on carcass evaluation, federal grading, and health inspection. The evaluation of meat cuts, meat processing, and preservation of meat products. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AGRI 1370 - Range and Wildlife Ecology - 3 sem. hrs. (3-0-0) 0306017101

This course provides a basic overview of range and wildlife ecological concepts with an emphasis on conservation and management practices. The concept of integrated rangeland and wildlife management is discussed. Three lecture hours per week. Prerequisite: None.

AGRI 1419 - Introductory Animal Science - 4 sem. hrs. (3-3-0) 0109015101

Scientific animal agriculture. Importance of livestock and meat industries. Selection, reproduction, nutrition, management, and marketing of beef cattle, swine, sheep, goats, and horses. An introductory survey course of scientific principle applications involving genetic selection and reproduction. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AGRI 2304 - Agricultural Construction II - 3 sem. hrs. (2-4-0) 0102015101

Selection, use, and maintenance of hand and power tools; arc and oxy-acetylene welding; and construction materials and principles. Advanced welding involving pipe, welding and fitting, welding involving non-ferrous alloys, hard facing, and oxyacetylene burning. Attention given to trade practices and welding processes used in industry. Two lecture and four laboratory hours per week. Prerequisite: AGRI 2303. **Lab Fee: \$24; Supply Fee: \$24**

AGRI 2317 - Introduction to Agricultural Economics - 3 sem. hrs. (3-0-0) 0101035101

Fundamental economic principles and their applications to the problems of the industry of agriculture. The field of agricultural economics and its relationship to other sciences. The characteristics of our economic system and basic economic concepts. Survey of the farm and ranch firm and its organization and management; structure and operation of the marketing system; functional and institutional aspects of agricultural finance; government policies and programs related to agriculture. Three lecture hours per week. Prerequisite: None.

AGRI 2330 - Wildlife Conservation and Management - 3 sem. hrs. (3-1-0) 0306015101

Principles and practices used in the production and improvement of wildlife resources. Aesthetic, ecological, and recreational uses of public and private lands. An introduction to the wildlife resources of the United States with special reference to Texas. The ecology and management of wildlife populations including native, exotic, and endangered species. This course provides an overview habitat management across forests, rangelands, and wetlands of North America. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

AGRI 2370 - Wildlife Management Techniques - 3 sem. hrs. (2-2-0)

Field and laboratory techniques used in wildlife management and research: aging, sexing, marking, capture, monitoring, disease surveys, food habits and nutrition analysis, habitat assessment and population estimation. Two lecture and two laboratory hours per week. Prerequisite: WMGT 1305, WMGT 1310, WMGT 1300, AGRI 1309. **Lab Fee: \$24**

ANTH 2346 - General Anthropology - 3 sem. hrs. (3-0-0) 4502015125

Study of human beings, their antecedents and related primates, and their cultural behavior and institutions. Introduces the major subfields: physical and cultural anthropology, archaeology, linguistics, and ethnology. An introduction to the working principles in the field of anthropology. Brief attention is given to physical anthropology, linguistics and archeology, while the major emphasis is placed on comparative or cultural anthropology, including attention to institutions of family, religion, social order, diet, kinship, role, and status distinction, art and crafts, and subsistence. Reference is given to prehistoric and preliterate peoples, the Native Americans and the impact of modern western technology on primitive and modern peoples. Three lecture hours per week. Prerequisite: None.

ARTS 1301 - Art Appreciation - 3 sem. hrs. (3-0-0)

Exploration of purposes and processes in the visual arts including evaluation of selected works. The course explores the relationship of art/artists/themes to past cultures as well as the relevance of the visual arts in contemporary times. This course provides the student with a basic understanding of the Visual Arts. Three lecture hours per week. Prerequisite: None. **None.**

ARTS 1303 - Art History I - 3 sem. hrs. (3-0-0) 5007035226

Examination and survey of painting, sculpture, architecture, and other arts from Prehistory to the present day. This course surveys painting, sculpture, architecture, and other arts from Prehistory to the 15th Century. The survey covers the first half of the book. Three lecture hours per week. Prerequisite: None.

ARTS 1304 - Art History II - 3 sem. hrs. (3-0-0) 5007035226

Examination of painting, sculpture, architecture, and other arts from Early Renaissance to the present time. The survey covers the second half of the book. Three lecture hours per week. Prerequisite: None.

ARTS 1311 - Design I - 3 sem. hrs. (3-3-0) 5004015326

Elements and principles of art using two- and three-dimensional concepts. This course deals with the fundamentals of art, including theory and practice of drawing, painting, and designing, using various media. Design analysis, color, and elements of drawing and composition are emphasized. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ARTS 1316 - Drawing I - 3 sem. hrs. (3-3-0) 5007055230

Investigation of drawing media and techniques including descriptive and expressive possibilities. A beginning course investigating a variety of media, techniques, and subjects, including descriptive and expressive possibilities. Subjects include still life, landscape and the model using additive and subtractive processes. This course will explore perceptual and descriptive possibilities with a consideration of drawing as a developmental process as well as an end to itself. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ARTS 1317 - Drawing II - 3 sem. hrs. (3-3-0) 5007055230

Investigation of drawing media and techniques including descriptive and expressive possibilities. A continuation of ARTS 1316, with an emphasis on individual exploration of ideas and expression. This course also involves the exploration of alternative ideas and experimental approaches to drawing. Includes the study of past and contemporary artists. Three lecture and three laboratory hours per week. Prerequisite: ARTS 1316. **Lab Fee: \$24**

ARTS 1325 - Drawing and Painting - 3 sem. hrs. (2-2-0) 5007085226

Drawing and painting for non-art majors. A beginning course investigating a variety of media, techniques and subjects exploring the fundamental elements of drawing and painting in today's art world. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ARTS 2316 - Painting I - 3 sem. hrs. (3-3-0) 5007085226

Exploration of ideas using painting media and techniques. An introduction to oil and synthetic (water-based) media. Exploring the potentials of painting media with emphasis on color, composition, and other formal elements as well as individual expression with an emphasis on process. Includes the study of past and contemporary painters. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ARTS 2317 - Painting II - 3 sem. hrs. (3-3-0) 5007085226

Exploration of ideas using painting media and techniques. A continuation of ARTS 2316 with a greater emphasis on aesthetics, critical thinking skills, self-expression and individual exploration. Three lecture and three laboratory hours per week. Prerequisite: ARTS 2316 or approval of instructor. **Lab Fee: \$24**

ARTS 2323 - Life Drawing I - 3 sem. hrs. (1-5-0) 5007055326

Basic study of the human form. The exploration of the human figure, from the live model, through the use of traditional drawing media including charcoal, graphite, ink and other media. One lecture and five laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ARTS 2324 - Life Drawing II - 3 sem. hrs. (1-5-0) 5007055326

Basic study of the human form. A continuation of ARTS 2323. The exploration of the human form with an emphasis on individual, conceptual and expressive possibilities. The exploration of various media and techniques is approached including mixed media, alternative grounds and collage. One lecture and five laboratory hours per week. Prerequisite: ARTS 2323. **Lab Fee: \$24**

ARTS 2326 - Sculpture I - 3 sem. hrs. (3-3-0) 5007095130

Exploration of ideas using sculpture media and techniques. Fundamentals of three dimensional design as experienced in basic sculptural processes using a variety of media, including additive and subtractive processes. Three lecture and three laboratory hours per week. Prerequisite: ARTS 1311 or approval of instructor. **Lab Fee: \$24**

ARTS 2341 - Art Metals I - 3 sem. hrs. (3-3-0) 5007135126

Exploration of ideas using basic techniques in jewelry and metal construction. Basic lost wax and hand building techniques in working with non-ferrous metals. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ARTS 2342 - Art Metals II - 3 sem. hrs. (3-3-0) 5007135126

Exploration of ideas using basic techniques in jewelry and metal construction. A continuation of ARTS 2341. Three lecture and three laboratory hours per week. Prerequisite: ARTS 2341. **Lab Fee: \$24**

ARTS 2346 - Ceramics I - 3 sem. hrs. (3-3-0) 5007115126

Exploration of ideas using basic ceramic processes. An introduction to basic ceramic processes emphasizing production and aesthetic expression. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ARTS 2347 - Ceramics II - 3 sem. hrs. (3-3-0) 5007115126

Exploration of ideas using basic ceramic processes. A continuation of ARTS 2346 with opportunities for specialization in ceramic processes emphasizing production and aesthetic expression. Three lecture and three laboratory hours per week. Prerequisite: ARTS 2346. **Lab Fee: \$24**

ARTS 2348 - Digital Art I - 3 sem. hrs. (3-0-0) 5004025226

Studio art courses that explore the potential of the computer hardware and software medium for their visual, conceptual, and practical uses in the visual arts. Three lecture hours per week. Prerequisite: BCIS 1405 or COSC 1401.

ARTS 2349 - Digital Art II - 3 sem. hrs. (3-0-0) 5004025226

Studio art courses that explore the potential of the computer hardware and software medium for their visual, conceptual, and practical uses in the visual arts. Three lecture hours per week. Prerequisite: BCIS 1405 or COSC 1401.

ARTS 2366 - Watercolor I - 3 sem. hrs. (3-3-0) 5007085326

Exploration of ideas using water-based painting media and techniques. The fundamentals of watercolor. Basic material and techniques are introduced including the study of artists, past and contemporary, using water-based media. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ARTS 2367 - Watercolor II - 3 sem. hrs. (3-3-0) 5007085326

Exploration of ideas using water-based painting media and techniques. A continuation of ARTS 2366. Encouraging independent development of technique, subject, new and innovative methods, mixed media and personal expression. Three lecture and three laboratory hours per week. Prerequisite: ARTS 2366. **Lab Fee: \$24**

AUMT 1407 - Automotive Electrical Systems - 4 sem. hrs. (2-6-0)

An overview of automotive electrical systems including topics in operational theory, testing, diagnosis, and repair of charging and starting systems, and electrical accessories. Emphasis on electrical principles, schematic diagrams and service manuals. May be taught manufacturer specific. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AUMT 1410 - Automotive Brake Systems - 4 sem. hrs. (2-6-0)

Operation and repair of drum/disc type brake systems. Topics include brake theory, diagnosis, and repair of power, manual, anti-lock brake systems, and parking brakes. May be taught manufacturer specific instructions. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

AUMT 1416 - Automotive Suspension and Steering Systems - 4 sem. hrs. (2-6-0)

Diagnosis and repair of automotive suspension and steering systems including electronically controlled systems. Includes component repair, and alignment procedures and tire and wheel service. May be taught manufacturer specific. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

AUMT 1445 - Automotive Climate Control Systems. - 4 sem. hrs. (2-6-0)

Diagnosis and repair of manual/electronic climate control systems; includes the refrigeration cycle and EPA guidelines for refrigerant handling. May be taught manufacturer specific. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

AUMT 2280 - Cooperative Education - Automobile/Automotive Mechanics Technology/Technician - 2 sem. hrs. (1-0-7)

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. One lecture and seven external hours per week. Prerequisite: None. Co-requisite: AUMT 2428. **Co-op Fee: \$24**

AUMT 2328 - Automotive Service - 3 sem. hrs. (2-4-0)

Mastery of automotive service including competencies covered in related courses. May be taught manufacturer specific. Capstone course that consolidates the student's learning experiences. Two lecture and four laboratory hours per week. Prerequisite: None. Co-requisite: AUMT 2425. **Lab Fee: \$24; End of Course Assessment Fee: \$20; ASE Testing Fee: \$92**

AUMT 2413 - Automotive Drive Train and Axles - 4 sem. hrs. (2-6-0)

A study of automotive clutches, clutch operation devices, manual transmissions/transaxles, and differentials with emphasis on the diagnosis and repair. May be taught with manufacturer specific instructions. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

AUMT 2417 - Automotive Engine Performance Analysis I - 4 sem. hrs. (2-6-0)

Theory, operation, diagnosis of drivability concerns, and repair ignition, and fuel delivery systems. Use of current engine performance diagnostic equipment. May be taught with manufacturer specific instructions. Two lecture and six laboratory hours per week. Prerequisite: AUMT 1407. **Lab Fee: \$24**

AUMT 2421 - Automotive Electrical Diagnosis and Repair - 4 sem. hrs. (2-6-0)

Repair of automotive electrical subsystems, lighting, instrumentation, and accessories. Emphasis on accurate diagnosis and proper repair methods using various troubleshooting skills and techniques. May be taught manufacturer specific. Two lecture and six laboratory hours per week. Prerequisite: AUMT 1407. **Lab Fee: \$24**

AUMT 2425 - Automotive Automatic Transmission and Transaxle - 4 sem. hrs. (2-6-0)

A study of the operation, hydraulic circuits, and electronic controls of modern automatic transmissions/transaxles. Diagnosis, disassembly, and assembly procedures with emphasis on the use of special tools and repair techniques. May be taught manufacturer specific. Two lecture and six laboratory hours per week. Prerequisite: AUMT 2413. **Lab Fee: \$24; Uniform Fee: \$50**

AUMT 2434 - Automotive Engine Performance Analysis II - 4 sem. hrs. (2-6-0)

Diagnosis and repair of emission systems, computerized engine performance systems, and advanced ignition and fuel systems. Includes use of advanced engine performance diagnostic equipment. May be taught manufacturer specific. Capstone course that consolidates the student's learning experiences. Two lecture and six laboratory hours per week. Prerequisite: AUMT 2417. **Lab Fee: \$24; End of Course Assessment Fee: \$20**

AUMT 2443 - Advanced Emissions Systems Diagnostics - 4 sem. hrs. (2-6-0)

Diagnosis and repair of emission control systems with emphasis on the application of advanced diagnostic information, tools, and techniques. Course will include state and federal laws required for preparation for licensing. May be taught with manufacturer specific. Two lecture and six laboratory hours per week. Prerequisite: AUMT 1407, AUMT 2417, AUMT 2434. **Lab Fee: \$24**

BCIS 1305 - Business Computer Applications - 3 sem. hrs. (2-4-0) 1102025404

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 of the Internet. (This course is part of the Business Field of Study Curriculum) Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

BIOL 1106 - Biology for Science Majors I Lab - 1 sem. hrs. (0-3-0) 26.0101.51 03

This laboratory-based course accompanies Biology 1306, Biology for Science Majors I. Laboratory activities will reinforce the fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included. Three laboratory hours per week. Prerequisite: None. Co-requisite: Biology 1306. **Lab Fee: \$24**

BIOL 1107 - Biology for Science Majors II Lab - 3 sem. hrs. (3-0-0) 26.0101.51 03

This laboratory-based course accompanies Biology 1307, Biology for Science Majors II. Laboratory activities will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Three lecture hours per week. Prerequisite: None. Co-requisite: Biology 1307. **Lab Fee: \$24**

BIOL 1108 - Biology for Non-Science Majors I Lab - 3 sem. hrs. (3-0-0) 26.0101.51 03

This laboratory-based course accompanies BIOL 1308, Biology for Non-Science Majors I. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Three lecture hours per week. Prerequisite: None. Co-requisite: Recommended : Biology 1308. **Lab Fee: \$24**

BIOL 1109 - Biology for Non-Science Majors II Lab - 3 sem. hrs. (3-0-0) 26.0101.51 03

This laboratory-based course accompanies BIOL 1309, Biology for Non-Science Majors II. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Three lecture hours per week. Prerequisite: None. Co-requisite: Recommended : Biology 1309. **Lab Fee: \$24**

BIOL 1306 - Biology for Science Majors I - 3 sem. hrs. (3-0-0) 2601015103

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. BIOL 1306 includes the scientific method, the chemical basis of life, the organization and function of the cell, cellular reproduction, energy transformations, and genetics. Other concepts are included in BIOL 1407. BIOL 1306 and BIOL 1307 are two linked courses designed to be taken in consecutive semesters. Intended for science majors. BIOL 1306 and BIOL 1308 may not both be counted towards completion of graduation requirements. Students enrolling in BIOL 1306 should have one year of high school chemistry or one semester of college chemistry and a strong background in biology. Three lecture hours per week. Prerequisite: None. Co-requisite: BIOL 1106 Biology for Science Majors I Laboratory.

BIOL 1307 - Biology for Science Majors II - 3 sem. hrs. (3-0-0) 2601015103

The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. BIOL 1306 and BIOL 1307 are two linked courses designed to be taken in consecutive semesters. Intended for science majors. BIOL 1307 includes evolution, history of life, diversity and form and function of organisms, classification, and ecology. Other concepts are included in BIOL 1306. BIOL 1307 and BIOL 1309 may not both count towards completion of graduation requirements. Three lecture hours per week. Prerequisite: It is recommended that BIOL 1306 and 1106, be taken before BIOL 1307/1107. Co-requisite: BIOL 1107 Biology for Science Majors II Laboratory.

BIOL 1308 - Biology for Non-Science Majors I - 3 sem. hrs. (0-3-0) 2601015103

Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure (anatomy), function (physiology), and reproduction. BIOL 1308 is the first part of a two-semester introduction to these concepts. Other concepts are included in BIOL 1309, the second part of the course. Emphasis will be placed on selected topics in contemporary biology. BIOL 1308 is the

first part of a two-semester introduction to these concepts. Other concepts are included in BIOL 1309, the second part of the course. Three laboratory hours per week. Prerequisite: None.. Co-requisite: Recommended BIOL 1108, Biology for Non-Science Majors I Laboratory.

BIOL 1309 - Biology for Non-Science Majors II - 3 sem. hrs. (3-0-0) 2601015103

Provides a survey of biological principles with an emphasis on humans, including evolution, ecology (plant and animal), plant and animal diversity and physiology. BIOL 1309 is the second part of a two-semester introduction to these concepts. Other concepts are included in BIOL 1308. Emphasis will be placed on selected topics in contemporary biology. BIOL 1309 is the second part of a two-semester introduction to these concepts. It is recommended that students take BIOL 1308 before BIOL 1309. Three lecture hours per week. Prerequisite: None.. Co-requisite: Recommended BIOL 1109 Biology for Non-Science Majors II Laboratory.

BIOL 1411 - General Botany - 4 sem. hrs. (3-3-0) 2603015103

Study of structure and function of plant cells, tissues, and organs. Includes an evolutionary survey and life histories of the following representative groups: algae, fungi, mosses, liverworts, ferns, and seed producing organisms. Plant reproductive and functional interactions with their environment and with humans. Selected laboratory exercises. Emphasis will be placed on a general survey of the plant kingdom with special emphasis on the flowering plants. To be offered both semesters during the long term and once during the summer term. Either BIOL 1411 or 1413 may be taken first, to be followed by the other course the next semester. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

BIOL 1413 - General Zoology - 4 sem. hrs. (3-3-0) 2607015103

Study of the principles of taxonomy, molecular biology, and ecology as they relate to animal form and function, diversity, behavior, and evolution. This course also includes a study of the classification, structure, body functions, distribution, and ecology of animals with special emphasis on humans. To be offered both semesters during the long term and once during the summer term. Either BIOL 1411 or 1413 may be taken first, to be followed by the other course the next semester. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

BIOL 1424 - Systematic Botany - 4 sem. hrs. (3-3-0) 2603015203

Introduction to the identification, classification, and evolutionary relationships of vascular plants with emphasis on flowering plants. Includes the importance of herbaria, collection techniques, and the construction and use of taxonomic keys. Students are introduced to the vocabulary terms and keys necessary for identification of the flowering plants. Field work supplements the basic study of family morphology. This course is offered only on demand in the spring semester and is designed to meet the requirements of biology majors. Three lecture and three laboratory hours per week. Prerequisite: BIOL 1411 with a minimum grade of "C" or approval of instructor. **Lab Fee: \$24**

BIOL 2316 - Genetics - 3 sem. hrs. (3-0-0) 2608045103

Study of the principles of molecular and classical genetics and the function and transmission of hereditary material. May include population genetics and genetic engineering. Three lecture hours per week. Prerequisite: BIOL 1406 or BIOL 2401 Human Anatomy with minimum grade of C. **None**

BIOL 2401 - Anatomy and Physiology I - 4 sem. hrs. (3-3-0) 2607075103

Study of the structure and function of human anatomy, including the neuroendocrine, integumentary, musculoskeletal, digestive, urinary, reproductive, respiratory, and circulatory systems. Content may be either integrated or specialized. The major organs and systems of the body and their relationship to health and disease will be studied. This course is planned to meet the requirements of Kinesiology and Home Economics majors, pre-professional major, and Biology major and minors, or may be taken as an elective. This course will be suitable for pre-professional (especially nursing) majors. Three lecture and three laboratory hours per week. Prerequisite: Biology 1406 or Biology 1408. **Lab Fee: \$24**

BIOL 2402 - Anatomy and Physiology II - 4 sem. hrs. (3-3-0) 2607075103

Study of the structure and function of human anatomy, including the neuroendocrine, integumentary, musculoskeletal, digestive, urinary, reproductive, respiratory, and circulatory systems. Content may be either integrated or specialized. The major organs and systems of the body and their relationship to health and disease will be studied. This course is planned to meet the requirements of Kinesiology and Home Economics majors, pre-professional major, and Biology major and minors, or may be taken as an elective. This course will be suitable for pre-professional (especially nursing) majors. Three lecture and three laboratory hours per week. Prerequisite: BIOL 2401. **Lab Fee: \$24**

BIOL 2406 - Environmental Biology - 4 sem. hrs. (3-3-0) 0301035101

Human interaction with and effect upon plant and animal communities. Conservation, pollution, energy, and other contemporary ecological problems. This course is designed to cover areas relating to contemporary ecological problems. Topics are to include air, water, soil, pollution, radiation, limnology, pesticides, wastes, and energy conservation. Emphasis will be placed upon biotic inter-relationships. The course will also include selected readings in the appropriate areas. Offered on demand. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

BIOL 2420 - Microbiology for Non-Science Majors - 4 sem. hrs. (3-3-0) 2605035103

Study of the morphology, physiology, and taxonomy of representative groups of pathogenic and nonpathogenic microorganisms. Pure cultures of microorganisms grown on selected media are used in learning laboratory techniques. Includes a brief preview of food microbes, public health, and immunology. This course includes a study of the microbiology and pathology vital to the paramedical health profession, upon which infectious diseases and their prevention and nursing care depend. Special emphasis is placed on disease etiology, epidemiology and host-parasite interactions. Three lecture and three laboratory hours per week. Prerequisite: BIOL 1408. **Lab Fee: \$24**

BIOL 2421 - Microbiology for Science Majors - 4 sem. hrs. (3-3-0) 2605035103

Study of the morphology, physiology, and taxonomy of representative groups of pathogenic and nonpathogenic microorganisms. Pure cultures of microorganisms grown on selected media are used in learning laboratory techniques. Includes a brief preview of food microbes, public health, and immunology. This is a general survey course in the biology of bacteria. The survey will include a study of metabolism, growth and death, variation and genetics, classification and morphology, and bacterial relationship with mankind. Three lecture and three laboratory hours per week. Prerequisite: BIOL 1411 and 1413 or equivalent courses. CHEM 1311-1312 or approval of instructor. This course is offered each spring semester and by petition at other times. **Lab Fee: \$24**

BMGT 1301 - Supervision - 3 sem. hrs. (3-0-0)

The role of the supervisor. Includes managerial functions as applied to leadership, counseling, motivation, and human relations skills. {New WECM update: February, 2013, W. Box} Three lecture hours per week. Prerequisite: None.

