Visit the Hill College website at www.hillcollege.edu and/or contact individual departments for changes and updates.
COURSES OF INSTRUCTION

Explanation of Course Numbers

Hill College has joined with other junior/community colleges and universities in the State of Texas and has adopted the Texas Common Course Numbering System (TCCN). The purpose of the new numbering system is to improve articulation and assist students who are transferring between participating institutions.

Each course is designated by a department title and a four digit number. The first of the four digits identifies the academic level of the course. Freshman or first year courses are designated by a "1", whereas sophomore or second year courses, "2". The second digit specifies the number of semester credit hours awarded for the completion of the course. The third and fourth digits distinguish the course within a program area. For example, ENGL 1301 would be a three semester credit English course normally taken during the freshman year.

AGRICULTURE

AGRI 1131. The Agriculture Industry. (2-0)
Provide an overview of the world of agriculture, nature of the industry, resource conservation, and the American agricultural system, including production, distribution, and marketing. To provide insight regarding departmental and college programs and career opportunities in agriculture and natural resources.

AGRI 1307. Agronomy. (3-3)
Principles and practices in the development, production, and management of field crops including plant breeding, plant diseases, soils, insect control, and weed control.

AGRI 1309. Computers in Agriculture. (2-2)
Use of computers in agricultural applications. Introduction to programming languages, word processing, electronic spreadsheets, and agricultural software.

AGRI 1311. Dairy Science. (2-2)
A survey of the dairy industry including dairy breeds, standards for selection and culling, herd replacements, feeding, management, physiology, and health maintenance. Also included are food value for milk, tests for composition and quality, and use and processing of market milk and dairy products.

AGRI 1319. Introductory Animal Science. (3-3)
This course stresses the importance of scientific animal agriculture and the importance of livestock and meat industries. General factors involving selection, reproduction, nutrition, management, and marketing of beef cattle, swine, sheep, goats, and horses.
AGRI 1325. Marketing of Agriculture Products.  (3-0)  
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. Including the different types of integration.

AGRI 2313. Plant Protection.  (3-3)  
Principles and practices of controlling and preventing economic loss caused by plant pests. Includes instruction in entomology, plant pathology, weed science, crop science, environmental toxicology, and related environmental protection measures.

AGRI 2317. Introduction to Agricultural Economics.  (3-0)  
Fundamental economic principles and their applications to the problems of the industry of agriculture. A study of basic economic concepts and our economic system of today. Survey of farm and ranch management, structure and operation of our marketing system. Other studies included will be agriculture pricing, marketing principles, finance government policies, and programs affecting the agricultural economy.

AGRI 2321. Livestock Evaluation I.  (3-3)  
A study of the types and breeds, market classes and grades of farm animals. Principles of evaluation include official grading, comparison judging, carcass contests progeny testing are emphasized, together with preparation of written justification of evaluations.

AGRI 2322. Livestock Evaluation II.  (3-3)  
A continuation of AGRI 2321. Consideration of the selection, evaluation and classification of livestock and livestock products is stressed.

AGRI 2330. Wildlife Conservation and Management.  (3-1)  
Principles and practices used in the production and improvement of wildlife resources for aesthetic, ecological, and recreational uses of public and private lands.

ART  
ARTS 1301. Art Appreciation.  (3-0)  
Study of different types of visual art, focusing on the roles of art and artists in society throughout history. Topics include the elements and principles of art, an introduction to the different media, and critical evaluation.

ARTS 1303. Art History I.  (3-0)
Architecture, sculpture, painting, and other visual arts from prehistoric time to the Renaissance. The relationship of art to religion, economic, political, social, and other culture patterns.

ARTS 1304. Art History II. (3-0)
Architecture, sculpture, painting, and other visual arts in relation to styles and culture patterns from the Renaissance to the present time.

ARTS 1311. Design I. (3-3)
Introduction to the fundamentals of two-dimensional design with an emphasis on creative expression using line, value, form, shape, space, texture, and color as it relates to environment.

ARTS 1312. Design II. (3-3)
Continued theory and practice of the principles of design with an introduction to three-dimensional design as it relates to environment and industry.

ARTS 1316. Drawing I. (3-3)
A beginning course investigating a variety of media, techniques and subjects including still-life, landscape, and architectural subjects, and exploring perceptual and descriptive possibilities with consideration of drawing as a development process as well as an end itself. The course is designed for art majors as well as for the student who wishes to increase their powers of observation and drawing skills for personal enjoyment.

ARTS 1317. Drawing II. (3-3)
A continuation of Drawing I using varied media including color in the study of natural and man-made forms with emphasis on line, value, textural surfaces, foreshortening, and related to contour, gestural, and modeled drawings.

ARTS 2316. Painting I. (3-3)
An introduction to the basics of painting. Explores under painting, composition, color, and form through opaque and transparent paint techniques.

ARTS 2317. Painting II. (3-3)
In addition to the basic principle application, there will be concentration on individual techniques in the media of oil.

ARTS 2326. Metal Sculpture I. (3-3)
Exploration of ideas using sculpture media and techniques.

ARTS 2348. Digital Art I. (3-3)
A studio art course that explores the potential of the computer hardware and software medium for their visual, conceptual, and practical uses in the visual arts.

ARTS 2349. Digital Art II. (3-3)
A continued exploration of the potential of the computer hardware and software medium for their visual, conceptual, and practical uses in the visual arts. Prerequisite: ARTS 2348 or consent of the instructor.

ARTS 2356. Photography I. (3-3)
Introduction to the basics of black and white photography. Includes camera operation, techniques, knowledge of chemistry, darkroom skills and presentation. Emphasis on design, history, and contemporary trends as a means of developing an understanding of photographic aesthetics.

ARTS 2357. Photography II. (3-3)
Extends the students’ knowledge of technique and guides them in developing personal outlooks toward specific applications of the black and white photographic process. Prerequisite: Photography I or its equivalent.

ARTS 2366. Water Color I. (3-3)
An introduction to the water color medium as a means of creative expression. Topics include transparency, technique, pigment selection, and paper preparation.

AUTOMOTIVE TECHNOLOGY

AUMT 1301. Introduction and Theory to Automotive Technology. (3-0)
An introductory overview of the automotive service industry including history, safety practices, shop equipment and tools, vehicle subsystems, service publications, professional responsibilities, and automobile maintenance.

AUMT 1407. Automotive Electrical Systems. (2-8)
An overview of automotive electrical systems including topics in operational theory, testing, diagnosis, and repair of batteries, charging and starting systems, and electrical accessories. Emphasis on electrical schematic diagrams and service manuals. May be taught manufacturer specific.

AUMT 1410. Automotive Brake Systems. (2-8)
Operation and repair of drum/disc type brake systems. Emphasis on safe use of modern equipment. Topics include brake theory, diagnosis, and repair of power, manual, anti-lock brake systems, and parking brakes. May be taught with manufacturer specific instructions.

AUMT 1416. Automotive Suspension and Steering System. (2-8)
A study of automotive suspension and steering systems including tire and wheel problem diagnosis, component repair, and alignment procedures. May be taught manufacturer specific.

AUMT 1419. Automotive Engine Repair. (2-6)
Fundamentals of engine operation, diagnosis and repair. Emphasis on identification, inspection, measurements, disassembly, repair, and reassembly of the engine. May be taught manufacturer specific.

AUMT 1445. Automotive Climate Control Systems. (2-8) Theory of automotive air conditioning and heating systems. Emphasis on the basic refrigeration cycle and diagnosis and repair of system malfunctions. Covers EPA guidelines for refrigerant handling and new refrigerant replacements. May be taught manufacturer specific. Prerequisite: AUMT 1407.

AUMT 2301. Automotive Management. (3-0) Instruction in human relations, customer relations, and customer satisfaction. Emphasis on management techniques and building relationships between the service department and the customer. Student needs to be their 3rd semester of automotive classes. Permission of instructor.

AUMT 2380, 2381. Coop. Ed. – Automobile/ Automotive Mechanics/ Technology/Technician. (1-20) 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. Permission of instructor.

AUMT 2413. Automotive Drive Train and Axles. (2-8) A study of automotive clutches, clutch operation devices, manual transmissions/transaxles, and differentials with emphasis on the diagnosis and repair of transmissions/transaxles and drive lines. May be taught with manufacturer specific instructions.


AUMT 2421. Automotive Electrical Diagnosis & Repair. (2-8) 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.

AUMT 2425. Automotive Automatic Transmission & Transaxle. (2-6) 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 the special tools and repair techniques. May be taught with manufacturer specific. Prerequisite: AUMT 1407.

AUMT 2434. Automotive Engine Performance Analysis II. (2-8) A study of diagnosis and repair of emission systems, computerized engine performance systems, and advanced ignition and fuel systems; and proper use of advanced engine performance diagnostic equipment. May be taught manufacturer specific. Prerequisite: AUMT 1407.

BIOLOGY

BIOL 1322. Nutrition and Diet Therapy I. (3-0) The study of the chemical, physical, and sensory properties of food; nutritional quality; and food use and diet applications.

BIOL 1406. Biology for Science Majors I. (3-3) A study of the fundamental principles of biology. The course includes an introduction to the scientific method, physical and chemical properties of living systems, basic cellular processes, genetics, evolution, taxonomy and ecology. Biology for Science Majors. Co-requisite: Student must also enroll in lab for the course: BIOL 1106

BIOL 1407. Biology for Science Majors II. (3-3) A continuation of the study of the fundamental principles of biology. This course covers (1) basic cellular metabolism, (2) plant function, organization, responses, and reproduction, (3) organ systems of higher animals, and (4) animal behavior. Prerequisite: BIOL 1406. Biology for Science Majors. Co-requisite: Student must also enroll in lab for the course: BIOL 1107

BIOL 1408. Biology for Non-Science Majors I. (3-3) Fundamental principles of living organisms including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of reproduction, genetics, ecology, and the scientific method are included. Co-requisite: Student must also enroll in lab for the course: BIOL 1108

BIOL 1409. Biology for Non-Science Majors II. (3-3) Continuation of BIOL 1408. Co-requisite: Student must also enroll in lab for the course: BIOL 1109

BIOL 1411. General Botany. (3-3) A study of the biology of plants. The course includes an introduction to the methodology of science, the chemistry of protoplasm and cell structure and function. A survey of the major plant groups emphasizes taxonomy, morphology and ecological relationships. Flowering plants are examined in detail. Co-requisite: Student must also enroll in lab for the course: BIOL 1111
BIOL 1413. General Zoology. (3-3)
The biology of animals, from protozoa through the vertebrates. The survey of the principle animal groups is augmented with discussion of biological principles and a more detailed study of a representative vertebrate. Co-requisite: Student must also enroll in lab for the course: BIOL 1113

BIOL 2401. Anatomy and Physiology I. (3-3)
Structure and function of the human body--cell structure and function, tissues, survey of the structure and functions of the organ systems and a more detailed consideration of the integumentary, skeletal, muscular, and nervous systems.

BIOL 2402. Anatomy and Physiology II. (3-3)
Further study of the structure and function of the human body with a detailed consideration of the endocrine, circulatory, digestive, respiratory, urinary, and reproductive systems. Fluids and electrolytes are also covered. Prerequisite required: BIOL 2401.

BIOL 2406. Marine Environment. (3-3)
Study of ocean environments. This course reviews the physical, chemical, geographic, and biological aspects of the ocean. A survey of marine biota, contemporary commercial practices, and environmental issues are included. Note: This course includes several required field trips at the expense of the student. Prerequisite: ENGL 1301, MATH 1314, and 2 semester sequence of biology or approval of the instructor. Co-requisite: Student must also enroll in lab for the course: BIOL 2106

BIOL 2416. Genetics. (3-3)
Study of the principles of molecular and classical genetics and the function and transmission of hereditary material. May include population genetics and genetic engineering. Prerequisites: BIOL 1406, BIOL 1408, or BIOL 2401. Co-requisite: Student must also enroll in lab for the course: BIOL 2116

BIOL 2420. Microbiology for Non-Science Majors. (3-3)
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. Prerequisites: BIOL 1406, BIOL 1408, or BIOL 2401. Co-requisite: Student must also enroll in lab for the course: BIOL 2120

BIOL 2421. Microbiology for Science Majors (Bacteriology). (3-4)
Morphology, physiology, cultivation, identification and control of bacteria. Comparative study of the major groups of microorganisms. Consideration of the role of microorganisms in disease, food and milk, water sewage, air, soil and
industrial areas. Prerequisites: BIOL 1406, BIOL 1407, & CHEM 1411. Co-requisite: Student must also enroll in lab for the course: BIOL 2121

BUSINESS ADMINISTRATION

Business Administration courses at Hill College include accounting, general business, business management, office administration, information processing, and word processing. Related business courses include economics, data processing, management development, and management internship.

Accounting

ACCT 2401. Principles of Accounting I - Financial. (3-3)
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.

ACCT 2402. Principles of Accounting II - Managerial. (3-3)
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. Prerequisite: ACCT 2401.

ACNT 1303. Introduction to Accounting I. (2-3)
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.

ACNT 1304. Introduction to Accounting II. (2-3)
A study of accounting for merchandising, notes payable, notes receivable, valuation of receivables and equipment, and valuation of inventories in a manual and computerized environment.

Business Administration/General Business

BUSG 1315. Small Business Operations. (3-0)
Aspects of operating a small business. Emphasizes management functions including how managers plan, exercise leadership, organize, and control the operations.

BUSG 2309. Small Business Management. (3-0)
Starting and operating a small business. Includes facts about a small business, essential management skills, how to prepare a business plan, financial needs, marketing strategies, and legal issues.

BUSI 1301. Business Principles. (3-0)
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.

