

COURSE DESCRIPTIONS  
2018-2019

Contact individual departments  
for changes and updates.

(Updated 08/16/2018)

## 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 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 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. (Core option—Creative Arts component) (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. (Core option—Creative Arts component) (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. (Core option—Creative Arts component) (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 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. (2-4)  
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 3<sup>rd</sup> 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 2389. Internship-Automobile/Automotive Mechanics/  
Technology/Technician. (0-18)  
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. 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 2417. Automotive Engine Performance Analysis I. (2-8)  
Theory, operation, diagnosis, and repair of basic engine dynamics, ignition systems, and fuel delivery systems. Use of basic engine performance diagnostic equipment. May be taught with manufacturer specific instructions. Prerequisite: AUMT 1407.
- 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)

This course introduces general nutritional concepts in health and disease and includes practical applications of that knowledge as well as nutrition and research applications. Special emphasis is given to fundamentals of chemistry and biochemistry, fundamentals of nutrition including nutrients and nutritional processes including functions, food sources, digestion, absorption, and metabolism. Environmental influences on health and disease, food safety and availability, symptomology of nutrient insufficiency, excess, and impaired metabolism, and nutritional information including food labels, advertising, and nationally established guidelines are addressed.

BIOL 1323. Nutrition and Diet Therapy II. (3-0)

Study of the chemical, physical, and sensory properties of food; nutritional quality; and food use and diet applications. Special emphasis is given to anatomy and physiology including nutritional, supplemental, and herbal support of body systems (digestive, immune, cardiovascular, musculoskeletal, nervous, endocrine, lymphatic, detoxification, excretory, and integumentary systems), epigenetics and nutritional genomics, and biochemical pathways. This course will expand upon comparative dietary systems including diet analysis and planning, popular diets review, cultural influence on food choices, evidence-based healthy lifestyle recommendations, and differential diet plans through various life cycles (pediatrics, men, women, geriatrics, and sports nutrition). The appropriate and safe use of herbs and supplements will be addressed (indications of need, contraindications, interactions with herbs, foods, and medications).

BIOL 1406. Biology for Science Majors I.

(Core option—Life & Physical Sciences component) (3-3)

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. A co-requisite laboratory-based course includes activities that will reinforce the fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included. Co-requisite: Student must also enroll in lab for the course: BIOL 1106

BIOL 1407. Biology for Science Majors II.

(Core option—Life & Physical Sciences component) (3-3)

The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. A co-requisite laboratory-based course includes activities that will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology,

and evolution of plants and animals. 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.

(Core option—Life & Physical Sciences component) (3-3)

This course provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Co-requisite: Student must also enroll in lab for the course: BIOL 1108

BIOL 1409. Biology for Non-Science Majors II.

(Core option—Life & Physical Sciences component) (3-3)

This course will provide a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Co-requisite: Student must also enroll in lab for the course: BIOL 1109

BIOL 1411. Botany. (Core option—Life & Physical Sciences component) (3-4)

Fundamental biological concepts relevant to plant physiology, life cycle, growth and development, structure and function, and cellular and molecular metabolism as they relate to botanical medicine. The role of plants in the environment, evolution, and phylogeny of major plant groups, algae, and fungi. Laboratory activities will reinforce fundamental biological concepts relevant to plant physiology, life cycle, growth and development, structure and function, and cellular and molecular metabolism as they relate to botanical medicine. The role of plants in the environment, evolution, and phylogeny of major plant groups, algae, and fungi as they relate to botanical medicine. Co-requisite: Student must also enroll in lab for the course: BIOL 1111

BIOL 2289. Holistic Clinical Skills. (0-9)

An instructional program designed to integrate on campus study with practical hands on work experience in the biological sciences/life sciences. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of living organisms and their systems. This course addresses mental health and wellness self-care strategies, nutritional counseling, herbal protocols, and wellness coaching processes. Students will gain skills in career preparation including practical skills development, coaching education, business management, legal issues including applicable laws and regulations, scope of practice, acceptable professional standards, practice development and marketing, obtaining referrals and collaborating with other health professionals,



and professional ethics. Students will also be introduced to intake procedures, health assessments, and lab testing.

BIOL 2389. Advanced Holistic Clinical Skills. (0-9)

An instructional program designed to integrate on campus study with practical hands on work experience in the biological sciences/life sciences. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of living organisms and their systems. This course addresses the mastery of clinical skills including client intake and health assessments, lab testing and analysis, medical terminology, and practice development. (Cross listed as) WECM

BIOL 2401. Anatomy and Physiology I.

(Core option—Life & Physical Sciences component) (3-3)

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

BIOL 2402. Anatomy and Physiology II.

(Core option—Life & Physical Sciences component) (3-3)

Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Systems to be studied include endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Prerequisite required: BIOL 2401. **Must have passed the reading section of the TSI or be exempt from other state tests.**

BIOL 2406. Environmental Biology.

(Core option—Life & Physical Sciences component) (3-3)

Principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research as they relate to

botanical medicine. Laboratory activities will reinforce principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological as they relate to botanical medicine. Co-requisite: Student must also enroll in lab for the course: BIOL 2106

BIOL 2416. Genetics. (3-3)

This course is a study of the principles of molecular and classical genetics and the function and transmission of hereditary material. It 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-Majors (Bacteriology). (3-3)

This course covers basic microbiology and immunology and is primarily directed at pre-nursing, pre-allied health, and non-science majors. It provides an introduction to historical concepts of the nature of microorganisms, microbial diversity, the importance of microorganisms and acellular agents in the biosphere, and their roles in human and animal diseases. Major topics include bacterial structure as well as growth, physiology, genetics, and biochemistry of microorganisms. Emphasis is on medical microbiology, infectious diseases, and public health. This course covers basics of culture and identification of bacteria and microbial ecology. Emphasis is on medical microbiology, infectious diseases, and public health. Prerequisites: BIOL 1406 or BIOL 1408 or BIOL 2401. Co-requisite: Student must also enroll in lab for the course: BIOL 2120