BMGT 1307 - Team Building - 3 sem. hrs. (3-0-0)

Principles of building and sustaining teams in organizations. Includes team dynamics, process improvement, trust and collaboration, conflict resolution, and the role of the individual in the team. [New WECM update: February, 2013, W. Box]CIP: 52.0201 The student will analyze the process of team building; integrate interpersonal skills, group dynamics, and leadership in the working of a team; and participate in a team to apply tools and techniques of the problem solving process.

End-Of-Course Outcomes: Describe the principles and processes of team building; identify interpersonal skills, group dynamics, and team leadership; and demonstrate techniques for team problem-solving and conflict resolution. Three lecture hours per week. Prerequisite: None.

BMGT 1327 - Principles of Management - 3 sem. hrs. (3-0-0)

Concepts, terminology, principles, theories, and issues in the field of management. Three lecture hours per week. Prerequisite: None.

BMGT 1382 - Cooperative Education- Business Administration and Management, General - 3 sem. hrs. (1-0-14)

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. 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. One lecture and fourteen external hours per week. Prerequisite: None. Co-requisite: BMGT 1301 or 1327. **Co-op Fee: \$24**

BMGT 1383 - Cooperative Education- Business Administration and Management, General - 3 sem. hrs. (1-0-15)

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. 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. One lecture and fifteen external hours per week. Prerequisite: BMGT 1382. **Co-op Fee: \$24**

BMGT 2303 - Problem Solving and Decision Making - 3 sem. hrs. (3-0-0)

Decision-making and problem-solving processes in organizations utilizing logical and creative problem solving techniques. Application of theory is provided by experiential activities using managerial decision tools. [New WECM update: February, 2013, W. Box] This is a capstone course that consolidates the student's learning experience and should only be taken during the last semester before graduation. Three lecture hours per week. Prerequisite: None. Co-requisite: BMGT 2383.

BMGT 2309 - Leadership - 3 sem. hrs. (3-0-0)

Leadership and its relationship to management. Prepares the student with leadership and communication skills needed to motivate and identify leadership styles. {New WECM update: February, 2013, W. Box} Three lecture hours per week. Prerequisite: None.

BMGT 2311 - Change Management - 3 sem. hrs. (3-0-0)

Knowledge, skills, and tools that enable a leader/organization to facilitate change in a participative style. [New WECM update: February, 2013, W. Box] Three lecture hours per week. Prerequisite: None.

BMGT 2482 - Cooperative Education - Business Administration and Management, General - 4 sem. hrs. (1-0-22)

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. 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. One lecture and twenty-two external hours per week. Prerequisite: None. **Co-op Fee: \$24**

BMGT 2483 - Cooperative Education - Business Administration and Management, General - 4 sem. hrs. (1-0-22)

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. 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. Credit: Three semester credit hours. One lecture and fifteen external hours per week. Associated Program: Management TSI Requirement: M1; R2; W1. Prerequisite: BMGT 2382 Co-op Fee: \$24 One lecture and twenty-two external hours per week. Prerequisite: None. **Co-op Fee: \$24**

BUSG 2309 - Small Business Management/Entrepreneurship - 3 sem. hrs. (3-0-0)

Starting, operating and growing a small business. Includes essential management skills, how to prepare a business plan, accounting, financial needs, staffing, marketing strategies, and legal issues. {New WECM update: February, 2013, W.Box} Three lecture hours per week. Prerequisite: None.

BUSI 1301 - Business Principles - 3 sem. hrs. (3-0-0) 5201015104

Introduction to the role of business in modern society. Includes overview of business operations, analysis of the specialized fields within the business organization, and development of a business vocabulary. A basic course in the fundamentals of business. The course is intended to give an overview of business and to develop an understanding of the realistic problems and practices of business. It includes a study of business organizations and operations, business functions, and various areas of business such as forms of organization, entrepreneurship, basic accounting and financial management, human resource development and management, business ethics and law, product marketing and distribution, and electronic commerce. Three lecture hours per week. Prerequisite: None.

BUSI 1307 - Personal Finance - 3 sem. hrs. (3-0-0) 1904015109

Personal and family accounts, budgets and budgetary control, bank accounts, charge accounts, borrowing, investing, insurance, standards of living, renting or home ownership, and wills and trust plans. Topics studied include the financial planning process, creation of financial statements including balance sheet and income and expense statements, preparation of a personal income tax return, management skills of basic assets such as cash, savings, autos and housing, credit management, life, health and property insurance, investments including stocks, bonds and mutual funds, retirement and estate planning. Credit: Three semester credit hours. Three lecture hours per week. Approval Code: 1904015109 TSI Requirement: M1; R1; W0. Prerequisite: None Three lecture hours per week. Prerequisite: None.

CDEC 1281 - Cooperative Education - Childcare Provider/Assistant - 2 sem. hrs. (1-0-8)

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. 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. One lecture and eight external hours per week. Prerequisite: TECA 1311 and CDEC 1313. **Co-op Fee: \$16.25**

CDEC 1303 - Family, School & Community - 3 sem. hrs. (3-0-1)

Study of the child, family, community, and schools. Includes parent education and involvement, family and community lifestyles, child abuse, and current family life issues. Course content is aligned with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 15 hours field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations. Three lecture and one external hours per week. Prerequisite: None. **Co-op Fee: 16.25**

CDEC 1311 - Educating Young Children - 3 sem. hrs. (3-0-1)

An introduction to the education of the young child. Includes developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities, and current issues. Course content is aligned with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 15 hours of field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations. Three lecture and one external hours per week. Prerequisite: None. **Co-op Fee: 16.25**

CDEC 1313 - Curriculum Resources for Early Childhood Programs - 3 sem. hrs. (3-0-0)

A study of the fundamentals of curriculum design and implementation in developmentally appropriate programs for children. Three lecture hours per week. Prerequisite: None.

CDEC 1318 - Wellness of the Young Child - 3 sem. hrs. (2-2-0)

Factors impacting the well-being of young children. Includes healthy behavior, food, nutrition, fitness, and safety practices. Focuses on local and national standards and legal implications of relevant policies and regulations. Course content is aligned with State Board of Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 15 hours field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations. Two lecture and two laboratory hours per week. Prerequisite: None. Lab Fee: \$24

CDEC 1319 - Child Guidance - 3 sem. hrs. (3-0-0)

An exploration of guidance strategies for promoting prosocial behaviors with individual and groups of children. Emphasis on positive guidance principles and techniques, family involvement, and cultural influences. Practical application through direct participation with children. Three lecture hours per week. Prerequisite: None.

CDEC 1321 - The Infant and Toddler - 3 sem. hrs. (3-0-0)

A study of appropriate infant and toddler programs (birth to age 3), including an overview of development, quality routines, appropriate environments, materials and activities, and teaching/guidance techniques. Three lecture hours per week. Prerequisite: None.

CDEC 1354 - Child Growth and Development - 3 sem. hrs. (3-0-0)

Physical, emotional, social, and cognitive factors impacting growth and development of children through adolescence. Three lecture hours per week. Prerequisite: None. **Lab Fee: \$24**

CDEC 1356 - Emergent Literacy for Early Childhood - 3 sem. hrs. (2-2-0)

An exploration of principles, methods, and materials for teaching young children language and literacy through a play-based, integrated curriculum. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CDEC 1359 - Children with Special Needs - 3 sem. hrs. (2-2-0)

A survey of information regarding children with special needs including possible causes and characteristics of exceptionalities, intervention strategies, available resources, referral processes, the advocacy role, and legislative issues. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CDEC 2280 - Cooperative Education - Child Care Provider/Assistant - 2 sem. hrs. (1-0-8)

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. 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. One lecture and eight external hours per week. Prerequisite: CDEC 1281. **Co-op Fee: \$16.25**

CDEC 2281 - Cooperative Education - Child Care Provider/Assistant - 2 sem. hrs. (1-0-8)

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 is a capstone course and should only be taken during the last semester before graduation. One lecture and eight external hours per week. Prerequisite: CDEC 2280. **Co-op Fee: \$16.25**

CDEC 2307 - Math and Science for Early Childhood - 3 sem. hrs. (2-2-0)

An exploration of principles, methods, and materials for teaching children math and science concepts and process skills through discovery and play. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CDEC 2326 - Administration of Programs for Children I - 3 sem. hrs. (2-2-0)

Application of management procedures for early child care education programs. Includes planning, operating, supervising, and evaluating programs. Topics cover philosophy, types of programs, policies, fiscal management, regulations, staffing, evaluation, and communication. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CETT 1302 - Electricity Principles - 3 sem. hrs. (2-4-0)

Principles of electricity including proper use of test equipment, A/C and D/C circuits, and component theory and operations. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50; VGI Refrigerant Certification: \$20; Employment Ready Testing: \$15**

CETT 1409 - DC-AC Circuits - 4 sem. hrs. (3-3-0)

Fundamentals of DC circuits and AC circuits operation including Ohm's law, Kirchhoff's laws, networks, transformers, resonance, phasors, capacitive and inductive and circuit analysis techniques. Three lecture and three laboratory hours per week. Prerequisite: CETT 1402. **Lab Fee: \$24**

CHEM 1111 - General Chemistry I Laboratory - 1 sem. hrs. (0-4-0) 4005015203

General principles, problems, fundamental laws, and theories. Course content provides a foundation for work in advanced chemistry and related sciences. CHEM 1111 is a laboratory course involving laboratory studies related to topics in Chemistry 1311. Four laboratory hours per week. Prerequisite: CHEM 1311 General Chemistry I or. Co-requisite: CHEM 1311 General Chemistry I. **Lab Fee: \$24**

CHEM 1112 - General Chemistry II Laboratory - 1 sem. hrs. (0-4-0) 4005015203

General principles, problems, fundamental laws, and theories. Course content provides a foundation for work in advanced chemistry and related sciences. CHEM 1112 is a laboratory course involving selected laboratory studies related to topics in Chemistry 1312. Four laboratory hours per week. Prerequisite: CHEM 1312 General Chemistry II or. Co-requisite: CHEM 1312 General Chemistry II. **Lab Fee: \$24**

CHEM 1311 - General Chemistry I - 3 sem. hrs. (3-0-0) 4005015203

Fundamental principles of Chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. High school chemistry is strongly recommended. Three lecture hours per week. Prerequisite: Math 1314 College Algebra or equivalent academic preparation. Co-requisite: CHEM 1111 General Chemistry I Laboratory.

CHEM 1312 - General Chemistry II - 3 sem. hrs. (3-0-0) 4005015203

Chemical equilibrium, thermodynamics, acid-base concepts, thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry. Three lecture hours per week. Prerequisite: CHEM 1311 General Chemistry I. Co-requisite: Recommended CHEM 1112 General Chemistry II Laboratory.

CHEM 1405 - Introductory Chemistry I - 4 sem. hrs. (3-4-0) 4005015103

Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for non-science and allied health students. This course is designed especially for students of business and liberal arts. The work of the course covers the fundamentals of general chemistry and the descriptive chemistry of non-metals. (May not be used in chemistry major sequence.) Three lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CHEM 1407 - Introductory Chemistry II - 4 sem. hrs. (3-4-0) 4005015103

Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for non-science and allied health students. This course is designed especially for students of business and liberal arts. Emphasis is placed upon basic principle, nomenclature, principal reaction, and method of synthesis. It considers all major classes of carbon compounds with special attention given to those sections which may be associated with biological substances. (May not be used in chemistry major sequence.) Three lecture and four laboratory hours per week. Prerequisite: CHEM 1405. **Lab Fee: \$24**

CHEM 2423 - Organic Chemistry I - 4 sem. hrs. (3-4-0) 4005045203

Study of the properties and behavior of hydrocarbon compounds and their derivatives. Designed for students in science or pre-professional programs. The general principles, theories, reactions, synthesis and preparations of elementary organic chemistry are presented. Special emphasis is placed on the classification, characteristics and structures of compounds. Laboratory work offers opportunity to study many typical reactions and to learn techniques of value in industrial chemistry. Many topics essential to the preparation of premedical, pre-dental, and pre-pharmacy students are studied in this course. Three lecture and four laboratory hours per week. Prerequisite: CHEM 1311/1111 and 1312/1112. **Lab Fee: \$24**

CHEM 2425 - Organic Chemistry II - 4 sem. hrs. (3-4-0) 4005045203

Study of the properties and behavior of hydrocarbon compounds and their derivatives. Designed for students in science or pre-professional programs. The general principles, theories, reactions, synthesis and preparations of elementary organic chemistry are presented. Special emphasis is placed on the classification, characteristics and structures of compounds. Laboratory work offers opportunity to study many typical reactions and to learn techniques of value in industrial chemistry. Many topics essential to the preparation of premedical, pre-dental, and pre-pharmacy students are studied in this course. Three lecture and four laboratory hours per week. Prerequisite: CHEM 1311/1111 and 1312/1112. **Lab Fee: \$24**

CJCR 1300 - Basic Jail Course - 3 sem. hrs. (2-4-0)

Human relations; observation; evaluation of prisoners; booking procedures; classification; mug shots; fingerprinting; strip searches; meals; medical services; visitation; inmates rights and privileges; detention areas; disturbances; riots; fire procedures; release procedures; and key, knife and tool control. Includes the required Texas Commission on Law Enforcement (TCLEOSE) objectives for course #1005. This course was designed to be repeated multiple times to improve student proficiency. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CJCR 1304 - Probation and Parole - 3 sem. hrs. (3-0-0)

A survey of the structure, organization, and operation of probation and parole services. Emphasis on applicable state statutes and administrative guidelines. Three lecture hours per week. Prerequisite: None.

CJCR 1307 - Correctional Systems and Practices - 3 sem. hrs. (3-0-0)

Corrections in the criminal justice system; organization of correctional systems; correctional role; institutional operations; alternatives to institutionalization; treatment and rehabilitation; current and future issues. Three lecture hours per week. Prerequisite: None.

CJCR 1358 - Rights of Prisoners - 3 sem. hrs. (3-0-0)

Legal rights of convicted offenders incarcerated in state and federal penal institutions. Emphasizes constitutional principles, case law, and federal and state statutes concerning prisoner rights. Three lecture hours per week. Prerequisite: None.

CJCR 2325 - Legal Aspects of Corrections - 3 sem. hrs. (3-0-0)

A study of the operation, management, and legal issues affecting corrections. Analysis of constitutional issues involving rights of the convicted, as well as civil liability of correctional agencies and staff. Three lecture hours per week. Prerequisite: None.

CJLE 1211 - Basic Firearms - 2 sem. hrs. (2-1-0)

Firearm safety, cleaning and care techniques, proper shooting principles, and proficiency. Two lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

CJLE 1303 - Basic Telecommunication Certification - 3 sem. hrs. (3-1-0)

Law enforcement functions, history of public safety communications, federal laws regulating public safety communications, radio communication systems, radio operations, fire and EMS dispatch considerations, telephone operations, law enforcement information systems, communication records, logs and documentation, legal issues, emergency management, police emergency situations, 9-1-1/computer aided dispatch, media relations, stress management, and crisis prevention. Required course for law enforcement telecommunication personnel prior to completion of 12 months of service. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

CJLE 1358 - Rights of Prisoners - 3 sem. hrs. (3-0-0)

Legal rights of convicted offenders incarcerated in state and federal penal institutions. Emphasizes constitutional principles, case law, and federal and state statutes concerning prisoner rights. Three lecture hours per week. Prerequisite: None.

CJLE 1506 - Basic Peace Officer I - 5 sem. hrs. (3-6-0)

Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer II, III, and IV to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Training Academy.***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY TCLEOSE*** Three lecture and six laboratory hours per week. Prerequisite: Admission to Basic Peace Officer Training Academy. Co-requisite: CJLE 1518, CJLE 1524, CJLE 1512. **Lab Fee: \$24**

CJLE 1512 - Basic Peace Officer II - 5 sem. hrs. (3-6-0)

Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer I, III, and IV to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Training Academy.***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY TCLEOSE*** Three lecture and six laboratory hours per week. Prerequisite: Admission to Basic Peace Officer Training Academy. Co-requisite: CJLE 1518, CJLE 1506, CJLE 1524. **Lab Fee \$24**

CJLE 1518 - Basic Peace Officer III - 5 sem. hrs. (3-6-0)

Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer I, II, and IV to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Academy. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY TCLEOSE*** Three lecture and six laboratory hours per week. Prerequisite: Admission to Basic Peace Officer Training Academy. Co-requisite: CJLE 1524, CJLE 1512, CJLE 1506. **Lab Fee \$24**

CJLE 1524 - Basic Peace Officer IV - 5 sem. hrs. (3-6-0)

Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer I, II, and III to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Training Academy. ***THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY TCLEOSE*** Three lecture and six laboratory hours per week. Prerequisite: Admission to Basic Peace Officer Training Academy. Co-requisite: CJLE 1512, CJLE 1518, CJLE 1506. **Lab Fee \$24**

CJLE 2247 - Tactical Skills for Police - 2 sem. hrs. (3-0-0)

Development of proficiency with a range of impact weapons and/or chemical agents and defensive techniques necessary to control a violent person. Three lecture hours per week. Prerequisite: None.

CJSA 1282 - Cooperative Education- Criminal Justice/Safety Studies - 2 sem. hrs. (1-0-7)

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. Directly related to a technical discipline, specific learning objectives guide the student through the work experience. This course may be repeated if topics and learning outcomes vary. One lecture and seven external hours per week. Prerequisite: None. **Co-op Fee: \$24**

CJSA 1302 - Private Security Officer Training - 3 sem. hrs. (3-0-0)

A critical study of the provisions of the Texas Private Investigators and Private Security Agencies Act. Topics include the impact of the code on procedures and policies, judicial interpretation of statutes and related procedures, and rules and regulations. Satisfies the requirements for Commissioned Security Officer Skill Certification. Three lecture hours per week. Prerequisite: None.

CJSA 1308 - Criminalistics I - 3 sem. hrs. (3-0-0) 43.0104

Introduction to the field of criminalistics. Topics include the application of scientific and technical methods in the investigation of crime including location, identification, and handling of evidence for scientific analysis. Three lecture hours per week. Prerequisite: None.

CJSA 1312 - Crime In America - 3 sem. hrs. (3-0-0)

American crime problems in historical perspective, social and public policy factors affecting crime, impact and crime trends, social characteristics of specific crimes, and crime prevention. Three lecture hours per week. Prerequisite: None.

CJSA 1313 - Court Systems and Practices - 3 sem. hrs. (3-0-0)

The judiciary in the criminal justice system; structure of the American court system; prosecution; right to counsel; pre-trial release; grand juries; adjudication process; types and rules of evidence, sentencing. Three lecture hours per week. Prerequisite: None.

CJSA 1322 - Introduction to Criminal Justice - 3 sem. hrs. (3-0-0)

History and philosophy of criminal justice and ethical considerations; crime defined; its nature and impact; overview of criminal justice system; law enforcement; court system; prosecution and defense; trial process; corrections. An overview of the criminal justice system. Topics include the history and philosophy of criminal justice, the definition of crime, and its nature and impact. Three lecture hours per week. Prerequisite: None.

CJSA 1351 - Use of Force - 3 sem. hrs. (3-0-0)

A study of the use of force including introduction to and statutory authority for the use of force, force options, deadly force, and related legal issues. Fulfills the Texas Commission on Law Enforcement (TCLEOSE) Use of Force Intermediate Certificate requirement. This course was designed to be repeated multiple times to improve student proficiency. Three lecture hours per week. Prerequisite: None.

CJSA 2282 - Cooperative Education- Criminal Justice /Safety Studies - 2 sem. hrs. (1-0-7)

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. One lecture and seven external hours per week. Prerequisite: Sophomore status in A.A.S. Law Enforcement program, CJSA 1282. **Co-op Fee: \$24**

CJSA 2323 - Criminalistics II - 3 sem. hrs. (3-0-0) 43.0104

Theory and practice of crime scene investigation. Topics include report writing, blood and other body fluids, document examination, etchings, casts and molds, glass fractures, use of microscope, and firearms identification. Three lecture hours per week. Prerequisite: None.

CJSA 2331 - Child Abuse: Prevention and Investigation - 3 sem. hrs. (3-0-0)

Forms of child abuse and neglect and the traits of typical abusers. Includes strategies to investigate abuse, interview victims and witnesses, document evidence in accordance with state law, and conduct case studies. Three lecture hours per week. Prerequisite: None.

CNBT 1110 - Basic Construction Safety - 1 sem. hrs. (3-0-0)

Basic job site construction safety in residential, commercial, and industrial construction. Three lecture hours per week. Prerequisite: None.

CNBT 1400 - Blueprint Reading - 4 sem. hrs. (3-3-0)

Introductory blueprint reading for residential and light commercial construction. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CNBT 1446 - Construction Estimating I - 4 sem. hrs. (3-3-0) 15.1001

Fundamentals of estimating materials and labor costs in construction. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COLS 0300 - College Success Skills - 3 sem. hrs. (2-2-0) 3201015212

Psychology of learning and success. Examines factors that underlie learning, success, and personal development in higher education. Topics covered include information processing, memory, strategic learning, self-regulation, goal setting, motivation, educational and career planning, and learning styles. Techniques of study such as time management, listening and note taking, text marking, library and research skills, preparing for examinations, and utilizing learning resources are covered. Includes college orientation and development of students' academic skills that apply to all disciplines. COLS 0300 may not be counted for local credit toward an associate degree or certificate and is not transferable. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COMM 1129 - News Publications I - 1 sem. hrs. (1-2-0) 0904015406

Work on the staff of one of the college publications. Students are required to work on the staff of at least one of the official college publications for prescribed periods under faculty supervision. For students who are interested in working on the staff of student publications under the supervision of the journalism instructor. One lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COMM 1130 - News Publications II - 1 sem. hrs. (1-2-0) 0904015406

Work on the staff of one of the college publications. Students are required to work on the staff of at least one of the official college publications for prescribed periods under faculty supervision. For students who are interested in working on the staff of student publications under the supervision of the journalism instructor. One lecture and two laboratory hours per week. Prerequisite: COMM 1129. **Lab Fee: \$24**

COMM 1316 - News Photography I - 3 sem. hrs. (3-3-0) 0904015506

Problems and practices of photography for newspapers. Includes instruction in camera and equipment operation and maintenance, film and plate developing, and printing media. A general beginner's course with emphasis on taking and processing pictures for reproduction in publications. The course consists of history, camera operation, exposure methods (for both color and black and white), basic darkroom methods (black and white only) covering negative development, printing and mounting. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COMM 1317 - News Photography II - 3 sem. hrs. (3-3-0) 0904015506

Problems and practices of photography for newspapers. Includes instruction in camera and equipment operation and maintenance, film and plate developing, and printing media. A continuation of COMM 1316 familiarizing the student with the fundamentals of basic photography. Emphasis is on darkroom procedures including advanced black and white printing techniques and color printing. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COMM 2129 - News Publications III - 1 sem. hrs. (1-2-0) 0904015406

Work on the staff of one of the college publications. Students are required to work on the staff of at least one of the official college publications for prescribed periods under faculty supervision. A continuation of COMM 1129 and 1130 for sophomore students. One lecture and two laboratory hours per week. Prerequisite: COMM 1130. **Lab Fee: \$24**

COMM 2130 - News Publications IV - 1 sem. hrs. (1-2-0) 0904015406

Work on the staff of one of the college publications. Students are required to work on the staff of at least one of the official college publications for prescribed periods under faculty supervision. A continuation of COMM 1129 and 1130 for sophomore students. One lecture and two laboratory hours per week. Prerequisite: COMM 2129. **Lab Fee: \$24**

COMM 2305 - Editing and Layout - 3 sem. hrs. (3-0-0) 0904015106

Editing and layout processes, with emphasis on accuracy and fairness, including the principles and techniques of design. Students will engage in graphic design for the print media. History and current practices in various forms of printing, type design, copy-fitting and layout fundamentals and trends in graphic design will be discussed. Three lecture hours per week. Prerequisite: None.