BUSI 2301. Business Law. (3-0)
Principles of law which form the legal framework for business activity. Major topics covered are the legal and social environment of business including ethics, the Constitution, government regulation, international trade, administrative agencies, environmental law, consumer protection, crimes, torts, and computers.

Human Relations

HRPO 1311. Human Relations. (3-0)
Practical application of the principles and concepts of the behavioral sciences to interpersonal relationships in the business and industrial environment.

HRPO 2301. Human Resources Management. (3-0)
Behavioral and legal approaches to the management of human resources in organizations.

Management

BMGT 1301. Supervision. (3-0)
A study of the role of the supervisor. Managerial functions as applied to leadership, counseling, motivation, and human skills are examined.

BMGT 1327. Principles of Management. (3-0)
Concepts, terminology, principles, theories, and issues in the field of management.

BMGT 2341. Strategic Management. (3-0)
A study of the strategic management process, including analysis of how organizations develop and implement a strategy for achieving organizational objectives in a changing environment.

Marketing

MRKG 1302. Principles of Retailing. (3-0)
Introduction to the retailing environment, types of retailers, current trends, the employment of retailing techniques, and factors that influence retailing.
MRKG 1311. Principles of Marketing. (3-0)
Introduction to the marketing functions; identification of consumer and organizational needs; explanation of economic, psychological, sociological, and global issues; and description and analysis of the importance of marketing research.

CHEMISTRY

CHEM 1406. Introductory Chemistry I (Allied Health Emphasis). (3-3)
Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiology chemistry, and environmental/consumer chemistry. Designed for allied health and non-science students. Co-requisite: Student must also enroll in lab for the course: CHEM 1106

CHEM 1411. General Chemistry I. (3-3)
General principles, fundamental laws, concepts, and theories of inorganic chemistry. A foundation course to prepare the student for further work in the sciences. Prerequisite: MATH 1314 or a higher level mathematics course, or concurrent enrollment in MATH 1314, or consent of the instructor. Co-requisite: Student must also enroll in lab for the course: CHEM 1111

CHEM 1412. General Chemistry II. (3-3)
Further exploration of chemical principles. Laboratory emphasis on analytical procedures. Prerequisite: CHEM 1411 or consent of instructor. Co-requisite: Student must also enroll in lab for the course: CHEM 1112

CHEM 2423. Organic Chemistry I. (3-3)
Study of the properties and behavior of hydrocarbon compounds and their derivatives. Designed for students in science or pre-professional programs. Co-requisite: Student must also enroll in lab for the course: CHEM 2123

CHILD CARE & DEVELOPMENT
A Flexible Entry Program

CDEC 1303. Families, School, & Community. (3-0)
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 16 hours field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations.

CDEC 1311. Educating Young Children. (3-0)
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 16 hours of field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations.

CDEC 1313. Curriculum Resources for Early Childhood Programs. (2-4)
A study of the fundamentals of curriculum design and implementation in developmentally appropriate programs for children.

CDEC 1318. Wellness of the Young Child. (2-2)
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 16 hours field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations.

CDEC 1319. Child Guidance. (2-4)
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.

CDEC 1354. Child Growth and Development. (3-0)
Physical, emotional, social, and cognitive factors impacting growth and development of children through adolescence.

CDEC 1356. Emergent Literacy for Early Childhood. (3-0)
An exploration of principles, methods, and materials for teaching young children language and literacy through a play-based integrated curriculum.

CDEC 1358. Creative Arts for Early Childhood. (2-3)
An exploration of principles, methods, and materials for teaching young children music, movement, visual arts, and dramatic play through process-oriented experiences to support divergent thinking.

CDEC 1421. Infant and Toddler. (3-3)
A study of appropriate infant and toddler programs (birth to age 3), including an overview of development, quality routines, learning environments, materials and activities, and teaching/guidance techniques.

CDEC 1459. Children with Special Needs. (3-3)
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. Prerequisite: CDEC 1354 or PSYC 2314 or consent of instructor.

CDEC 1494. Special Topics in Child Care/Provider/Assistant. (2-5)
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: CDEC 2441 or 9 hours of CDEC course work or consent of the instructor.

CDEC 1496. Special Topics in Child Care & Support Services Mgmt. (2-5)
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Sophomore standing and 34 hours of CDEC course work or consent of the instructor.

CDEC 2307. Math and Science for Early Childhood. (2-4)
An exploration of principles, methods, and materials for teaching young children math and science concepts and process skills through discovery and play.

CDEC 2366. Practicum (or Field Experience)- Child Care Provider/Assistant. (0-21)
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: CDEC 2441 or concurrent enrollment or consent of instructor.

CDEC 2426. Administration of Programs for Children I. (3-3)
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. Prerequisite: Sophomore standing and 34 hours of CDEC course work or consent of the instructor.

CDEC 2428. Administration of Programs for Children II. (3-3)
An in-depth study of the skills and techniques in managing early care and education programs, including legal and ethical issues, personnel management, team building, leadership, conflict resolution, stress management advocacy, professionalism, fiscal analysis and planning parent education/partnerships. Prerequisite: Sophomore standing and 34 hours of CDEC course work or consent of the instructor.

CDEC 2441. The School Age Child. (3-3)
A study of age appropriate programs for the school age child (5 to 13 years), including an overview of development, appropriate environments, materials and
activities, and teaching/guidance techniques. Prerequisite: CDEC 1421 or consent of instructor.

EDUC and TECA courses listed under EDUCATION

COMMUNICATION
See Computer Information Systems or Speech

COMPUTER INFORMATION SYSTEMS

ARTC 1313. Digital Publishing I. (2-4)
The fundamentals of using digital layout as a primary publishing tool and the basic concepts and terminology associated with typography and page layout.

ARTC 1325. Introduction to Computer Graphics. (2-4)
A survey of computer design concepts, terminology, processes, and procedures. Topics include computer graphics hardware, electronic images, electronic publishing, vector-based graphics, and interactive multimedia.

ARTC 1353. Computer Illustration. (2-4)
Use of the tools and transformation options of an industry-standard vector drawing program to create complex illustrations or drawings.

ARTC 2335. Portfolio Development for Graphic Design. (2-4)
Preparation of a portfolio comprised of completed graphic design projects. Evaluation and demonstration of portfolio presentation methods based on the student's specific area of study.

ARTV 1343. Digital Sound. (2-4)
Digitizing sound and incorporating it into multimedia or web titles for various delivery systems. Emphasizes compression issues, sampling, synchronizing, and resource management.

ARTV 1351. Digital Video. (2-4)
Producing and editing video and sound for multimedia or web productions. Emphasizes capture, editing, and outputting of video using a desktop digital video workstation.

BCIS 1305. Business Computer Applications. (3-2)
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.

COMM 1307. Introduction to Mass Communication. (3-0)
Study of the media by which entertainment and information messages are delivered. Includes an overview of the traditional mass media: their functions, structures, supports, and influences.

COMM 2305. Editing and Layout. (3-3)
Editing and layout processes, with emphasis on accuracy and fairness, including the principles and techniques of design.

COMM 2330. Introduction to Public Relations. (3-0)
Exploration of the history and development of public relations. Presentation of the theory behind and process of public relations, including the planning, implementation, and evaluation of PR campaigns.

COSC 1309. Logic Design. (3-3)
A discipline approach to problem solving with structured techniques and representation of algorithms using pseudo code and graphical tools. Discussion of methods for testing, evaluation, and documentation.

COSC 1436. Programming Fundamentals I. (3-3)
Introduces the fundamental concepts of structure 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. Prerequisite: BCIS 1305 or consent of the instructor.

COSC 1437. Programming Fundamentals II. (3-3)
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. Prerequisite: COSC 1436 or consent of the instructor.

COSC 2425. Computer Organization and Machine Language. (3-3)
Basic computer organization; machine cycle, digital representation of data and instructions, assembly language programming, assembler, loader, macros, subroutines, and program linkages. Prerequisite: COSC 1436 or consent of the instructor.

COSC 2436. Programming Fundamentals III. (3-3)
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. Prerequisite: COSC 1437 or consent of the instructor.

IMED 1301. Introduction to Multimedia. (2-4)
A survey of the theories, elements, and hardware/software components of multimedia. Topics include digital image editing, digital sound and video editing, animation, web page development, and interactive presentations. Emphasis on conceptualizing and producing effective multimedia presentations.

IMED 1316. Web Design I. (2-4)
Instruction in web design and related graphic design issues including mark-up languages, web sites, and browsers.

IMED 1345. Interactive Multimedia I. (2-4)
Exploration of the use of graphics and sound to create interactive multimedia applications and/or animations using industry standard authoring software.

IMED 1359. Writing for Digital Media. (2-4)
Written communication for digital media environments including professional websites or other digital content.

ITMT 2401. Windows Server 2008 Network Infrastructure Configuration. (3-3)
A course in Windows Server 2008 networking infrastructure to include installation, configuration, and troubleshooting of Internet Protocol (IP) addressing, network services and security.

ITMT 2402. Windows Server 2008 Active Directory Configuration. (3-3)

ITMT 2422. Windows Server 2008 Applications Infrastructure Configuration. (3-3)
A course in the installation, configuring, maintaining, and troubleshooting of an Internet Information Services (IIS) 7.0 web server and Terminal Services in Windows Server 2008.

ITMT 2451. Windows Server 2008: Server Administrator. (3-3)
Knowledge and skills for the entry-level server administrator or information technology (IT) professional to implement, monitor and maintain Windows Server 2008 servers.

ITMT 2456. Windows Server 2008: Enterprise Administrator. (3-3)
A capstone course in the design of Windows Server 2008 Enterprise Network Infrastructure that meets business and technical IT requirements for network services.

ITNW 1308. Windows 7 I&S CLT Operating Systems. (2-4)
The fundamentals of managing and configuring network clients.

ITNW 1358. Network+. (2-4)
Assists individuals in preparing for the Computing Technology Industry Association (Comp TIA) Network+ certification exam and career as a network professional.

ITSC 1307. UNIX Operating System I. (2-4)
Introduction to the UNIX operating system including multi-user concepts, terminal emulation, use of system editor, basic UNIX commands, and writing script files. Includes introductory system management concepts.

ITSC 1325. Personal Computer Hardware. (2-4)
Current personal computer hardware including assembly, upgrading, setup, configuration, and troubleshooting.

ITSE 2409. Database Programming. (3-3)
Database development using database programming techniques emphasizing database structures, modeling, and database access.

ITSE 2413. Web Authoring. (3-3)
Introduction in designing and developing web pages that incorporate text, graphics, and other supporting elements using current technologies and authoring tools.

ITSE 2417. JAVA Programming. (3-3)
Introduction to object-oriented Java programming including the fundamental syntax and semantics of Java for applications and web applets.

ITSE 2421. Object-Oriented Programming. (3-3)
Introduction to object-oriented programming. Emphasis on the fundamentals of design with classes, including development, testing, implementation, and documentation.

ITSY 1342. Information Technology Security. (2-4)
Instruction in security for network hardware, software, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses.

ITSY 2400. Operating System Security. (3-3)
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.

ITSY 2401. Firewalls and Network Security. (3-3)
Identify elements of firewall design, types of security threats and responses to security attacks. Use best practices to design, implement, and monitor a network
security plan. Examine security incident postmortem reporting and ongoing network security activities.

**ITSY 2430. Intrusion Detection.** (3-3) Computer information systems security monitoring, intrusion detection, and crisis management. Includes alarm management, signature configuration, sensor configuration, and troubleshooting components. Emphasizes identifying, resolving, and documenting network crises and activating the response team.

**ITSY 2442. Incident Response and Handling.** (3-3) In-depth coverage of incident response and incident handling, including identifying sources of attacks and security breaches; analyzing security logs; recovering the system to normal; performing postmortem analysis; and implementing and modifying security measures.

**ITSY 2443. Computer System Forensics.** (3-3) In-depth study of system forensics including methodologies used for analysis of computer security breaches. Gather and evaluate evidence to perform postmortem analysis of a security breach.

**RTVB 1317. Convergence of Electronic Media.** (3-0) Explores career opportunities, regulatory and economic issues in electronic media including radio, television, internet, and new media.

### COSMETOLOGY
A Flexible Entry Program

**CSME 1348. Principles of Skin Care.** (2-4) An introduction of the theory and practice of skin care.

**CSME 1401. Orientation to Cosmetology.** (2-8) An overview of the skills and knowledge necessary for the field of cosmetology.

**CSME 1405. Fundamentals of Cosmetology.** (2-8) A course in the basic fundamentals of cosmetology. Topics include service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, and comb out.

**CSME 1420. Orientation to Facial Specialist.** (2-5) An overview of the skills and knowledge necessary for the field of facials and skin care.

**CSME 1421. Principles of Facial/Esthetic Technology I.** (2-5) An introduction to the principles of facial/esthetic technology. Topics include anatomy, physiology, theory, and related skills of facial/esthetic technology.
CSME 1430. Orientation to Nail Technology. (3-6)
An overview of the fundamental skills and knowledge necessary for the field of nail technology.

CSME 1431. Principles of Nail Technology I. (3-6)
A course in the principles of nail technology. Topics include anatomy, physiology, theory, and related skills of nail technology.

CSME 1434. Cosmetology Instructor I. (2-6)
The fundamentals of instructing cosmetology students. Prerequisite: Valid operator license, Texas Department of Licensure and Regulation.

CSME 1435. Orientation to the Instruction of Cosmetology. (2-6)
An overview of the skills and knowledge necessary for the instruction of cosmetology students. Prerequisite: Valid operator license, Texas Department of Licensure and Regulation.

CSME 1441. Principles of Nail Technology II. (3-6)
A continuation of the concepts and principles of nail technology. Topics include advanced instruction in anatomy, physiology, theory, and related skills of nail technology.