BIOL 2421. Microbiology for Science Majors. (3-4)

This course examines principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. The course will also examine the interactions of microbes with each other, hosts, and the environment. Laboratory activities will reinforce principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. The course will also examine the interactions of microbes with each other, hosts, and the environment. Prerequisites: BIOL 1406, BIOL 1407, & CHEM 1411. Co-requisite: Student must also enroll in lab for the course: BIOL 2121

## BUSINESS ADMINISTRATION & MANAGEMENT

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 2301. Principles of Accounting I – Financial. (2-4)

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 2302. Principles of Accounting I – Managerial. (2-4)  
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 or ACCT 2301

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).  
(Core option—Life & Physical Sciences component) (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)  
(Core option—Life & Physical Sciences component)  
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)  
(Core option—Life & Physical Sciences component)  
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 DEVELOPMENT/EARLY CHILDHOOD EDUCATION

CDEC 1164. Practicum (or Field Experience) – Child Development (0-8)  
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

CDEC 1303. Families, School, & Community. (3-1)  
Study of the child, family, community, and schools. Includes parent education and involvement, family and community lifestyles, child abuse, and current family life issues. Course content is aligned with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 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. (3-1)  
An introduction to the education of the young child. Includes developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities, and current issues. Course content is aligned with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 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. (2-3)  
Study of the fundamental of developmentally appropriate curriculum design and implementation in early care and education programs for children birth through age eight.

CDEC 1318. Wellness of the Young Child. (3-1)  
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. (3-1)  
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.

CDEC 1321. Infant and Toddler. (3-1)  
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 1323. Observation and Assessment. (3-1)  
A study of observation skills, assessment techniques, and documentation of children's development.

CDEC 1354. Child Growth and Development. (3-1)  
Physical, emotional, social, and cognitive factors impacting growth and development of children through adolescence.

CDEC 1358. Creative Arts for Early Childhood. (3-1)  
An exploration of principles, methods, and materials for teaching music, movement, visual arts, and dramatic play through process-oriented experiences to support divergent thinking to children from birth through age eight.

CDEC 1359. Children with Special Needs. (3-1)  
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 2265. Practicum (or Field Experience) – Child Development (0-17)  
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

CDEC 2326. Administration of Programs for Children I. (3-1)  
Application of management procedures for early child care and 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 2328. Administration of Programs for Children II. (3-1)  
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, technical applications in programs and planning parent education/partnerships. Prerequisite: Sophomore standing and 34 hours of CDEC course work or consent of the instructor.

CDEC 2341. The School Age Child. (3-1)  
A study of programs for the school age child including an overview of development, learning environments, materials and activities, and guidance techniques. Prerequisite: CDEC 1321 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. (2-4)  
(Core required—Component Area Option component)  
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 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 2325. Computer Organization. (2-4)  
The organization of computer systems is introduced using assembly language. Topics include basic concepts of computer architecture and organization, memory hierarchy, data types, computer arithmetic, control structures, interrupt



handling, instruction sets, performance metrics, and the mechanics of testing and debugging computer systems. Embedded systems and device interfacing are introduced. 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 Digital Media. (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 1405. Configuring Advanced Windows Server Operating System. (3-3)  
Advanced configuration tasks required to deploy, manage, and maintain a Windows Server operating system infrastructure. Additional topics include fault tolerance, certificate services, and identity federation.

ITMT 1406. Computer Systems Networking and Telecommunications. (3-3)  
A study of the initial implementation of core services in a Windows server environment; includes an introduction to Windows Server administration interface, roles and features of the Windows Server operating system and various installation and configuration options used when deploying and configuring Windows Server.

ITMT 1457. Administering a Windows Server Operating System. (3-3)  
A study of administrative tasks needed to maintain a Windows Server operating system including user and group management, network assess and data security. Topics include how to implement, configure and manage Group Policy infrastructure, Group Policy objects (GPOs) using links, security groups, WMI

filters, loopback processing, preference targeting and troubleshooting policy application.

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)  
A study of Active Directory Service on Windows Server 2008. Concepts of resource management within an enterprise network environment.

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. Implementing & Supporting Client 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.

ITNW 1451. Fundamentals of Wireless LANs. (3-3)  
Design, plan, implement, operate, and troubleshoot Wireless Local Area Networks (WLANs). Includes WLAN design, installation, and configuration; and WLAN security issues and vendor interoperability strategies.

ITSC 1305. Introduction to PC Operating Systems. (2-4)  
Introduction to personal computer operating systems including installation, configuration, file management, memory and storage management, control of peripheral devices, and use of utilities.

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.

ITSC 1380. Cooperative Education - Computer and Information Sciences, 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.

ITSC 2435. Application Software Problem Solving. (3-3)  
Utilization of appropriate application software to solve advanced problems and generate customized solutions.

ITSE 1329. Programming Logic and Design. (2-4)  
Problem-solving applying structured techniques and representation of algorithms using design tools. Includes testing, evaluation, and documentation.

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 2417. Wireless Security Development. (3-3)  
Development of information security policies, standards, and guidelines for an organization. Includes Demilitarized Zone (DMZ), antivirus, Virtual Private Network (VPN), wireless communications, remote access, and other critical administrative and operational security policies. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. Emphasizes wireless security goals of availability, integrity, and confidentiality in the design, planning, implementing, operating, and troubleshooting of wireless LAN along with administrative controls.

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.

ITSY 2445. Network Defense and Countermeasures. (3-3)  
This is a practical application and comprehensive course that includes the planning, design, and construction of defenses for a complex network that will sustain an attack, document events, and mitigate the effects of the attack. Prerequisites: ITSY 2400, ITSY 2430, ITSY 2442 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.

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

CSME 1310. Introduction to Haircutting and Related Theory. (2-6)  
Introduction to the theory and practice of hair cutting. Topics include terminology, implements, sectioning and finishing techniques.