COMM 2311 - News Gathering and Writing I - 3 sem. hrs. (3-3-0) 0904015706

Fundamentals of writing news for the mass media. Includes instruction in methods and techniques for gathering, processing, and delivering news in a professional manner. A course in fundamentals to acquaint the student with newspaper traditions, practices, and objectives as well as techniques of news gathering, interviewing, and writing the various types of news stories. Each student is required to report for The Southwest Texan (newspaper). Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COMM 2315 - News Gathering and Writing II - 3 sem. hrs. (3-3-0) 0904015806

Continuation of the aims and objectives of news gathering and writing with emphasis on advanced reporting techniques. A continuation of COMM 2311 with discussions of various types of complex stories such as sports, reviews, criticisms, features, interviews and editorials; primarily a course to perfect students' writing skills and techniques; the ethics of reporting and the obligations of the

competent journalist. Each student is required to report for The Southwest Texan (newspaper). Three lecture and three laboratory hours per week. Prerequisite: COMM 2311. **Lab Fee: \$24**

COMM 2324 - Practicum in Electronic Media - 3 sem. hrs. (3-2-0) 0907015306

Lecture and laboratory instruction and participation. Three lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COMM 2327 - Introduction to Advertising - 3 sem. hrs. (3-0-0) 0909035106

Fundamentals of advertising, including marketing theory and strategy, copywriting, design and selection of media. Three lecture hours per week. Prerequisite: None.

COMM 2331 - Radio/Television Announcing - 3 sem. hrs. (2-3-0) 0907015406

Principles of announcing; study of voice, diction, pronunciation, and delivery. Experience in various types of announcing. Study of phonetics is recommended. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COMM 2332 - Radio/Television News - 3 sem. hrs. (2-3-0) 0907015206

Preparation and analysis of news styles for the electronic media. Two lecture and three laboratory hours per week. Prerequisite: COMM 2331. **Lab Fee: \$24**

COSC 1301 - Introduction to Computing - 3 sem. hrs. (2-4-0) 1101015107

Overview of computer systems-hardware, operating systems, and microcomputer application software, including the Internet, word processing, spreadsheets, presentation graphics, and databases. Current issues such as the effect of computers on society, and the history and use of computers in business, educational, and other modern settings are also studied. This course is not intended to count toward a student's major field of study in business or computer science. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COSC 1336 - Programming Fundamentals I - 3 sem. hrs. (2-3-0) 1102015507

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. (This course is included in the Field of Study Curriculum for Computer Science.) Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

COSC 1337 - Programming Fundamentals II - 3 sem. hrs. (2-3-0) 1102015607

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. (This course is included in the Field of Study Curriculum for Computer Science.) Two lecture and three laboratory hours per week. Prerequisite: COSC 1336. **Lab Fee: \$24**

COSC 2325 - Computer Organization and Machine Language - 3 sem. hrs. (2-3-0) 1102015407

Basic computer organization; machine cycle, digital representation of data and instructions; assembly language programming, assembler, loader, macros, subroutines, and program linkages. (This course is included in the Field of Study Curriculum for Computer Science.) Two lecture and three laboratory hours per week. Prerequisite: COSC 1336. **Lab Fee: \$24**

COSC 2336 - Programming Fundamentals III - 3 sem. hrs. (2-3-0) 1102015707

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. (This course is included in the Field of Study Curriculum for Computer Science.) Two lecture and three laboratory hours per week. Prerequisite: COSC 1337. **Lab Fee: \$24**

CRIJ 1301 - Introduction to Criminal Justice - 3 sem. hrs. (3-0-0) 4301045124

History, philosophy, and ethical considerations of criminal justice; the nature and impact of crime; and an overview of the criminal justice system, including law enforcement and court procedures. Three lecture hours per week. Prerequisite: None.

CRIJ 1306 - Court Systems and Practices - 3 sem. hrs. (3-0-0) 2201015424

Study of the judiciary in the American criminal justice system and the adjudication processes and procedures. Three lecture hours per week. Prerequisite: None.

CRIJ 1307 - Crime in America - 3 sem. hrs. (3-0-0) 4504015225

American crime problems in historical perspective, social and public policy factors affecting crime, impact and crime trends, social characteristics of specific crimes, and prevention of crimes. Three lecture hours per week. Prerequisite: None.

CRIJ 1310 - Fundamentals of Criminal Law - 3 sem. hrs. (3-0-0) 2201015324

Study of criminal law, its philosophical and historical development, major definitions and concepts, classifications and elements of crime, penalties using Texas statutes as illustrations, and criminal responsibility. Three lecture hours per week. Prerequisite: None.

CRIJ 1313 - Juvenile Justice System - 3 sem. hrs. (3-0-0) 4301045524

A study of juvenile justice process to include specialized juvenile law, role of the juvenile law, role of the juvenile courts, role of the police agencies, role of correctional agencies, and the theories concerning delinquency. Three lecture hours per week. Prerequisite: None.

CRIJ 2301 - Community Resources in Corrections - 3 sem. hrs. (3-0-0) 4301045224

An introductory study of the role of the community in corrections; community programs for adults and juveniles; administration of community programs; legal issues; future trends in community treatment. Three lecture hours per week. Prerequisite: None.

CRIJ 2313 - Correctional Systems & Practices - 3 sem. hrs. (3-0-0) 4301045424

Corrections in the criminal justice system; organization of correctional systems; correctional role; institutional operations; alternatives to institutionalization; treatment and rehabilitation; current and future issues. This course provides an overview of the field of corrections. It reviews prisons and jails, correctional policies, agencies, prison life, and challenges facing corrections. Three lecture hours per week. Prerequisite: None.

CRIJ 2314 - Criminal Investigation - 3 sem. hrs. (3-0-0) 4301045524

Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation. Three lecture hours per week. Prerequisite: None.

CRIJ 2323 - Legal Aspects of Law Enforcement - 3 sem. hrs. (3-0-0) 4301045524

Police authority; responsibilities; constitutional constraints; laws of arrest, search and seizure; police liability. This course focuses on the constitutional rights of criminal defendants as interpreted by the U.S. Supreme Court. Students discuss Supreme Court decisions and identify their significance for the justice system. Three lecture hours per week. Prerequisite: None.

CRIJ 2328 - Police Systems & Practices - 3 sem. hrs. (3-0-0) 4301045724

The police profession; organization of law enforcement systems; the police role; police discretion; ethics; police- community interaction; current and future issues. Three lecture hours per week. Prerequisite: None.

CRPT 1411 - Conventional Roof Systems - 4 sem. hrs. (3-3-0)

Principles of design and construction of a conventional roof system incorporating gable, hip, valley and intersections. Emphasis given to safe work practices and the use, and maintenance of tools and equipment. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CRPT 1415 - Conventional Wall Systems - 4 sem. hrs. (3-3-0)

Conventional wall systems with emphasis on wood frame construction. Includes identification of components; construction of wall systems; safe work practices; and the use, and maintenance of tools and equipment. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CRPT 1423 - Floor Systems - 4 sem. hrs. (3-3-0) 46.0201

An introduction to common floor systems. Includes component identification; construction of a floor system; safe work practices; and the use, and maintenance of tools and equipment. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CRPT 1429 - Introduction to Carpentry - 4 sem. hrs. (3-3-0)

An introduction to the carpentry trade including safety, tools, equipment, terminology, and methods. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CRPT 1441 - Conventional Exterior Finish System - 4 sem. hrs. (3-3-0) 46.0201

Installation of exterior finish systems and components including the placement and installation of cornice, windows, doors, siding, and flashing. Emphasis on safe work practices and the use, and maintenance of tools and equipment. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CRPT 1445 - Conventional Interior Finish System - 4 sem. hrs. (3-3-0) 46.0201

Installation of interior finish systems and components including the placement and installation of doors, trim, floor, wall, and ceiling finishes. Emphasis on safe work practices and the use, and maintenance of tools and equipment. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CSME 1248 - Principles of Skin Care - 2 sem. hrs. (1-2-0)

An introduction of the theory and practice of skin care. One lecture and two laboratory hours per week. Prerequisite: None. Co-requisite: CSME 1401. **Lab Fee: \$24**

CSME 1310 - Introduction to Haircutting and Related Theory - 3 sem. hrs. (1-8-0)

Introduction to the theory and practice of haircutting. Topics include terminology, implements, sectioning and finishing techniques. One lecture and eight laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CSME 1401 - Orientation to Cosmetology - 4 sem. hrs. (2-6-0)

An overview of the skills and knowledge necessary for the field of cosmetology. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CSME 1405 - Fundamentals of Cosmetology - 4 sem. hrs. (2-8-0)

A course in the basic fundamentals of cosmetology. Topics include safety and sanitation, service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, and comb out. Two lecture and eight laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CSME 1434 - Cosmetology Instructor I - 4 sem. hrs. (2-7-0)

The fundamentals of instructing cosmetology students. Student must have valid Texas Department of Licensing and Regulation license and high school diploma or GED. Two lecture and seven laboratory hours per week. Prerequisite: CSME 1435. **Lab Fee: \$24**

CSME 1435 - Orientation to the Instruction of Cosmetology - 4 sem. hrs. (2-6-0)

An overview of the skills and knowledge necessary for the instruction of cosmetology students. Two lecture and six laboratory hours per week. Prerequisite: Student must have valid Texas Department of Licensing and Regulation license and high school diploma or GED. **Lab Fee: \$24**

CSME 1443 - Manicuring and Related Theory - 4 sem. hrs. (2-5-0)

Presentation of the theory and practice of nail services. Topics include terminology, application, and workplace competencies related to nail services. Two lecture and five laboratory hours per week. Prerequisite: None. Co-requisite: CSME 1401. **Lab Fee: \$24**

CSME 1453 - Chemical Reformation and Related Theory - 4 sem. hrs. (2-8-0)

Presentation of the theory and practice of chemical reformation including terminology, application, and workplace competencies. Two lecture and eight laboratory hours per week. Prerequisite: None. Co-requisite: CSME 1401. **Lab Fee: \$24**

CSME 2310 - Advanced Haircutting and Related Theory - 3 sem. hrs. (1-8-0)

Advanced concepts and practice of haircutting. Topics include haircuts, utilizing scissors, razor, and/or clippers. One lecture and eight laboratory hours per week. Prerequisite: CSME 1310. **Lab Fee: \$24**

CSME 2337 - Advanced Cosmetology Techniques - 3 sem. hrs. (1-8-0)

Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services, and workplace competencies. One lecture and eight laboratory hours per week. Prerequisite: CSME 1405. **Lab Fee: \$24**

CSME 2343 - Salon Development - 3 sem. hrs. (2-3-0)

Procedures necessary for salon development. Topics include professional ethics and goal setting, salon operation, and record keeping. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

CSME 2401 - The Principles of Hair Coloring and Related Theory - 4 sem. hrs. (2-8-0)

Presentation of the theory, practice, and chemistry of hair color. Topics include terminology, application, and workplace competencies related to hair color. Two lecture and eight laboratory hours per week. Prerequisite: CSME 1401. **Lab Fee: \$24**

CSME 2414 - Cosmetology Instructor II - 4 sem. hrs. (2-6-0)

A continuation of the fundamentals of instructing cosmetology students. Student must have valid Texas Department of Licensing and Regulation license and high school diploma or GED. Two lecture and six laboratory hours per week. Prerequisite: CSME 1434. **Lab Fee: \$24**

CSME 2415 - Cosmetology Instructor III - 4 sem. hrs. (2-6-0)

Presentation of lesson plan assignments and evaluation techniques. Student must have valid Texas Department of Licensing and Regulation license and high school diploma or GED. Two lecture and six laboratory hours per week. Prerequisite: CSME 2414. **Lab Fee: \$24**

CSME 2439 - Advanced Hair Design - 4 sem. hrs. (2-7-0)

Advanced concepts in the theory and practice of hair design. Two lecture and seven laboratory hours per week. Prerequisite: CSME 1401. **Lab Fee: \$24**

CSME 2441 - Preparation for the State Licensing Examination - 4 sem. hrs. (2-7-0)

Preparation for the state licensing examination. Two lecture and seven laboratory hours per week. Prerequisite: CSME 1401. **Lab Fee: \$24; Exam Fee: \$183.00**

CSME 2444 - Cosmetology Instructor IV - 4 sem. hrs. (2-6-0)

Advanced concepts of instruction in a cosmetology program. Topics include demonstration, development, and implementation of advanced evaluation and assessment techniques. Student must have valid Texas Department of Licensing and Regulation license and high school diploma or GED. Two lecture and six laboratory hours per week. Prerequisite: CSME 2415. **Lab Fee: \$24**

CSME 2445 - Instructional Theory and Clinic Operation - 4 sem. hrs. (2-6-0)

An overview of the objectives required by the Texas Department of Licensing and Regulation Instructor Examination. Student must have valid Texas Department of Licensing and Regulation license and high school diploma or GED. Capstone course that consolidates the student's learning experiences. Two lecture and six laboratory hours per week. Prerequisite: CSME 2444. **Lab Fee: \$24**

DANC 2303 - Dance Appreciation I - 3 sem. hrs. (3-0-0) 5003015426

Survey of primitive, classical, and contemporary dance and its interrelationship with cultural developments and other art forms. Three lecture hours per week. Prerequisite: None.

DANC 2304 - Dance Appreciation II - 3 sem. hrs. (3-0-0) 5003015426

Survey of the development of contemporary dance forms and their relationships with other modern art forms. Three lecture hours per week. Prerequisite: None.

DEMR 1301 - Shop Safety and Procedures - 3 sem. hrs. (2-2-0)

A study of shop safety, rules, basic shop tools, and test equipment. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

DEMR 1310 - Diesel Engine Testing and Repair I - 3 sem. hrs. (2-4-0)

An introduction to testing and repairing diesel engines including related systems and specialized tools. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DEMR 1330 - Steering and Suspension I - 3 sem. hrs. (2-4-0)

A study of design, function, maintenance, and repair of steering and suspension systems. Emphasis on troubleshooting and repair of failed components. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DEMR 1349 - Diesel Engine II - 3 sem. hrs. (2-4-0)

An in-depth coverage of disassembly, repair, identification, evaluation, and reassembly of diesel engines. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

DEMR 1405 - Basic Electrical Systems - 4 sem. hrs. (2-6-0)

Basic principles of electrical systems of diesel powered equipment with emphasis on starters, alternators, and batteries. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DEMR 1406 - Diesel Engine I - 4 sem. hrs. (2-6-0)

An introduction to the basic principles of diesel engines and systems. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DEMR 1417 - Basic Brake Systems - 4 sem. hrs. (2-6-0)

Basic principles of brake systems of diesel powered equipment. Emphasis on maintenance, repairs, and troubleshooting. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; ASE Exam Fee: \$66**

DEMR 1421 - Power Train I - 4 sem. hrs. (2-6-0)

Fundamentals of repair and theory of power trains including clutches, transmissions, drive shafts, and differentials. Emphasis on inspection and repair. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DEMR 1423 - Heating Ventilation and Air Conditioning (HVAC) Troubleshooting and Repair - 4 sem. hrs. (2-6-0)

Introduction to heating, ventilation, and air conditioning theory, testing, and repair. Emphasis on refrigerant reclamation, safety procedures, specialized tools, and repairs. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

DEMR 1447 - Power Train II - 4 sem. hrs. (2-6-0)

Continuation of fundamentals and theory of power train systems. Emphasis on disassembly, inspection, and repair of power train components. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

DEMR 2281 - Cooperative Education - Diesel Mechanics Technology/Technician - 2 sem. hrs. (1-0-7)

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. Capstone course that consolidates the student's learning experiences. One lecture and seven external hours per week. Prerequisite: None. Co-requisite: DEMR 1447, DEMR 2348, DEMR 2432. **Co-op Fee: \$24**

DEMR 2348 - Failure Analysis - 3 sem. hrs. (2-3-0)

An advanced course designed for analysis of typical part failures on equipment. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Uniform Fee: \$50**

DEMR 2432 - Electronic Controls - 4 sem. hrs. (2-6-0)

Advanced skills in diagnostic and programming techniques of electronic control systems. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; ASE Exam Fee: \$66**

DRAM 1120 - Theater Practicum I - 1 sem. hrs. (1-4-0) 5005065326

Practicum in theater with emphasis on technique and procedures with experience gained in play productions. Participation in and evaluation of rehearsal and performance activities related to the departmental productions. One lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DRAM 1121 - Theater Practicum II - 1 sem. hrs. (1-4-0) 5005065326

Practicum in theater with emphasis on technique and procedures with experience gained in play productions. Participation in and evaluation of rehearsal and performance activities related to the departmental productions. One lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DRAM 1310 - Introduction to Theater - 3 sem. hrs. (3-0-0) 5005015126

Survey of all phases of theater including its history, dramatic works, stage techniques, production procedures, and relation to the fine arts. Participation in major productions may be required. A survey of the fields of theater employment designed to provide introductory knowledge. Equal time and attention is given to each of the phases of the entertainment business: Performing, Directing, Producing, Managing, Costuming, Make-up, Scenery, Lighting and Sound. Three lecture hours per week. Prerequisite: None.

DRAM 1330 - Stagecraft I - 3 sem. hrs. (3-3-0) 5005025126

Study and application of visual aesthetics of design which may include the physical theater, scenery construction and painting, properties, lighting, costume, makeup, and backstage organization. Practical experience in the technical procedures involved in the mounting of a play. Opportunity is afforded for scenery construction and painting, lighting, properties, sound, stage effects and costume construction. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DRAM 1341 - Makeup - 3 sem. hrs. (3-0-0) 5005025226

Design and execution of makeup for the purpose of developing believable characters. Includes discussion of basic makeup principles and practical experience of makeup application. Theory and practice of the craft of stage makeup. Three lecture hours per week. Prerequisite: None. **Supply Fee: \$24**

DRAM 1351 - Acting I - 3 sem. hrs. (3-3-0) 5005065126

Development of basic skills and techniques of acting including increased sensory awareness, ensemble performing, character analysis, and script analysis. Emphasis on the mechanics of voice, body, emotion, and analysis as tools for the actor. Exercises in bodily and vocal control. Varied projects in the training and disciplining of the mind and body for the purpose of theatrical performance. Projects in pantomime and stage action. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

DRAM 1352 - Acting II - 3 sem. hrs. (3-3-0) 5005065126

Development of basic skills and techniques of acting including increased sensory awareness, ensemble performing, character analysis, and script analysis. Emphasis on the mechanics of voice, body, emotion, and analysis as tools for the actor. A continuation of DRAM 1351. Study with experience in problems of creating characterization, with emphasis on developing vocal and physical skill in acting. Three lecture and three laboratory hours per week. Prerequisite: DRAM 1351. **Lab Fee: \$24**

DRAM 2120 - Theater Practicum III - 1 sem. hrs. (1-4-0) 5005065326

Practicum in theater with emphasis on technique and procedures with experience gained in play productions. Additional practice in rehearsal and performance activities related to departmental productions. One lecture and four laboratory hours per week. Prerequisite: DRAM 1120 and 1121. **Lab Fee: \$24**

DRAM 2121 - Theater Practicum IV - 1 sem. hrs. (1-4-0) 5005065326

Practicum in theater with emphasis on technique and procedures with experience gained in play productions. Additional practice in rehearsal and performance activities related to departmental productions. One lecture and four laboratory hours per week. Prerequisite: DRAM 1120 and 1121. **Lab Fee: \$24**

DRAM 2361 - History of the Theater I - 3 sem. hrs. (3-0-0) 5005055126

Development of theater art from the earliest times through the 16th century. Three lecture hours per week. Prerequisite: None.

DRAM 2362 - History of the Theater II - 3 sem. hrs. (3-0-0) 5005055126

Development of theater art from the 17th century through the 21st century. Three lecture hours per week. Prerequisite: None.

ECON 2301 - Principles of Macroeconomics - 3 sem. hrs. (3-0-0) 4506015125

An analysis of the economy as a whole including measurement and determination of Aggregate Demand and Aggregate Supply, national income, inflation, and unemployment. Other topics include international trade, economic growth, business cycles, and fiscal policy and monetary policy. History, development, and application of macroeconomic and microeconomic theory underlying the production, distribution, and exchange of goods and services including the utilization of resources, analysis of value and prices, national income analysis, fiscal policies, monetary and banking theory and policy, distribution of income, labor problems, international economics, and economic systems. Attention given to the application of economic principles to economic problems. A survey of contemporary macroeconomic problems related to the concepts of Gross Domestic Product, Gross National Product, household consumption, business investment, the international sector, economic growth, determinants of aggregate demand and supply, market equilibrium, business cycles, price stability, full employment, the role of government, monetary and fiscal policy, and globalization. Three lecture hours per week. Prerequisite: None.

ECON 2302 - Principles of Microeconomics - 3 sem. hrs. (3-0-0) 4506015125

History, development, and application of macroeconomic and microeconomic theory underlying the production, distribution, and exchange of goods and services including the utilization of resources, analysis of value and prices, national income analysis, fiscal policies, monetary and banking theory and policy, distribution of income, labor problems, international economics, and economic systems. Attention given to the application of economic principles to economic problems. A survey of the applied business concepts of elasticities of demand and supply, consumer behavior, utility maximization, consumer and producer surplus, pricing, marginal, average, variable, fixed and total cost decisions, profitability, short and long run time horizons, market structures including perfect competition, monopoly, monopolistic competition and oligopoly, corporate mergers, antitrust regulation, income distribution and international trade. Three lecture hours per week. Prerequisite: None.

EDTC 1301 - Educational Systems - 3 sem. hrs. (3-0-0)

A study of the role and responsibilities of educational personnel with emphasis on development of professionalism and effective communication strategies with adults. Topics include the various codes of ethics governing the educational field, the issue of confidentiality, learners' rights and responsibilities, and challenges facing schools. Three lecture hours per week. Prerequisite: None.

EDTC 1307 - Introduction to Teaching Reading - 3 sem. hrs. (3-0-0)

General principles of reading instruction. Topics include emergent literacy, reading readiness, reading instruction, literacy-based environments, and a review of varied materials and techniques for teaching reading. Three lecture hours per week. Prerequisite: None.

EDTC 1313 - Educational Software & Technology - 3 sem. hrs. (3-1-0)

Introduction to the use of educational software, instructional applications, and technology in the educational setting. Evaluate the use of technology for guided practice and self-paced student remediation. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

EDTC 1364 - Field Experience - Teacher Assistant/Aide - 3 sem. hrs. (0-0-21)

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Twenty-one external experience hours per week. Prerequisite: EDUC 1301 or EDTC 1301 or EDTC 1311. **Co-op Fee: \$24**

EDTC 2305 - Reading Problems - 3 sem. hrs. (3-0-0)

In-depth coverage of reading difficulties. Emphasis on the theories, strategies, recognition, and remediation of reading problems. Topics include assessment, direct instruction, and motivational/interactive literacy activities. Introduction to effective methods of identifying and correcting various reading difficulties. Emphasis on the effect of reading difficulties on reading ability and the various techniques recommended for correcting each difficulty and the use of strategic approaches to the teaching of reading. Topics include the importance of direct instruction and motivational learning activities with abundant practice in the act of reading. Three lecture hours per week. Prerequisite: EDTC 1307.