CSME 1451. Artistry of Hair, Theory and Practice. (2-8)
Instruction in the artistry of hair design. Topics include theory, techniques, and application of hair design. Pre/co requisite-Orientation to Cosmetology.

CSME 1453. Chemical Reformation and Related Theory. (2-8)
Presentation of the theory and practice of chemical reformation including terminology, application, and workplace competencies. Pre/co requisite-Orientation to Cosmetology.

CSME 1492. Special Topics in Cosmetology Instruction. (4-0)
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course is designed to be repeated multiple times to improve student proficiency.

CSME 1493. Special Topics in Cosmetic Services, General. (4-0)
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course is designed to be repeated multiple times to improve student proficiency.

CSME 1543. Manicuring and Related Theory. (3-7)
Presentation of the theory and practice of nail technology. Topics include terminology, application, and workplace competencies related to nail technology. Pre/co requisite-Orientation to Cosmetology.

CSME 1545. Principles of Facial/Esthetic Technology II. (2-9)
A continuation of the concepts and principles in skin care and other related technologies. Topics include advanced instruction in anatomy, physiology, theory, and related skills of facial/esthetic technology.

CSME 1547. Principles of Skin Care/Facials and Related Theory. (3-7)
In-depth coverage of the theory and practice of skin care, facials, and cosmetics. Pre/co requisite-Orientation to Cosmetology.

CSME 2302. Introduction to Application of Hair Color. (2-4)
Introduction to basic hair color applications including safety and sanitation procedures.

CSME 2337. Advanced Cosmetology Techniques. (2-4)
Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services, and workplace competencies. Pre/co requisite-Fundamentals of Cosmetology.

CSME 2343. Salon Development. (3-0)
Applications of procedures necessary for salon development. Topics include professional ethics and goals, salon operation, and record keeping.

CSME 2401. The Principles of Hair Coloring and Related Theory. (2-8)
Presentation of the theory and practice of hair color and chemistry. Topics include terminology, application, and workplace competencies related to hair color. Pre/co requisite-Orientation to Cosmetology.

CSME 2414. Cosmetology Instructor II. (2-6)
A continuation of the fundamentals of instruction of cosmetology students. Prerequisite: Valid operator license, Texas Department of Licensure and Regulation.

CSME 2415. Cosmetology Instructor III. (2-6)
Presentation of lesson plan assignments and evaluation techniques. Prerequisite: Valid Texas Department of Licensing and Regulation license.

CSME 2439. Advanced Hair Design. (2-8)
Advanced concepts in the theory and practice of hair design. Pre/co requisite-Orientation to Cosmetology.

CSME 2444. Cosmetology Instructor IV. (2-6)
Advanced concepts of instruction in a cosmetology program. Topics include demonstration, development, and implementation of advanced evaluation and assessment techniques. Prerequisite: Valid Texas Department of Licensing and Regulation license.

CSME 2445. Instructional Theory and Clinic Operation. (1-6)
An overview of the objectives required by the Texas Department of Licensing and Regulation Instructor Examination. Prerequisite: Valid Texas Department of Licensing and Regulation license.

CSME 2530. Nail Enhancement. (2-9)
A course in the theory, application, and related technology of artificial nails. Pre/co requisite-Orientation to Nail Technology.

CSME 2531. Principles of Facials/Esthetic Technology III. (2-9)
Advanced concepts and principles of skin care and other related technologies.

CSME 2541. Preparation for the State Licensing Examination. (3-6)
Preparation for the state licensing examination.

FSHN 2309. Fashion Image. (3-0)
Instruction in the techniques used to analyze the fashion image of individual clients. Emphasis on personal coloring, seasonal color harmonies, appropriate fabric textures, body proportion and silhouette, figure, facial and hair analysis, and wardrobe coordination. Study of fashion image consultant business practices and job qualifications.

NUPC 2230. Infection Control and Aseptic Techniques. (2-0)
Review and update information related to infection control and aseptic techniques. Discussion of means of transmission, common signs and symptoms, and available treatments for communicable diseases commonly found in healthcare. Study of the standard precaution categories differentiating between standard precautions and transmission-based precautions. Includes discussion of sterile and aseptic techniques.

CRIMINAL JUSTICE

Criminal Justice - Field of Study

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

CRIJ 1306. Court Systems and Practices. (3-0)
Study of the judiciary in the American criminal justice system and the adjudication processes and procedures.

CRIJ 1307. Crime in America. \( (3-0) \)
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 crime.

CRIJ 1310. Fundamentals of Criminal Law. \( (3-0) \)
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.

CRIJ 1313. Juvenile Justice System. \( (3-0) \)
A study of the juvenile justice process to include specialized juvenile law, role of the juvenile law, role of the juvenile courts, role of police agencies, role of correctional agencies, and theories concerning delinquency.

CRIJ 2301. Community Resources in Corrections. \( (3-0) \)
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.

CRIJ 2313. Correctional Systems and Practices. \( (3-0) \)
Corrections in the criminal justice system; organization of correctional systems; correctional role; institutional operations; alternatives to institutionalization; treatment and rehabilitation; current and future issues.

CRIJ 2314. Criminal Investigation. \( (3-0) \)
Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation.

CRIJ 2323. Legal Aspects of Law Enforcement. \( (3-0) \)
Police authority; responsibilities; constitutional constraints; laws of arrest, search, and seizure; police liability.

CRIJ 2328. Police Systems and Practices. \( (3-0) \)
The police profession; organization of law enforcement systems; the police role; police discretion; ethics; policy-community interaction; current and future issues.

Criminal Justice Studies

CJSA 1308. Criminalistics I. \( (3-0) \)
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.

CJSA 1400. Death Investigations I.  (3-0)
Concepts, investigation process, scene management, required documentation, and case management for incidences of natural, accidental, and suicidal deaths. Follows the Department of Justice National Guidelines for investigations investigators.

CJSA 2323. Criminalistics II.  (3-0)
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.

CJSA 2334. Contemporary Issues in Criminal Justice.  (3-0)
A series of lectures and class participation exercises presenting selected topics currently confronting criminal justice personnel and the public they serve.

CJSA 2335. First Line Police Supervision.  (3-0)
Development of supervision techniques and practices for the first-line supervisor and development of desirable traits of a supervisor with emphasis on individual and group leadership. Special emphasis on the balance between the individual and the organization.

CJSA 2389. Criminal Justice/Safety Studies  (0-9)
A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

Corrections/Correctional Administration

CJCR 1304. Probation & Parole.  (3-0)
A survey of the structure, organization, and operation of probation and parole services. Emphasis on applicable state statutes and administrative guidelines.

CJCR 2325. Legal Aspects of Corrections.  (3-0)
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. Assess current case, statutory and constitutional law applicable to the correctional setting including clients, inmates, and staff; explain and describe the various types and classifications of correctional populations; and explain consequences of civil and criminal liabilities.

Law Enforcement/Police Science
CJLE 1111. Basic Firearms. (0-3)
Firearm safety, cleaning and care techniques, proper shooting principles, and firearm proficiency. This course was designed to be repeated multiple times if content varies.

CJLE 1132. Physical Fitness for Law Enforcement. (0-3)
Addresses personal health and diet, fitness, and stress management for law enforcement. Includes development of flexibility, strength, cardiovascular, endurance training, and personal fitness evaluation techniques. This course was designed to be repeated multiple times if content varies.

CJLE 1327. Interviewing & Report Writing for Criminal Justice Professions. (3-0)
Instruction and skill development in interviewing, note-taking, and report writing in the criminal justice context. Development of skills to conduct investigations by interviewing witnesses, victims, and suspects properly. Organization of information regarding incidents into effective written reports.

CJLE 1506. Basic Peace Officer I. (3-6)
Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer II, III, IV, and V (supplement) 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.***

CJLE 1512. Basic Peace Officer II. (3-6)
Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer I, III, IV, and V (supplement) 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.***

CJLE 1518. Basic Peace Officer III. (3-6)
Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer I, II, IV, and V (supplement) 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.***

CJLE 1524. Basic Peace Officer IV. (3-6)
Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer I, II, III, and V (supplement) 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.***
Drug and Alcohol Abuse Counseling

DAAC 1309. Assessment Skill of Alcohol and Other Drug Addictions. (3-0)
Examines procedures and tools used to identify and assess a client’s strengths, weaknesses, problems, and needs.

DAAC 1311. Counseling Theories. (3-0)
An examination of the major theories and current treatment modalities used in the field of counseling.

DAAC 1317. Basic Counseling Skills. (3-0)
Presents the basic counseling skills necessary to develop an effective helping relationship with clients.

DAAC 1319. Introduction to Alcohol & Other Drug Addictions. (3-0)
Provides an overview of causes and consequences of addiction as they relate to the individual, family, community, and society. Overview of alternatives regarding prevention, intervention, and treatment. Includes explanation of competencies and requirements for licensure in Texas. Identifies addiction issues related to diverse populations.

DAAC 2307. Addicted Family Intervention. (3-0)
Present family as a dynamic system focusing on the effects of addiction on family roles, rules, and behavior patterns. Includes the effects of mood altering substances, behaviors, and therapeutic alternatives as they relate to the family from a multicultural and transgenerational perspective.

DAAC 2343. Current Issues. (3-0)
Examination of current issues in addiction. Identify current issues of addiction counseling; and analyze treatment implications related to these issues.

DAAC 2354. Dynamics of Group Counseling. (3-0)
Exploration of group counseling skills, techniques, and stages of group development.

DAAC 2366. Practicum (or Field Experience) - Substance Abuse/Addiction Counseling. (0-21)
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

DAAC 2563. Clinical - Substance Abuse/Addiction Counseling. (1-20)
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.
DMSO 1110. Introduction to Sonography. (0-2)
An introduction to the profession of sonography and the role of the sonographer. Emphasis on medical terminology, ethical/legal aspects, written and verbal communication, and professional issues relating to registry, accreditation, professional organizations and history of the profession.

DMSO 1160. Clinical-Sonography Techniques. (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.

DMSO 1302. Basic Ultrasound Physics. (3-0)
Basic acoustical physics and acoustical waves in human tissue. Emphasis on ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams.

DMSO 1342. Intermediate Ultrasound Physics. (2-2)
Continuation of Basic Ultrasound Physics. Includes interaction of ultrasound with tissues, mechanics of ultrasound production and display, various transducer designs and construction, quality assurance, bioeffects, and image artifacts. May introduce methods of Doppler flow analysis.

DMSO 1351. Sonographic Sectional Anatomy. (3-1)
Sectional anatomy of the male and female body. Includes anatomical relationships of organs, vascular structures, and body planes and quadrants.

DMSO 1355. Sonographic Pathophysiology. (3-0)
Pathology and pathophysiology of the abdominal structures visualized with ultrasound. Includes abdomen, pelvis, and superficial structures.

DMSO 1360. Clinical. (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.

DMSO 1361. Clinical. (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.

DMSO 1441. Abdominopelvic Sonography. (3-2)
Normal anatomy and physiology of the abdominal and pelvic cavities as related to scanning techniques, transducer selection, and scanning protocols.
DMSO 2130. Advanced Ultrasound and Review. (0-4)
Knowledge, skills, and professional values within a legal and ethical framework addressing emerging technologies and professional development.

DMSO 2243. Advanced Ultrasound Principles & Instrumentation. (1-2)
Theory and application of ultrasound principles. Includes advances in ultrasound technology.

DMSO 2245. Advanced Sonographic Practices. (2-0)
Exploration of advanced sonographic procedures and emerging ultrasound applications.

DMSO 2405. Sonography of Obstetrics/Gynecology. (3-4)
Detailed study of the pelvis and obstetrics/gynecology as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

DMSO 2460. Clinical. (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.

VASCULAR TECHNOLOGY

DSVT 1300. Principles of Vascular Technology. (2-2)
Introduction to non-invasive vascular technology modalities. Includes 2D imaging, Doppler, plethysmography, and segmental pressures. Emphasis on performing basic venous and arterial imaging and non-imaging exams.

DSVT 2200. Vascular Technology Applications. (1-2)
Non-invasive vascular technology. Includes 2-D imaging, Doppler, plethysmography, and segmental pressures. Emphasizes protocols for performing basic venous and arterial imaging and non-imaging exams.

DSVT 2335. Advanced Non-Invasive Vascular Technology. (2-2)
Non-Invasive vascular concepts. Includes harmonics, contrast, power Doppler, digital intraoperative, intravascular, abdominal vascular, graft surveillance, vascular interventions, and research. Emphasizes extensive review of case studies, technical reporting, preliminary interpretation, and registry review.

DSVT 2461. Clinical. (0-20)
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.

DRAMA
DRAM 1120, 1121. Theater Practicum I & II.  (3-3)
A participation course to aid students in finding an outlet for talents in the field of drama. Required of all drama majors and drama scholarship students, but open to all students.

DRAM 1141. Make Up.  (1-0)
The design and execution of make up for the purpose of developing believable characters. A discussion of basic make up principles and practical experience of make up application.

DRAM 1161 Musical Theater I.  (1-3)
Study and performance of works from the musical theater repertoire.

DRAM 1242. Introduction to Costume.  (3-0)
Principles and techniques of costume design and construction for theatrical productions.

DRAM 1310. Introduction to the Theater.  (3-3)
A survey course designed to acquaint the student with all the various areas of theatre, beginning with the history of the theatre and including a discussion of the periods and the playwrights that reflected the periods. Topics include an examination of the various theatre arts: directing, acting, scene design, lighting, costuming, theatre management, and how to choose and produce a play.

DRAM 1323. Basic Theater Practice.  (3-3)
Practicum in theater with emphasis on technique and procedures with experience gained in play productions.