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 safety and sanitation, 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 and Skin Care Technology I. (2-5)  
An introduction to the principles of facial and skin care technology. Topics include anatomy, physiology, theory, and related skills of facial and skin care technology. Co-requisite: CSME 1420 - Orientation to Facial Specialist

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 Texas Department of Licensing and Regulation license and high school diploma or GED.

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 Texas Department of Licensing and Regulation license and high school diploma or GED.

CSME 1441. Principles of Nail Technology II. (3-6)  
A continuation of the concepts and principles of nail technology. Topics include professional ethics, salon management, client relations, and related skills of nail technology. Co-requisite: CSME 1431 - Principles of Nail Technology I

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.

CSME 1453. Chemical Reformation and Related Theory. (2-8)  
Presentation of the theory and practice of chemical reformation including terminology, application, and workplace competencies.

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 services. Topics include terminology, application, and workplace competencies related to nail services.

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. Co-requisite: CSME 1421 - Principles of Facial and Skin Care Technology I

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 goal setting, salon operation, and record keeping.

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

CSME 2414. Cosmetology Instructor II. (2-6)  
A continuation of the fundamentals of instructing of cosmetology students. Prerequisite: Valid Texas Department of Licensing and Regulation license and high school diploma or GED.

CSME 2439. Advanced Hair Design. (2-8)  
Advanced concepts in the theory and practice of hair design.

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 and high school diploma or GED.

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 and high school diploma or GED.

CSME 2449. Cosmetology Instructor III. (2-6)  
Presentation of lesson plan assignments and evaluation techniques. Prerequisite: Valid Texas Department of Licensing and Regulation license and high school diploma or GED.

CSME 2530. Nail Enhancement. (2-9)  
A course in the theory, application, and related technology of nail enhancements.

CSME 2531. Principles of Facials and Skin Care Technology III. (2-9)  
Advanced concepts and principles of skin care and other related technologies.  
Co-requisite: CSME 1545 - Principles of Facial and Skin Care Technology II.

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

## 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.

#### 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. Course is only offered through credit by evaluation.

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. Course is only offered through credit by evaluation.

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 approved Basic Peace Officer Training Academy. \*\*\*THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY Texas Commission on Law Enforcement.\*\*\*

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 approved Basic Peace Officer Academy. \*\*\*THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY Texas Commission on Law Enforcement.\*\*\*

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 approved Basic Peace Officer Academy. \*\*\*THIS COURSE

MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY Texas Commission on Law Enforcement.\*\*\*

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 approved Basic Peace Officer Training Academy. \*\*\*THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY Texas Commission on Law Enforcement.\*\*\*

### 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 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 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.

### DIAGNOSTIC MEDICAL SONOGRAPHY

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, bio-effects, 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 1310. Introduction to the Theater. (3-3)  
(Core option—Creative Arts component)  
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 1341. Makeup. (3-1)  
Design and execution of makeup for the purpose of developing believable characters. Includes discussion of basic makeup principles and practical experience of makeup application.
- DRAM 1342. Introduction to Costume. (3-1)  
Principles and techniques of costume design and construction for theatrical productions.
- 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)  
(Core option—Creative Arts component)  
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.

MUEN 1160. Musical Theatre. (1-3)  
Examples of small vocal ensembles may include but are not limited to glee club, madrigals, opera/musical theatre, commercial, and folk.

## ECHOCARDIOGRAPHY

### Echocardiography Program



The Commission on Accreditation of Allied Health Education Programs (CAAHEP) is pleased to inform you of its vote on **January 21, 2016** to award **initial accreditation** to the Cardiovascular Technology - Adult Echocardiography Associate degree program at Hill College, Hillsboro, TX.

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 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)

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.

HPRS 2200. Pharmacology for Health Professions. (2-0)  
A study of drug classifications, actions, therapeutic uses, adverse effects, routes of administration, and calculation of dosages.

## ECONOMICS

ECON 2301. Principles of Macroeconomics.  
(Core option—Social and Behavioral Sciences component) (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.  
(Core option—Social and Behavioral Sciences component) (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 1300. Learning Frameworks. (3-0)  
A study of the research and theory in the psychology of learning, cognition, and motivation; factors that impact learning, and application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of college-level student academic strategies. Students use assessment instruments (e.g., learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. (Cross-listed as PSYC 1300); Note: (NOTE: While traditional study skills courses include some of the same learning strategies – e.g., note-taking, reading, test preparation etc.-as learning framework courses is solely or primarily on skill acquisition. Study skills courses, which are not under-girded by scholarly models of the learning process, are not considered college-level, and, therefore, are distinguishable from Learning Framework courses.)

EDUC 1301. Introduction to the 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. The course provides students with opportunities 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 should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Course must include a minimum of 16 contact hours of field experience in P-12 classrooms.

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. The course provides students with opportunities to participate in early field observations of P-12 special populations and should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Must include a minimum of 16 contact hours of field experience in P-12 classrooms with special populations.

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 must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Association for the Education of Young Children position statement related to developmentally appropriate practices for children from birth through age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. The course includes a minimum of 16 hours of field experiences.

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 must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Association for the Education of Young Children position statement related to developmentally appropriate practices for children from birth through age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations; and the course includes a minimum of 16 hours of field experiences.

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. Focuses on local and national standards and legal implications of relevant policies and regulations. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Association for the Education of Young Children position statement related to developmentally appropriate practices for children from birth to age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Course includes a minimum of 16 hours of field experiences.

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

#### EMERGENCY MEDICAL SERVICES PROFESSIONS CAAHEP Accredited Program #600447

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 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 2305. EMS Operations. (2-2)

Knowledge and skills to safely manage multi-casualty incidents and rescue situations; utilize air medical resources; identify hazardous materials and other specialized incidents. Prerequisite: Paramedic I&II.

