COURSE DESCRIPTIONS

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 (TCCNS). The new numbering system improves articulation and assists students 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 course's completion. The third and fourth digits distinguish the course within a program area. For example, HIST 1301 would be a three-semester credit History course normally taken during the first year.

All courses are listed in alphabetical order according to the program name.

AGRICULTURE

AGRI 1131. The Agricultural Industry. (1-0)
Overview of agriculture and the American agricultural system, including an examination of career opportunities and requirements.

AGRI 1309. Computers in Agriculture. (2-2)
Survey of the use of computers in agricultural applications.

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

AGRI 1325. Marketing of Agriculture Products. (3-0)
Essential marketing functions in the movement of agricultural commodities and products from producer to consumer.

AGRI 1407. Agronomy. (3-3)
Principles and practices in the development, production, and management of field crops including growth and development, climate, plant requirements, pest management, and production methods. Laboratory activities will reinforce the fundamental principles and practices in the development, production, and management of field crops including growth and development, climate, plant requirements, pest management, and production methods.

AGRI 1419. Introductory Animal Science. (3-3)
Scientific animal production and the importance of livestock and meat industries. Selection, reproduction, nutrition, management, and marketing of livestock. Laboratory activities will reinforce scientific animal production and the importance of livestock and meat industries. Selection, reproduction, nutrition, management, and marketing of livestock.

AGRI 2317. Introduction to Agricultural Economics. (3-0)
Fundamental economic principles and their application in the agricultural industry.

AGRI 2321. Livestock Evaluation. (3-3)
Evaluation and grading of market cattle, swine, sheep, and goats and their carcasses and wholesale cuts. Emphasis will be placed on value determination. Selection and evaluation of breeding cattle, sheep, swine, and goats with emphasis on economically important traits.

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

ART

ARTS 1301. Art Appreciation. (3-0)
(Core option—Creative Arts component)
A general introduction to the visual arts designed to create an appreciation of the vocabulary, media, techniques, and purposes of the creative process. Students will critically interpret and evaluate works of art within formal, cultural, and historical contexts.

ARTS 1303. Art History I. (3-0)
(Core option—Creative Arts component)
A chronological analysis of the historical and cultural contexts of the visual arts from prehistoric times to the 14th century.

ARTS 1304. Art History II. (3-0)
(Core option—Creative Arts component)
A chronological analysis of the historical and cultural contexts of the visual arts from the 14th century to the present day.

ARTS 1311. Design I. (3-3)
An introduction to the fundamental terminology, concepts, theory, and application of two-dimensional design.

ARTS 1312. Design II. (3-3)
An introduction to the fundamental terminology, concepts, theory, and application of three-dimensional design.

ARTS 1316. Drawing I. (3-3)
A foundation studio course exploring drawing with emphasis on descriptive, expressive, and conceptual approaches. Students will learn to see and interpret a variety of subjects while using diverse materials and techniques. Course work will facilitate a dialogue in which students will engage in critical analysis and begin to develop their understanding of drawing as a discipline.

ARTS 1317. Drawing II. (3-3)
A studio course exploring drawing with continued emphasis on descriptive, expressive, and conceptual approaches. Students will further develop the ability to see and interpret a variety of subjects while using diverse materials and techniques. Course work will facilitate a dialogue in

which students will employ critical analysis to broaden their understanding of drawing as a discipline.

ARTS 2316. Painting I. (3-3)
Studio art course that introduces the fundamental principles, materials, and techniques of painting.

ARTS 2317. Painting II. (3-3)
Studio art course that furthers the study of the principles, materials, and techniques of painting.

ARTS 2326. Sculpture. (3-3)
A studio art course that introduces the materials, processes, and issues pertaining to the making of three-dimensional objects and environments. The course explores the use of varied materials and techniques along with the formal and conceptual principles that form the basis of contemporary sculpture.

ARTS 2348. Digital Media. (3-3)
Studio art course that introduces the potential of basic digital media manipulation and graphic creation. The course emphasizes still and time-based media.

ARTS 2356. Photography I. (3-3)
A studio art course that introduces the technical and conceptual basics of photography as a creative medium.