DRAM 1330. Stagecraft I.  (3-3)
The study and application of choosing, casting, rehearsing, and producing of a play. In addition to the direct aspects of production, other topics may include set design, lighting, sound, costuming, properties, house management, and backstage organization. Designed for drama majors as well as art majors, architectural students, fashion merchandising.

DRAM 1351. Introduction to Acting I.  (3-3)
This course approaches acting as an art where native ability is important but where certain techniques can be taught. Special problems of individual students will be addressed, especially with regard to handling stage fright. Projects include improvisations, monologues, duo characterizations, and personal development according to needs.

DRAM 1352. Introduction to Acting II.  (3-3)
A continuation of DRAM 1351. The development of basic skills and techniques of acting including increased sensory awareness, ensemble performing,
character analysis, and script analysis. Emphasis is placed on the mechanics of voice, body, emotion, and an analysis as tools for the actor.

DRAM 2120, 2121. Theater Practicum III & IV. (3-3)
A continuation of DRAM 1120, 1121.

DRAM 2331. Stagecraft II. (3-3)
A continuation of DRAM 1330.

DRAM 2336. Voice for Theater. (3-0)
Application of the performer’s use of the voice as a creative instrument of effective communication. Encourages an awareness of the need for vocal proficiency with an emphasis on techniques designed to improve the performer's speaking abilities.

DRAM 2351. Introduction to Acting III. (3-3)
A continuation of DRAM 1352.

DRAM 2366. The Development of the Motion Picture. (2-4)
The study of the historical development of motion pictures to the present time and the medium of entertainment and industry as an art form. Representative films are viewed, studied, and evaluated. Further film analysis emphasizes direction, producing, acting, and other production values of the cinema.

DRAM 2367. Development of the Motion Picture II. (2-4)
Emphasis on the analysis of the visual and aural aspects of selected motion pictures, dramatic aspects of narrative films, and historical growth and sociological effect of film as an art.

DRAM 2389. Academic Cooperative. (3-7)
An instructional program designed to integrate on-campus study with practical hands-on work experience. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of drama.

ECHOCARDIOGRAPHY

DMSO 1302. Basic Ultrasound Physics. (3-0)
Basic acoustical physics and acoustical waves in human tissue. Emphasis on ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams.

DSAE 1203. Introduction to Echocardiography Techniques. (1-3)
An introduction to scanning techniques and procedures with hands-on experience in a lab setting. Emphasis is placed on the sonographic explanation of the normal adult heart.
DSAE 1205. Cardiovascular Pharmacology. (2-0)
Pharmacology relating to the treatment of cardiovascular diseases. Includes drug classification, indications, contraindications, action, dosage, route of administration, and side effects.

DSAE 1260. Clinical-Diagnostic Medical Sonography/Sonographer and Ultrasound Technician. (0-8)
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.

DSAE 1315. Principles of Adult Echocardiography. (2-2)
An introduction to cardiovascular anatomy and physiology, including hemodynamics and spatial relationships of the normal adult heart. Topics include anatomical correlation of 2-D, M-Mode, and Doppler sonographic imaging. Scanning techniques are correlated and taught in the laboratory sessions.

DSAE 1440. Diagnostic Electrocardiography. (3-3)
Cardiac testing including the techniques and interpretation of patient physical assessment. Covers electrocardiography, stress testing, Holter monitoring, vital signs, and cardiovascular pharmacology.

DSAE 2235. Advanced Echocardiography. (0-6)
Instruction in advanced echocardiographic procedures. Topics include stress echo, related diagnostic imaging, and related noninvasive cardiac testing.

DSAE 2304. Echocardiographic Evaluation of Pathology I. (2-2)
An emphasis on adult acquired cardiac pathologies. Topics include cardiovascular pathophysiology, quantitative measurements, and the application of 2-D, M-Mode, and Doppler. Recognition of the sonographic appearances of cardiovascular disease is stressed.

DSAE 2437. Echocardiographic Evaluation of Pathology II. (3-3)
A continuation of Echocardiographic Evaluation of Pathology I with emphasis on cardiac disease. Discussion of quantitative measurements and application of 2-D, M-Mode, and Doppler and recognition of the sonographic appearances of cardiac disease is stressed.

DSAE 2660. Clinical-Diagnostic Medical Sonography/Sonographer and Ultrasound Technician. (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.

DSAE 2661. Clinical-Diagnostic Medical Sonography/Sonographer and
Ultrasound Technician. (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.

ECONOMICS

ECON 2301. Principles of Macroeconomics. (3-0)
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.

ECON 2302. Principles of Microeconomics. (3-0)
Analysis of the behavior of individual economic agents, including consumer behavior and demand, producer behavior and supply, price and output decisions by firms under various market structures, factor markets, market failures, and international trade.

EDUCATION

EDUC 1301. Introduction to Teaching Profession. (3-1)
An enriched, integrated pre-service course and content experience that provides active recruitment and institutional support of students interested in a teaching career, especially in high need fields. Requires students to participate in early field observations at all levels of P-12 schools with varied and diverse student populations and 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. Course content is aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standard. Course requires 16 contact hours of field experience in P-12 classrooms.

EDUC 2301. Introduction to Special Populations. (3-1)
An enriched, integrated pre-service course and content experience that provides an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic and academic diversity, and equity with an emphasis on factors that facilitate learning. Require students to participate in early field observations of P-12 special populations. Course content is aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Course requires 16 contact hours of field experience in P-12 classrooms.

TECA 1303. Family, School, and Community. (3-1)
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 is aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Students are required to do a 16 hour observation.

TECA 1311. Educating Young Children. (3-1)
An introduction to the education of the young child, including developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities, and current issues. Course content is aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Students are required to do a 16 hour observation.

TECA 1318. Wellness of the Young Child. (3-1)
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 regulation. Course content is aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Students are required to do a 16 hour observation.

TECA 1354. Child Growth and Development. (3-0)
A study of the physical, emotional, social, and cognitive factors impacting growth and development of children through adolescence.

EMERGENCY MEDICAL SERVICES PROFESSIONS

EMSP 1149. Trauma Life Support (1-0)
Intense skill development in emergency field management, systematic rapid assessment, resuscitation, packaging, and transportation of patients. Includes experience necessary to meet initial certification requirements. Prerequisite: Certified Basic EMT; L.V.N., R.N., or Physician.

EMSP 1160. Basic Clinical Internship-E.M.S. Professions. (0-6)
A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experience. Course may be repeated if topics and learning outcomes vary. Prerequisite/co-requisite: Must be eighteen years of age at the completion
of the course. Must have attained a GED or high school diploma prior to testing with the National Registry of Emergency Medical Technicians.

EMSP 1161. Intermediate Clinical-E.M.S. Professions. (0-6)
A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. Prerequisite: Completion of Introduction to Advanced Practices to include airway management and intravenous infusion therapy.

EMSP 1162. Paramedic Clinical I-E.M.S. Professions. (0-6)
A method of instruction providing detailed education, training and work-based experience, and direct patient/client care generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. Prerequisite/co-requisite: Completion of Introduction to Advanced Practices to include airway management and intravenous infusion therapy and emergency pharmacology.

EMSP 1163. Paramedic Clinical II-E.M.S. Professions. (0-6)
A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. Prerequisite: Completion of Paramedic I and Assessment Based Management.

EMSP 1355. Trauma Management. (2-2)
A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with traumatic injuries. Prerequisite: Patient Assessment & Advanced Airway.

EMSP 1356. Patient Assessment & Airway Management. (2-2)
A detailed study of the knowledge and skills required to reach competence in performing patient assessment and airway management. Prerequisite: EMT Basic Introduction to Advanced Practice.

EMSP 1438. Introduction to Advanced Practice. (3-2)
An exploration of the foundations necessary for mastery of the advanced topics of clinical practice out of the hospital. Prerequisite: EMT-Basic.

EMSP 1501. Emergency Medical Technician-Basic. (3-8)
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. Prerequisite/co-requisite: Must be eighteen years of age at the completion of the course. Must have attained a GED or high school diploma prior to testing with the National Registry of Emergency Medical Technicians.

EMSP 2135. Advanced Cardiac Life Support. (1-0)
Skill development for professional personnel practicing in critical care units, emergency departments, and paramedic ambulances. Establishes a system of protocols for management of the patient experiencing cardiac difficulties. Prerequisite: Current American Heart Association Health Care Provider or American Red Cross Professional Rescuer or equivalent course completion, Paramedic I.

EMSP 2143. Assessment Based Management. (0-3)
The capstone of the EMSP program. Designed to provide for teaching and evaluating comprehensive assessment based patient care management. Prerequisite: Patient Assessment & Advanced Airway, Trauma, Cardiology, Medical Emergencies, Special Populations.

EMSP 2338. EMS Operations. (2-2)
A detailed study of the knowledge and skills necessary to safely manage the scene of an emergency. Prerequisite: Paramedic I & II.

EMSP 2348. Emergency Pharmacology. (3-1)
A comprehensive course covering all aspects of the utilization of medications in treating emergency situations. Course is designed to compliment Cardiology, Special Populations, and Medical Emergency courses. Co-requisite: Introduction of Advanced Practices, Patient Assessment and Airway Management, Trauma Management.

EMSP 2430. Special Populations. (3-2)
A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of ill or injured patients in nontraditional populations. Prerequisite: Patient Assessment & Advanced Airway, Pharmacology, Cardiology, and Medical Emergencies.

EMSP 2434. Medical Emergencies. (3-4)
A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with medical emergencies.
Prerequisite: Patient Assessment & Advanced Airway, Pharmacology, and Cardiology.

EMSP 2460. Clinical-Emergency Medical Service Professions III. (0-16)
A method of instruction providing detailed education, training and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning outcomes vary. Prerequisite/co-requisite: Completion of Paramedic I & II along with EMS Operations.

EMSP 2544. Cardiology. (4-4)
A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies. Co-requisite: Patient Assessment, Advanced Airway & Emergency Pharmacology.

ENGINEERING

ENGR 1304. Graphics. (2-4)
Introduction to spatial relationships, multiview projection and sectioning, dimensioning, graphical presentation of data, and fundamentals of computer graphics.

ENGR 2303. Technical Statics. (3-1)
Calculus-based study of composition and resolution of forces, equilibrium of force systems, friction, centroids, and moments of inertia; dynamics of rigid bodies, force-mass-acceleration, work-energy, and impulse-momentum computation. Prerequisites: MATH 2314, PHYS 2426.

ENGLISH

ENGL 0306. Developmental English I. (3-3)
Designed for the improvement of English/communication skills needed for college readiness and success through a variety of resources including lecture, computer assisted instruction, video, printed material, and writing exercises. Emphasis on basic grammar, usage, sentence and paragraph construction. This course will not meet the requirements for English credit for the graduation with the Associate Degree.

ENGL 0307. Developmental English II. (3-3)
A continuation of ENGL 0306. Designed for the improvement of English/communication skills needed for college readiness and success through a variety of resources including lecture, computer assisted instruction, video, printed material, and writing exercises. Emphasis on effective organization, effective
sentences, usage, and paragraph and essay development. This course will not meet the requirements for English credit for graduation with the Associate Degree.

ENGL 0308. Developmental English III. (3-3)
Designed for the improvement of writing skills necessary for college readiness and success through a variety of resources for the student who has scored between 200 and 220 on the THEA or successfully completed ENGL 0307. Extensive writing will be done with a thorough review of grammar using a variety of resources. Emphasis on unity, focus, purpose and audience, and edited American English. This course will not meet the requirements for English credit for graduation with the Associate Degree.

ENGL 0309. Developmental English (NCBO). (3-3)
Development of fundamental writing skills such as idea generation, organization, style, utilization of standard English, and revision. This course will not meet the requirements for English credit for graduation with the Associate Degree.

INRW 0309. Developmental Integrated Reading & Writing. (NCBO). (3-3)
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 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.

ENGL 1301. Composition I. (3-0)
A review of the principles of grammar, punctuation, and sentence structure; spelling drill and vocabulary; selected readings; theme writing with emphasis on organization of the whole composition, paragraph development, and effective sentences for expository and argumentative-persuasive writing; library use, individual conferences.

ENGL 1302. Composition II. (3-0)
Studies in analyzing literature and the writing of critical papers; selected readings; a review of research and documentation procedures leading to the production of a research paper; mechanics of composition as necessary for each class. Prerequisite: ENGL 1301 or approval of the instructor.

ENGL 2139. Selected Studies in Literature. (1-0)
Intensive reading in single area unified by period, genre, or theme. Emphasis on reading, discussion, and composition. May be repeated when topics vary.

ENGL 2311. Technical Writing. (3-0)
Training in writing clear, concise technical reports on scientific, engineering, and business projects; the processes of collection, organization, interpretation, and logical presentation of facts and ideas; and the use of graphic aids. Prerequisites: six semester hours of composition or approval of the instructor.

ENGL 2322. British (English) Literature I. (3-0)
A general survey of English literature from its origin through the 18th century; some consideration of historical background and development; emphasis on emerging ideas and surviving influences. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2323. British (English) Literature II. (3-0)
Further study of English literature from the Romantic period to the present; selected readings from major authors; emphasis on emerging ideas and surviving influences. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2327. American Literature I. (3-0)
From the beginning to 1860. This course treats briefly of colonial writers and writings in order to center attention on major literary figures of the first half of the nineteenth century. Both narrative and expository prose are studied along with poetry and drama. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2328. American Literature II. (3-0)
From 1860 to the present. The course treats briefly of the emergence of modern American literature in order to center attention on major literary figures of the latter half of the nineteenth century and the twentieth century. Both narrative and expository prose are studied along with poetry and drama. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2331. World Literature. (single semester) (3-0)
Selected significant works of world literature. May include study of movements, schools, or periods. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2332 World Literature I. (3-0)
Study of representative masterpieces of world literature with emphasis on classical and neo-classical literature; foreign literature read in translation; themes and oral reports; recommended for social science and education majors. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2333 World Literature II. (3-0)
A survey of masterpieces of world literature from the neo-classical period to the present; study of various critical approaches to literature; foreign literature read in translation; themes and oral reports; recommended for social science and
education majors. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2341. Special Topics in Literature. (3-0)
A study of selected topics in literature. Note: May be repeated when topics vary.