EMSP 2306. Emergency Pharmacology. (3-1)  
A study of drug classifications, actions, therapeutic uses, adverse effects. Routes of administration, and calculation of dosages. 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.

## ENGLISH

ENGL 0101. Writing Success Camp.  
Development of college-level writing focusing on idea generation, drafting, organization, revision, and utilization of standard English.

ENGL 0102. Writing Dev. Ed. (BASE NCBO). (1-0)  
Development of college-level writing focusing on idea generation, drafting, organization, revision, and utilization of standard English. This Intervention is

designed specifically for students assessed at BASE levels 3-4 and must be part of a student's co-enrollment (co-requisite) enrollment: •as a mainstreamed intensifier providing contact hours for additional, just-in-time instructional support for the student's success in the developmental writing course, or •as a contextualized and/or integrated basic skills instructional support for a Career/Technical Education course.

ENGL 0302. Developmental English. (3-3)  
Development of college-level writing focusing on idea generation, drafting, organization, revision, and utilization of standard English.

INRW 0303. Integrated Reading/Writing. (3-3)  
Integration of critical reading and academic writing skills. Successful completion of this course if taught at the upper (exit) level fulfills TSI requirements for reading and/or writing.

INRW 0109. Integrated Reading/Writing (NCBO) "Bubble".  
Integration of critical reading and academic writing skills. Successful completion of this intervention if taught at the upper (exit) level fulfills TSI requirements for reading and/or writing.

ENGL 1301. Composition I. (Core required—English component) (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. (Core required—English component) (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.  
(Core option—Language, Philosophy & Culture component) (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.

(Core option—Language, Philosophy & Culture component) (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.

(Core option—Language, Philosophy & Culture component) (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.

(Core option—Language, Philosophy & Culture component) (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)

(Core option—Language, Philosophy & Culture component) (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.

(Core option—Language, Philosophy & Culture component) (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.

(Core option—Language, Philosophy & Culture component) (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.

### ENVIROMENTAL SCIENCE

ENVR 1401. Introduction to Environmental Science I. (3-3)  
(Core option—Life & Physical Sciences component)  
A survey of the forces, including humans, that shape our physical and biologic environment, and how they affect life on Earth. Introduction to the science and policy of global and regional environmental issues, including pollution, climate change, and sustainability of land, water, and energy resources. (Cross-listed with GEOL 1305 and GEOL1405) Co-requisite: Student must also enroll in lab for the course: ENVR 1101.

### 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.

FIRT 1333. Fire Chemistry I. (3-0)  
Chemical nature and properties of compounds as related to the fire service. Fundamental laws of chemistry, states of matter, gas laws, chemical bonding, and thermodynamics. This course meets Fire and Emergency Services Higher Education (FESHE) Model Curriculum core requirements.

FIRT 1338. Fire Protection Systems. (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)

This course introduces students to the processes that drive Earth's physical systems. Students will explore the relationships among these physical systems, with emphasis on weather and climate, water, ecosystems, geologic processes and landform development, and human interactions with the physical environment.

GEOG 1303. World Regional Geography. (3-0)

This course is an introduction to the world's major regions seen through their defining physical, social, cultural, political, and economic features. These regions are examined in terms of their physical and human characteristics and their interactions. The course emphasizes relations among regions on issues such as trade, economic development, conflict, and the role of regions in the globalization process.

## GEOLOGY/ENVIRONMENTAL SCIENCE

ENVR 1401. Introduction to Environmental Science I.

(Core option—Life & Physical Sciences component) (3-3)

A survey of the forces, including humans, that shape our physical and biologic environment, and how they affect life on Earth. Introduction to the science and policy of global and regional environmental issues, including pollution, climate change, and sustainability of land, water, and energy resources. (Cross-listed with GEOL 1305 and GEOL1405) Co-requisite: Student must also enroll in lab for the course: ENVR 1101.

GEOL 1305. Environmental Science. (3-0)

A survey of the forces, including humans, that shape our physical and biologic environment, and how they affect life on Earth. Introduction to the science and policy of global and regional environmental issues, including pollution, climate change, and sustainability of land, water, and energy resources. (Cross-listed with ENVR 1301) GEOL 1305 or GEOL 1405 but not both.

GEOL 1401. Earth Sciences for Non-Science Majors I.

(Core option—Life & Physical Sciences component) (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 for Non-Science Majors II.

(Core option—Life & Physical Sciences component) (3-3)

Extension of the study of geology, astronomy, meteorology and oceanography, focusing on natural resources, hazards and climate variability. Prerequisites: GEOL 1301 or 1401 Earth Science I, or GEOL 1303 or 1403 Physical Geology. Co-requisite: Student must also enroll in lab for the course: GEOL 1102

GEOL 1403. Physical Geology.

(Core option—Life & Physical Sciences component) (3-3)

Introduction to the study of the materials and processes that have modified and shaped the surface and interior of Earth over time. These processes are described by theories based on experimental data and geologic data gathered from field observations. Co-requisite: Student must also enroll in lab for the course: GEOL 1103

GEOL1404. Historical Geology.

(Core option—Life & Physical Sciences component) (3-3)

A comprehensive survey of the history of life and major events in the physical development of Earth as interpreted from rocks and fossils. Prerequisites: GEOL 1403 Physical Geology. Co-requisite: Student must also enroll in lab for the course: GEOL 1104

GEOL 1405. Environmental Science.

(Core option—Life & Physical Sciences component) (3-3)

A survey of the forces, including humans, that shape our physical and biologic environment, and how they affect life on Earth. Introduction to the science and policy of global and regional environmental issues, including pollution, climate change, and sustainability of land, water, and energy resources. (Cross-listed with ENVR 1401) Co-requisite: Student must also enroll in lab for the course: GEOL 1105

GEOL 1445. Oceanography.

(Core option—Life & Physical Sciences component) (3-3)

Survey of oceanography and related sciences. Co-requisite: Student must also enroll in lab for the course: GEOL 1145

GEOL 1447. Meteorology.