ARTS 2357. Photography II. (3-3)
A studio art course that furthers the study of the technical and conceptual basics of photography as a creative medium.

ARTS 2366. Watercolor. (3-3)
Studio art course that introduces the fundamental principles, materials, and techniques of watercolor and other water-based media.

AUTOMOTIVE TECHNOLOGY

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 Systems. (2-8)
Diagnosis and repair of automotive suspension and steering systems including electronically controlled systems. Includes component repair, alignment procedures and tire and wheel service. May be taught manufacturer specific.

AUMT 1419. Automotive Engine Repair. (2-8)
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.

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. Students needto be in their 3rd semester of automotive classes.

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.

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.

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.

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. (2-8)
A study of the operation, hydraulic circuits and electronic controls of modern automatic transmissions/transaxles. Diagnosis, disassembly, and assembly procedures with emphasis on the use of special tools and repair techniques. May be taught with manufacturer specific.

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.

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. (3-3)
(Core option—Life & Physical Sciences component)
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. (3-3)
(Core option—Life & Physical Sciences component)
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. (3-3)
(Core option—Life & Physical Sciences component)
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. (3-3)
(Core option—Life & Physical Sciences component)
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. General Botany. (3-4)
(Core option—Life & Physical Sciences component)
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. Recommended pre-requisite: MATH1314 or 1414 Successful completion of College Algebra or concurrent enrollment in higher-level mathematics is recommended. Co-requisite: Student must also enroll in lab for the course: BIOL 1111

BIOL 2289. Holistic Clinical Skills. (0-8)
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.
BIOL 2401. Anatomy and Physiology I. (3-3)

(Core option—Life & Physical Sciences component)

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.

BIOL 2402. Anatomy and Physiology II. (3-3)
(Core option—Life & Physical Sciences component)
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.

BIOL 2406. Environmental Biology. (3-3)
(Core option—Life & Physical Sciences component)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. Recommended pre-requisite: MATH1314 – Successful completion of College Algebra or concurrent enrollment in higher level mathematics is recommended. Co-requisite: Student must also enroll in lab for the course: BIOL 2106

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

BIOL 2420. Microbiology for Non-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. This course is primarily directed at pre-nursing and other pre-allied health majors and covers basics of microbiology.

Emphasis is on medical microbiology, infectious diseases, and public health. 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)
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

Accounting

ACCT 2301. Principles of Accounting I – Financial. (2-4)
This course is an introduction to the fundamental concepts of financial accounting as prescribed by U.S. generally accepted accounting principles (GAAP) as applied to transactions and events that affect business organizations. Students will examine the procedures and systems to accumulate, analyze, measure, and record financial transactions. Students will use recorded financial information to prepare a balance sheet, income statement, statement of cash flows, and statement of shareholders' equity to communicate the business entity's results of operations and financial position to users of financial information who are external to the company. Students will study the nature of assets, liabilities, and owners' equity while learning to use reported financial information for purposes of making decisions about the company. Students will be exposed to International Financial Reporting Standards (IFRS). Recommended co-requisite: MATH 1324 Mathematics for Business & Social Science

ACCT 2302. Principles of Accounting I – Managerial. (2-4)
This course is an introduction to the fundamental concepts of managerial accounting appropriate for all organizations. Students will study information from the entity's accounting system relevant to decisions made by internal managers, as distinguished from information relevant to users who are external to the company. The emphasis is on the identification and assignment of product costs, operational budgeting and planning, cost control, and management decision making. Topics include product costing methodologies, cost behavior, operational and capital budgeting, and performance evaluation. Prerequisite: ACCT 2401 or ACCT 2301

Business Administration/General Business

BUSG 1315. Small Business Operations. (3-0)
Operating a small business. Emphasizes management functions including planning, leading, organizing, staffing, and controlling 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)
This course provides a survey of economic systems, forms of business ownership, and considerations for running a business. Students will learn various aspects of business, management, and leadership functions, organizational considerations; and decision-making processes. Financial topics are introduced, including accounting, money and banking, and securities markets. Also included are discussions of business challenges in the legal and regulatory environment, business ethics, social responsibility, and international business. Emphasized is the dynamic role of business in everyday life.