ENGLISH AS A SECOND LANGUAGE

ESLG 0310. Reading and Vocabulary I. (3-3)
English for speakers of other languages: develop reading fluency, including vocabulary, preparing students to function in an English speaking society.

ESLG 0311. Reading and Vocabulary II. (3-3)
A continuation of ESLG 0310, Reading and Vocabulary I.

FIRE PROTECTION TECHNOLOGY
Fire Science/Firefighting

FIRS 1313. Firefighter Certification III. (3-0)
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***This course may be offered only by institutions licensed as a fire academy by the Texas Commission on Fire Protection.

FIRS 1319. Firefighter Certification IV. (2-2)
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***This course may be offered only by institutions licensed as a fire academy by the Texas Commission on Fire Protection.

FIRS 1323. Firefighter Certification V. (2-3)
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***This course may be offered only by institutions licensed as a fire academy by the Texas Commission on Fire Protection.

FIRS 1329. Firefighter Certification VI. (2-2)
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural
Fire Suppression, Course #100. ***This course may be offered only by institutions licensed as a fire academy by the Texas Commission on Fire Protection.

FIRS 1401. Firefighter Certification I. 
(3-2)
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***This course may be offered only by institutions licensed as a fire academy by the Texas Commission on Fire Protection.

FIRS 1407. Firefighter Certification II. 
(3-3)
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***This course may be offered only by institutions licensed as a fire academy by the Texas Commission on Fire Protection.

FIRS 1433. Firefighter Certification VII. 
(3-3)
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. ***This course may be offered only by institutions licensed as a fire academy by the Texas Commission on Fire Protection.

FIRT 1311. Fire Service Hydraulics. 
(3-0)
The study of the application of hydraulic principles to analyze and solve water supply problems related to fire protection.

FIRT 1319. Firefighter Health and Safety. 
(3-0)
A study of firefighter occupational safety and health in emergency and nonemergency situations.

FIRT 1329. Building Codes and Construction. 
(3-0)
Examination of building codes and requirements, construction types, and building materials. Topics include walls, flooring, foundations, and various roof types and the associated dangers of each.

(3-0)
A study of the design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and potable fire extinguishers.
FIRT 1353. Legal Aspects of Fire Protection. (3-0)
A study of the rights, duties, liability concerns, and responsibilities of public fire protection agencies and personnel.

FRENCH

FREN 1411. Elementary French. (French Level I). (3-4)
A course covering the essentials of French (pronunciation, basic vocabulary, functional grammar, sentence structure, inflections, and common idioms) with stress on reading, understanding, writing, and speaking.

FREN 1412. Elementary French. (French Level II). (3-4)
Continuation of FREN 1411. Prerequisite: FREN 1411 or equivalent or one year of high school French or consent of instructor.

FREN 2311. Intermediate French. (French Level III). (3-2)
French grammar and verb tenses with conversation, readings, vocabulary study, and some original compositions. Prerequisite: FREN 1411 and 1412 or equivalent or two years of high school French or consent of instructor.

FREN 2312. Intermediate French. (French Level IV). (3-2)
Continuation of FREN 2311. Prerequisite: FREN 2311 or equivalent or consent of the instructor.

GEOGRAPHY

GEOG 1301. Physical Geography. (3-0)
The physical composition of the earth is surveyed. Topics include weather, climate, topography, plant and animal life, land, and the sea. Emphasis is on the earth in space, use of maps and charts, and place geography.

GEOG 1303. World Regional Geography. (3-0)
A study of major developing and developed regions with emphasis on awareness of prevailing world conditions and globalization, including emerging conditions and trends, and awareness of diversity of ideas and practices to be found in those regions. Course content may include one or more regions.

GEOLOGY/ENVIROMENTAL SCIENCE

ENVR 1401. Introduction to Environmental Science I. (3-3)
An interdisciplinary study of (biology, chemistry, geology) and social sciences (economics, politics, ethics.) Focus on current global concerns, including climate change, overpopulation, deforestation, pollution, biodiversity, and resources. Laboratory experience emphasizes the application of fundamental principles of biology and chemistry as well as critical thinking. Co-requisite: Student must also enroll in lab for the course: ENVR 1101.
ENVR 1402. Introduction to Environmental Science II. (3-3)
Continued interdisciplinary study of (biology, chemistry, geology) and social sciences (economics, politics, ethics.) Focus on energy issues, climate change, ozone loss, land use, conservation, management, deforestation, biodiversity, the history of environmental law and regulation and local environmental problems. Co-requisite: Student must also enroll in lab for the course: ENVR 1102.

GEOL 1305. Environmental Geology (Natural Disasters). (3-0)
Understanding the causes and effects of natural disasters such as earthquakes, volcanic eruptions, landslides, floods, land subsidence, coastal hazards, etc., and what we can do to mitigate and prevent these events. Students may take GEOL 1305 or GEOL 1405 but not both.

GEOL 1401. Earth Sciences I. (3-3)
Survey of physical and historical geology, astronomy, meteorology, oceanography, and related sciences. Co-requisite: Student must also enroll in lab for the course: GEOL 1101

GEOL 1402. Earth Sciences II. (Dinosaurs) (3-3)
Examines the evolution, ecology, and extinction of the dinosaurs from a physical and historical perspective, Comparative anatomy is emphasized. Dinosaur controversies will be examined in light of recent evidence. Co-requisite: Student must also enroll in lab for the course: GEOL 1102

GEOL 1403. Physical Geology. (3-3)
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. Co-requisite: Student must also enroll in lab for the course: GEOL 1103

GEOL 1404. Historical Geology. (3-3)
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 Central Texas; also includes topographic and geologic map interpretation. Co-requisite: Student must also enroll in lab for the course: GEOL 1104

GEOL 1405. Environmental Geology. (3-3)
The earth as a habitat. Interrelationships between humans and the environment. Geologic factors in urban and regional land use planning. Co-requisite: Student must also enroll in lab for the course: GEOL 1105

GEOL 1445. Oceanography. (3-3)
Survey of physical and historical geology, astronomy, meteorology, oceanography, and related sciences. Co-require: Student must also enroll in lab for the course: GEOL 1145

GEOL 1447. Meteorology. (3-3)
Survey of meteorology and related sciences. Co-require: Student must also enroll in lab for the course: GEOL 1147

GOVERNMENT

GOVT 2305. Federal Government. (3-0)
Surveys the origins and development of the US Constitution, structure and powers of the national government including the legislative, executive, and judicial branches, federalism, systems of government, political participation, the media, the national election process, public policy including foreign relations, national defense, fiscal economy policy, and domestic and social policy, civil liberties, and civil rights. Prerequisite: None; however, it is recommended student have sophomore classification or completion of HIST 1301 and HIST 1302. Must have passed the reading section of the THEA or approved alternative test or credit of READ 0302.

GOVT 2306. Texas Government. (3-0)
Surveys the origins and development of the current Texas Constitution and its previous constitutions, the amendment process, the structure and powers of state and local government including the Texas legislature, plural executive, and system of laws and courts, federalism and intergovernmental relations, political participation, the election process, public policy and the political culture of Texas. Prerequisite: None; however, it is recommended student have sophomore classification or completion of HIST 1301 and HIST 1302. Must have passed the reading section of the THEA or approved alternative test or credit of READ 0302.

HISTORY

HIST 1301. United States History I. (3-0)
A survey of the history of the United States from its European background through the Reconstruction Era, with emphasis on colonization, the War of Independence, the Jefferson and Jackson Ages, Westward Movement events leading to and the fighting of the War Between the States, and the Reconstruction Era of 1865-1877. All aspects of history are considered: social, political, economic, military.

HIST 1302. United States History II. (3-0)
A survey of the United States from 1877 to the present, starting with the Hayes administration, emphasizing industrial growth, social changes and reforms and the role of the United States in 20th Century reforms, political trends, international commitments and leadership.
HIST 2303. History of Texas. (3-0)
A study of the military, political, social, and economic development of Texas from Spanish Colonial days through the period of Mexican control, the Revolution, the Republic, and the Confederacy to the present day.

HIST 2311. Western Civilization I. (3-0)
A study of the origin and development of various Western cultures and their impact on subsequent history. Emphasis on the Greco-Roman society, early Christianity, and the importance of the Renaissance and the Reformation. This course is designed to give the student historical perspective as well as a basic historical knowledge of the period.

HIST 2312. Western Civilization II. (3-0)
A continuation of HIST 2311 beginning with the "Modern World" (17th century). Special attention to the Enlightenment, the French Revolution and Napoleon, and the importance of the 19th century. The course will emphasize the rise of totalitarianism and the clash of ideologies and importance of World Wars I and II to 20th century thought. Prerequisite: HIST 2311 or approval of the instructor.

HIST 2321. World Civilizations I. (3-0)
A survey of ancient and medieval history with emphasis on Asian, African, and European cultures. The modern history and culture of Asia, Africa, Europe, and the Americas, including recent developments.

HIST 2322. World Civilizations II. (3-0)
Continuation of HIST 2321, World Civilizations I.

HIST 2389. Academic Cooperative. (Special Topics). (3-0)
An instructional program designed to integrate on-campus study with practical hands-on experience in history. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of human social behavior and/or social institutions.

HUMANITIES

HUMA 1301. Humanities I. (3-0)
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.

MATHEMATICS

MATH 0300. Developmental Mathematics I. (3-3)
A basic arithmetic course of the fundamental operation in mathematics and basic geometry. The course is designed to prepare the students for success in college
math courses. This course will not meet the requirements for math credit for graduation with the Associate Degree.

MATH 0302. Developmental Mathematics II. (3-3)
An elementary algebra course designed to prepare the students for success in college math courses. Topics covered include solid geometry, integers, solving equations and inequalities, linear equations, systems of linear equations, operations with polynomials, and factoring of polynomials. This course will not meet the requirements for math credit for graduation with the Associate Degree. Prerequisite: MATH 0300 or competency at that level.

MATH 0304. Intermediate Algebra. (3-0)
This course is designed for students who have had one year of high school algebra to prepare the students for success in college math courses. Topics covered include factoring, rational expressions and equations, linear and quadratic graphs, radical expressions and equations, and quadratic equations. This course will not meet the requirements for math credit for graduation with the Associate Degree. Prerequisite: MATH 0302 or competency at that level.

MATH 1314. College Algebra. (3-0)
In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. Prerequisites: Two years high school algebra or permission of instructor.

MATH 1316. Plane Trigonometry. (3-0)
Definition of trigonometric functions, angular measure, identities, trigonometric functions, solution of triangles, functions of composite angles. Prerequisite: MATH 1314 or concurrent registration or permission of instructor.

MATH 1324. Precalculus for Business and Economics. (3-0)
Topics to be covered are linear equations and applications, systems of linear equations, matrix algebra and applications, linear programming, probability and statistics. Prerequisite: MATH 1314 or approval of instructor.

MATH 1325. Calculus for Business and Economics. (3-0)
Topics to be covered are derivatives and applications, curve sketching and optimization, logarithms and exponential functions, integrals and applications, and multivariate calculus. Prerequisite: MATH 1324 or approval of instructor.

MATH 1332 Contemporary Mathematics for Technology I. (3-0)
Topics may include introductory treatments of sets, logic, number systems, number theory, relations, functions, probability and statistics. Appropriate applications are included. Course is a non-core course. The course is designated for technical-vocational-workforce students only and not a course to
satisfy the math option for students receiving the associate of science, associate of arts, or the associate of arts in teaching degree.

MATH 1342. Statistics. (3-0)
Collection and tabulation of data: Bar charts, graphs, sampling, average, dispersion, normal curve, and probability are covered. The applications of statistics to various other fields will also be considered.

MATH 1350. Fundamentals of Mathematics I. (3-0)
This course is the study of concepts, 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. Prerequisite: MATH 1314.

MATH 1351. Fundamentals of Mathematics II. (3-0)
This course is the study of 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 (4-8) teacher certification. Prerequisite: MATH 1350 and MATH 1314.

MATH 2320. Differential Equations. (3-0)
Differential equations of the first order, linear equations of order two and higher, applications in the fields of engineering and physics, solutions using Laplace transforms. Prerequisite: MATH 2415 or concurrent registration or approval of the instructor.

MATH 2412. Precalculus. (3-2)
Emphasis on algebra, trigonometry, and elementary functions. Additional topics include graphing, applications, vectors, and conics. Designed as preparation for MATH 2413. Calculus I. (3-3)
Rectangular coordinates, functions, limits, continuity, analytic geometry, derivatives of functions, applications, integration, numerical integration, areas, volumes and arc length by integration. Prerequisite: High school algebra, trigonometry, and geometry or approval of the instructor.

MATH 2414. Calculus II. (3-3)
Techniques of differentiation and integration, applications, improper integrals, indeterminant forms, Taylor's formula, infinite series, analytic geometry, plane curves, polar coordinates, vectors and surfaces. Prerequisites: MATH 2413 or equivalent or approval of instructor.

MATH 2415. Calculus III. (3-3)
Multivariate calculus, limits and continuity of functions of several variables, partial derivatives, directional derivatives, multiple integration, vector calculus, Green's
Theorem, Stokes' theorem. Prerequisite: MATH 2414 or equivalent or approval of instructor.