(Core option—Life & Physical Sciences component) (3-3)

Survey of meteorology and related sciences. Co-requisite: Student must also enroll in lab for the course: GEOL 1147

## GOVERNMENT

GOVT 2305. Federal Government. (3-0)

(Core required—Government/Political Sciences component)

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)  
(Core required—Government/Political Sciences component)

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.

GOVT 2389. Academic Cooperative/Special Topics. (3-0)

An instructional program designed to integrate on-campus study with practical hands-on experience in government. 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.

#### HEATING, VENTILATION, AIR CONDITIONING

HART 1301. Basic Electricity for HVAC. (2-2)

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

HART 1403. Air Conditioning Control Principles. (2-4)

A basic study of HVAC and refrigeration controls; troubleshooting of control components; emphasis on use of wiring diagrams to analyze high and low voltage circuits; a review of Ohm's law as applied to air conditioning controls and circuits.

HART 1407. Refrigeration Principles. (2-4)

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

HART 1441. Residential Air Conditioning. (2-4)

A study of components, applications, and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair, and charging of air conditioning systems. Prerequisites: HART 1301 and HART 1407.

HART 1445. Gas and Electric Heating. (2-4)

Study of the procedures and principles used in servicing heating systems including gas fired furnaces and electric heating systems. Prerequisites: HART 1301 and HART 1407.

HART 2331. Advanced Electricity for HVAC. (2-2)

Advanced electrical instruction and skill building in installation and servicing of air conditioning and refrigeration equipment including detailed instruction in motors and power distribution motors, motor controls, and application of solid state devices. Prerequisites: HART 2334.

HART 2334. Advanced Air Conditioning Controls. (2-2)  
Theory and application of electrical control devices, electromechanical controls, and/or pneumatic controls. Prerequisites: HART 1403 and HART 1407.

HART 2336. Air Conditioning Troubleshooting. (2-2)  
An advanced course in application of troubleshooting principles and use of test instruments to diagnose air conditioning and refrigeration components and system problems including conducting performance tests. Prerequisites: HART 2458 and HART 2331.

HART 2368. Practicum-Heating, Air Conditioning and Refrigeration Technology/  
Technician. (1-20)  
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: HART 2334 and HART 2331.

HART 2438. Air Conditioning Installation and Startup. (2-4)  
A study of air conditioning system installation, refrigerant piping, condensate disposal, and air cleaning equipment with emphasis on startup and performance testing. Prerequisites: HART 1301 and HART 1407.

HART 2445. Residential Air Conditioning Systems Design. (2-4)  
Study of the properties of air and results of cooling, heating humidifying or dehumidifying; heat gain and heat loss calculations including equipment selection and balancing the air system. Prerequisites: HART 1301 and HART 1407.

HART 2458. Testing, Adjusting, and Balancing HVAC Systems. (2-4)  
A study in the process of checking and adjusting all the building environmental systems to produce the design objectives. Emphasis on efficiency and energy savings. Prerequisites: HART 2438 and HART 2445.

## HISTORY

HIST 1301. United States History I. (3-0)  
(Core required—American History component)  
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)  
(Core required—American History component)  
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 2301. Texas History. (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. Introduction to Humanities I. (3-0)  
(Core option—Language, Philosophy & Culture component)

This stand-alone course is an interdisciplinary survey of cultures focusing on the philosophical and aesthetic factors in human values with an emphasis on the historical development of the individual and society and the need to create.

HUMA 1302. Introduction to Humanities II.

(Core option—Language, Philosophy & Culture component) (3-0)

This stand-alone course is an interdisciplinary survey of cultures focusing on the philosophical and aesthetic factors in human values with an emphasis on the historical development of the individual and society and the need to create.

## INDUSTRIAL MAINTENANCE

ELMT 1305. Basic Fluid Power. (2-2)

Basic Fluid power course covering pneumatic and hydraulic systems, fluid power symbols, operating theory, components, and basic electrical and manual controls.

ELPT 1311. Basic Electrical Theory. (2-2)

Basic theory and practice of electrical circuits. Includes calculations as applied to alternating and direct current.

ELPT 1325. National Electric Code. (3-0)

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

ELPT 2405. Motors and Transformers. (2-4)

Operation of single-and three-phase motors and **transformers**. Includes transformer banking, power factor correction, and protective devices. Prerequisite: ELPT 1311.

ELPT 2419. Programmable Logic Controllers I. (2-4)

Fundamental concepts of programmable logic controllers, principles of operation, and numbering systems as applied to electrical controls.

INMT 1305. Introduction to Industrial Maintenance. (2-2)

Basic mechanical skills and repair techniques common to most fields of industrial maintenance. Topics include precision measuring instruments and general safety rules common in industry, including lock-out/tag-out.

INMT 1319. Manufacturing Processes. (2-2)

Exploration of a variety of methods used in manufacturing. Theory and application of processes including but not limited to metal forming, welding, machining, heat treating, plating, assembly procedures, and process control considerations, casting and injection molding.

INMT 2380. Cooperative Education-Manufacturing  
Technology/Technician. (1-15)  
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

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. (2-4)  
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 to machining fundamentals. The student begins by using basic machine tools including the lathe, milling machine, drill press, power saw, and bench grinder. Machine terminology, theory, math, part layout, and bench work using common measuring tools is included. Emphasis is placed on shop safety, housekeeping, and preventative maintenance. Prerequisite: MCHN 1320.

MCHN 2303. Fundamentals CNC Machine Controls. (2-2)  
Programming and operation of Computer Numerical Controlled (CNC) machine shop equipment. Prerequisite: MCHN 1438.

## MATHEMATICS

MATH 0202 Developmental Mathematics (BASE NCBO) (2-0)  
Topics in mathematics such as arithmetic operations, basic algebraic concepts and notation, geometry, and real and complex number systems. This Intervention is designed specifically for students assessed at BASE levels 3-4 and must be part of a student's co-enrollment (co-requisite) enrollment as a mainstreamed intensifier providing contact hours for additional, just-in-time instructional support for the student's success in the developmental math course. The course is developmental and will not result in degree or transferable credit.