EDTC 2311 - Instructional Practices and Effective Learning Environments - 3 sem. hrs. (3-0-0)

General principles for selecting developmentally appropriate strategies in core curriculum areas, planning the classroom environment, and instructional accommodations and modifications. Topics address methods for supporting instructional planning and implementation of educational goals and objectives. Also examines cooperative learning strategies. Three lecture hours per week. Prerequisite: None.

EDTC 2317 - Guiding Student Behavior - 3 sem. hrs. (3-0-0)

A study of developmentally appropriate direct and indirect guidance techniques for use in various school environments. Topics include identification of causes of inappropriate behavior, establishing and managing routines, the environment's role in promoting positive behavior, promoting self-esteem negotiation/conflict resolution strategies, and enhancing positive self-direction. Emphasis on implementation of a behavior management plan. Three lecture hours per week. Prerequisite: EDUC 1301 or EDTC 1301 or EDTC 1311.

EDUC 1100 - Learning Frameworks - Transfer Strategies - 1 sem. hrs. (1-1-0) 42.2701.51 25

A study of the: research and theory in the psychology of learning, cognition, and motivation; factors that impact learning, and application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of 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. One lecture and one laboratory hours per week. Prerequisite: General Education Core completion. **Lab Fee: \$16.25**

EDUC 1300 - Learning Framework - 3 sem. hrs. (3-0-0) 4203015125

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 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. Three lecture hours per week. Prerequisite: None.

EDUC 1301 - Introduction to the Teaching Profession - 3 sem. hrs. (3-0-1) 1301015109

An enriched and integrated pre-service course and content experience that: 1) provides active recruitment and institutional support of students interested in a teaching career, especially in high need fields; 2) provides students with opportunities to participate in early field observations at all levels of P-12 schools with varied and diverse student populations; 3) provides students with support from college and school faculty, preferably in small cohort groups, for the purpose of introduction to and analysis of the culture of schooling and classrooms; 4) course content should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards; and 5) course must include a minimum of 16 contact hours of field experience in P-12 classrooms. Three lecture and one external hours per week. Prerequisite: None. **Co-op Fee: \$16.25**

EDUC 1325 - Principles and Practices of Multicultural Education - 3 sem. hrs. (3-0-0) 1301015209

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 communication and teaching, as well as psychosocial stressors encountered by diverse cultural groups. Three lecture hours per week. Prerequisite: None.

EDUC 2301 - Introduction to Special Populations - 3 sem. hrs. (3-0-1) 1310015109

An enriched, integrated pre-service course and content experience that: 1) provides an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic and academic diversity, and equity with an emphasis on factors that facilitate learning; 2) provides students with opportunities to participate in early field observations of P-12 special populations; 3) course content should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities

standards. 4) course must include a minimum of 16 contact hours of field experience in P-12 classrooms with special populations; and 5) pre-requisite for this course is EDUC 1301. Introduction to special education including characteristics, problems, and needs of the exceptional learner. Public and private services available to the handicapped citizen. Field trips may be required. Three lecture and one external hours per week. Prerequisite: EDUC 1301. **Co-op Fee: \$16.25**

ELPT 1429 - Residential Wiring - 4 sem. hrs. (3-3-0) 46.0301

Wiring methods for single family and multi-family dwellings. Includes load calculations, service entrance sizing, proper grounding techniques, and associated safety procedures. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

EMAP 1345 - Texas Hazard Mitigation and Debris Management - 3 sem. hrs. (3-0-0)

Hazard mitigation process and available methodologies which, when applied, will contribute to reducing the vulnerability of a jurisdiction. Includes an in-depth study of potential funding mechanisms including the Hazard Mitigation Grant Program. Three lecture hours per week. Prerequisite: None.

EMAP 1400 - Principles of Basic Emergency Management - 4 sem. hrs. (4-0-0)

Overview of the Texas Emergency Management System and the concepts of emergency management and its integration of systems, basic definitions, identification of hazards and their analyses. Includes the role of the local emergency manager, coordination of systems and agreements among various governments, request for state assistance during an emergency, hazardous materials planning, emergency management-related grants, and availability of surplus property. This course is equivalent to the Texas Department of Emergency Management and the Federal Emergency Management Agency courses G230 and G610. Four lecture hours per week. Prerequisite: None.

EMAP 1440 - Texas Exercise Design and Incident Command - 4 sem. hrs. (4-0-0)

Twelve-step process in the development of emergency management exercises, beginning with assessing a jurisdiction's exercise needs and continuing through criteria-based evaluation and after-action reporting. Provides students with detailed information concerning the system for command, control, and coordination of emergency response. This course is equivalent to the Texas Department of Emergency Management and the Federal Emergency Management Agency courses G920 and G193. Four lecture hours per week. Prerequisite: None.

EMAP 2300 - Developing Volunteer Resources and Decision Making - 3 sem. hrs. (3-0-0)

Management of volunteer services. Includes system/needs analysis, program definition, volunteer role/task definition, job descriptions, publicity and recruitment, training, interviewing techniques, maintenance, and liability issues. Emphasizes decision-making, problem solving, and effective donation management planning and implementation. This course is equivalent to the Texas Department of Emergency Management and the Federal Emergency Management Agency courses G241 and G288. Three lecture hours per week. Prerequisite: None.

EMAP 2301 - Leadership and Effective Communication - 3 sem. hrs. (3-0-0)

Analysis of personal and group dynamics in an emergency management setting. Supports all facets of interaction in the emergency management arena through an in-depth study of how people communicate. Examines the interpretation of the spoken and unspoken word and the effective utilization of public information processes of print, radio, and television media. This course is equivalent to the Texas Department of Emergency Management and the Federal Emergency Management Agency courses G240 and G242. Three lecture hours per week. Prerequisite: None.

EMSP 1160 - Clinical - Emergency Medical Technology/Technician - 1 sem. hrs. (0-0-6)

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. Six external experience hours per week. Prerequisite: None. **Co-op Fee: \$24**

EMSP 1501 - Emergency Medical Technician - Basic - 5 sem. hrs. (3-6-0)

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. Three lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ENGL 0101 - Basic English Lab - 1 sem. hrs. (0-4-0) 3201085312

Basic English is a course designed to teach students to recognize and write well-formed sentences and paragraphs according to the conventions of standard edited American English. Skills emphasized in the course are correct word usage, spelling, grammar, and punctuation. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. ENGL 0101 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ENGL 0102 - Developmental Writing Lab - 1 sem. hrs. (0-4-0) 3201085312

Developmental writing focuses on specific skills necessary for successfully completing college-level writing assignments, especially essays. This course is designed to help students structure their writing and refine their English language skills to conform to the conventions of edited American English. Writing objectives include recognizing purpose and audience, unity and focus, development, effective organization, effective sentences, and edited American English usage. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. ENGL 0102 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ENGL 0301 - Basic English - 3 sem. hrs. (3-1-0) 3201085312

Basic English is a course designed to teach students to recognize and write well-formed sentences and paragraphs according to the conventions of standard edited American English. Skills emphasized in the course are correct word usage, spelling, grammar, and punctuation. ENGL 0301 may not be counted for local credit toward an associate degree or certificate and is not transferable. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

ENGL 0302 - Developmental Writing - 3 sem. hrs. (3-1-0) 3201085312

Developmental writing focuses on specific skills necessary for successfully completing college-level writing assignments, especially essays. This course is designed to help students structure their writing and refine their English language skills to conform to the conventions of edited American English. Writing objectives include recognizing purpose and audience, unity and focus, development, effective organization, effective sentences, and edited American English usage. ENGL 0302 may not be counted for local credit toward an associate degree or certificate and is not transferable. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

ENGL 1301 - Composition I - 3 sem. hrs. (3-0-0) 2304015112

Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus on writing the academic essay as a vehicle for learning, communicating, and critical analysis. Three lecture hours per week. Prerequisite: None.

ENGL 1302 - Composition II - 3 sem. hrs. (3-0-0) 2304015112

Intensive study of and practice in the strategies and techniques for developing research-based expository and persuasive texts. Emphasis on effective and ethical rhetorical inquiry, including primary and secondary research methods; critical reading of verbal, visual, and multimedia texts; systematic evaluation, synthesis, and documentation of information sources; and critical thinking about evidence and conclusions. Applies composition skills to the study and analysis of poetry, the short story, drama, the essay, and/or the novel. An analytic research paper utilizing the MLA format is required. Three lecture hours per week. Prerequisite: ENGL 1301.

ENGL 2307 - Creative Writing I - 3 sem. hrs. (3-0-0) 2305015112

Practical experience in the techniques of imaginative writing. May include fiction, nonfiction, poetry, or drama. A course for beginning writers who have fair mastery of English fundamentals. Provides training and practice in writing. Three lecture hours per week. Prerequisite: ENGL 1301.

ENGL 2308 - Creative Writing II - 3 sem. hrs. (3-0-0) 2305015112

Practical experience in the techniques of imaginative writing. May include fiction, nonfiction, poetry, screenwriting, or drama. A continuation of ENGL 2307. Further attention given to the creative process as it applies to the written word. Three lecture hours per week. Prerequisite: ENGL 2307.

ENGL 2311 - Technical and Business Writing - 3 sem. hrs. (3-0-0) 2311015112

Intensive study of and practice in professional settings. Focus on the types of documents necessary to make decisions and take action on the job, such as proposals, reports, instructions, policies and procedures, e-mail messages, letters, and descriptions of products and services. Practice individual and collaborative processes involved in the creation of ethical and efficient documents. Principles of composition and rhetoric applied to writing in technical, scientific, and other professional fields. Includes the writing of memoranda, letters, e-mail, abstracts, resumes, and reports. Three lecture hours per week. Prerequisite: ENGL 1301.

ENGL 2322 - British Literature I - 3 sem. hrs. (3-0-0) 2308015112

A survey of the development of British literature from the Anglo-Saxon period to the Eighteenth Century. Students will study works of prose, poetry, drama, and fiction in relation to their historical, linguistic, and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Emphasis is given to The Middle Ages through The Eighteenth Century. Readings from an anthology. Parallel study of a history of British literature. Three lecture hours per week. Prerequisite: ENGL 1301 and ENGL 1302.

ENGL 2323 - British Literature II - 3 sem. hrs. (3-0-0) 2308015112

A survey of the development of British literature from the Romantic period to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Emphasis is given to The Romantic Period through the present. Readings from an anthology. Parallel study of a history of British literature. Three lecture hours per week. Prerequisite: ENGL 1301 and ENGL 1302.

ENGL 2327 - American Literature I - 3 sem. hrs. (3-0-0) 2307015112

A survey of American literature from the period of exploration and settlement through the Civil War. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Significant American prose and poetry to 1865. Three lecture hours per week. Prerequisite: ENGL 1301 and ENGL 1302.

ENGL 2328 - American Literature II - 3 sem. hrs. (3-0-0) 2307015112

A survey of American literature from the Civil War to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Significant American prose and poetry from 1865 to the present. Three lecture hours per week. Prerequisite: ENGL 1301 and ENGL 1302.

ENGL 2332 - World Literature I - 3 sem. hrs. (3-0-0) 1601045213

A survey of world literature from the ancient world through the sixteenth century. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. This course is built around selected readings chosen from the masterpieces of the world's great literature. Includes readings from many

countries while emphasizing literature of the Western World through the early Renaissance. Three lecture hours per week. Prerequisite: ENGL 1301 and ENGL 1302.

ENGL 2333 - World Literature II - 3 sem. hrs. (3-0-0) 1601045213

A survey of world literature from the seventeenth century to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. The second semester of World Literature begins with the Renaissance and continues to the present time. Reading will be selected from the masterpieces of this period with the emphasis placed on those of the Western World. Three lecture hours per week. Prerequisite: ENGL 1301 and ENGL 1302.

ENGR 1201 - Introduction to Engineering - 2 sem. hrs. (2-0-0) 1401015110

An introduction to the engineering profession with emphasis on technical communication and team-based engineering design. Two lecture hours per week. Prerequisite: None.

ENGR 2301 - Engineering Mechanics - Statics - 3 sem. hrs. (3-0-0) 1411015310

Calculus-based study of composition and resolution of forces, equilibrium of force systems, friction, centroids, and moments of inertia. Three lecture hours per week. Prerequisite: MATH 2313. Co-requisite: MATH 2314.

ENGR 2302 - Engineering Mechanics: Dynamics - 3 sem. hrs. (3-0-0) 1411015310

Calculus-based study of dynamics of rigid bodies, force-mass-acceleration, work-energy, and impulse-momentum computation. Three lecture hours per week. Prerequisite: ENGR 2301. Co-requisite: MATH 2415.

ENGR 2303 - Engineering Mechanics - Statics and Dynamics - 3 sem. hrs. (3-0-0) 1411015310

Combined, single-semester study of statics and dynamics. Calculus-based study of dynamics of rigid bodies, force-mass acceleration, work energy, and impulse-momentum computation. Three lecture hours per week. Prerequisite: MATH 2413 and PHYS 2425.

ENGR 2304 - Programming for Engineers - 3 sem. hrs. (2-3-0) 1102015207

Introduction to computer programming. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes coverage of language syntax, data and file structures, input/output devices, and disks/files. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ENGR 2305 - Circuits I for Electrical Engineering - 3 sem. hrs. (3-0-0) 1410015110

Principles of electrical circuits and systems. DC, transient, and sinusoidal steady-state analysis. Three lecture hours per week. Prerequisite: MATH 2414. Co-requisite: PHYS 2426.

ESLC 0300 - ESLG Basic ESL Grammar - 3 sem. hrs. (1-2-0) 3201085512

Principles and techniques of composition and reading. Open only to non-native speakers. This course is a high beginner-intermediate integrated writing, reading, speaking, and listening course, with a focus on grammar skills and academic communication, specifically designed for non-native speakers of English. Students will develop basic reading comprehension and vocabulary as well as engage in writing sentences, short narratives, explanations, and descriptions with practice in the principles and conventions of standard edited English grammar. ESLC0300 may not be counted for local credit toward an associate degree or certificate and is not transferable. One lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

ESLG 0201 - Intermediate ESL Grammar - 2 sem. hrs. (1-2-0) 3201085712

Develops writing skills, including standard English usage, organization of ideas, and application of grammar, in speakers of languages other than English and prepares them to function in an English speaking society. This course provides intensive study on the fundamentals of English grammar and structure in preparation of college level writing courses. (Equivalent to ENG-0301.) ESLG0201 may not be counted for local credit toward an associate degree or certificate and is not transferable. One lecture and two laboratory hours per week. Prerequisite: LOEP score on USM 170 or greater and Essay 4 or greater. Co-requisite: ESLW 0201 (Student must be co-enrolled). **Lab Fee: \$24**

ESLG 0202 - Advanced ESL Grammar - 2 sem. hrs. (1-2-0) 3201085712

Develops writing skills, including standard English usage, organization of ideas, and application of grammar, in speakers of languages other than English and prepares them to function in an English speaking society. This course is an advanced grammar course of the academic credit ESL sequence and is designed for advanced level students. This course is the highest level of grammar courses offered in the Credit-ESL Program. Emphasis is placed on the application of complex grammatical structures in the writing process. (Equivalent to ENGL-0302.) ESLG0202 may not be counted for local credit toward an associate degree or certificate and is not transferable. One lecture and two laboratory hours per week. Prerequisite: ELSG 0201. Co-requisite: ESLW 0202 (Student must be co-enrolled). **Lab Fee: \$24**

ESLG 0300 - Basic ESL Grammar - 3 sem. hrs. (2-2-0) 3201085512

Principles and techniques of English grammar. Open only to non-native speakers. This course is a high beginner-low intermediate integrated grammar, writing, reading, speaking, and listening course, with a focus on grammar skills and academic communication. Students will develop the basic principles and conventions of standard edited English grammar, reading comprehension and vocabulary as well as engage in writing sentences, short narratives, explanations. ESLG0300 may not be counted for local credit toward an associate degree or certificate and is not transferable. Two lecture and two laboratory hours per week. Prerequisite: None. Co-requisite: None. **Lab Fee: \$16.25**

ESLR 0301 - Basic ESL Reading and Vocabulary - 3 sem. hrs. (3-1-0) 3201085612

Develops reading fluency and vocabulary in speakers of languages other than English and prepares them to function in an English-speaking society. This course is a low-intermediate reading course that will provide students with extensive reading opportunities.

Students will study and practice basic reading skills including vocabulary development, comprehension improvement, and oral reading ability. Students will develop and refine syntactical and contextual strategies while they read and analyze various types of genres, including novels, short stories, essays, and poetry. Examples of different multicultural literature are included. ESLR0301 may not be counted for local credit toward an associate degree or certificate and is not transferable. Three lecture and one laboratory hours per week. Prerequisite: LOEP score on USM 57-169, Essay 3 or less, Reading 57-101. **Lab Fee: \$16.25**

ESLR 0302 - Intermediate ESL Reading and Vocabulary - 3 sem. hrs. (3-1-0)

Develops reading fluency and vocabulary in speakers of languages other than English and prepares them to function in an English-speaking society. This course is an intermediate reading course that provides students with extensive reading opportunities and continued immersion into the English language. Students will study and practice basic reading skills including vocabulary development, comprehension improvement, and reading fluency. Students will develop contextual strategies while they read and analyze various types of genres, including novels, short stories, essays, and poetry. Examples of different multicultural literature are included. ESLR0302 may not be counted for local credit toward an associate degree or certificate and is not transferable. Credit: Three semester credit hours. Three lecture and one laboratory hours per week. Three lecture and one laboratory hours per week. Prerequisite: ESLR0301 or LOEP score on USM 57-169, Essay 3 or less, Reading 57-101. **Lab Fee: \$16.25**

ESLR 0303 - Advanced ESL Reading and Vocabulary - 3 sem. hrs. (3-1-0)

Develops reading fluency and vocabulary in speakers of languages other than English and prepares them to function in an English-speaking society. This course is a high-intermediate to low-advanced reading course that provides students with extensive reading opportunities. Students will study and practice essential reading skills including academic vocabulary development, comprehension, analysis and advanced fluency. Students will develop and refine syntactical and contextual strategies while they read and analyze various types of genres, including novels, short stories, essays, and poetry. Examples of different multicultural literature are included. ESLR0303 may not be counted for local credit toward an associate degree or certificate and is not transferable. Three lecture and one laboratory hours per week. Prerequisite: ESLR 0302 or LOEP score on USM 57-169, Essay 3 or less, Reading 57-101. **Lab Fee: \$16.25**

ESLW 0201 - Intermediate ESL Writing - 2 sem. hrs. (1-2-0) 3201085712

Develops writing skills, including standard English usage, organization of ideas, and application of grammar, in speakers of languages other than English and prepares the student to function in an English speaking society or continue to expand their academic language proficiency. This course is a low-advanced composition course of the academic credit ESL sequence and is designed for low-advanced level students. The course provides extensive study of basic writing skills in preparation for higher level writing courses. Students write paragraphs and short essays and develop an awareness of correct grammar, usage, and mechanical skills. (Equivalent to ENG-0301.) ESLW0201 may not be counted for local credit toward an associate degree or certificate and is not transferable. One lecture and two laboratory hours per week. Prerequisite: LOEP score on USM 170 or greater and Essay 4 or greater. Co-requisite: ESLG 0201 (Student must be co-enrolled). **Lab Fee: \$24**

ESLW 0202 - Advanced ESL Writing - 2 sem. hrs. (1-2-0) 3201085712

Develops writing skills, including standard English usage, organization of ideas, and application of grammar, in speakers of languages other than English and prepares them to function in an English speaking society. This course is an advanced composition course of the academic credit ESL sequence and is designed for advanced level students. This course is designed for English as a Second Language or bilingual students who need further training and practice in expository writing and conventional language skills in preparation for higher level writing courses. Emphasis is on writing of full length essays and research techniques. (Equivalent to ENG-0302.) ESLW0202 may not be counted for local credit toward an associate degree or certificate and is not transferable. One lecture and two laboratory hours per week. Prerequisite: ELSW 0201. Co-requisite: ESLG 0202. **Lab Fee: \$24**

FORS 2440 - Introduction to Forensic Science - 4 sem. hrs. (4-4-0) 4301065124

Survey of the procedures of crime scene investigation in gathering evidence and applicable scientific technologies that follow established protocols by first responders; a preview of how criminalists in forensic laboratories will process the gathered evidence presented. This course provides an introduction to the fundamentals of forensic science as articulated in crime scene investigation, evidence gathering, and preservation. Utilizing lecture and lab, established methods, techniques, and analyses of crime scene evidence is presented as students learn correct techniques of first responders to crime scenes and how evidence is analyzed in forensics labs including: trace analysis of hair and fiber, stain analysis, epithelial cell analysis, latent fingerprint analysis, DNA sequencing and other chemical analyses upon gathered evidence. Four lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

FORS 2450 - Introduction to Forensic Psychology - 4 sem. hrs. (4-0-0) 43.0106.51 24

Survey of current perspectives and technologies in the analysis of criminal mind suggested by crime scene evidence; introduction applications of forensic psychology including the history and current practice of criminal profiling in the apprehension of serial killers as sexual predators. Four lecture hours per week. Prerequisite: Psychology 2301 is required as a pre-requisite for this course. .

GEOG 1300 - Principles of Geography - 3 sem. hrs. (3-0-0) 4507015125

Introduction to the concepts which provide a foundation for continued study of geography. Includes the different elements of natural environment as related to human activities, modes of living, and map concepts. Emphasis is on physical geography. A course in the study of relation between man's physical environment-land forms, water bodies, minerals, climate- and his reaction to these natural forces as manifested by his occupation, racial status, and his religious contacts. Maps and other tools of geography are studied. Three lecture hours per week. Prerequisite: None.

GEOL 1403 - Physical Geology - 4 sem. hrs. (3-3-0) 4006015403

Principles of physical and historical geology. Study of the earth's composition, structure, and internal and external processes. Includes the geologic history of the earth and the evolution of life. Introduces the basic physical processes of the earth and their effect on man and his environment. Emphasizes plate tectonics, earth materials, weathering and the agents of erosion, and the development of landforms. The lab provides hands-on experience in rock and mineral identification and an introduction to geologic and topographic map interpretation. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

GEOL 1404 - Historical Geology - 4 sem. hrs. (3-3-0) 4006015403

Principles of physical and historical geology. Study of the earth's composition, structure, and internal and external processes. Includes the geologic history of the earth and the evolution of life. Introduces the theories of the evolution of life forms on earth. Concurrent with this study is the history of the development of landforms of North America. Lab introduces fossil identification with emphasis on fossils of Southwest Texas; also includes topographic and geologic map interpretation. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

GEOL 2289 - Academic Cooperative - 2 sem. hrs. (1-0-4) 4001015303

An instructional program designed to integrate on-campus study with practical hands-on work experience in the physical sciences. In conjunction with class seminars, the individual students will set specific goals and objectives in the scientific study of inanimate objects, processes of matter and energy, and associated phenomena. One lecture and four external hours per week. Prerequisite: None. **Co-op Fee: \$24**

GISC 1302 - Understanding Geographic Information System - 3 sem. hrs. (2-4-0)

Theory and application of geographic information science (GIS). Includes an overview of the general principles of GIS and practical experience in its use. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

GISC 1321 - Introduction to Raster-Based Geographic Information Systems (GIS) - 3 sem. hrs. (2-4-0)

Instruction in FIS data sets including raster-based information such as images or photographs, acquisition of such data, and processing and merging with vector data. Two lecture and four laboratory hours per week. Prerequisite: GISC 1302. **Lab Fee: \$24**

GOVT 2305 - Federal Government (Federal Constitution and Topics) - 3 sem. hrs. (3-0-0) 4510025125

Origin and development of the U.S. Constitution, structure and powers of the national government including the legislative, executive, and judicial branches, federalism, political participation, the national election process, public policy, civil liberties, and civil rights. Three lecture hours per week. Prerequisite: None.