MUSIC
Ensembles

MUEN 1131. Brass Ensemble. (1-2)
This brass ensemble provides brass students the opportunity to perform brass literature from several periods of music. Various brass ensembles will be formed from the membership of this organization. Admission is by the consent of the Director. May be taken four times for credit.

MUEN 1134. Guitar Ensemble. (1-2)
This course is designed for the student who has previous guitar experience. This course is an ensemble setting where students will have the opportunity to read and perform various styles of music ranging from the Renaissance to the 20th century. Topics discussed will include pedagogical technique as well as reading music notation for beginning to intermediate levels. Admission is by the consent of the Director. May be repeated four times for credit.

MUEN 1151. Women’s Chorus. (2-2)
This small women’s vocal ensemble performs a wide array of vocal music for female voices. It is open to any female student with previous choir experience or by the consent of the Director.

MUEN 1154. Vocal Ensemble. (2-2)
This small vocal group of mixed voices is selected from members of the choir by audition. The group performs mainly light selections and modern day vocal stylings. The Ensemble is featured on many public performances as a Jazz Chorus and Madrigal Singers.

MUEN 1155. Men’s Chorus. (2-2)
This small men’s vocal ensemble performs a wide array of vocal music for male voices. It is open to any male student with previous choir experience or by the consent of the Director.

MUEN 2124. Band. (0-6)
This ensemble is designed for the study and performance of a wide variety of band literature, including literature for symphonic wind ensemble, and concert band. It is open to any student with previous band experience or by consent of the Director. May be taken four times for credit.

MUEN 2125. Jazz Laboratory Band. (2-2)
This ensemble provides training in all styles of jazz and dance band performance. Smaller jazz ensembles are drawn from the membership of this
organization. Admission is by consent of the Director. May be taken four times for credit.

MUEN 2143. Chorale. (0-6)
This choral ensemble is designed to acquaint members with all types of choral music. The repertoire varies from early sacred and secular music to modern day spirituals and popular music. Open to any student with previous choir experience or by consent of the Director. May be taken four times for credit.

Theory and Literature

MUSI 1116, 1117. Elem. Sight-Singing and Ear Training. (1-1)
This course includes sight-singing and dictation of intervals and simple melodies in various clefs, and major and minor modes. Must be taken concurrently with MUSI 1311, 1312.

MUSI 1306. Music Appreciation. (3-0)
A course for non-music majors designed to acquaint the student with an overall survey of music literature. Open to all students and designed to increase awareness and appreciation of the art of music through live and recorded performances.

MUSI 1308, 1309. Survey of Music Literature. (3-2)
Designed to acquaint students with vocal and instrumental literature from the Medieval continuing through the music of the Twentieth Century. A study of composers and analysis of standard repertoire, styles and historical periods is made through books, scores, recordings, and live performances. For music majors and minors only or permission of instructor.

MUSI 1310. American Popular Music. (3-0)
This course is a comprehensive analysis of the development of popular music in American culture from the late 19th through the 21st centuries. Business, technological, societal and personal aspects of the music will be investigated.

MUSI 1311, 1312. Elementary Harmony. (4-2)
This course correlates the elements of music theory through the use of written and keyboard harmony, sight-singing, dictation, and general ear training. The basic study includes a working knowledge of notation, rhythm, scales, intervals, triads, seventh chords, inversions, and non-harmonic tones. Must be taken concurrently with MUSI 1116, 1117.

MUSI 2116, 2117. Intermed. Sight-Singing & Ear Training. (1-1)
This course includes sight-singing and dictation of intervals and difficult melodies in modes and melodies that modulate. Must be taken concurrently with MUSI 2311, 2312. Prerequisites: MUSI 1116, 1117 or approval of instructor.
MUSI 2311, 2312. Intermediate Harmony.  (3-1)
This course gives further study in written and keyboard harmony. It also includes
altered chords, modulation to closely related keys, and original compositions in
the style of the period under consideration. Must be taken in conjunction with
MUSI 2116, 2117. Prerequisite: MUSI 1311, 1312 or consent of the instructor.

Applied Music

Principal Instruments.  (1-1)
MUAP 1202, 1203, 2204, 2205. Violin.
MUAP 1205, 1206, 2207, 2208. Viola.
MUAP 1213, 1214, 2213, 2214. Bass.
MUAP 1217, 1218, 2219, 2220. Flute.
MUAP 1221, 1222, 2223, 2224. Oboe.
MUAP 1225, 1226, 2227, 2228. Bassoon.
MUAP 1229, 1230, 2231, 2232. Clarinet.
MUAP 1233, 1234, 2235, 2236. Saxophone.
MUAP 1237, 1238, 2239, 2240. Trumpet/Cornet.
MUAP 1241, 1242, 2243, 2244. Horn.
MUAP 1245, 1246, 2247, 2248. Trombone.
MUAP 1249, 1250, 2251, 2252. Euphonium/Baritone.
MUAP 1253, 1254, 2255, 2256. Tuba.
MUAP 1257, 1258, 2259, 2260. Percussion.
MUAP 1261, 1262, 2263, 2264. Guitar.
MUAP 1269, 1270, 2271, 2272. Piano.
MUAP 1281, 1282, 2283, 2284. Voice.

Designed for the music major to develop proficiency on his/her chosen principal
instrument (or voice). Technical, tonal, and interpretative ability is stressed.
Materials used are commensurate with the student's ability. Performance on a
minimum of one student recital or jury each semester is required. One 1 hour
lesson per week is required. Fee charged.

Secondary Instruments  (1-1)
MUAP 1102, 1103, 2104, 2105. Violin.
MUAP 1105, 1106, 2107, 2108. Viola.
MUAP 1113, 1114, 2113, 2114. Bass.
MUAP 1117, 1118, 2119, 2120. Flute.
MUAP 1121, 1122, 2123, 2124. Oboe.
MUAP 1125, 1126, 2127, 2128. Bassoon.
MUAP 1129, 1130, 2131, 2132. Clarinet.
MUAP 1133, 1134, 2135, 2136. Saxophone.
MUAP 1137, 1138, 2139, 2140. Trumpet/Cornet.
MUAP 1141, 1142, 2143, 2144. Horn.
MUAP 1145, 1146, 2147, 2148. Trombone.
MUAP 1149, 1150, 2151, 2152. Euphonium/Baritone.
MUAP 1153, 1154, 2155, 2156. Tuba.
MUAP 1157, 1158, 2159, 2160. Percussion.
MUAP 1161, 1162, 2163, 2164. Guitar.
MUAP 1169, 1170, 2171, 2172. Piano.
MUAP 1181, 1182, 2183, 2184. Voice.

Designed for the non-music major wishing to improve his/her ability on a certain instrument (or voice), or for the music major in partial fulfillment of the secondary instrument requirement. Performances on a minimum of one student recital or jury each semester is required. One ½ hour lesson per week is required. Fee charged.

MUSI 1181, 1182, 2181, 2182. Class Piano. (1-2)
This course is organized for the student with no knowledge (or limited knowledge) of the keyboard and music reading. It is open to all students and meets for one hour of class instruction per week. Fee charged.

MUSI 1183, 1184, 2183, 2184. Class Voice. (1-2)
Class instruction in the fundamentals of correct breathing, tone, production and diction. Laboratory course designed for students with little or no previous voice training to aid in developing a pleasing tone quality produced with ease and proper enunciation. Fee charged.

MUSI 1192, 1193, 2192, 2193. Class Guitar. (1-2)
This course is designed for the complete beginner to guitar and reading music notation. Topics discussed will include fundamentals in guitar technique and basic music reading skills in first position on the guitar. This course is a class setting and a guitar may be provided and meets for one hour per week. Fee charged.

NURSING

A.D.N. (RN) PROGRAMS

RNSG 1160. Clinical-Nursing-Registered Nurse Training. (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. Introductory level.

RNSG 1260. Clinical-Nursing-Registered Nurse Training. (0-8)
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. Transition course.

RNSG 1261. Clinical-Nursing-Registered Nurse Training. (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. Intermediate level.

RNSG 1301. Pharmacology. (3-0) 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. This course lends itself to either a blocked or integrated approach. Pre-requisite for ADN Program.

RNSG 1327. Transition from Vocational to Professional Nursing. (3-1) Topics include health promotion, expanded assessment, analysis of data, nursing process, pharmacology, multidisciplinary teamwork, communication, and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework throughout the life span. Transition course.

RNSG 1343 Complex Concepts of Adult Health. (2-4) Integration of previous knowledge and skills related to common adult health needs into the continued development of the professional nurse as a provider of care, coordinator of care, and member of a profession in the care of adult clients/families in structured health care settings with complex medical-surgical health care needs associated with each body system. Emphasis on knowledge, judgments, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Intermediate level course.

RNSG 1412 Nursing Care of Child Bearing and Child Rearing Families. (2-6) Introductory level study of the concepts related to the provision of nursing care for childbearing and childrearing families; application of systematic problem-solving processes and critical thinking skills, including a focus on the childbearing family during preconception, prenatal, antepartum, neonatal, and postpartum periods and the childrearing family from birth to adolescence; and competency in knowledge, judgment, skill, and professional values within a legal/ethical framework. This course lends itself to a blocked approach.

RNSG 1417. Concepts of Nursing Practice I for Articulating Students. (3-7) Provides the articulating student the opportunity to examine the role of the professional nurse; application of a systematic problem-solving process and critical thinking skills which includes a focus on the adult population in selected settings; and competency in knowledge, judgment, skill, and professional values within a legal/ethical framework. This course lends itself to either a blocked or integrated approach. Transition course.

RNSG 1441 Common Concepts of Adult Health. (2-6) 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.

RNSG 1513. Foundations for Nursing Practice.  (4-4)
Introduction to the role of the professional nurse as provider of care, coordinator of care, and member of the profession. Topics include but are not limited to the fundamental concepts of nursing practice, history of professional nursing, a systematic framework for decision-making, mechanisms of disease, the needs and programs that nurses help patients manage, and basic psychomotor skills. Emphasis on knowledge, judgment, skills and professional values within a legal/ethical framework. This course lends itself to a blocked approach.

RNSG 2101 Care of Children and Families.  (1-0)
Study of concepts related to the provision of nursing care for children and their families, emphasizing judgment, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Intermediate level course.

RNSG 2213. Mental Health Nursing.  (1-3)
Principles and concepts of mental health, psychopathology, and treatment modalities related to the nursing care of clients and their families. This course lends itself to a blocked approach. Intermediate level course.

RNSG 2261. Clinical-Nursing-Registered Nurse Training.  (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. Intermediate level.

RNSG 2262. Clinical-Advanced-Registered Nursing Training.  (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. ** Imbedded in this clinical experience is a capstone experience consisting of a concentrated clinical where the student will be expected to progress from the care of one patient to managing clinical aspects for up to half of the assigned RN’s patient care assignment. Successful completion of this clinical includes a positive clinical evaluation of this segment of the clinical experience by both the assigned RN and the Clinical Instructor.

RNSG 2331 Advanced Concepts of Adult Health.  (2-3)
Application of advanced concepts and skills for the development of the professional nurse’s roles in complex nursing situations with adult clients/families with complex health needs involving multiple body systems in intermediate and critical care settings. Emphasis on knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Advanced level course.
VOCATIONAL NURSING

HITT 1305. Medical Terminology.  (3-0)
A study of word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols, surgical procedures, medical specialties, and diagnostic procedures.

VNSG 1216. Nutrition.  (2-0)
Introduction to nutrients and their role in proper growth and development and the maintenance of health. Designed to expose the student to fundamental principles of human nutrition. Included in the study of nutrition during the life cycle and diet therapy as it relates to the disease process.

VNSG 1219 Leadership and Professional Development.  (2-0)
Study of the importance of professional growth. Topics include the role of the licensed vocational nurse in the multi-disciplinary health care team, professional organizations, and continuing education.

VNSG 1222 Vocational Nursing Concepts.  (2-0)
Introduction to the nursing profession and its responsibilities. Includes legal and ethical issues in nursing practice. Concepts related to the physical, emotional, and psychosocial self-care of the learner/professional.

VNSG 1330. Maternal-Neonatal Nursing.  (3-0)
Utilization of the nursing process in the assessment and management of the childbearing family. Emphasis on the bio-psycho-socio-cultural needs of the family during the phases of pregnancy, childbirth, and the neonatal period including abnormal conditions. Designed to acquaint the student to the obstetrical patient by utilizing the nursing process in meeting the needs of these patients. There is a focus on the parent/fetus-neonate in both normal and high risk conditions.

VNSG 1331. Pharmacology.  (3-0)
Fundamentals of medications and their diagnostic, therapeutic, and curative effects. Includes nursing intervention utilizing the nursing process. Designed to acquaint the student to the utilization of the nursing process in meeting health care needs of the patient receiving drug therapy.

VNSG 1334. Pediatrics.  (3-0)
Study of childhood diseases and childcare from infancy through adolescence. Focus on the care of the well and the ill child utilizing the nursing process. Also the child in each developmental stage will be covered.

VNSG 1360. Clinical I Practical Nurse (LPN Training)  (0-15)
A method of instruction providing detailed education, training, and work-based experience, and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external experiences. Course may be repeated if the topics and learning outcomes vary. This course includes supervised clinical experience offering laboratory practice in the development of basic nursing skills and introduction to the disease process. Special emphasis is placed on the geriatric patient and the problems unique to that age group.

VNSG 1461. Clinical II Practical Nursing (LPN Training) (0-23)
A method of instruction providing detailed education, training, and work-based experience, and direct patient/client care generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course includes supervised offering students laboratory practice in the nursing care of adult advanced medical or surgical patient and/or the obstetric, pediatric and new patients. Exposure to various allied health fields is included. The administration of medications begins this semester.