MATH 0232. Developmental Contemporary Math. (2-0)



The course is developmental and will not result in degree or transferable credit.  
Co-requisite: MATH 1332.

MATH 0242. Developmental Statistics. (2-0)  
The course is developmental and will not result in degree or transferable credit.  
Co-requisite: MATH 1342.

MATH 0302. Beginning Algebra. (3-3)  
Topics in mathematics such as arithmetic operations, basic algebraic concepts and notation, geometry, and real and complex number systems. The course is developmental and will not result in degree or transferable credit. Prerequisites: Assignment by appropriate test.

MATH 0309. Intermediate Algebra (NCBO “Bubble”). (3-1)  
The course is a non-semester-length developmental education intervention for students two points or less to passing the TSI Assessment to become college ready. The course is a study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations.

MATH 0314. Intermediate Algebra. (3-0)  
The course is developmental and will not result in degree or transferable credit.  
Co-requisite: MATH 1314.

MATH 0324. Intermediate Business Pre-Calculus. (3-0)  
The course is developmental and will not result in degree or transferable credit.  
Co-requisite: MATH 1324.

MATH 1314. College Algebra. (Core option—Mathematics component) (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. (Core option—Mathematics component) (3-0)  
In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. Prerequisite: MATH 1314 or concurrent registration or permission of instructor.

MATH 1324. Mathematics for Business and Social Sciences.  
(Core option—Mathematics component) (3-0)  
The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of

finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. Prerequisite: Meet TSI college readiness standard for mathematics; or equivalent.

MATH 1325. Calculus for Business and Social Sciences.

(Core option—Mathematics component) (3-0)

This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions, with emphasis on applications in business, economics, and social sciences. This course is not a substitute for Math 2413, Calculus I. Prerequisite: MATH 1314 College Algebra or MATH 1324 Mathematics for Business and Social Sciences.

MATH 1332 Contemporary Mathematics.

(Core option—Mathematics component) (3-0)

(Core approved Co-Board effective Fall 2018)

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. Elementary Statistical Methods.

(Core option—Mathematics component) (3-0)

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended.

MATH 1350. Mathematics for Teachers I.

(3-0)

Concepts of sets, functions, numeration systems, number theory, and properties of the natural numbers, integers, rational, and real number systems with an emphasis on problem solving and critical thinking. Prerequisite: MATH 1314 College Algebra or the equivalent course work.

MATH 1351. Mathematics for Teachers II.

(3-0)

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 1314 College Algebra or the equivalent course work.

MATH 2320. Differential Equations.

(3-0)

Ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions,

series solutions, singular points, transform methods, and boundary value problems; application of differential equations to real world problems, Prerequisite: MATH 2414 Calculus II.

MATH 2412. Pre-calculus Math. (Core option—Mathematics component) (3-2)  
In-depth combined study of algebra, trigonometry, and other topics for calculus readiness. Prerequisite: MATH 1314 College Algebra or the equivalent preparation.

MATH 2413. Calculus I. (Core option—Mathematics component) (3-3)  
Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing a function; the chain rule, mean value theorem, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with an application to calculation of areas. Prerequisite: MATH 2412 Pre-Calculus Math or the equivalent preparation.

MATH 2414. Calculus II. (3-3)  
Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. Prerequisite: MATH 2413 Calculus I

MATH 2415. Calculus III. (3-3)  
Advanced topics in calculus, including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, and Jacobians; application of the line integral, including Green's Theorem, the Divergence Theorem, and Stokes' Theorem. Prerequisite: MATH 2414 Calculus II

## 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 20<sup>th</sup> 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 1160. Musical Theatre. (1-3)  
Examples of small vocal ensembles may include but are not limited to glee club, madrigals, opera/musical theatre, commercial, and folk.

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. (Core option—Creative Arts component) (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. Music Literature I. (Core option—Creative Arts component) (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 1309. Music Literature II. (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)  
(Core option—Creative Arts component)  
This course is a comprehensive analysis of the development of popular music in American culture from the late 19<sup>th</sup> through the 21<sup>st</sup> 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 1160, Italian Diction; MUSI 1161, English Diction;  
MUSI 2160, German Diction; MUSI 2161, French Diction (1-0)  
Study of phonetic sounds of the English, French, German, or Italian languages to promote the ability to sing in those languages.

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. 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. 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)  
Content includes health promotion, expanded assessment, analysis of data, critical thinking skills and systematic problem solving process, pharmacology, interdisciplinary teamwork, communication, and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework throughout the lifespan. This course lends itself to either a blocked or integrated approach.

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)  
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 the perinatal 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)  
Basic integration of the role of the professional nurse as a provider of patient-centered care, patient safety advocate, member of health care team, and member of the profession. Study of the common concepts of caring for adult patients and families with medical-surgical health care needs related to body systems, emphasizing 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 patient-centered care, patient safety advocate, member of health care team, and member of the profession. Content includes fundamental concepts of nursing practice, history of professional nursing, and a systematic framework for decision-making and critical thinking. Emphasis on knowledge, judgment, skills and professional values within a legal/ethical framework. This course lends itself to a blocked approach.

RNSG 2201. Care of Children and Families. (2-0)  
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)

Study of medical terms through word origin and structure. Introduction to abbreviations and symbols, surgical and diagnostic procedures, and medical specialties. Identify, pronounce, and spell medical terms; use terms in context; utilize prefixes, suffixes, root words, and plurals to construct medical terms; analyze medical terms; translate abbreviations; and interpret symbols.

VNSG 1216. Nutrition. (2-0)  
Introduction to nutrients and the role of diet therapy in growth and development and in the maintenance of health. Identify the basic nutrients; discuss the role of nutrients in growth and development and health maintenance; and identify diet therapy associated with disease processes.