GOVT 2306 - Texas Government (Texas Constitution and Topics) - 3 sem. hrs. (3-0-0) 4510025125

Origin and development of the Texas Constitution, structure and powers of state and local government, federalism and inter-governmental relations, political participation, the election process, public policy, and the political culture of Texas. Three lecture hours per week. Prerequisite: None.

HALT 1301 - Principles of Horticulture - 3 sem. hrs. (2-3-0)

An overview of the horticulture industry, plant science, terminology, classification, propagation, environmental responses, and careers and opportunities in the field of horticulture. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HALT 2314 - Plant Propagation - 3 sem. hrs. (2-3-0)

A study of the sexual and asexual propagation of plants used in horticulture. Topics include propagation by seeds, cuttings, grafting, budding, layering, division, separation, and tissue culture; and environmental factors of propagation. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HART 1403 - Air Conditioning Control Principles - 4 sem. hrs. (2-6-0)

A basic study of HVAC and refrigeration controls; troubleshooting of control components; emphasis on use of wiring diagrams to analyze high and low voltage circuits; a review of Ohm's law as applied to air conditioning controls and circuits. Two lecture and six laboratory hours per week. Prerequisite: CETT 1402 and HART 1407 or approval of instructor. **Lab Fee: \$24; Uniform Fee: \$50**

HART 1407 - Refrigeration Principles - 4 sem. hrs. (2-6-0)

An introduction to the refrigeration cycle, heat transfer theory, temperature/pressure relationship, refrigerant handling, refrigeration components and safety. Two lecture and six laboratory hours per week. Prerequisite: CETT 1402 or approval of instructor. **Lab Fee: \$24;**

HART 1441 - Residential Air Conditioning - 4 sem. hrs. (2-6-0)

A study of components, applications, and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair, and charging of air conditioning systems. Two lecture and six laboratory hours per week. Prerequisite: CETT 1402 or HART 1407 or approval of instructor. **Lab Fee: \$24; Employment Ready Testing \$15.00**

HART 1445 - Gas and Electric Heating - 4 sem. hrs. (2-6-0)

Study of the procedures and principles used in servicing heating systems including gas fired furnaces and electric heating systems. Two lecture and six laboratory hours per week. Prerequisite: CETT 1402 and HART 1403 or approval of instructor. **Lab Fee: \$24**

HART 2436 - Air Conditioning Troubleshooting - 4 sem. hrs. (2-6-0)

An advanced course in application of troubleshooting principles and use of test instruments to diagnose air conditioning and refrigeration components and system problems including conducting performance tests. Two lecture and six laboratory hours per week. Prerequisite: CETT 1402, HART 1403, HART 1407, HART 1441, HART 2442 and HART 1445 or approval of instructor. **Lab Fee: \$24**

HART 2438 - Air Conditioning Installation and Startup - 4 sem. hrs. (2-6-0)

A study of air conditioning system installation, refrigerant piping, condensate disposal, and air cleaning equipment with emphasis on startup and performance testing. Capstone course that consolidates the student's learning experiences. Two lecture and six laboratory

hours per week. Prerequisite: CETT 1402, HART 1403 and HART 1441 or approval of instructor. **Lab Fee: \$24; EPA Certification Fee: \$20, Student End of Program Assessment Fee \$24**

HART 2442 - Commercial Refrigeration - 4 sem. hrs. (2-6-0)

Theory and practical application in the maintenance of commercial refrigeration; medium and low temperature applications and ice machines. Two lecture and six laboratory hours per week. Prerequisite: CETT 1402, HART 1407, and MAIR 1449 or approval of instructor. **Lab Fee: \$24; Other Fees: R-410 Employment Ready Testing \$25.00; Commercial Refrigeration Test \$15.00; Uniform Fee: \$50**

HART 2445 - Residential Air Conditioning Systems Design - 4 sem. hrs. (2-6-0)

Study of the properties of air and results of cooling, heating, humidifying or dehumidifying; heat gain and heat loss calculations including equipment selection and balancing the air system. Two lecture and six laboratory hours per week. Prerequisite: HART 1403, HART 1407, HART 1441 or approval of instructor. **Lab Fee: \$24; Refrigerant 410A Certification Fee: \$25**

HART 2449 - Heat Pumps - 4 sem. hrs. (2-6-0)

A study of heat pumps, heat pump control circuits, defrost controls, auxiliary heat, air flow, and other topics related to heat pump systems. Two lecture and six laboratory hours per week. Prerequisite: CETT 1402, HART 1403, HART 1407, and HART 1441. **Lab Fee: \$24; Other Fees: Heat Pump Employment Ready Test \$15.00; Uniform Fee: \$50**

HECO 1322 - Nutrition & Diet Therapy - 3 sem. hrs. (3-0-0) 1905015109

Study of the chemical, physical, and sensory properties of food; nutritional quality; and food use and diet applications. Three lecture hours per week. Prerequisite: None.

HIST 1301 - United States History I - 3 sem. hrs. (3-0-0) 5401025125

Survey of the political, social, economic, military, cultural, and intellectual history of the United States. The course examines the period from Pre-Columbian America through the United States Civil War. Topics include European and Native conflict and accommodation, European colonization, community diversity, slavery, economic growth, and the origin and development of the political and social institutions of the United States. Three lecture hours per week. Prerequisite: None.

HIST 1302 - United States History II - 3 sem. hrs. (3-0-0) 5401025125

Survey of the political, social, economic, military, cultural, and intellectual history of the United States. The course examines the historical events from the end of the Civil War to the present. Topics include Reconstruction, Expansion, Industrialization, Urbanization, Reform, American Global Power Status, World War I, the Depression, World War II, the Cold War, Demographic Change, Social Justice, and Civil Unrest. Three lecture hours per week. Prerequisite: None.

HIST 2301 - Texas History - 3 sem. hrs. (3-0-0) 5401025225

Survey of Texas from the Spanish exploration to the present. Topics include: Spanish exploration & settlement, Mexican political & social development, Anglo-American settlement & revolution, Texas independence & American statehood, and the economic & social development of modern Texas. Three lecture hours per week. Prerequisite: None.

HIST 2311 - Western Civilization I - 3 sem. hrs. (3-0-0) 5401015425

Survey of the political, social, economic, military, cultural, and intellectual development of Europe. A survey of the principal aspects of Western civilization from pre-historic times to 1660. Special attention is given to the social, religious, economic, and political development of successive periods. Three lecture hours per week. Prerequisite: None.

HIST 2312 - Western Civilization II - 3 sem. hrs. (3-0-0) 5401015425

Survey of the political, social, economic, military, cultural, and intellectual development of Europe. A continuation of the survey from 1660 to the present. These two courses are designed to serve as a foundation to further study in the history of Western Civilization. Three lecture hours per week. Prerequisite: None.

HIST 2380 - Mexican-American History - 3 sem. hrs. (3-0-0) 4511015325

Historical, economic, social, and cultural development of minority groups. May include African-American, Mexican-American, Asian-American, and Native American issues. This class covers the historical, economic, social, cultural and political development of the Mexican-American people with particular emphasis upon their contribution to the larger American society. Major topics include social conflict, accommodation, and community identification. Particular emphasis is placed on self-determination and acculturation originating from within the Mexican-American community. Three lecture hours per week. Prerequisite: None.

HMSY 1337 - Introduction to Homeland Security - 3 sem. hrs. (2-2-0)

Overview of homeland security. Evaluation of the progression of homeland security issues throughout Texas and the United States. An examination of the roles undertaken and methods used by governmental agencies and individuals to respond to those issues. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HMSY 1338 - Homeland Security Emergency Communications Management - 3 sem. hrs. (2-2-0)

Interagency communication systems. Includes mutual air associations/LEPC, standardized communications systems, and centralized communications hubs. Also covers coordinating emergency traffic, maintaining communication infrastructure security, and establishing communication alert systems and backup communication systems. Topics include political and policy basis of emergency management, technology and emergency management, mitigation, disaster recovery, and hazardous materials awareness. Includes an overview of incident command systems, terrorism and emergency management, mitigation for emergency managers, debris management, and individual and community disaster education. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HMSY 1339 - Homeland Security Emergency Contingency Planning - 3 sem. hrs. (2-4-0)

Procedures for establishing a process and structure for the systematic, coordinated, and effective delivery of emergency assistance to address the consequences of any major disaster or emergency occurring in any region of the U.S. or other countries. An Emergency Contingency Plan will be developed that outlines public and private agency responses, recovery, and mitigation available to augment local, state, and federal efforts to save lives and protect public health, safety, and property. Includes types of aid available to individuals and communities after a disaster. Also covers interagency and intergovernmental emergency preparedness, planning, training, exercises, coordination, and information exchange leading to the development of supplemental plans and procedures to implement agency response activities to rapidly and efficiently recover from the disaster or emergency. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HMSY 1340 - Homeland Security Intelligence Operations - 3 sem. hrs. (2-2-0)

A study of the intelligence community. Includes the role of intelligence and law enforcement. Topics include collection methods, cycle, management operations, classification, production and analysis, assessment of targets, and assessment of threat vulnerability. Source development and adjudication will be conducted. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HMSY 1341 - Critical Infrastructure Protection - 3 sem. hrs. (2-3-0)

Identification and analysis of critical infrastructure systems including security and threat assessments. Includes mitigation of threats as well as evaluation and revision of security measures in order to protect critical infrastructures. Capstone course that consolidates the student's learning experiences. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HMSY 1342 - Understanding and Combating Terrorism - 3 sem. hrs. (2-2-0)

Study of terrorism and reasons why America is a terrorist target. Includes methods of terrorism, domestic and international terrorism, Islam and Radical Islam, terrorist operations, cyber-terrorism, narco-terrorism, the mind of the terrorist, and organized crime's impact on terrorism. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HMSY 1343 - Weapons of Mass Destruction - 3 sem. hrs. (2-2-0)

Weapons of mass destruction and hazardous material incidents. Covers hazard and risk assessment, crime scene preservation, chemical agents, toxic industrial chemicals, biological agents, pathogens, radiological agents, explosive devices, detection-sampling and plume models, and decontamination methods. Includes an overview of incident command systems and personal protection equipment. The critical role of first responders in weapons of mass destruction, mitigation, and survival will also be presented. Discussion includes lessons learned from the Oklahoma City Bombing and events of September 11, 2001. Community mitigation plans will be researched in order to prepare for and defeat weapons of mass destruction. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HMSY 1374 - Federal Law Enforcement Operations for Border Security - 3 sem. hrs. (2-2-0)

Training in investigative and operational processes and procedures in Federal Law Enforcement Operations for border patrol officers. Includes an overview of border patrol investigations and operations, specialized techniques, and field operations. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HMSY 1375 - Immigration and Nationality Law for Border Security - 3 sem. hrs. (3-0-0)

Survey of legal issues to immigration and nationality law for border patrol officers. Includes nationality law, immigration law, liability issues, and civil rights issues. Also includes basic issues related to constitutional law, statutory authority, and criminal law. Three lecture hours per week. Prerequisite: None.

HMSY 2337 - Managing a Unified Incident Command - 3 sem. hrs. (2-4-0)

A study of the common set of procedures of the unified incident command system for organizing personnel, facilities, equipment, and communications to successfully coordinate situations such as natural disasters, fires, rescue operations, kidnappings, hazardous material spills, mass casualties, terrorism, and/or weapons of mass destruction. Includes the identification and application of key roles and functional responsibilities for professionally managing these types of incidents. Also covers one or more practical application exercises and/or scenarios. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

HRPO 2301 - Human Resources Management - 3 sem. hrs. (3-0-0)

Behavioral and legal approaches to the management of human resources in organizations. Three lecture hours per week. Prerequisite: None.

HUMA 1301 - Introduction to the Humanities I - 3 sem. hrs. (3-0-0) 2401035112

An interdisciplinary, multi-perspective assessment of cultural, political, philosophical, and aesthetic factors critical to the formulation of values and the historical development of the individual and of society. Three lecture hours per week. Prerequisite: None.

HUMA 1315 - Fine Arts Appreciation - 3 sem. hrs. (3-0-0) 5001015126

Understanding purposes and processes in the visual and musical arts including evaluation of selected works. This course may include dance, drama, and/or literary works. Three lecture hours per week. Prerequisite: None.

IBUS 1305 - Introduction to International Business and Trade - 3 sem. hrs. (3-0-0)

The techniques of entering the international marketplace. Emphasis on the impact and dynamics of sociocultural, 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. The techniques for entering the international marketplace. Emphasis on the impact and dynamics of sociocultural, 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. Three lecture hours per week. Prerequisite: None.

IBUS 1351 - Multinational Enterprises and Partnerships - 3 sem. hrs. (3-0-0)

The essential relationship between domestic and foreign business and industries engaged in shared services and production. Includes economic development through international co-production agreements with governments, technology transfer, legal, financial, labor, and management factors, and practical applications of agreements. Three lecture hours per week. Prerequisite: None.

IBUS 2345 - Import Customs Regulations - 3 sem. hrs. (3-0-0)

Duties and responsibilities of the licensed customs broker. Includes processes for customs clearance including appraisalment, bonded warehouse entry, examination of goods, harmonized tariffs, fees, bonding, penalties, quotas, immediate delivery, consumption, and liquidation, computerized systems, laws, and regulations. Three lecture hours per week. Prerequisite: None.

IMED 1301 - Introduction to Digital Media - 3 sem. hrs. (2-3-0)

A survey of the theories, elements, and hardware/software components of digital media. Emphasis on conceptualizing and producing effective digital media presentations. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

IMED 1316 - Web Design I - 3 sem. hrs. (2-3-0)

Instruction in the web page design and related graphic design issues including mark-up languages, web sites, and browsers. Basic computer skills recommended and may be tested the first week of school. If skills are not met, student will be advised to register for COSC 1401. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

IMED 2309 - Internet Commerce - 3 sem. hrs. (2-3-0)

An overview of the Internet as a marketing and sales tool with emphasis on developing a prototype for electronic commerce. Topics include dynamic data, integration, data collection, and on-line transactions. Two lecture and three laboratory hours per week. Prerequisite: None. Co-requisite: IMED 1316 and ITSW 1307. **Lab Fee: \$24**

INRW 0302 - Integrated Reading and Writing - 3 sem. hrs. (3-1-0) 32.0108.59 12

This is a combined lecture/lab, performance-based course designed to develop students critical reading and academic writing skills. The focus of the course will be on applying critical reading skills for organizing, analyzing, and retaining material and developing written work appropriate to the audience, purpose, situation, and length of the assignment. The course integrates preparation in basic academic reading skills with basic skills in writing a variety of academic essays. This is a course with a required lab. The course fulfills TSI requirements for reading and writing. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

ITNW 1313 - Computer Virtualization - 3 sem. hrs. (2-3-0)

Implement and support virtualization of clients of servers in a networked computing environment. This course explores installation, configuration, and management of computer virtualization workstation and servers. Install and configure virtual machines managers; create and network virtual machines; and set priorities for accessing resources. Move and clone virtual machines. Ensure high availability of applications within virtual machines. Lectures, projects, and exercises reinforce skills as they are learned. Two lecture and three laboratory hours per week. Prerequisite: ITSC 1305. **Lab Fee: \$24**

ITNW 1325 - Fundamentals of Networking Technologies - 3 sem. hrs. (2-3-0)

Instruction in networking technologies and their implementation. Topics include the OSI reference model, network protocols, transmission media, and networking hardware and software. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ITNW 1353 - Supporting Network Server Infrastructure - 3 sem. hrs. (3-0-0)

Installing, configuring, managing, and supporting a network infrastructure. This hands-on course is designed to prepare you for the MCSE certification exam and for the challenges you will face as a Microsoft networking professional. Lectures, projects and exercises reinforce skills as they are learned. The text includes CoursePrep Test Preparation software will help get you ready for the exam day. Three lecture hours per week. Prerequisite: None. **Lab fee: \$24.00**

ITNW 1454 - Implementing and Supporting Servers - 4 sem. hrs. (3-3-0)

Implement, administer, and troubleshoot information systems that incorporate servers in a networked computing environment. Three lecture and three laboratory hours per week. Prerequisite: ITSC 1305. **Lab Fee: \$24**

ITNW 2312 - Routers - 3 sem. hrs. (2-3-3)

Router configuration for local area networks and wide area networks. Includes Internet Protocol (IP) addressing techniques and intermediate routing protocols. error Prerequisite: ITNW 1325. **Lab Fee: \$24**

ITSC 1301 - Introduction to Computers - 3 sem. hrs. (2-3-0)

Overview of computer information systems. Introduces computer hardware, software, procedures, and human resources. Basic computer skills recommended and may be tested the first week of school. If skills are not met, student will be advised to register for POFT 1329. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ITSC 1305 - Introduction to PC Operating Systems - 3 sem. hrs. (2-3-0)

Introduction to personal computer operating systems including installation, configuration, file management, memory and storage management, control of peripheral devices, and use of utilities. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ITSC 1325 - Personal Computer Hardware - 3 sem. hrs. (2-4-0)

Current personal computer hardware including assembly, upgrading, setup, configuration, and troubleshooting. Basic computer skills recommended and may be tested the first week of school. If skills are not met, student will be advised to register for COSC 1401. The course is focused towards the CompTIA A+ Essentials, exam code 220-701. Two lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ITSC 2280 - Cooperative Education, Computer and Information Sciences, General - 2 sem. hrs. (1-0-7)

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. Capstone course that consolidates the student's learning experiences. This course should be taken the graduating semester for the A.A.S. degree. One lecture and seven external hours per week. Prerequisite: ITCC 1342 and ITNW 1454 or approval of instructor. **Co-op Fee: \$24**

ITSE 1302 - Computer Programming - 3 sem. hrs. (2-3-0)

Introduction to computer programming including design, development, testing, implementation, and documentation. Basic computer skills recommended and may be tested the first week of school. If skills are not met, student will be advised to register for COSC 1401. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

ITSW 1307 - Introduction to Database - 3 sem. hrs. (2-3-0)

Introduction to database theory and the practical applications of a database. Basic computer skills recommended and may be tested the first week of school. If skills are not met, student will be advised to register for COSC 1401. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; MOS Exam Fee: \$65; MOS Test Prep Fee: \$40**

ITSY 1342 - Information Technology Security - 3 sem. hrs. (2-3-0)

Instruction in security for network hardware, software, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses. An emphasis on acceptable use policy measures, ethical computer use, and the threats seen in the everyday world of technology. Two lecture and three laboratory hours per week. Prerequisite: ITSC 1305 and ITNW 1454. **Lab Fee: \$24**

ITSY 2300 - Operating System Security - 3 sem. hrs. (2-3-0)

Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats and monitor network security implementations. Use best practices to configure operating systems to industry security standards. Two lecture and three laboratory hours per week. Prerequisite: ITSY 1342. **Lab Fee: \$24**

ITSY 2317 - Wireless Security Development - 3 sem. hrs. (2-3-0)

Development of information security policies, standards, and guidelines for an organization. Includes Demilitarized Zone (DMZ), antivirus, Virtual Private Network (VPN), wireless communications, remote access, and other critical administrative and operational security policies. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. Emphasizes wireless security goals of availability, integrity, accuracy, and confidentiality in the design, planning, implementing, operating, and troubleshooting of wireless LAN along with appropriate planning and administrative controls. Additional material: Deal, Richard A. Cisco Pix Firewalls ISBN 10: 0072225238 ISBN 13: 9780072225235 McGraw-Hill Osborne Media Two lecture and three laboratory hours per week. Prerequisite: ITNW 1325. **Lab fee \$24.00**

ITSY 2441 - Security Management Practices - 4 sem. hrs. (3-3-0)

In-depth coverage of security management practices, including asset evaluation and risk management; cyber law and ethics issues; policies and procedures; business recovery and business continuity planning; network security design; and developing and maintaining a security plan. Three lecture and three laboratory hours per week. Prerequisite: ITNW 1453. **Lab Fee: \$24**

MAIR 1449 - Refrigerators, Freezers, Window Air Conditioners - 4 sem. hrs. (2-6-0)

Theory, sequence of operation, components and repair, electrical schematics, and troubleshooting electronic components in air conditioning and refrigeration. Emphasis on safety for the electrical, mechanical, and sealed systems. Two lecture and six laboratory hours per week. Prerequisite: CETT 1402 and HART 1407 or approval of instructor. **Lab Fee: \$24**

MATH 0101 - Basic Mathematics Lab - 1 sem. hrs. (0-4-0) 3201045119

This is a course for students who have no admission units in algebra or who show need for a review of the fundamentals of arithmetic. Topics to be covered in the course are the whole numbers, fractions, decimals, ratio and proportion, percent, measurement, geometry, arithmetic of signed numbers, solving linear equations with one variable, and consumer mathematics. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. Math 0101 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

MATH 0102 - Elementary Algebra Lab - 1 sem. hrs. (0-4-0) 3201045119

This is a course for students who have no admission units in algebra or who show need for a review of the fundamentals of introductory algebra. Topics to be covered in the course are the real number system, linear equations, and inequalities, multiplication and factoring of polynomials, rational expressions and equations, quadratic equations, radicals and rational exponents, graphing of linear and quadratic functions, systems of linear equations, and statement problems. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. MATH 0102 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

MATH 0103 - Intermediate Algebra (lab) - 1 sem. hrs. (0-4-0) 3201045212

This is a basic course in algebra which is intended for those students needing a foundation course in algebra beyond one year of high school algebra. Topics to be covered are those covered in Math 0302 and the following: quadratic inequalities, conic sections, exponential and logarithmic functions, sequences, and series. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. MATH 0103 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

MATH 0111 - Basic Mathematics Lab - 1 sem. hrs. (0-4-0) 3201045119

This is a course for students who have no admission units in algebra or who show need for a review of the fundamentals of arithmetic. Topics to be covered in the course are the whole numbers, fractions, decimals, ratio and proportion, percent, measurement, geometry, arithmetic of signed numbers, solving linear equations with one variable, and consumer mathematics. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. Math 0111 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

MATH 0112 - Elementary Algebra Lab - 1 sem. hrs. (0-4-0) 3201045119

This is a course for students who have no admission units in algebra or who show need for a review of the fundamentals of introductory algebra. Topics to be covered in the course are the real number system, linear equations, and inequalities, multiplication and factoring of polynomials, rational expressions and equations, quadratic equations, radicals and rational exponents, graphing of linear and quadratic functions, systems of linear equations, and statement problems. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. Math 0112 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

MATH 0113 - Intermediate Algebra Lab - 1 sem. hrs. (0-4-0) 3201045212

A study of relations and functions, inequalities, algebraic expressions and equations (absolute value, Polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. Four laboratory hours per week. Prerequisite: None.