VNSG 1462. Clinical III Practical Nursing (LPN Training) (0-23)
A method of instruction providing detailed education, training, and work-based experience, and direct patient/client care generally at clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topics and learning objectives vary. This course includes supervised clinical experiences offering students laboratory practice in nursing care of the adult and of the advanced medical or surgical patient and/or the obstetric, pediatric and newborn patients. Exposure to various allied health fields is included.

VNSG 1500. Nursing In Health and Illness I. (4-4)
Introduction to general principles of growth and development, primary health care needs of the client across the life span, and therapeutic nursing interventions. Designed to acquaint the student to the nursing process, the technical skills, and concepts which cover all areas of the curriculum. This will also include dosage calculation. Provides the student practice in the clinical skills lab.

VNSG 1509. Nursing In Allied Health and Illness II. (5-0)
Introduction to common health problems of the adult requiring medical and surgical interventions. This course is designed to acquaint the student to the adult patient who has health deviations. Preventative, therapeutic, and
rehabilitative aspects shall be provided. Also included will be physical, psychological, and spiritual components of health and disease.

VNSG 1510. Nursing In Health and Illness III.  
Continuation of nursing in Health and Illness II. Further study of common medical-surgical problems of the adult including concepts of mental illness. Incorporates knowledge necessary to make the transition from student to graduate vocational nurse. This course provides further study of the adult with health deviations including preventative, therapeutic, and rehabilitative aspects.

OFFICE ADMINISTRATION TECHNOLOGY

ITSC 1305. Introduction to PC Operating Systems.  
Introduction to personal computer operating systems including installation, configuration, file management, memory and storage management, control of peripheral devices, and use of utilities.

ITSC 1309. Integrated Software Applications I.  
Introduction to business productivity software suites using word processing, spreadsheets, databases, and/or presentation software.

ITSC 1380. Cooperative Education - Computer and Information Sciences, General.  
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

ITSC 2435. Application Software Problem Solving.  
Utilization of appropriate application software to solve advanced problems and generate customized solutions.

ITSW 1301. Introduction to Word Processing.  
An overview of the production of documents, tables, and graphics.

ITSW 1304. Introduction to Spreadsheets.  
Instruction in the concepts, procedures, and application of electronic spreadsheets. Importance of electronic spreadsheets.

ITSW 1307. Introduction to Database.  
Introduction to database theory and the practical applications of a database.

ITSW 1310. Introduction to Presentation Graphics Software.  
Instruction in the utilization of presentation software to produce multimedia presentations. Graphics, text, sound, animation and/or video may be used in
presentation development. ITSW 1301 or BCIS 1305 or consent of the instructor.

ITSW 2334. Advanced Spreadsheets. (2-4)
Advanced techniques for developing and modifying spreadsheets. Includes macros and data analysis functions.

MDCA 1343. Medical Insurance. (2-4)
Emphasizes medical office coding procedures for payment/reimbursement by patient or third party.

MRMT 1307. Medical Transcription I. (2-4)
Fundamentals of medical transcription with hands-on experience in transcribing physician dictation including basic reports such as history and physicals, discharge summaries, consultations, operative reports, and other medical reports. Utilizes transcribing and information processing equipment compatible with industry standards. Designed to develop speed and accuracy. Prerequisite: HITT 1305 and ITSW 1301 or consent of the instructor.

POFI 1401. Computer Applications I. (3-3)
Overview of computer office applications including current terminology and technology. Introduction to computer hardware, software applications, and procedures.

POFI 2331. Desktop Publishing. (2-4)
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. Prerequisite: ITSW 1301 or consent of the instructor.

POFI 2340. Advanced Word Processing. (2-4)
Advanced techniques in merging, macros, graphics, and desktop publishing. Includes extensive formatting for technical documents. Emphasis on business applications. Prerequisite: ITSW 1301 or consent of the instructor.

POFM 1302. Medical Software Applications. (2-4)
Medical software applications for the management and operation of health care information systems.

POFM 1317. Medical Administrative Support. (2-4)
Instruction in medical office procedures including appointment scheduling, medical records creation and maintenance, telephone communications, coding, billing, collecting, and third party reimbursement. Prerequisite: POFT 1329 and ITSW 1301 or consent of the instructor.

POFM 1327. Medical Insurance. (2-4)
Survey of medical insurance including the life cycle of various claim forms, terminology, litigation, patient relations, and ethical issues.

POFM 1380. Cooperative Education - Medical Administrative/Executive Assistant and Medical Secretary. (1-20)
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.

POFM 1381. Cooperative Education - Medical Administrative/Executive Assistant and Medical Secretary. (1-20)
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. 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.

POFT 1220. Job Search Skills. (2-0)
Skills to seek and obtain employment in business and industry.

POFT 1301. Business English. (2-4)
Introduction to a practical application of basic language usage skills with emphasis on fundamentals of writing and editing for business.

POFT 1307. Proofreading and Editing. (3-0)
Instruction in proofreading and editing skills necessary to assure accuracy in business documents.

POFT 1309. Administrative Office Procedures I. (2-4)
Study of current office procedures, duties, and responsibilities applicable to an office environment.

POFT 1319. Records and Information Management I. (3-0)
Introduction to basic records information management filing systems including manual and electronic filing.

POFT 1321. Business Math. (2-4)
Fundamentals of business mathematics including analytical and critical thinking skills.

POFT 1329. Beginning Keyboarding. (2-4)
Skill development keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents.
POFT 1349. Administrative Office Procedures II. (2-4)
In depth coverage of office procedures with emphasis on decision making, goal setting, management theories, and critical thinking. Prerequisite: POFT 1309 or consent of the instructor.

POFT 1380. Cooperative Education - Administrative Assistant/Secretarial Science, General. (1-20)
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.

POFT 1381. Cooperative Education - Administrative Assistant/Secretarial Science, General. (1-20)
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.

POFT 2301. Intermediate Keyboarding. (2-4)
A continuation of keyboarding skills emphasizing acceptable speed, and accuracy levels and formatting documents. Prerequisite: POFT 1329 or consent of the instructor.

PHILOSOPHY

PHIL 1316. History of Religion I. (3-0)
A historical survey of major religions and the study of the development of Judaism, its customs, literature, language and religion. Emphasis is given to the influence of contemporary societies upon the Hebrew people, together with a study of the lands in which they lived.

PHIL 1317. History of Religion II. (3-0)
A historical survey of major religions and a comprehensive view of the land, the literature, religions, and the governments which influenced the Christian movement. A study is made of the role that Judaism and Hellenism played in the development of Christianity with special emphasis given to the Roman Government and the Greek Culture.

PHYSICAL ACTIVITY AND HEALTH

PHED 1101, 1131, 2101, 2131. Aerobics. (0-3)
The aerobic exercise class places emphasis on aerobic conditioning as well as the development of strength, flexibility, and endurance. It will include a program of low impact aerobics for the development of cardiovascular endurance, toning exercises for specific muscle groups, and flexibility exercises.

PHED 1102, 1132, 2102, 2132. Basketball/Soccer. (0-3)
Instruction, practice and participation in the rules, strategies and techniques of basketball and soccer.

PHED 1103, 1133, 2103, 2133. Weight Lifting. (0-3)
Instruction on proper technique and practice in the use of weights through mostly isotonic and some isometric devices.

PHED 1104, 1134, 2104, 2134. Volleyball. (0-3)
Demonstration, practice and participation in the basic skills of volleyball.

PHED 1105, 1135, 2105, 2135. Basketball. (0-3)
Co-ed. instruction, practice, participation in the rules, strategies and techniques of basketball.

PHED 1106, 1136, 2106, 2136. Varsity Athletics. (0-3)
Participation in the sport activity of men's and women's basketball, men's baseball, women's softball, women's volleyball, golf, dance, or rodeo.

PHED 1107, 1137, 2107, 2137. Dance & Rhythmic Activities. (0-3)
Practice and participation in dance and rhythmic routines.

PHED 1108, 1138, 2108, 2138. Intro. to Wellness/Fitness. (0-3)
Introduces the basic exercise and approach to wellness, perform a fitness appraisal and write and apply a wellness program.

PHED 1110, 1130, 2110, 2130. Walking/Jogging. (0-3)
Introduces the basics of walking and jogging, also practices the basics of exercise and wellness.

PHED 1111, 1141, 2111, 2141. P.E. Golf. (0-3)
Instruction, practice, participation in the rules, strategies and techniques of golf.

PHED 1114, 1124, 2114, 2124. Archery. (0-3)
Instruction on proper technique and safety rules of shooting archery equipment.

PHED 1115, 1145, 2115, 2145. Bowling. (0-3)
Demonstration, practice and participation in the basic skills and rules of bowling.

PHED 1116, 1146, 2116, 2146. Roller Skating. (0-3)
Demonstration, practice and participation in the basic skills of roller skating.
PHED 1117, 1147, 2117, 2147. P.E. Tennis. (0-3)
Demonstration, practice and participation in the basic skills of tennis.

PHED 1120, 1150, 2120, 2150. Water Aerobics. (0-3)
Emphasizes a series of continuous exercises and workouts done in the water that develop muscular strength, flexibility, and aerobic fitness.

PHED 1121. Swimming, Beginning. (For Non Swimmers) (0-3)
Introduces basic swimming skills to the non swimmer such as front crawl, elementary backstroke, breathing control, basic floating, water safety and artificial resuscitation.

PHED 1122, 1152, 2122, 2152. Ultimate Frisbee. (0-3)
Coed instruction, practice, participation in the rules, strategies and techniques of ultimate Frisbee.

PHED 1123, 1153, 2123, 2153. Flag Football. (0-3)
Demonstration, practice and participation in the game and basic skills of flag football.

PHED 1125, 1155, 2125, 2155. Zumba. (0-3)
Instruction and participation in a fitness program which involves dance and aerobic elements.

PHED 1126, 1156, 2126, 2159. Body Stretching and Sculpting. (0-3)
The body stretching and sculpting class places emphasis on development of flexibility, endurance, and strength. It will include a program of toning exercise for specific muscle groups, and flexibility exercises.

PHED 1127, 1157, 2127, 2157. Badminton. (0-3)
Demonstration, practice and participation in the basic skills of badminton.

PHED 1128, 1158, 2128, 2158. Tai Chi. (0-3)
An exercise class that places emphasis on Tai Chi conditioning as well as the development of core strengthening, cardio respiratory training, posture, balance and movement. It will include low impact movements for the development of correct techniques and strategies of Tai Chi.

PHED 1151. Swimming, Intermediate. (0-3)
Provides progressive skill development in the front crawl and back crawl, breast and side strokes, survival strokes, water safety, and artificial resuscitation.

PHED 2121. Advanced Swimming. (0-3)
Advanced swimming and skill development.
PHED 1301. Intro. to Physical Fitness & Sport. (3-0)
Orientation to the field of physical fitness and sport. Includes the study and practice of activities and principles that promote physical fitness.

PHED 1304. Personal/Community Health I. (3-0)
Investigation of the principles and practices in relation to personal and community health.

PHED 1306. First Aid. (3-0)
Instruction in practice of first aid techniques. Course leads to Red Cross Standard, Advanced and Instructors Certificates. Open as a service course to all departments.

PHED 1308. Sports Officiating I. (3-1)
Instruction in rules, interpretation, and mechanics of officiating selected sports.

PHED 1309. Sports Officiating II. (3-1)
A continuation of PHED 1308. Instruction in rules, interpretation, and mechanics of officiating selected sports.

PHED 1321. Coaching/Sports/Athletics I. (3-1)
Studies of the history, theories, philosophies, rules, and terminology of competition sports. Includes coaching techniques.

PHED 1322. Coaching/Sports/Athletics II. (3-1)
A continuation of PHED 1321. Studies of the history, theories, philosophies, rules, and terminology of competition sports. Includes coaching techniques.

PHED 1338. Concepts of Physical Fitness. (3-3)
Concepts and use of selected physiological variables of fitness, individual testing and consultation and the organization of sports and fitness programs.

PHED 1346. Drug Use and Abuse. (3-0)
Study of the use and abuse of drugs in today’s society. Emphasizes the physiological, sociological, and psychological factors.

PHED 2121. Advanced Swimming. (0-3)
Advanced swimming and skill development.

PHED 2156. Taping and Bandaging. (1-0)
This course provides the fundamental taping and bandaging techniques used in the prevention and care of athletic related injuries.

PHED 2356. Care and Prevention of Athletic Injuries. (3-0)
Prevention and care of athletic injuries with emphasis on qualities of a good athletic trainer, avoiding accidents and injuries, recognizing signs and symptoms
of specific sports injuries and conditions, immediate and long-term care of injuries, and administration procedures in athletic training.

PHYSICS

PHYS 1401. General College Physics. (3-3)
Fundamentals of mechanics, heat and sound. Co-requisite: Student must also enroll in lab for the course: PHYS 1101

PHYS 1402. General College Physics. (3-3)
Fundamentals of electricity, magnetism, light and atomic physics. Co-requisite: Student must also enroll in lab for the course: PHYS 1102

PHYS 1403. Stars and Galaxies. (3-3)
Study of stars, galaxies, and the universe outside our solar system. Co-requisite: Student must also enroll in lab for the course: PHYS 1103

PHYS 1404. Solar System. (3-3)
Study of the sun and its solar system, including its origin. Co-requisite: Student must also enroll in lab for the course: PHYS 1104

PHYS 2425. Mechanics, Heat, & Sound. (3-3)
Mechanics, heat and sound for engineering and physics majors. Problems requiring knowledge of calculus are introduced. Prerequisite: Credit for or concurrent registration in MATH 2413 or consent of the instructor. Co-requisite: Student must also enroll in lab for the course: PHYS 2125

PHYS 2426. Electricity, Magnetism, & Light. (3-3)
Electricity, magnetism, light and atomic physics for engineering and physics majors. Problems requiring knowledge of calculus are introduced. Prerequisite: PHYS 2425 and credit for or concurrent registration in MATH 2414 or consent of the instructor. Co-requisite: Student must also enroll in lab for the course: PHYS 2126

PSYCHOLOGY

PSYC 1100. Learning Framework. (1-0)
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 draw from the theoretical models they have learned.