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)  
A study of the biological, psychological, and sociological concepts applicable to basic needs of the family including childbearing and neonatal care. Utilization of the nursing process in the assessment and management of the childbearing family. Topics include physiological changes related to pregnancy, fetal development, and nursing care of the family during labor and delivery and the puerperium. Discuss human reproduction and fetal development as related to the normal aspects of childbearing; identify common complications of the mother and newborn during prenatal, antenatal, and postnatal periods; and relate characteristics of the normal newborn and associated nursing interventions to meet identified health care needs utilizing the nursing process.

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 the care of the pediatric patient and family during health and disease. Emphasis on growth and developmental needs utilizing the nursing process.

VNSG 1360. Clinical I Practical Nurse (LPN Training) (0-15)

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 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) (0-18.75)

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. A method of instruction providing detailed education, training, and work based experience, and direct patient/client care generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation, and placement 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) (0-18.75)

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. A method of instruction providing detailed education, training, and work based experience, and direct patient/client care generally at 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 health problems requiring medical and surgical interventions. Compare and contrast normal physiology of body systems to pathologic variations in the patient with medical-surgical health problems; evaluate and treat patients with medical-surgical health problems using the nursing process including nutrition, pharmacological therapy, and principles of safety.

VNSG 2510. Nursing In Health and Illness III. (5-0)

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 1309. Integrated Software Applications I. (2-4)

Introduction to business productivity software suites using word processing, spreadsheets, databases, and/or presentation software.

ITSW 2334. Advanced Spreadsheets. (2-4)

Advanced techniques for developing and modifying spreadsheets. Includes macros and data analysis functions.

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 1349. Introduction to Spreadsheets. (2-4)

Instruction in the concepts, procedures, and application of electronic spreadsheets. Importance of electronic spreadsheets.

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 2401. Introduction to Word Processing. (2-4)  
An overview of the production of documents, tables, and graphics.
- 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 1300. Basic Medical Coding. (2-4)  
Presentation and application of basic coding rules, principles, guidelines, and conventions utilizing various coding systems.
- 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. (2-1)  
Skills to seek and obtain employment in business and industry.

- 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 1359. Records and Information Management II. (2-4)  
Evaluation of filing systems and equipment; and maintenance of database records according to information management theory.
- 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.

POFT 2312. Business Correspondence & Communications. (2-4)  
Development of writing and presentation skills to produce effective business communications.

## PHILOSOPHY

PHIL 1301. Introduction to Philosophy. (3-0)  
A study of major issues in philosophy and/or the work of major philosophical figures in philosophy. Topics in philosophy may include theories of reality, theories of knowledge, theories of value, and their practical applications.

## 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 1113, 1129, 2113, 2129. Athletic Training. (0-3)  
Course includes instruction and participation in physical and recreational activities with special emphasis on the basic skills and knowledge to be successful as a student athletic trainer.

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

PHED 1301. Foundations of Kinesiology. (3-0)  
The purpose of this course is to provide students with an introduction to human movement that includes the historical development of physical education, exercise science, and sport. This course offers the student both an introduction to the knowledge base, as well as, information on expanding career opportunities.

PHED 1304. Personal/Community Health. (3-0)  
This course provides an introduction to the fundamentals, concepts, strategies, applications, and contemporary trends related to understanding personal and/or community health issues. This course also focuses on empowering various populations with the ability to practice healthy living, promote healthy lifestyles, and enhance individual well-being.

PHED 1306. First Aid. (3-0)  
Instruction and practice for emergency care. Designed to enable students to recognize and avoid hazards within their environment, to render intelligent assistance in case of accident or sudden illness, and to develop skills necessary for the immediate and temporary care of the victim. Successful completion of the course may enable the student to receive a certificate from a nationally recognized agency (Red Cross). Open as a service course to all departments.

PHED 1308. Sports Officiating. (3-1)  
The purpose of the course is to study officiating requirements for sports and games with an emphasis on mechanics, rule interpretation, and enforcement.

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

PHED 1338. Concepts of Physical Fitness. (3-3)  
This course is designed to familiarize students with knowledge, understanding and values of health related fitness and its influence on the quality of life emphasizing the development and implementation of fitness programs.

PHED 1346. Drug Use and Abuse. (3-0)  
Study of the use, misuse and abuse of drugs and other harmful substances in today's society. Physiological, sociological, pharmacological and psychological factors will be emphasized.

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

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. College Physics I. (3-3)  
(Core option—Life & Physical Sciences component)  
Fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; with emphasis on problem solving. Co-requisite: Student must also enroll in lab for the course: PHYS 1101. Prerequisites: MATH 1314 College Algebra and MATH 1316 Plane Trigonometry or MATH 2412 Pre-Calculus Math.

PHYS 1402. College Physics II. (3-3)  
(Core option—Life & Physical Sciences component)  
Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. Co-requisite: Student must also enroll in lab for the course: PHYS 1102. Prerequisite: PHYS 1401 College Physics

PHYS 1403. Stars and Galaxies. (3-3)  
(Core option—Life & Physical Sciences component)

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.

(Core option—Life & Physical Sciences component) (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. University Physics I.

(Core option—Life & Physical Sciences component) (3-3)

Fundamental principles of physics, using calculus, for science, computer science, and engineering majors; the principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics; and emphasis on problem solving. Co-requisite: Student must also enroll in lab for the course: PHYS 2125. Prerequisite: MATH 2413 Calculus I

PHYS 2426. University Physics II.