MATH 0301 - Basic Mathematics - 3 sem. hrs. (3-1-0) 3201045119

This is a course for students who have no admission units in algebra or who show need for a review of the fundamentals of arithmetic. MATH 0301 may not be counted for local credit toward an associate degree or certificate and is not transferable. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**; Mandatory Access Code Fee: \$83.35

MATH 0302 - Elementary Algebra - 3 sem. hrs. (3-1-0) 3201045119

Topics in mathematics such as arithmetic operations, basic algebraic concepts and notation, geometry, and real variable solving. Applications will be demonstrated throughout. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**; **Mandatory Access Code Fee: \$83.35**

MATH 0303 - Intermediate Algebra - 3 sem. hrs. (3-1-0) 3201045219

This course is a study of relations and functions. It will demonstrate the use of algebra in the context of solving equations and inequalities. Other algebraic concepts related to absolute value, polynomial, radical and rational expressions will also be discussed with a special emphasis on linear and quadratic functions. Methods of graphing functions will be demonstrated as well as the use of systems of linear equations. Real-world applications of algebra will be modeled throughout the course. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**; Mandatory Access Code Fee: \$83.35

MATH 1314 - College Algebra - 3 sem. hrs. (3-0-0) 2701015419

This course studies various topics in the methods of solving algebraic equations and inequalities. Properties of functions including polynomials, radical, absolute value, exponential and logarithmic functions along with their transformations are shown. Linear Algebra and its applications in multi-variable problem solving is also covered. A specific emphasis on mathematical modeling and problem-solving using functions is demonstrated throughout the course. Three lecture hours per week. Prerequisite: Two years of high school algebra.

MATH 1316 - Plane Trigonometry - 3 sem. hrs. (3-0-0) 2701015319

This course covers the trigonometric functions, identities, trigonometric equations, circular measure, logarithms, addition formulas and related topics, solution of triangles, and complex numbers. Three lecture hours per week. Prerequisite: Two years high school algebra or approval of instructor. **Mandatory Access Code Fee: \$83.35**

MATH 1324 - Mathematics for Business and Social Sciences I - 3 sem. hrs. (3-0-0) 2703015219

A course designed primarily for students in business administration and economics covering functions and graphs, systems of linear equations, matrices, linear programming, and mathematics of finance. Three lecture hours per week. Prerequisite: Two years of high school algebra or Math 1314.

MATH 1325 - Mathematics for Business and Social Sciences II - 3 sem. hrs. (3-0-0) 2703015319

A continuation of MATH 1324 covering the derivative and its applications, exponential and logarithmic functions, integration and its applications to business, economics, and management. Three lecture hours per week. Prerequisite: MATH 1324.

MATH 1332 - Contemporary Mathematics I - 3 sem. hrs. (3-0-0) 2701015119

This course is directed toward students who are not majoring in sciences or engineering. Study of applied problems related to ratio, proportion, and variation; consumer mathematics; measurements and geometric concepts; introduction to probability and statistics; logic and problem solving skills involving deductive reasoning; sets; number systems; and functions involving linear, quadratic, logarithmic, and exponential equations, including applied problems involving systems of equations. Three lecture hours per week. Prerequisite: Two years of high school algebra.

MATH 1342 - Elementary Statistical Methods - 3 sem. hrs. (3-0-0) 2705015119

This course is designed to equip the student to understand and use the fundamental statistical tools in the fields of psychology, sociology, education, and the medical sciences. The course will include measures of central tendency and variability, graphic representation, correlation, normal and probability distributions, hypothesis testing, and analysis of variance. Three lecture hours per week. Prerequisite: Two years of high school algebra.

MATH 1350 - Fundamentals of Mathematics I - 3 sem. hrs. (3-0-0) 2701015619

Topics include 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. This course is designed specifically for students who seek middle grade (4-8) teacher certification. Three lecture hours per week. Prerequisite: Two years of high school algebra or Math 1314.

MATH 1351 - Fundamentals of Mathematics II - 3 sem. hrs. (3-0-0) 2701016019

Topics include 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. This course is designed specifically for students who seek middle grade (4 through 8) teacher certification. Three lecture hours per week. Prerequisite: MATH 1350, MATH 1314.

MATH 2312 - Pre-Calculus Math - 3 sem. hrs. (3-0-0) 2701015819

The application of algebra and trigonometry to the study of elementary functions and their graphs including polynomial, rational, exponential, logarithmic, and trigonometric functions. Topics from analytical geometry as well as sequences and series will be demonstrated. Three lecture hours per week. Prerequisite: Two years of high school algebra and geometry or MATH 1314 and MATH 1316. **Mandatory Access Code Fee: \$83.35**

MATH 2318 - Linear Algebra - 3 sem. hrs. (3-0-0) 2701016119

Finite dimensional vector spaces, linear transformations and matrices, quadratic forms, and eigenvalues and eigenvectors. Three lecture hours per week. Prerequisite: MATH 2414 or approval of instructor.

MATH 2320 - Differential Equations - 3 sem. hrs. (3-0-0) 2703015119

The study of linear differential equations, homogeneous and nonhomogeneous, undetermined coefficient, variations of parameter, equations of higher degree, and power series. Three lecture hours per week. Prerequisite: MATH 2414.

MATH 2413 - Calculus I - 4 sem. hrs. (4-0-0) 2701015919

This course covers the principles of the differential calculus including functions, limits, continuity as applied to differentiation. Also covers applications of differentiation such as related rate problems, maxima and minima, and curvature. Additional topics are anti-derivatives and elementary integration. Four lecture hours per week. Prerequisite: None. Co-requisite: MATH 2312 or both MATH 1314 and MATH 1316.

MATH 2414 - Calculus II - 4 sem. hrs. (4-0-0) 2701015919

This course covers the principles of integral calculus as applied to integration, areas, length of arcs, areas of surface of revolution, volumes, pressure, and work. Also includes further study of limits and differentiation; and infinite sequences and series. Four lecture hours per week. Prerequisite: MATH 2413.

MATH 2415 - Calculus III - 4 sem. hrs. (4-0-0) 2701015919

This course covers the study of vector analysis, partial differentiation, and multiple integration and their applications. Four lecture hours per week. Prerequisite: MATH 2414.

MRKG 1311 - Principles of Marketing - 3 sem. hrs. (3-0-0)

Introduction to the marketing mix functions and process. Includes identification of consumer and organizational needs and explanation of environmental issues. Identify marketing mix components in relation to market segmentation; explain the environmental factors which influence consumer and organizational decision making processes; and outline marketing plan. Three lecture hours per week. Prerequisite: None.

MUEN 1131 - Mariachi I - 1 sem. hrs. (0-3-0) 5009035626

Presents a string and brass ensemble that performs traditional folk music and modern Mexican music. Includes performances for special occasions on and off campus. Three laboratory hours per week. Prerequisite: Approval of instructor. **Lab Fee: \$24**

MUEN 1132 - Mariachi II - 1 sem. hrs. (0-3-0) 5009035626

Presents a string and brass ensemble that performs traditional folk music and modern Mexican music. Includes performances for special occasions on and off campus. Three laboratory hours per week. Prerequisite: Approval of instructor. **Lab Fee: \$24**

MUEN 2131 - Mariachi III - 1 sem. hrs. (0-3-0) 5009035626

Presents a string and brass ensemble that performs traditional folk music and modern Mexican music. Includes performances for special occasions on and off campus. Three laboratory hours per week. Prerequisite: Approval of instructor. **Lab Fee: \$24**

MUEN 2132 - Mariachi IV - 1 sem. hrs. (0-3-0) 5009035626

Presents a string and brass ensemble that performs traditional folk music and modern Mexican music. Includes performances for special occasions on and off campus. Three laboratory hours per week. Prerequisite: Approval of instructor. **Lab Fee: \$24**

MUSI 1181 - Piano Class I - 1 sem. hrs. (0-3-0) 5009075126

Class instruction in the fundamentals of keyboard technique for beginning piano students. Three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

MUSI 1182 - Piano Class II - 1 sem. hrs. (0-3-0) 5009075126

Class instruction in the fundamental of keyboard technique for beginning piano students. A continuation of MUSI 1181. Three laboratory hours per week. Prerequisite: MUSI 1181. **Lab Fee: \$24**

MUSI 1192 - Guitar Class I - 1 sem. hrs. (0-3-0) 5009115126

Class instruction in the fundamental techniques of playing and teaching guitar. Three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

MUSI 1193 - Guitar Class II - 1 sem. hrs. (0-3-0) 5009115126

Class instruction in the fundamental techniques of playing and teaching guitar. A continuation of MUSI 1192. Guitar playing and note reading for beginning students. Three laboratory hours per week. Prerequisite: MUSI 1192. **Lab Fee: \$24**

MUSI 1301 - Fundamentals of Music I - Keyboard-based - 3 sem. hrs. (3-0-0) 5009045526

Introduction to the elements of music theory: scales, intervals, keys, triads, elementary ear training, keyboard harmony, notation, meter, and rhythm. Includes written work and playing the piano (keyboard). Three lecture hours per week. Prerequisite: None.

MUSI 1303 - Fundamentals of Music - Guitar-based - 3 sem. hrs. (3-0-0) 5009045526.

Introduction to the elements of music theory: scales, intervals, keys, triads, elementary ear training, keyboard harmony, notation, meter, and rhythm. Includes written work and playing the guitar. Three lecture hours per week. Prerequisite: None.

MUSI 1304 - Foundations of Music - 3 sem. hrs. (3-0-0) 5009045426

Study of the basic fundamentals of music with an introduction to melodic, rhythmic, and harmonic instruments. Emphasis on participation in singing and reading music. Includes written work and playing the recorder. Three lecture hours per week. Prerequisite: None.

MUSI 1306 - Music Appreciation - 3 sem. hrs. (3-0-0) 5009025126

Understanding music through the study of cultural periods, major composers, and musical elements. Illustrated with audio recordings and live performances. A study of the development of the art and science of music from earliest records to the present day. Recordings of the major composers will be used to understand the cultural periods and musical elements. Three lecture hours per week. Prerequisite: None.

MUSI 2181 - Piano Class III - 1 sem. hrs. (0-3-0) 5009075126

Class instruction in the fundamentals of keyboard technique for beginning piano students. Three laboratory hours per week. Prerequisite: MUSI 1182. **Lab Fee: \$24**

MUSI 2182 - Piano Class IV - 1 sem. hrs. (0-3-0) 5009075126

Class instruction in the fundamentals of keyboard technique for beginning piano students. Three laboratory hours per week. Prerequisite: MUSI 2181. **Lab Fee: \$24**

MUSI 2192 - Guitar Class III - 1 sem. hrs. (0-3-0) 5009115126

Class instruction in the fundamental techniques of playing and teaching guitar. A continuation of class instruction in the fundamentals of guitar playing and note reading for beginning students. Three laboratory hours per week. Prerequisite: MUSI 1193. **Lab Fee: \$24**

MUSI 2193 - Guitar Class IV - 1 sem. hrs. (0-3-0) 5009115126

Class instruction in the fundamental techniques of playing and teaching guitar. A continuation of class instruction in the fundamentals of guitar playing and note reading for beginning students. Three laboratory hours per week. Prerequisite: MUSI 2192. **Lab Fee: \$24**

ORIE 0100 - New Student Orientation - 1 sem. hrs. (1-0-0) 3201015235

New Student Orientation is designed to provide information about the college's policies, procedures, and regulations. It also provides students with the knowledge of academic and technical programs, student services, use of campus resources, and student development for college success, student activities, personnel, and the Student Code of Conduct. Students transferring to SWTJC with 12 or more semester hours do not have to fulfill ORIE 0100 requirements. One lecture hour per week. Prerequisite: None.

PBAD 1321 - Public Administration - 3 sem. hrs. (3-0-0)

An introduction to the organization and management of the public sector. Topics include intergovernmental relations, overview of different levels of government program management, and management of non-profit agencies. Three lecture hours per week. Prerequisite: None.

PBAD 1341 - Governmental Agencies - 3 sem. hrs. (3-0-0)

An overview of governmental agencies and their interrelationships; goals and objectives; and organizational structure of each agency. Topics include grants-in-aid, revenue and expenditure patterns, and global influence on governmental agencies. Three lecture hours per week. Prerequisite: None.

PBAD 2305 - Public Sector Management - 3 sem. hrs. (3-0-0)

General principles of public management and strategies of dealing with internal and external systems. Topics include planning, decision-making and leadership models, organizational behavior, and resource management. Three lecture hours per week. Prerequisite: None.

PBAD 2311 - Public Sector Supervision - 3 sem. hrs. (3-0-0)

Skill development in supervisory techniques in public management. Topics include organizational structure, motivation, planning, control, delegation, and leadership. Instructional techniques may include case studies, role playing, and teamwork. Three lecture hours per week. Prerequisite: None.

PBAD 2331 - Budgeting in the Public Sector - 3 sem. hrs. (3-0-0)

Examination of revenue-producing activities and sources of funds; construction and implementation of budgets; and basic terminology, concepts, and mechanics as they relate to fiscal factors. Topics include budget cycle, taxation, bonds, indebtedness, and fund accounting. Three lecture hours per week. Prerequisite: None.

PBAD 2335 - Ethics in the Public Sector - 3 sem. hrs. (3-0-0)

Examination of reconciling the practice of public administration with provisions of law. Topics include codes of conduct, financial disclosure, conflict of interest, nepotism, and ethical dilemmas. Three lecture hours per week. Prerequisite: None.

PFPB 2409 - Residential Construction Plumbing I - 4 sem. hrs. (3-3-0) 46.0503

Skill development in the procedures and techniques employed by a plumber in the rough-in and top-out stages of a new home or the remodeling of an older home. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

PHED 1100 - Physical Activities - 1 sem. hrs. (0-3-0) 3601085123

Instruction and participation in physical and recreational activities. This includes one or more of the following: Dance for Conditioning, Swimming, Water Activities, Conditioning, Jogging for Fitness, Volleyball, Basketball, Bowling, Weight Training, Tennis, Rodeo, Racquetball, Team Sports, Soccer, and Outdoor Education. Three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

PHED 1110 - Physical Activities - 1 sem. hrs. (0-3-0) 3601085123

Instruction and participation in physical and recreational activities. This includes one or more of the following: Dance for Conditioning, Swimming, Water Activities, Conditioning, Jogging for Fitness, Volleyball, Basketball, Bowling, Weight Training, Rodeo, Racquetball, Team Sports, Soccer, and Outdoor Education. Three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

PHED 1253 - Lifeguard Training - 2 sem. hrs. (1-2-0) 3601085323

This course is designed to provide individuals with the methods and techniques for teaching all levels of swimming as sanctioned by the American Red Cross. Individual completing all requirements will receive ARC Certification. This course is to provide students the skills and knowledge needed to prevent and respond to aquatic emergencies. This course prepares candidates to recognize emergencies, respond quickly and effectively, and prevent drowning and other water related incidents. This course teaches the skills needed to become a professional lifeguard. One lecture and two laboratory hours per week. Prerequisite: To be certified as a lifeguard, student must pass a swimming test given at the beginning of the course and again at the end. The swim consists of swimming 500 yards continuously using the front crawl, breast stroke and sidestroke. Students must also be able to swim 20 yards and retrieve a brick from the bottom of the pool (8 ft. deep) and tread water for 2 minutes. **Lab Fee: \$24**

PHED 1301 - Introduction to Physical Fitness & Sport - 3 sem. hrs. (3-0-0) 3105015223

Orientation to the field of physical fitness and sport. Includes the study and practice of activities and principles that promote physical fitness. This course is an orientation to the broad field of physical education and sport. This course examines physical education's culture, social, and scientific foundations. It also includes areas of history, careers, international programs, current issues, and future directions. Three lecture hours per week. Prerequisite: None.

PHED 1304 - Personal and Community Health - 3 sem. hrs. (3-0-0) 5103015116

Investigation of the principles and practices in relation to personal and community health. Three lecture hours per week. Prerequisite: None.

PHED 1306 - First Aid - 3 sem. hrs. (3-0-0) 5103015316

Instruction in and practice of first aid techniques. This course provides students with knowledge and skills needed to help sustain life and minimize consequences of injury or sudden illness until advanced medical help arrives. The section devoted to first aid and cardiopulmonary resuscitation (CPR) is designed to meet the requirements for certification of first aid: Responding to Emergencies, Community CPR, and AED. Three lecture hours per week. Prerequisite: None.

PHED 1308 - Sports Officiating I - 3 sem. hrs. (3-0-0) 1202045109

Instruction in rules, interpretation, and mechanics of officiating selected sports. Three lecture hours per week. Prerequisite: None.

PHED 1338 - Concepts of Physical Fitness - 3 sem. hrs. (3-2-0) 3105015123

Concepts and use of selected physiological variables of fitness, individual testing and consultation, and the organization of sports and fitness programs. Three lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

PHED 2100 - Physical Activities - 1 sem. hrs. (0-3-0) 3601085123

Instruction and participation in physical and recreational activities. This includes one or more of the following: Dance for Conditioning, Swimming, Water Activities, Conditioning, Jogging For Fitness, Volleyball, Basketball, Bowling, Weight Training, Tennis, Rodeo, Racquetball, Team Sports, Soccer, and Outdoor Education. Three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

PHED 2110 - Physical Activities - 1 sem. hrs. (0-3-0) 3601085123

Instruction and participation in physical and recreational activities. This includes one or more of the following: Dance for Conditioning, Swimming, Water Activities, Conditioning, Jogging for Fitness, Volleyball, Basketball, Bowling, Weight Training, Tennis, Rodeo, Racquetball, Team Sports, Soccer, and Outdoor Education. Three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

PHIL 1301 - Introduction to Philosophy - 3 sem. hrs. (3-0-0) 3801015112

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. Special emphasis will be placed on the history of philosophical ideas. Three lecture hours per week. Prerequisite: None.

PHIL 2306 - Introduction to Ethics - 3 sem. hrs. (3-0-0) 3801015312

Classical and contemporary theories concerning the good life, human conduct in society, and moral and ethical standards. This course surveys classical and modern ethical theories. There is an examination of a variety of conduct and character based theories. The nature of human excellence, goodness, authenticity, happiness, duty and freedom are studied. Three lecture hours per week. Prerequisite: None.

PHIL 2321 - Philosophy of Religion - 3 sem. hrs. (3-0-0) 3802015312

A critical investigation of major religious ideas and experiences. This course is designed to include the concepts of the major Greek philosophers on the creation and existence of God as they relate to the Old Testament philosophy of the Hebrews. The course gives the student a working knowledge of the various periods involved with the development of monotheism in the worship of God and a background for further study. Three lecture hours per week. Prerequisite: None.

PHYS 1101 - College Physics Laboratory I - 1 sem. hrs. (0-3-0) 4008015303

This laboratory-based course accompanies PHYS 1301, College Physics I. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; emphasis will be on problem solving. Three laboratory hours per week. Prerequisite: PHYS 1301 College Physics I or. Co-requisite: PHYS 1301 College Physics I. **Lab Fee: \$24**

PHYS 1102 - College Physics Laboratory II - 1 sem. hrs. (0-3-0) 4008015303

This laboratory-based course accompanies PHYS 1302, College Physics II. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. Three laboratory hours per week. Prerequisite: PHYS 1302 College Physics II or . Co-requisite: PHYS 1302 College Physics II. **Lab Fee: \$24**

PHYS 1301 - College Physics I - 4 sem. hrs. (3-3-0) 4008015303

Algebra-level physics sequence, with laboratories, that includes studies of mechanics and heat. Three lecture and three laboratory hours per week. Prerequisite: Two years of high school algebra or equivalent. Co-requisite: PHYS 1101 University Physics I Laboratory. **Lab Fee: \$24**

PHYS 1302 - College Physics II - 4 sem. hrs. (3-3-0) 4008015303

Algebra-level physics sequence, with laboratories, that includes introduction to waves, electricity and magnetism. and modern physics. Three lecture and three laboratory hours per week. Prerequisite: PHYS 1301 College Physics I; PHYS 1101 College Physics I Laboratory. Co-requisite: PHYS 1102 College Physics II Laboratory. **Lab Fee: \$24**

PHYS 1405 - Elementary Physics I - 4 sem. hrs. (3-3-0) 4008015103

Conceptual level survey of topics in physics intended for liberal arts and other non-science majors. This course is designed for the business major, education major, or liberal arts major, and is not recommended for students majoring in mathematics, biology, chemistry, physics, pre-engineering, or any other physical or life sciences. Concepts and fundamental principles of mechanics, heat and sound are presented in both lecture and laboratory settings with minimum use of mathematics. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

PHYS 1407 - Elementary Physics II - 4 sem. hrs. (3-3-0) 4008015103

Conceptual level survey of topics in physics intended for liberal arts and other non-science majors. This course is designed for the business major, education major, or liberal arts major, and is not recommended for students majoring in mathematics, biology, chemistry, physics, pre-engineering, or any other physical or life sciences. Concepts and fundamental principles of light, electricity and magnetism, and modern physics are presented in both lecture and laboratory settings with minimum use of mathematics. Three lecture and three laboratory hours per week. Prerequisite: PHYS 1405 or equivalent. **Lab Fee: \$24**

PHYS 2125 - University Physics Laboratory I - 1 sem. hrs. (0-3-0) 4001015303

Basic laboratory experiments supporting theoretical principles presented in PHYS 2325 involving the principles and applications of classical mechanics, including harmonic motion and physical systems; experimental design, data collection and analysis, and preparation of laboratory reports. Three laboratory hours per week. Prerequisite: PHYS 2325 University Physics I or. Co-requisite: PHYS 2325 University Physics I. **Lab Fee: \$24**

PHYS 2126 - University Physics Laboratory II - 1 sem. hrs. (0-3-0) 4001015603

Laboratory experiments supporting theoretical principles presented in PHYS 2326 involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics; experimental design, data collection and analysis, and preparation of laboratory reports. Three laboratory hours per week. Prerequisite: PHYS 2325 University Physics I; PHYS 2125 University Physics I Laboratory. Co-requisite: PHYS 2326 University Physics II. **Lab Fee: \$24**

PHYS 2325 - University Physics I - 4 sem. hrs. (3-3-0) 4008015403

Calculus-level physics course, with laboratories, that includes study of mechanics and heat. Physics is a scientific study of the basic laws of nature and the interactions between all matter. This study builds on the conceptual understanding and problem-solving skills (qualitative and quantitative) acquired in a two-semester algebra/trig based physics course successfully completed at either the high school or college level. Three lecture and three laboratory hours per week. Prerequisite: None. Co-requisite: Math 2413 (Calculus I); PHYS 2125 University Physics I Laboratory. **Lab Fee: \$24**

PHYS 2326 - University Physics II - 4 sem. hrs. (3-3-0) 4008015403

Calculus-level physics course, with laboratories, that includes studies of waves, electricity and magnetism, and geometrical/physical optics. Physics is a scientific study of the basic laws of nature and the interactions between all matter. This study builds on the conceptual understanding and problem-solving skills (qualitative and quantitative) acquired in a two-semester algebra/trig based physics course successfully completed at either the high school or college level. Three lecture and three laboratory hours per week. Prerequisite: PHYS 2425 University Physics I; PHYS 2125 University Physics I Laboratory. Co-requisite: Math 2414 (Calculus II); PHYS 2126 University Physics Laboratory II. **Lab Fee: \$24**

POFI 1349 - Spreadsheets - 3 sem. hrs. (2-3-0)

Skill development in concepts, procedures, and application of spreadsheets. This course is designed to be repeated multiple times to improve student proficiency. Basic computer skills recommended and may be tested the first week of school. If skills are not met, student will be advised to register for COSC 1301. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; MOS Exam Fee: \$65; MOS Test Prep Fee: \$40**

POFI 2301 - Word Processing - 3 sem. hrs. (2-3-0)

Word processing software focusing on business applications. This course is designed to be repeated multiple times to improve student proficiency. Basic computer skills recommended and may be tested the first week of school. If skills are not met, student will be advised to register for POFT 1329. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; MOS Exam Fee: \$65; MOS Test Prep Fee: \$40**

POFI 2331 - Desktop Publishing - 3 sem. hrs. (2-3-0)

In-depth coverage of desktop publishing terminology, text editing, and use of design principles. Emphasis on layout techniques, graphics, multiple page displays and business applications. Two lecture and three laboratory hours per week. Prerequisite: POFI 2301. **Lab Fee: \$24**

POFL 1303 - Legal Office Procedures - 3 sem. hrs. (2-3-0)

This course presents the fundamental administrative duties of support personnel in a law office including issues involved operating within social, organizational, and technological systems. Two lecture and three laboratory hours per week. Prerequisite: Basic word processing skills. **Lab Fee: \$24**

POFL 1305 - Legal Terminology - 3 sem. hrs. (3-0-0)

This course presents an overview of the areas of law and legal professions, including spelling, pronunciation, and definition of legal terms. Three lecture hours per week. Prerequisite: None.