PSYC 2301. General Psychology. (3-0)
The course is a descriptive survey of the field of psychology. Topics include: theory and research development, perception, learning, thinking, emotions, motivation, personality, descriptions of and treatment of mental illness.

PSYC 2306. Human Sexuality. (3-0)
Study of the psychological, sociological, and physiological aspects of human sexuality. (In ACGM cross-listed as SOCI 2306)

PSYC 2314. Human Growth and Development. (3-0)
The course is a detailed study of human growth and development through the complete life-span cycle. The development of several physical and mental processes is examined. The course emphasizes innate and environmental factors that influence development and the relationship of physical and mental maturation on the total human personality.

PSYC 2315. Psychology of Adjustment. (3-0)
Study of the processes involved in adjustment and coping of individuals to their personal and social environments.

PSYC 2319. Social Psychology. (3-0)
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. (In ACGM cross-listed as SOCI 2326)

PSYC 2389. Academic Co-Operative Leadership. (3-0)
An instructional program designed to integrate on-campus study with practical hands-on experience in psychology. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of human social behavior and/or social institutions.

READING

READ 0301. Developmental Reading I. (3-3)
Designed for students needing improvement in reading through remedial exercises. A variety of resources including lecture, computer assisted instruction, videos, tapes, and printed material are used. Emphasis is on increasing vocabulary, main ideas, supporting details, meanings of words and phrases, and comprehension.

READ 0302. Developmental Reading II. (3-3)
A continuation of READ 0301. A variety of resources including lecture, computer assisted instruction, videos, tapes, and written material are used. Emphasis is on the writer's purpose and meaning, the relationship among ideas, and thinking skills necessary to pursue college level work.

READ 0303. Developmental Reading III. (3-3)
Designed for the student who has taken the THEA and scored between 200 and 230 or has successfully completed READ 0302. Critical reading and thinking skills are further developed through lecture and assigned readings.

INRW 0309. Developmental Integrated Reading & Writing. (NCBO). (3-3)
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 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.

SOCIOLOGY

SOCI 1301. Introduction to Sociology. (3-0)
The course is a descriptive survey of the field of sociology. Topics include: theory and research development, culture, social organization, socialization, social control and deviant behavior, social class, social institutions, social and cultural change.

SOCI 1306. Sociology of Social Problems. (3-0)
Using sociological analysis, the course covers a number of contemporary social problems related to America. The analysis of the social problems includes descriptive content, causes and solutions.

SOCI 2301. Marriage and Family. (3-0)
Using a sociological approach, the course covers the marriage and family institution. Topics include: male-female relations from dating through marriage, marriage life-cycle and adjustments, problems leading to marital breakdown and divorce, the relationship of the marriage and family institution to the larger society.

SOCI 2306. Human Sexuality. (3-0)
Study of the psychological, sociological, and physiological aspects of human sexuality. (In ACGM cross listed as PSYC 2306.)

SOCI 2326. Social Psychology. (3-0)
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. (In ACGM cross-listed as PSYC 2319)

SPANISH

SPAN 1411. Elementary Spanish. (Spanish Level I) (3-2)  
A course covering the essentials of Spanish (pronunciation, basic vocabulary, functional grammar, sentence structure, inflections, and common idioms) with stress on reading, understanding, writing, and speaking.

SPAN 1412. Elementary Spanish. (Spanish Level II) (3-2)  
Continuation of SPAN 1411. Prerequisite: SPAN 1411 or equivalent or one year of high school Spanish or consent of the instructor.

SPAN 2311. Intermediate Spanish. (Spanish Level III) (3-0)  
A study of Spanish grammar and verb tenses with conversation, readings, vocabulary study, and some original compositions. Prerequisite: SPAN 1411 and SPAN 1412 or equivalent or two years of high school Spanish or consent of the instructor.

SPAN 2312. Intermediate Spanish. (Spanish Level IV) (3-0)  
Continuation of SPAN 2311. Prerequisite: SPAN 2311 or equivalent or consent of the instructor.

SPEECH/COMMUNICATIONS

COMM 1307. Introduction to Mass Communication. (3-0)  
Study of the media by which entertainment and information messages are delivered. Includes an overview of the traditional mass media: their functions, structures, supports, and influences.

COMM 2305. Editing and Layout. (3-3)  
Editing and layout processes, with emphasis on accuracy and fairness, including the principles and techniques of design.

COMM 2330. Introduction to Public Relations. (3-0)  
Exploration of the history and development of public relations. Presentation of the theory behind and process of public relations, including the planning, implementation, and evaluation of PR campaigns.

SPCH 1144, 1145, 2144, 2145. Forensic Activities. (1-3)
This course consists of laboratory experience for students who participate in forensic activities. May be taken four semesters. Prerequisite: SPCH 2335 or consent of instructor.

SPCH 1146. Parliamentary Procedures. (1-3)
Laboratory experience in Parliamentary Procedures.

SPCH 1311. Introduction to Speech Communications. (3-0)
Theories and practice of communication in interpersonal, small group, and public speech.

SPCH 1315. Public Speaking. (3-0)
This is a practical course in public speaking, employing oral assignments demonstrating the ability to choose a topic, do research, organize a speech, and deliver it with maximum control over stage fright. Students prepare and deliver a minimum of four speeches, followed by critiques.

SPCH 1318. Interpersonal Communication. (3-0)
Application of communication theory to interpersonal relationship development, maintenance, and termination in relationship contexts including friendships, romantic partners, families, and relationships with co-workers and supervisors.

SPCH 1321. Business & Professional Communication. (3-0)
Study and application of communication within the business and professional context. Special emphasis will be given to communication competencies in presentations, dyads, teams, and technologically.

SPCH 1342. Voice and Diction. (3-0)
A course designed to improve the voice by evaluation of individual student speech habits and extensive work to correct deficiencies. Analysis will include volume, quality, pitch, rate, vocal variety, articulation, and pronunciation. A study of physiology of vocalization, including breath control, the larynx, resonance, and the articulation system, will be demonstrated by class exercises. Thorough practice with The International Phonetic Alphabet will be augmented by dictionary studies, work lists and oral readings.

SPCH 2333. Discussion and Small Group Communication. (3-0)
Discussion and small group theory and practice as they relate to group process and interaction.

SPCH 2335. Argumentation and Debate. (3-0)
This course consists of the study of theories and practice in argumentation and debate including analysis, reasoning, organization, evidence, and refutation as applied to college forensics and debate. Application is made to current topics.

SPCH 2341. Oral Interpretation. (3-0)
This is a first course in interpretation and designed to enable students to better communicate the written page to an audience. Through lectures and student performances, one should learn to choose selections, prepare them for presentation, adapt them to a time limit, and learn the fine points of delivery including pauses, intensity, range, pronunciation, and emotional quality.

**WELDING**

MCHN 1302. Print Reading for Machining Trades.  (2-2)
A study of blueprints for machining trades with emphasis on machine drawings.

MCHN 1320. Precision Tools and Measurement.  (1-5)
An introduction to the modern science of dimensional metrology. Emphasis on the identification, selection, and application of various types of precision instruments associated with the machining trade. Practice of basic layout and piece part measurements while using standard measuring tools.

MCHN 1343. Machine Shop Mathematics.  (3-0)
Designed to prepare the student with technical, applied mathematics that will be necessary in future machine shop-related courses.

MCHN 1438. Basic Machine Shop I.  (2-4)
A course that introduces the student machining fundamentals. The student begins by using basic machine tools including the lathe, milling machine, drill press, power saw, and bench grinder. Machine terminology, theory, math, part layout, and bench work using common measuring tools is included. Emphasis is placed on shop safety, housekeeping, and preventative maintenance.

MCHN 2303. Fundamentals of Computer Numerical Controlled (CNC) Machine Controls.  (2-2)
Programming and operation of Computer Numerically Controlled (CNC) machine shop equipment.

WLDG 1323. Welding Safety, Tools, and Equipment.  (3-0)
An introduction to welding careers and safety practices, including welding safety; OSHA and the Hazardous Communication Act, Material Safety Data Sheets (MODS); basic mathematics; measuring systems; shop operations; use and care of precision measuring tools; and the use and care of hand and power tools. Instruction on various types of welding equipment and processes, basic welding gases, fluxes, electrodes, symbols, and blueprint.

WLDG 1327. Welding Codes.  (2-2)
An in-depth study of welding codes and their development in accordance with structural standards, welding processes, destructive and nondestructive testing methods.
WLDG 1337. Introduction to Metallurgy.  
A study of ferrous and non-ferrous metals from the ore to the finished product. Emphasis on metal alloys, heat treating, hard surfacing, welding techniques, forging, foundry processes, and mechanical properties of metal including hardness, machine ability, and ductility.

WLDG 1380, 1381. Cooperative Education - Welder/Welding Technologist.  
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 the technical discipline, specific learning objectives guide the student through the work experience.

WLDG 1391. Special Topics in Welding/Welding Technologist.  
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student.

WLDG 1408. Metal Sculpture.  
Techniques and methods of oxy-acetylene and electric welding and cutting to produce metal sculptures. Skill development in material forming, welding, brazing, and finishing techniques. Includes work ethics, artistic styles, and professionalism.

WLDG 1412. Introduction to Flux Cored Arc Welding (FCAW).  
An overview of terminology, safety procedures, and equipment set-up. Practice in performing T-joints, lap joints, and butt joints using Flux Cored Arc Welding (FLAW) equipment.

WLDG 1413. Introduction to Blueprint Reading for Welders.  
A study of industrial blueprints. Emphasis placed on terminology, symbols, graphic description, and welding processes. Includes systems of measurement and industry standards. Also includes interpretation of plans and drawings used by industry to facilitate field application and production.

WLDG 1417. Introduction to Layout and Fabrication.  
A fundamental course in the layout and fabrication related to the welding industry. Major emphasis on structural shapes and use in construction.

WLDG 1421. Welding Fundamentals.  
An introduction to the fundamentals of equipment used in oxyacetylene and arc welding, including welding and cutting safety, basic oxyacetylene welding and cutting, basic arc welding processes and basic metallurgy.
WLDG 1428. Introduction to Shielded Metal Arc Welding (SMAW). (2-4)
An introduction to the shielded metal arc welding process. Emphasis is placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs. Instruction provided in SMAW fillet welding in various positions.

WLDG 1430. Introduction to Gas Metal Arc (MIG) Welding. (2-4)
A study of the principles of gas metal arc welding, setup and use of GMAW equipment, and safe use of tools/equipment. Instruction on various joint designs.

WLDG 1434. Introduction to Gas Tungsten Arc (TIG) Welding. (2-4)
An introduction to the principles of gas tungsten arc welding (GTAW), setup/use of the GTAW equipment, and safe use of tools and equipment. Welding instruction in various positions on joint design.

WLDG 1435. Introduction to Pipe Welding. (2-4)
An introduction to welding of pipe using the shielded metal arc welding process, including electrode selection, equipment setup, and safe shop practices. Emphasis on welding positions 1G and 2G using various electrodes.

WLDG 1453. Intermediate Layout and Fabrication. (2-4)
An intermediate course in layout and fabrication. Includes design and production of shop layout and fabrication. Emphasis placed on symbols, blueprints, and written specifications.

WLDG 1457. Intermediate Shielded Metal Arc Welding (SMAW). (2-4)
A study of the production of various fillet and groove welds. Preparation of specimens testing in all positions. Prerequisite: WLDG 1428 or concurrent enrollment or consent of the instructor.

WLDG 2380, 2381. Cooperative Education - Welder/Welding Technologist. (1-20)
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 the technical discipline, specific learning objectives guide the student through the work experience.

WLDG 2406. Intermediate Pipe Welding. (2-4)
A comprehensive course on the welding of pipe using the shielded metal arc welding (SMAW) process. Position of welds will be 1G, 2G, 5G, and 6G using various electrodes. Topics covered include electrode selection, equipment setup, and safe shop practices.

WLDG 2413. Welding Using Multiple Processes. (2-4)
Instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes; oxy-fuel cutting and welding, shielded metal arc welding, gas metal arc welding, flux-cored arc welding, gas tungsten arc welding, or any other approved welding procedures. Prerequisite: WLDG 1430 and WLDG 1434 or consent of the instructor.

WLDG 2435. Advanced Layout and Fabrication. (2-4)
An advanced course in layout and fabrication. Includes production and fabrication of layout, tools, and processes. Emphasis on application of fabrication and layout skills.

WLDG 2443. Advanced Shield Metal Arc Welding (SMAW). (2-4)
Advanced topics based on accepted welding codes. Training provided with various electrodes in shielded metal arc welding processes with open V-groove joints in all positions. Prerequisite: WLDG 1457 or consent of the instructor.

WLDG 2447. Advanced Gas Metal (MIG) Welding. (2-4)
Advanced topics Gas Metal Arc Welding (GMAW). Includes welding in various positions and directions.

WLDG 2451. Advanced Gas Tungsten Arc (TIG) Welding. (2-4)
Advanced topics in GTAW welding, including welding in various positions and directions. Prerequisite: WLDG 1434 or consent of the instructor.

WLDG 2453. Advanced Pipe Welding. (2-4)
Advanced topics involving welding of pipe using the shielded metal arc welding process. Topics may include electrode selection, equipment setup, and safe shop practices. Emphasis on welding positions 5G and 6G using various electrodes. Prerequisite: WLDG 2406 or permission of the instructor.