(Core option—Life & Physical Sciences component) (3-3)

Principles of physics for science, computer science, and engineering majors, using calculus, involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics. Co-requisite: Student must also enroll in lab for the course: PHYS 2126. Prerequisite: PHYS 2425 University Physics I and MATH 2414 Calculus II

## 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 1300. Learning Framework.

(3-0)

A study of the research and theory in the psychology of learning, cognition, and motivation; factors that impact learning, and application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of college-level student academic strategies. Students use assessment instruments (e.g., learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across

their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. (Cross-listed as EDUC 1300); Note: (NOTE: While traditional study skills courses include some of the same learning strategies – e.g., note-taking, reading, test preparation etc.-as learning framework courses is solely or primarily on skill acquisition. Study skills courses, which are not under-girded by scholarly models of the learning process, are not considered college-level, and, therefore, are distinguishable from Learning Framework courses.)

PSYC 2301. General Psychology.

(Core option—Social and Behavioral Sciences component) (3-0)

General Psychology is a survey of the major psychological topics, theories and approaches to the scientific study of behavior and mental processes.

PSYC 2306. Human Sexuality.

(3-0)

This course will provide an overview of the broad field of human sexuality. Topics will be covered from various perspectives—biological, sociological, anthropological, etc., but will focus primarily on the psychological perspective. The goal is for each student to learn factual, scientifically-based information that will provoke thought and contribute to his/her own decision-making on sexual issues of the classroom. (Cross-listed as SOCI 2306)

PSYC 2308. Child Psychology.

(3-0)

This course will address psychological development from conception through middle childhood with references to physical, cognitive, social and personality changes. Students will examine the interplay of biological factors, human interaction, social structures and cultural forces in development.

PSYC 2314. Lifespan Growth and Development.

(Core option—Social and Behavioral Sciences component) (3-0)

Lifespan Growth and Development is a study of social, emotional, cognitive and physical factors and influences of a developing human from conception to death.

PSYC 2315. Psychology of Adjustment.

(3-0)

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

PSYC 2317. Statistical Methods in Psychology.

(3-0)

Study of statistical methods used in psychological research, assessment, and testing. Includes the study of measures of central tendency and variability, statistical inference, correlation and regression as these apply to psychology.

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. (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 0101. Reading Success Camp.  
Development of reading and higher order thinking skills necessary for college readiness.

READ 0102. Reading Dev. Ed. (BASE NCBO). (1-0)  
Development of reading and higher order thinking skills necessary for college readiness. This Intervention is designed specifically for students assessed at BASE levels 3-4 and must be part of a student's co-enrollment (co-requisite) enrollment: •as a mainstreamed intensifier providing contact hours for additional, just-in-time instructional support for the student's success in the developmental reading course, or •as a contextualized and/or integrated basic skills instructional support for a Career/Technical Education course.

READ 0302. Developmental Reading (3-3)  
Development of reading and higher order thinking skills necessary for college readiness.

## SOCIAL WORK

SOCW 2361. Introduction to Social Work. (3-0)  
Development of the philosophy and practice of social work in the United States, survey of the fields and techniques of social work.

## SOCIOLOGY

SOCI 1301. Introductory Sociology.  
(Core option—Social and Behavioral Sciences component) (3-0)  
The scientific study of human society, including ways in which groups, social institutions, and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts, and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity, and deviance.

SOCI 1306. Social Problems.

(Core option—Social and Behavioral Sciences component) (3-0)

Application of sociological principles and theoretical perspectives to major social problems in contemporary society such as inequality, crime and violence, substance abuse, environmental issues, deviance, or family problems.

SOCI 2301. Marriage and the Family.

(Core option—Social and Behavioral Sciences component) (3-0)

Sociological and theoretical analysis of the structures and functions of the family, the varied cultural patterns of the American family, and the relationships that exist among the individuals within the family, as well as the relationships that exist between the family and other institutions in society.

SOCI 2306. Human Sexuality.

(3-0)

This course will provide an overview of the broad field of human sexuality. Topics will be covered from various perspectives – biological, sociological, anthropological, etc., but will focus primarily on the psychological perspective. The goal is for each student to learn factual, scientifically-based information that will provoke thought and contribute to his/her own decision-making on sexual issues outside of the classroom. (Cross-listed as PSYC 2306)

SOCI 2319. Minority Studies.

(3-0)

This course studies minority-majority group relations, addressing their historical, cultural, social, economic, and institutional development in the United States. Both sociological and social psychological levels of analysis will be employed to discuss issues including experiences of minority groups within the context of their cultural heritage and tradition, as well as that of the dominant culture. Core concepts to be examined include (but are not limited to) social inequality, dominance/subordination, prejudice, and discrimination. Particular minority groups discussed may include those based on poverty, race/ethnicity, gender, sexual orientation, age, disability, or religion.

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. (Cross-listed as PSYC 2319)

SOCI 2340. Drug Use & Abuse.

(3-0)

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

SOCI 2389. Academic Cooperative.

(3-0)

An instructional program designed to integrate on-campus study with practical hands-on experience in sociology. 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.

## 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)  
(Core option—Language, Philosophy & Culture component) (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)  
(Core option—Language, Philosophy & Culture component) (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 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)  
(Core required—Component Area Option component)

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. (2-4)



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. (3-0)  
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. (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 1391. Special Topics in Welding/Welding Technologist. (1-5)  
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.

WLDG 1408. Metal Sculpture. (2-4)  
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). (2-4)  
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. (2-4)  
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. (2-4)  
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. (2-4)  
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 Welding (GMAW). (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 Welding (GTAW). (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. Prerequisite: WLDG 1457 or concurrent enrollment or consent of the instructor.

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. Prerequisite: WLDG 1435 or concurrent enrollment or consent of the instructor.

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 and WLDG 1457 or consent of the instructor.

WLDG 2432. Welding Automation. (2-4)

Overview of automated welding and cutting applications. Special emphasis on safe use and operation of equipment. Prerequisite: WLDG 1413 and WLDG 1430 or concurrent enrollment 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 Arc Welding (GMAW). (2-4)  
Advanced topics Gas Metal Arc Welding (GMAW). Includes welding in various positions and directions.

WLDG 2451. Advanced Gas Tungsten Arc Welding (GTAW). (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.