POFL 2301 - Legal Document Processing - 3 sem. hrs. (2-3-0)

Skill development in the production of legal documents used in the legal and court systems. Student will utilize editing and proofreading skills and knowledge to produce error-free legal documents; and produce legal documents appropriate to the needs of the local legal community. Two lecture and three laboratory hours per week. Prerequisite: POFL 1305 and POFI 2301. **Lab Fee: \$24**

POFM 1300 - Medical Coding Basics - 3 sem. hrs. (3-0-0)

This course introduces the student to presentation and application of basic coding rules, principles, guidelines, and conventions utilizing various coding systems. The student will be introduced to a comprehensive approach to learning and mastering procedural coding, including CPT coding, as well as additional resource information that is essential for coders. Many clinical examples are used throughout the course to provide the student with "real life" coding examples and practice. Students will be provided with a review of the human anatomy that is relevant to selecting procedural codes. Learning is reinforced by the use of anatomical illustrations and illustrations of operative procedures. Three lecture hours per week. Prerequisite: None.

POFT 1301 - Business English - 3 sem. hrs. (3-0-0)

Introduction to a practical application of basic language usage skills with emphasis on fundamentals of writing and editing for business. Three lecture hours per week. Prerequisite: POFI 2301.

POFT 1309 - Administrative Office Procedures I - 3 sem. hrs. (2-3-0)

Study of current office procedures, duties, and responsibilities applicable to an office environment. Capstone course that consolidates the student's learning experiences. This course should be taken during the second semester before the completion of the one-year certificate. Two lecture and three laboratory hours per week. Prerequisite: POFI 2301. **Lab Fee: \$24**

POFT 1313 - Professional Workforce Preparation - 3 sem. hrs. (3-0-0)

Preparation for career success including ethics, interpersonal relations, professional attire, and advancement. Three lecture hours per week. Prerequisite: None.

POFT 1325 - Business Math Using Technology - 3 sem. hrs. (2-3-0)

Skill development in business math problem-solving using electronic technology. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

POFT 1329 - Beginning Keyboarding - 3 sem. hrs. (2-3-0)

Skill development in the operation of the keyboard by touch applying proper keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

POFT 2281 - Cooperative Education - Administrative Assistant/Secretarial Science, General - 2 sem. hrs. (1-0-8)

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. Capstone course that consolidates the student's learning experiences. This course should be taken the graduating semester for the A.A.S. degree. One lecture and eight external hours per week. Prerequisite: None. **Co-op Fee: \$24**

PSYC 1300 - Learning Framework - 3 sem. hrs. (3-0-0) 42.2701.51 25

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 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. Three lecture hours per week. Prerequisite: None.

PSYC 2301 - General Psychology - 3 sem. hrs. (3-0-0) 4201015125

General Psychology is a survey of the major psychological topics, theories and approaches to the scientific study of behavior and mental processes. Three lecture hours per week. Prerequisite: None.

PSYC 2302 - Applied Psychology - 3 sem. hrs. (3-0-0) 4201015225

Survey of the applications of psychological knowledge and methods in such fields as business, industry, education, medicine, law enforcement, social work, and government work. Three lecture hours per week. Prerequisite: None.

PSYC 2314 - Lifespan Growth and Development - 3 sem. hrs. (3-0-0) 4207015125

Life-Span Growth and Development is a study of social, emotional, cognitive and physical factors and influences of a developing human from conception to death. Three lecture hours per week. Prerequisite: None.

PSYC 2315 - Psychology of Adjustment - 3 sem. hrs. (3-0-0) 4201015625

Study of the processes involved in adjustment of individuals to their personal and social environments. Three lecture hours per week. Prerequisite: None.

PSYC 2319 - Social Psychology - 3 sem. hrs. (3-0-0) 4216015125

Study of individual behavior within the social environment. May include topics such as the socio-psychological process, attitude formation and change, interpersonal relations, and group processes. Three lecture hours per week. Prerequisite: None.

RADR 1260 - Clinical-Radiologic Technology/Science-Radiographer - 2 sem. hrs. (0-0-12)

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. Content and clinical practice experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated.

Clinical practice experiences are designed to provide patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. Twelve external experience hours per week. Prerequisite: Admission to Radiologic Technology Program. **Co-op fee: \$24; Insurance Fee: \$14.50**

RADR 1311 - Basic Radiographic Procedures - 3 sem. hrs. (2-4-0)

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.

Content provides the knowledge base necessary to perform standard imaging procedures and special studies. Consideration is given to the evaluation of optimal diagnostic images.

Two lecture and four laboratory hours per week. Prerequisite: Admission to Radiologic Technology program. **Lab Fee: \$24**

RADR 1313 - Principles of Radiographic Imaging I - 3 sem. hrs. (3-0-0)

Radiographic image quality and the effects of exposure variables. Content will establish a knowledge base in the following:
-Factors that govern the image production process in analog and digital imaging.
-Fundamentals of photon interactions with matter.
-Beam restriction devices and grids. Three lecture hours per week. Prerequisite: Admission to Radiologic Technology program and RADR 2309.

RADR 1360 - Clinical-Radiologic Technology/Science-Radiographer - 3 sem. hrs. (0-0-16)

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. Content and clinical practice experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated.

Clinical practice experiences are designed to provide patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure.

Sixteen external experience hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 1260. **Co-op Fee: \$24**

RADR 1361 - Clinical-Radiologic Technology/Science-Radiographer - 3 sem. hrs. (0-0-15)

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.

Content and clinical practice experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated.

Clinical practice experiences are designed to provide patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. Fifteen external experience hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 1360. **Co-op Fee: \$24**

RADR 1362 - Clinical-Radiologic Technology/Science-Radiographer - 3 sem. hrs. (0-0-15)

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. Content and clinical practice experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated.

Clinical practice experiences are designed to provide patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. Fifteen external experience hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 1361. **Co-op Fee: \$24**

RADR 1409 - Introduction to Radiography and Patient Care - 4 sem. hrs. (3-3-0)

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 profession and to the health care system. Patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, and basic pharmacology are also included.

Introduction: Content provides an overview of the foundations of radiography and the practitioner's role in the health care delivery system. Principles, practices and policies of health care organizations are examined and discussed in addition to the professional responsibilities of the radiographer.

Patient Care: Content provides the concepts of optimal patient care, including consideration for the physical and psychological needs of the patient and family. Routine and emergency patient care procedures are described, as well as infection control procedures using standard precautions. The role of the radiographer in patient education is identified.

Medical Terminology: Content provides an introduction to the origins of medical terminology. A word-building system is introduced and abbreviations and symbols are discussed. Also introduced is an orientation to understanding radiographic orders and diagnostic report interpretation. Related terminology is addressed.

Ethics and Law: Content provides a foundation in ethics and law related to the practice of medical imaging. An introduction to terminology, concepts and principles will be presented. Students will examine a variety of ethical and legal issues found in clinical practice.

Three lecture and three laboratory hours per week. Prerequisite: Admission to Radiologic Technology program.. **Lab Fee: \$24**

RADR 2217 - Radiographic Pathology - 2 sem. hrs. (2-1-0)

Disease processes and their appearance on radiographic images. Content introduces concepts related to disease and etiological considerations with emphasis on radiographic appearance of disease and impact on exposure factor selection. Two lecture and one laboratory hours per week. Prerequisite: Admission to Radiologic Technology Program. **Lab Fee: \$16.25**

RADR 2301 - Intermediate Radiographic Procedures - 3 sem. hrs. (2-4-0)

A continuation of the 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.

Content provides the knowledge base necessary to perform standard imaging procedures and special studies. Consideration is given to the evaluation of optimal diagnostic images.

Two lecture and four laboratory hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 1311. **Lab Fee: \$24**

RADR 2305 - Principles of Radiographic Imaging II - 3 sem. hrs. (3-0-0)

Radiographic imaging technique formulation. Includes equipment quality control, image quality assurance, and the synthesis of all variables in image production. Content establishes a knowledge base in factors that govern the image production process. Content imparts an understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed. Principles of digital system quality assurance and maintenance are presented. Three lecture hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 1313.

RADR 2309 - Radiographic Imaging Equipment - 3 sem. hrs. (3-0-0)

Equipment and physics of x-ray production. Includes basic x-ray circuits. Also examines the relationship of conventional and digital equipment components to the imaging process.

Content establishes a knowledge base in radiographic equipment requirements and design, factors that govern the image production process, atomic structure and terminology, nature and characteristics of radiation, x-ray production, and fundamentals of photon interactions with matter. Three lecture hours per week. Prerequisite: Admission to Radiologic Technology program.

RADR 2313 - Radiation Biology and Protection - 3 sem. hrs. (3-0-0)

Effects of Radiation exposure on biological systems. Includes typical medical exposure levels, methods for measuring and monitoring radiation, and methods for protecting personnel and patients from excessive exposure.

Content provides an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues and the body as a whole are presented. Factors affecting biological response are presented, including acute and chronic effects of radiation.

Content presents an overview of the principles of radiation protection, including the responsibilities of the radiographer for patients, personnel and the public. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations are incorporated. Three lecture hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 2309.

RADR 2331 - Advanced Radiographic Procedures - 3 sem. hrs. (2-4-0)

Continuation of positioning; alignment of the anatomical structure and equipment, evaluation of images for proper demonstration of anatomy and related pathology.

Content provides the knowledge base necessary to perform standard imaging procedures and special studies. Consideration is given to the evaluation of optimal diagnostic images.

Two lecture and four laboratory hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 2301. **Lab Fee: \$24**

RADR 2335 - Radiologic Technology Seminar - 3 sem. hrs. (2-4-0)

A capstone course focusing on the synthesis of professional knowledge, skills, and attitudes and preparation for professional employment and lifelong learning.

This course consists of a comprehensive review of all content areas included on the American Registry of Radiologic Technologist (ARRT) certification examination. Two lecture and four laboratory hours per week. Prerequisite: Admission to the Radiologic Technology Program. **Lab Fee: \$24.00**

Kettering National Assessment and Remediation Fee: \$145.00

RADR 2340 - Sectional Anatomy for Medical Imaging - 3 sem. hrs. (3-0-0)

Anatomic relationships present under various sectional orientations. Gross anatomical structures are located and identified in axial (transverse), sagittal, coronal and orthogonal (oblique) planes. Illustrations and anatomy images will be compared with MR and CT images in the same imaging planes and at the same level with applicable. the characteristic appearance of each anatomical structure as it appears on a CT, MR ad ultrasound image, when applicable, will be stressed.

Content will also provide introductory understanding of the operation of a computed tomography (CT) device and principles related to CT imaging. Three lecture hours per week. Prerequisite: Admission to the Radiologic Technology Program.

RADR 2460 - Clinical - Radiologic Technology/Science Radiographer - 4 sem. hrs. (0-0-24)

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.

Content and clinical practice experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated.

Clinical practice experiences are designed to provide patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. Twenty-four external experience hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 1362. **Co-op Fee: \$24 Insurance Fee: \$15**

RADR 2461 - Clinical-Radiologic Technology/Science-Radiographer - 4 sem. hrs. (0-0-24)

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. Content and clinical practice experiences are designed to sequentially develop, apply, critically analyze, integrate, synthesize and evaluate concepts and theories in the performance of radiologic procedures. Through structured, sequential, competency-based clinical assignments, concepts of team practice, patient-centered clinical practice and professional development are discussed, examined and evaluated.

Clinical practice experiences are designed to provide patient care and assessment, competent performance of radiologic imaging and total quality management. Levels of competency and outcomes measurement ensure the well-being of the patient preparatory to, during and following the radiologic procedure. Twenty-four external experience hours per week. Prerequisite: Admission to Radiologic Technology Program and RADR 2460. **Co-op Fee: \$24**

READ 0101 - Basic Developmental Reading Lab - 1 sem. hrs. (0-4-0) 3201085212

This course is designed to help improve vocabulary, comprehension and to establish a schematic (broad based) conceptual background for comprehension. Vocabulary improvement will be developed through the use of sight words, dictionary skills, and phonetic, contextual, and structural analysis. Comprehension improvement will be developed through application of vocabulary skills to understand concepts and organizational patterns and through material used to establish a schematic (broad base) conceptual background for future course work. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. Reading 0101 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

READ 0102 - Intermediate Developmental Reading Lab - 1 sem. hrs. (0-4-0) 3201085212

Reading 0102 focuses on improving vocabulary and comprehension. Students will cultivate the skills needed for comprehending material including: (1) determining the meaning of words and phrases through the use of sight words, and dictionary and structural analysis as well as contextual analysis; (2) identifying the main idea and supporting details through the use of transitional words and phrases; and (3) identifying a writer's purpose and point of view. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. Reading 0102 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

READ 0103 - Advanced Developmental Reading Lab - 1 sem. hrs. (0-4-0) 3201085212

Reading 0103 focuses on specific skills necessary for successfully comprehending college-level material. This course helps students develop critical thinking and basic reasoning skills that include: (1) determining the meaning of words and phrases; (2) understanding main idea and supporting details in written materials; (3) identifying a writer's purpose, viewpoint and meaning; (4) analyzing the relationship among ideas in written material and drawing conclusions; (5) using critical skills to evaluate written material; (6) applying study skills to reading assignments. Individualized study and practice are provided through programmed materials, instructional software, assignments from instructors, small group instruction, or one-to-one instruction with peer tutors supervised by lab instructors, depending on the needs of the student. READ 0103 may not be counted for local credit toward an associate degree or certificate and is not transferable. Four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

READ 0301 - Basic Developmental Reading - 3 sem. hrs. (3-1-0) 3201085212

This course is designed to help improve vocabulary, comprehension and to establish schematic (broad based) conceptual background for comprehension. Vocabulary improvement will be developed through the use of sight words, dictionary skills, and phonetic, contextual, and structural analysis. Comprehension improvement will be developed through application of vocabulary skills to understand concepts and organizational patterns and through material used to establish a schematic (broad based) conceptual background for future course work. Reading 0301 may not be counted for local credit toward an associate degree or certificate and is not transferable. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

READ 0302 - Intermediate Developmental Reading - 3 sem. hrs. (3-1-0) 3201085212

Reading 0302 focuses on improving vocabulary and comprehension. Students will cultivate the skills needed for comprehending material including (1) determining the meaning of words and phrases through the use of sight words, and dictionary and structural analysis as well as contextual analysis; (2) identifying the main idea and supporting details through the use of transitional words and phrases; and (3) identifying a writer's purpose and point of view. Reading 0302 may not be counted for local credit toward an associate degree or certificate and is not transferable. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

READ 0303 - Advanced Developmental Reading - 3 sem. hrs. (3-1-0) 3201085212

Reading 0303 focuses on specific skills necessary for successfully comprehending college-level material. This course helps students develop critical thinking and basic reasoning skills. Reading 0303 may not be counted for local credit toward an associate degree or certificate and is not transferable. Three lecture and one laboratory hours per week. Prerequisite: None. **Lab Fee: \$16.25**

RNSG 1161 - Clinical - Registered Nursing - 1 sem. hrs. (0-0-6)

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. The first clinical experience will focus on concept-based clinical activities that will introduce the student to documents including the patient clinical record. Six external experience hours per week. Prerequisite: None. **Co-Op Fee: \$24**

RNSG 1170 - Introduction to Health Care Concepts - 1 sem. hrs. (1-0-0)

An introduction to concept-based learning with emphasis on selected pathophysiological concepts with nursing applications. Concepts include acid-base balance, fluid and electrolytes, immunity, gas exchange, perfusion, metabolism, coping, and tissue integrity. One lecture hour per week. Prerequisite: None.

RNSG 1171 - Professional Nursing Concepts I - 1 sem. hrs. (1-0-0)

Introduction to professional nursing concepts and exemplars within the professional nursing roles: Member of Profession, Provider of Patient-Centered Care, Patient Safety Advocate, and Member of the Health Care Team. Content includes clinical judgment, communication, ethical-legal, evidenced-based practice, health promotion, informatics, patient-centered care, patient education, professionalism, safety, and team/collaboration. Emphasizes role development of the professional nurse. This course lends itself to a concept-based approach. One lecture hour per week. Prerequisite: None.

RNSG 1172 - Professional Nursing Competencies - 1 sem. hrs. (0-4-0)

Development of professional nursing competencies in the care of diverse patients throughout the lifespan. Emphasizes psychomotor skills and clinical reasoning in the performance of nursing procedures related to the concepts of: clinical judgment, comfort, elimination, fluid and electrolytes, nutrition, gas exchange, safety, functional ability, immunity, metabolism, mobility, and tissue integrity. Includes health assessment and medication administration. This course lends itself to a concept-based approach. Four laboratory hours per week. Prerequisite: RNSG 2172. **Lab Fee: \$24**; ATI National Assessment Exam and Remediation Fee: \$321

RNSG 1209 - Introduction to Nursing - 2 sem. hrs. (1-2-0)

Overview of nursing and the role of the professional nurse as a provider of care, coordinator of care, and member of a profession. Topics include knowledge, judgment, skills and professional values with a legal/ethical framework. This course lends itself to a blocked approach. One lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

RNSG 1271 - Professional Nursing Competencies - 2 sem. hrs. (1-3-0)

Development of professional nursing competencies in the care of diverse patients throughout the lifespan. Emphasizes psychomotor skills and clinical reasoning in the performance of nursing procedures related to the concepts of: clinical judgment, comfort, elimination, fluid and electrolytes, nutrition, gas exchange, safety, functional ability, immunity, metabolism, mobility, and tissue integrity. Includes health assessment and medication administration. This course lends itself to a concept-based approach. One lecture and three laboratory hours per week. Prerequisite: RNSG 1161. **Lab Fee: \$24**; ATI National Assessment Exam & Remediation Fee: \$321

RNSG 1301 - Pharmacology - 3 sem. hrs. (3-0-0)

Introduction to the science of pharmacology with emphasis on the actions, interactions, adverse effects, and nursing implications of each drug classification. Topics include the roles and responsibilities of the nurse in safe administration of medications within a legal/ethical framework. Three lecture hours per week. Prerequisite: RNSG 1161.

RNSG 1311 - Nursing Pathophysiology - 3 sem. hrs. (3-0-0)

Basic principles of pathophysiology emphasizing nursing applications. Topics include principles of homeostasis related to body systems. (WECM) This course builds on knowledge obtained in anatomy and physiology courses as well as clinical experience that enhance understanding of normal and abnormal indications in the selected patient population. Clear delineation of pathologic changes in human tissue will be utilized as the basis for nursing actions required to assist with patient response to morbidity and mortality. Three lecture hours per week. Prerequisite: Anatomy and Physiology I and II.

RNSG 1362 - Clinical - Registered Nursing - 3 sem. hrs. (0-0-18)

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. Clinical experience will continue to include concept-based clinical activities with a significant focus on mental health issues. Eighteen external experience hours per week. Prerequisite: RNSG 1161. **Co-Op Fee: \$24**; ATI Real Life Scenario Fee: \$100

RNSG 1441 - Common Concepts of Adult Health - 4 sem. hrs. (3-3-0)

Study of the general principles of caring for selected adult clients and families in structured settings with common medical-surgical health care needs related to each body system. Emphasis on knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

RNSG 1471 - Health Care Concepts I - 4 sem. hrs. (3-4-0)

In-depth coverage of foundational health care concepts with application through selected exemplars. Concepts include comfort, diversity, elimination, functional ability, human development, mobility, nutrition, sensory perception, sleep, thermoregulation, grief, and tissue integrity. Emphasizes development of clinical judgment skills in the beginning nurse. This course lends itself to a concept-based approach. Three lecture and four laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**; **Typhoon Fee: \$50**; ATI Real Life Scenario Fee: \$100

RNSG 2172 - Professional Nursing Concepts II - 1 sem. hrs. (1-0-0)

Expanding professional nursing concepts and exemplars within the professional nursing roles. Applying concepts of clinical judgment, communication, ethical-legal, evidenced-based practice, patient-centered care, professionalism, safety, and team/collaboration through exemplars presented in the HCC course. Introduces concept of leadership and management. Emphasizes role development of the professional nurse. This course lends itself to a concept-based approach. One lecture hour per week. Prerequisite: None. **ATI National Assessment Exam and Remediation Fee: \$321**

RNSG 2173 - Professional Nursing Concepts III - 1 sem. hrs. (1-0-0)

Application of professional nursing concepts and exemplars within the professional nursing roles. Utilizes concepts of clinical judgment, ethical-legal, evidenced-based practice, patient-centered care, professionalism, safety, and team/collaboration. Introduces the concept of quality improvement and health care organizations. Incorporates concepts into role development of the professional nurse. This course lends itself to a concept-based approach. One lecture hour per week. Prerequisite: RNSG 1362. **ATI National Assessment Exam & Remediation Fee: \$321**

RNSG 2174 - Professional Nursing Concepts IV - 1 sem. hrs. (1-0-0)

Integration of professional nursing concepts and exemplars within the professional nursing roles. Synthesizes concepts of clinical judgment, ethical-legal, evidenced-based practice, leadership and management, patient-centered care, professionalism, safety, and team/collaboration through exemplars presented in the HCC course. Emphasizes concept of quality improvement and introduces health policy. Incorporates concepts into role development of the professional nurse. This course lends itself to a concept-based approach. One lecture hour per week. Prerequisite: RNSG 2361. **ATI National Assessment Exam & Remediation Fee: \$321**

RNSG 2221 - Management of Client Care - 2 sem. hrs. (2-0-0)

Exploration of leadership and management principles applicable to the role of the nurse as a provider of care, coordinator of care, and member of a profession. Includes application of knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. (WECM) Two lecture hours per week. Prerequisite: RNSG 1227, 2213, 2260, 1343, 2360.

RNSG 2361 - Clinical - Registered Nursing - 3 sem. hrs. (0-0-18)

A health-related work-based experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Since the concept-based curriculum is an integrated curriculum, the clinical assignments can include patients on any of the institutional units that relate to the clinical objectives. Eighteen external experience hours per week. Prerequisite: RNSG 1362. **Co-op Fee: \$24; ATI Real Life Clinical Scenarios Fee: \$100**

RNSG 2362 - Clinical - Registered Nursing - 3 sem. hrs. (0-0-18)

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. Since the concept-based curriculum is an integrated curriculum, clinical assignments can include patients on any of the institutional units that relate to the clinical objectives. Eighteen external experience hours per week. Prerequisite: RNSG 2361. **Co-op Fee: \$24 ATI Real Life Scenario Fee: \$100**

RNSG 2572 - Health Care Concepts II - 5 sem. hrs. (4-4-0)

In-depth coverage of health care concepts with application through selected exemplars. Concepts include acid-base balance, coping, clotting, cognition, fluid and electrolytes, gas exchange, immunity, metabolism, nutrition, comfort, and perfusion. Provides continuing opportunities for development of clinical judgment skills. The course lends itself to a concept-based approach. Four lecture and four laboratory hours per week. Prerequisite: RNSG 1161. **Lab Fee: \$24**

RNSG 2573 - Health Care Concepts III - 5 sem. hrs. (4-4-0)

In-depth coverage of health care concepts with nursing application through selected exemplars. Concepts include cellular regulation, end of life, immunity, interpersonal relationships, human development, intracranial regulation, mood/affect, comfort, sexuality, mobility, and reproduction. Provides continuing opportunities for development of clinical judgment skills. The course lends itself to a concept-based approach. Four lecture and four laboratory hours per week. Prerequisite: RNSG 1362. **Lab Fee: \$24**

RNSG 2574 - Health Care Concepts IV - 5 sem. hrs. (4-4-0)

In-depth coverage of advanced health care concepts with nursing applications through selected exemplars. Concepts include cognition, immunity, clotting, fluid and electrolyte balance, gas exchange, metabolism, nutrition, perfusion, coping, tissue integrity, and interpersonal relationships. Continuing development of clinical judgment with integration of all program concepts. The course lends itself to a concept-based approach. Four lecture and four laboratory hours per week. Prerequisite: RNSG 2361. **Lab Fee: \$24**

SOCI 1301 - Introductory Sociology - 3 sem. hrs. (3-0-0) 4511015125

Introduction to the concepts and principles used in the study of group life, social institutions, and social processes. Study of human societies, the imprinting influence of culture, the socialization process, the formation and nature of social structure, social groups and social institution. Attention is given to variations in social interaction, status and role, and social change. Three lecture hours per week. Prerequisite: None.

SOCI 1306 - Social Problems - 3 sem. hrs. (3-0-0) 4511015225

Application of sociological principles to the major problems of contemporary society such as inequality, crime and violence, substance abuse, deviance, or family problems. (Fulfills the civic responsibility requirements.) This course explores various problems that confront American society today: personal, institutional, cultural and historical-global. Problems range from drugs, divorce, crime, mental illness, environment, alienation in modern society to economic and political conflicts that are national and global. Special attention is paid to high-tech virtual reality as a new arena for problematic social issues. Three lecture hours per week. Prerequisite: None.

SOCI 2301 - Marriage and the Family - 3 sem. hrs. (3-0-0) 4511015425

Sociological examination of marriage and family life. Problems of courtship, mate selection, and marriage adjustment in modern American society. A study of demographic trends in family and marriage, include childbearing and divorce, sociological theories of mate selection, marital interaction, and marital dissolution. Contemporary controversial issues, such as the relationship of unmarried couples, alternative marriage forms, abortion, and violence in the family, are discussed. Three lecture hours per week. Prerequisite: None.

SOCI 2306 - Human Sexuality - 3 sem. hrs. (3-0-0) 4511015325

Study of the psychological, sociological, and physiological aspects of human sexuality. This course will give students an introduction to the study of Human Sexuality. It presents fundamental issues and principles of human sexuality by utilizing cultural, legal, ethical, psychosocial, and biological perspectives. It presents current theories and research such as the landmark Masters and Johnson studies, as well as other contemporary research impacting the understanding of sexual behavior. Principles and issues of human sexuality are presented from a scientific perspective with the intent to educate adults on the fundamental of human reproduction and its cultural manifestations. Three lecture hours per week. Prerequisite: None.

SOCI 2319 - Minority Studies I - 3 sem. hrs. (3-0-0) 4511015325

Historical, economic, social, and cultural development of minority groups. May include African-American, Mexican-American, Asian-American, and Native American issues. The principal ethnic groups in American society and their sociological significance: problems of inter-group relations, social movements, and related social changes occurring on the contemporary American scene. There will be primary emphasis upon those ethnic groups living in the Southwestern part of the United States. The contributions of each of these major ethnic groups will be studied. Three lecture hours per week. Prerequisite: SOCI 1301.

SPAN 1300 - Beginning Spanish Conversation I - 3 sem. hrs. (3-0-0) 1609055413

Basic practice in comprehension and production of the spoken language. This course is strictly for those who have had no previous contact with Spanish. This course is basically oral with grammar kept to the minimum essentials. This course is designed for non-native speakers. Three lecture hours per week. Prerequisite: Approval of instructor.

SPAN 1310 - Beginning Spanish Conversation II - 3 sem. hrs. (3-0-0) 1609055413

Basic practice in comprehension and production of the spoken language. This course is designed for those who have had some type of Spanish on any level. It is also intended for those who have some speaking knowledge of the language whether it be ranch Spanish or everyday usage. This course is designed for adult education and is designed for non-Native speakers only. Three lecture hours per week. Prerequisite: SPAN 1300 or approval of instructor.

SPAN 1411 - Beginning Spanish I - 4 sem. hrs. (3-2-0) 1609055113

Fundamental skills in listening comprehension, speaking, reading, and writing. Includes basic vocabulary, grammatical structures, and culture. A study of standard elementary grammar with oral and reading exercises; early attention given to background for conversation. Part of preparation will be done in language laboratory. Three lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

SPAN 1412 - Beginning Spanish II - 4 sem. hrs. (3-2-0) 1609055113

Fundamental skills in listening comprehension, speaking, reading, and writing. Includes basic vocabulary, grammatical structures, and culture. This course is an in-depth continuation of SPAN 1411. Three lecture and two laboratory hours per week. Prerequisite: SPAN 1411 - no exceptions. **Lab Fee: \$24**

SPAN 2311 - Intermediate Spanish I - 3 sem. hrs. (3-0-0) 1609055213

Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. Rapid review of Spanish language structure, followed by intensive practice on the 1,500 word level, with emphasis on development of aural comprehension and speaking ability, supplemental written and oral exercises designed to develop self-expression and recognition ability. Reading of standard literary works. Three lecture hours per week. Prerequisite: SPAN 1411 and SPAN 1412.

SPAN 2312 - Intermediate Spanish II - 3 sem. hrs. (3-0-0) 1609055213

Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. Rapid review of Spanish language structure, followed by intensive practice on the 1,500 word level, with emphasis on development of oral comprehension and speaking ability, supplemental written and oral exercises designed to develop self-expression and recognition ability. Reading of standard literary works. Extensive written and oral work translation and original composition aimed at correct grammatical usage and ease of self-expression. Three lecture hours per week. Prerequisite: SPAN 1411, SPAN 1412, and SPAN 2311.

SPCH 1311 - Introduction to Speech Communication - 3 sem. hrs. (3-0-0) 2310015112

Theories and practice of communication in interpersonal, small group, and public speech. This course is an introduction to communication that teaches students how to effectively communicate in a given situation. Three lecture hours per week. Prerequisite: None.

SPCH 1315 - Public Speaking - 3 sem. hrs. (3-0-0) 2310015312

Research, composition, organization, delivery, and analysis of speeches for various purposes and occasions. Students put into practice the fundamental principles set out in SPCH 1311. Emphasis will be placed on types of public speaking (informative, persuasive, special occasion) in which students will deliver a variety of speeches in each area. Three lecture hours per week. Prerequisite: SPCH 1311 or SPCH 1321.

SPCH 1318 - Interpersonal Communication - 3 sem. hrs. (3-0-0) 2310015412

Theories and exercises in verbal and nonverbal communication with focus on interpersonal relationships. Three lecture hours per week. Prerequisite: SPCH 1311 or SPCH 1321.

SPCH 1321 - Business and Professional Communication - 3 sem. hrs. (3-0-0) 2310015212

The application of theories and practice of speech communication as applied to business and professional situations. This course emphasizes such things as appropriate communication between and among managers and employees. It also explores workplace interviews and improves students' ability to make effective business presentations. Three lecture hours per week. Prerequisite: None.

TECA 1303 - Families, School, and Community - 3 sem. hrs. (3-0-1) 1301015209

A study of the child, family, community, and schools, including parent education and involvement, family and community lifestyles, child abuse, and current family life issues. Course content must be aligned as applicable with State Board of Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Course includes a minimum of 16 hours of field experiences. A study of the relationship between the child, the family, the community, and early childhood educators, including a study of parent

education, family and community lifestyles, child abuse, and current issues. Three lecture and one external hours per week. Prerequisite: None. **Co-op Fee: \$16.25**

TECA 1311 - Educating Young Children - 3 sem. hrs. (3-0-1) 1312025109

An introduction to the education of the young child, including developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities, and current issues. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Course requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Course includes a minimum of 16 hours of field experiences. An introduction to the profession of early childhood education, focusing on developmentally appropriate practices, types of programs, historical perspectives, ethics, and current issues. Three lecture and one external hours per week. Prerequisite: None. **Co-op Fee: \$16.25**

TECA 1318 - Wellness of the Young Child - 3 sem. hrs. (3-0-1) 1301015309

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. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Course requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations and includes a minimum of 16 hours of field experiences. Course is a study of nutrition, health, safety, and related activities, including skill development in management of issues, guidelines, and practices in nutrition, as well as community health, hygiene, safety, and legal implications. Integration of these principles is applied to a variety of settings. Three lecture and one external hours per week. Prerequisite: None. **Co-op Fee: \$16.25**

TECA 1354 - Child Growth and Development - 3 sem. hrs. (3-0-0) 1312025209

A study of the physical, emotional, social, and cognitive factors impacting growth and development of children through adolescence. A study of the principles of normal child growth and development from conception to adolescence. Focus on physical, cognitive, social, and emotional domains of development. Three lecture hours per week. Prerequisite: None.

VNSG 1116 - Nutrition - 1 sem. hrs. (1-0-0)

Introduction to nutrients and the role of diet therapy in growth and development and in the maintenance of health. The purpose of this course is to introduce basic principles of scientific nutrition and present their application in person-centered care, i.e., nutrition throughout the life cycle, community nutrition and Health Care, and Clinical Nutrition. One lecture hour per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, and admission into the vocational nursing program.

VNSG 1122 - Vocational Nursing Concepts - 1 sem. hrs. (1-0-0)

This course teaches the basic concepts and fundamental skills that a vocational nurse needs in current practice. It is an introduction to the nursing profession and its responsibilities which include: legal and ethical issues in nursing practice as a member of the profession and health care team. Concepts related to the physical, emotional, spiritual, and psychosocial self-care of the learner/professional. This course incorporates aspects of nursing in all of the major settings in which LVNs are employed. As the role of the LVN expands, there is a need for a thorough knowledge of the nursing process and problem solving. The Nursing process is the underlying theme of this course with: 1) focus on the patient as a consumer of health care with psychosocial as well as physical needs; 2) critical thinking as a tool for learning, problem solving, and developing clinical judgment; 3) communication as an essential tool for the art and practice of nursing; 4) collaboration with other health care workers and the use of management and supervision to provide coordinated, cost-effective patient care; 5) teaching for the maintenance of wellness and promotion of self-care; and 6) integration of cultural sensitivity and cultural competence into patient care. One lecture hour per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, and admission into the vocational nursing program.

VNSG 1126 - Gerontology - 1 sem. hrs. (1-0-0)

Overview of the physical, psychosocial, and cultural aspects of the aging process. Addresses disease processes of aging. Exploration of perceptions toward care of the older adult. This course must be passed with at least an 80 in order to progress to the spring nursing semester. It is taught by Distance Learning technology. Power Point notes are provided to the student through the use of Campus Cruiser and can be downloaded if they have installed Power Point Reader previously. Class will center and focus around total respect for our older adults. The instructor will assist students to recognize the need for all seniors to remain productive and active, as well as the importance in participation in decision making regarding their own care. One lecture hour per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, and admission into the vocational nursing program.

VNSG 1136 - Mental Health - 1 sem. hrs. (1-0-0)

Introduction to the principles and theories of positive mental health and human behaviors. Topics include the history of mental health, current legal and ethical issues, cultural issues, emotional responses, coping mechanisms, and therapeutic communication skills. One lecture hour per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, and admission into the vocational nursing program.

VNSG 1138 - Mental Illness - 1 sem. hrs. (1-0-0)

Study of the human behavior with emphasis on emotional and mental abnormalities and modes of treatment incorporating the nursing process. One lecture hour per week. Prerequisite: VNSG 1116, VNSG 2331, VNSG 1323, VNSG 1122, VNSG 1136, VNSG 1329, VNSG 1126, VNSG 1227, and VNSG 1360.

VNSG 1227 - Essentials of Medication Administration - 2 sem. hrs. (1-2-0)

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. One lecture and two laboratory hours per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, and admission into the vocational nursing program. **Lab Fee: \$24**

VNSG 1230 - Maternal-Neonatal Nursing - 2 sem. hrs. (2-0-0)

Utilization of the nursing process in the assessment and management of the childbearing family. Emphasis is on the bio-psycho-socio-cultural needs of the family during the phases of pregnancy, childbirth, and the neonatal period including abnormal conditions. Two lecture hours per week. Prerequisite: VNSG 1116, VNSG 2331, VNSG 1323, VNSG 1122, VNSG 1136, VNSG 1329, VNSG 1126, VNSG 1227, VNSG 1360.

VNSG 1231 - Pharmacology - 2 sem. hrs. (2-0-0)

Fundamentals of medications and their diagnostic, therapeutic, and curative effects. Includes nursing interventions utilizing the nursing process. Two lecture hours per week. Prerequisite: VNSG 1116, VNSG 2331, VNSG 1323, VNSG 1122, VNSG 1136, VNSG 1227, AND VNSG 1360.

VNSG 1234 - Pediatrics - 2 sem. hrs. (2-0-0)

Pediatrics is the branch of medicine that deals with the child's development and care and the diseases of childhood and their treatment. The course focuses on family-centered care, wellness, health promotion, and illness prevention, and the growth and development of the child and the parent. Pediatrics is a subspecialty of medical-surgical nursing. The student is introduced to the concept of studying from simple-to-complex, and health-to-illness. Clinical problems are approached via critical thinking, using evidenced-based information, and are incorporated into the nursing process. Two lecture hours per week. Prerequisite: VNSG 1116, VNSG 2331, VNSG 1323, VNSG 1122, VNSG 1136, VNSG 1329, VNSG 1126, VNSG 1227, AND VNSG 1360.

VNSG 1323 - Basic Nursing Skills - 3 sem. hrs. (2-3-0)

Mastery of entry level nursing skills and competencies of provider of care, coordinator of care and member of a profession for a variety of health care settings. Utilization of the nursing process as the foundation for all nursing interventions. The student must pass this course with at least an 80 in order to progress to Fall B nursing semester. Two lecture and three laboratory hours per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, and admission into the vocational nursing program. **Lab Fee: \$24**

VNSG 1329 - Medical/Surgical Nursing I - 3 sem. hrs. (3-0-0)

Application of the nursing process to the care of adult patient experiencing medical-surgical conditions along the health-illness continuum in a variety of health care settings. Course focuses on the basics of health promotion and health maintenance of the adult patient, application of the nursing process, and critical thinking skills. Course will be taught utilizing Distance Learning Technology; instructors will utilize the team teaching approach to the curriculum. The vocational nursing student will be assisted to achieve the beginning level of the nursing practice continuum as Provider of Care, Coordinator of Care and Member of a Profession. The course also integrates technical skills and the use of computers into clinical practice. Three lecture hours per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, and admission into the vocational nursing program.

VNSG 1360 - Clinical - Licensed Vocational Nurse Training - 3 sem. hrs. (0-0-18)

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. 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 technical clinical instruction, supervision, evaluation, and placement is the responsibility of the college nursing faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. Eighteen external experience hours per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, and admission into the vocational nursing program. Co-requisite: VNSG 1323, VNSG 2331, VNSG 1329, VNSG 1122, VNSG 1116 Nutrition, VNSG 1126, VNSG 1136, VNSG 1227. Assessment Technologies Institute (ATI) National Assessment Exam and Remediation Fee: \$471.00. Paid by students with tuition and fees.

VNSG 1432 - Medical-Surgical Nursing II - 4 sem. hrs. (4-0-0)

Continuation of Medical/Surgical Nursing I with application of the nursing process to the care of adult patients experiencing medical-surgical conditions along the health-illness continuum in a variety of health care settings. Principles of leadership and management are included. Topics include the role of the licensed vocational nurse in the multi-disciplinary health care team; professional organizations; and continuing education. This is a capstone course that consolidates the student's learning experience. Four lecture hours per week. Prerequisite: VNSG 1116, VNSG 2331, VNSG 1323, VNSG 1122, VNSG 1136, VNSG 1329, VNSG 1126, VNSG 1227, and VNSG 1360.

VNSG 1561 - Clinical - Licensed Vocational Nurse Training - 5 sem. hrs. (0-0-29)

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. 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. Twenty-nine external experience hours per week. Prerequisite: VNSG 1116, VNSG 2331, VNSG 1323, VNSG 1122, VNSG 1136, VNSG 1329, VNSG 1126, VNSG 1227, VNSG 1360. Co-requisite: VNSG 1230, VNSG 1234, VNSG 1432, VNSG 1138, VNSG 1231. **Assessment Technologies Institute (ATI) Exam and Remediation Fee: \$441.00 (Paid by students with tuition and fees)**

VNSG 2331 - Advanced Nursing Skills - 3 sem. hrs. (2-3-0)

Mastery of advanced level nursing skills and competencies for a variety of health care settings and the utilization of the nursing process as the foundation for all nursing interventions. The student must pass this course with at least an 80 in order to progress to the Spring nursing semester. Two lecture and three laboratory hours per week. Prerequisite: BIOL 2401, BIOL 2402, PSYC 2301, PSYC 2314, VNSG 1323, and admission into the vocational nursing program. **Lab Fee: \$24**

WDWK 1413 - Cabinet Making I - 4 sem. hrs. (3-3-0)

Design and construction of base cabinets and wall cabinets for kitchens and bathrooms. Emphasis on safe use of portable and stationary power tools. Three lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

WLDG 1041 - Pipe Welding - 0 sem. hrs. (0-0-0)

This course covers pipe welding techniques and applications. Error lecture hours per week. Prerequisite: None.

WLDG 1313 - Introduction to Blueprint Reading for Welders - 3 sem. hrs. (2-3-0)

A study of industrial blueprints. Emphasis placed on terminology, symbols, graphic description, and welding processes. Includes systems of measurements and industry standards. Also includes interpretation of plans and drawings used by industry to facilitate field application and production. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

WLDG 1317 - Introduction to Layout and Fabrication - 3 sem. hrs. (2-3-0)

A fundamental course in layout and fabrication related to the welding industry. Major emphasis on structural shapes and use in construction. Two lecture and three laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Supply Fee: \$24**; Uniform fee \$60

WLDG 1323 - Welding Safety, Tools, and Equipment - 3 sem. hrs. (3-0-0)

An introduction to welding careers, equipment and safety practices, including OSHA standards for industry. Three lecture hours per week. Prerequisite: None.

WLDG 1421 - Welding Fundamentals - 3 sem. hrs. (3-0-0)

An introduction to the fundamentals of equipment used in oxy-fuel and arc welding, including welding and cutting safety, basic oxy-fuel welding and cutting, basic arc welding processes and basic metallurgy. Three lecture hours per week. Prerequisite: None. **IG Certification - \$25; Consumable Supplies Fee: \$100**

WLDG 1430 - Introduction to Gas Metal Arc Welding - 3 sem. hrs. (2-6-0)

Principles of gas metal arc welding, setup and use of Gas Metal Arc Welding(GMAW) equipment, and use of tools/equipment. Instruction in various joint designs. Two lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Supply Fee: \$24; Uniform Fee: \$60; Consumable Supplies Fee: \$250**

WLDG 1435 - Introduction to Pipe Welding - 4 sem. hrs. (3-3-0)

An introduction to welding of pipe using the shielded metal arc welding process (SMAW), including electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 1G and 2G using various electrodes. An introduction to welding of pipe using the shielded metal arc welding process (SMAW), including electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 1G and 2G using various electrodes. Three lecture and three laboratory hours per week. Prerequisite: WLDG 1425. **Lab Fee: \$24**

WLDG 1453 - Intermediate Layout and Fabrication - 4 sem. hrs. (3-3-0)

An intermediate course in layout and fabrication. Includes design and production of shop layout and fabrication. Emphasis placed on symbols, blueprints, and written specifications. Three lecture and three laboratory hours per week. Prerequisite: WLDG 1317. **Lab Fee: \$24; Supply Fee: \$24**

WLDG 1457 - Intermediate Shielded Metal Arc Welding (SMAW) - 4 sem. hrs. (3-3-0)

A study of the production of various fillets and groove welds. Preparation of specimens for testing in all test positions. Three lecture and three laboratory hours per week. Prerequisite: WLDG 1528. **Lab Fee: \$24; American Welding Society (AWS) Certification Testing Fee: \$20; Consumable Supplies Fee: \$250**

WLDG 1528 - Introduction to Shielded Metal Arc Welding - 5 sem. hrs. (3-6-0)

An introduction to shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs. Instruction provided in SMAW fillet welds in various positions. Three lecture and six laboratory hours per week. Prerequisite: None. **Lab Fee: \$24; Supply Fee: \$24**

WMGT 1164 - Practicum - Wildlife and Wildlands Science and Management - 1 sem. hrs. (0-0-8)

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Capstone course that consolidates the student's learning experiences. Eight external experience hours per week. Prerequisite: WMGT 1305, WMGT 1310. **Co-op Fee: \$24**

WMGT 1300 - Wildlife Preserve Management - 3 sem. hrs. (3-0-0)

Conventional and non-conventional wildlife management techniques applied to the most popular game species in Texas. Students will earn a certificate for scoring big game provided by the Buckmasters Trophy Records Organization. Three lecture hours per week. Prerequisite: WMGT 1305, WMGT 1310.

WMGT 1305 - Introduction to Wildlife Management - 3 sem. hrs. (3-0-0)

History of wildlife management and its initial introduction of basic management techniques for a variety of species. This course provides an introduction to historical and current wildlife and habitat management systems across forests, rangelands, and wetlands of North America. Three lecture hours per week. Prerequisite: None.

WMGT 1310 - Wildlife Identification - 3 sem. hrs. (2-2-0)

Animal, bird, and vegetation identification, and their importance in the ecosystem. Two lecture and two laboratory hours per week. Prerequisite: None. **Lab Fee: \$24**

WMGT 1315 - Wildlife Outdoor Recreation & Management - 3 sem. hrs. (3-0-0)

The commercial importance and management of various aspects of outdoor recreation. Three lecture hours per week. Prerequisite: WMGT 1305.

WMGT 2164 - Practicum - Wildlife and Wildlands Science and Management - 1 sem. hrs. (0-0-8)

Practical & general workplace training supported or directed by individualized learning plans, developed by employer or college. Capstone course that consolidates the student's learning experiences. Eight external experience hours per week. Prerequisite: WMGT 1164, WMGT 1305, WMGT 1310, WMGT 1300, AGRI 2303. **Co-op Fee: \$24**

WMGT 2359 - Wildlife Propagation, Handling & Management - 3 sem. hrs. (2-2-0)

The application of non-conventional management techniques with emphasis on animal husbandry directly related toward whitetail deer within confinement. Two lecture and two laboratory hours per week. Prerequisite: WMGT 1300, BIO 1413. **Lab Fee: \$24**