BUSI 2305. Business Statistics. (3-0)
Descriptive and inferential statistical techniques for business and economic decision-making. Topics include the collection, description, analysis, and summarization of data; probability; discrete and continuous random variables; the binomial and normal distributions; sampling distributions; tests of hypotheses; estimation and confidence intervals; linear regression; and correlation analysis. Statistical software is used to analyze data throughout the course. (BUSI 2305 is included in the business Field of Study.) Prerequisite: MATH 1324 or MATH 1314 and BCIS 1305.

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 mix functions and process. Includes identification of consumer and organizational needs and explanation of environmental issues.

CHEMISTRY

CHEM 1406. Introductory Chemistry I (Allied Health Emphasis). (3-3)
(Core option—Life & Physical Sciences component)
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)
Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. Basic laboratory experiments supporting theoretical principles presented in CHEM 1311; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. Prerequisite:MATH 1314 or 1414 College Algebra or equivalent academic preparation. Co-requisite: Student must also enroll in lab for the course: CHEM 1111

CHEM 1412. General Chemistry II. (3-3) OBJ
(Core option—Life & Physical Sciences component)
Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry. Basic laboratory experiments supporting theoretical principles presented in CHEM 1312; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports. CHEM 1411 or consent of instructor. Co-requisite: Student must also enroll in lab for the course: CHEM 1112

CHEM 2423. Organic Chemistry I. (3-4)
Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. This laboratory-based course accompanies CHEM 2323, Organic Chemistry I. Laboratory activities will reinforce fundamental principles of organic chemistry, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry,

structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Methods for the purification and identification of organic compounds will be examined. 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 the 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 young children. Includes developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities, and current issues. Course content is aligned with the 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)
A study of the fundamentals 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 the 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. The 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--0)
Physical, emotional, social, and cognitive factors impact 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 for children 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.

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 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.

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.

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.

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 design concepts, terminology, processes, and procedures. Topics include computer graphics hardware, digital images, digital publishing, vector-based graphics, and interactive multimedia.

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 video games, multimedia or web projects 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 digital video workstation.

BCIS 1305. Business Computer Applications. (2-4)
(Core required—Component Area Option component)
Introduces and develops foundational skills in applying essential and emerging business productivity information technology tools. The focus of this course is on business productivity software applications, including word processing, spreadsheets, databases, presentation graphics, data analytics, and business-oriented utilization of the internet. (BCIS 1305 is included in the Business Field of Study.)

COMM 1307. Introduction to Mass Communication. (3-0)
Survey of basic content and structural elements of mass media and their functions and influences on society.

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 structured programming and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy. This course is

included in the Field of Study Curriculum for Computer Science. Prerequisite: BCIS 1305 or consent of the instructor.

COSC 1437. Programming Fundamentals II. (3-3)
This course focuses on the object-oriented programming paradigm, emphasizing the definition and use of classes along with fundamentals of object-oriented design. The course includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering processes. Students will apply techniques for testing and debugging software. (This course is included in the Field of Study Curriculum for Computer Science.) 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.

IMED 1309. Fundamentals of Cloud Computing. (2-4)
Introduction to cloud computing from a business and technical perspective, including cloud concepts, services, architecture, system integration, connectivity, data center migration, administration, security, compliance and technical support. Coverage includes preparation for industry certifications. Topics may adapt to changes in industry practices.

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

IMED 1345. Interactive Digital Multimedia I. (2-4)
Exploration of the use of graphics and sound to create interactive digital media 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 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.

ITNW 1308. Implementing & Supporting Client Operating Systems. (2-4)
The fundamentals of managing and configuring local, network, and distributed network clients. Topics may adapt to changes in industry practices.

ITNW 1309. Fundamentals of Cloud Computing. (2-4)
Introduction to cloud computing from a business and technical perspective, including cloud concepts, services, architecture, system integration, connectivity, data center migration,

administration, security, compliance and technical support. Coverage includes preparation for industry certifications. Topics may adapt to changes in industry practices

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

ITSC 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 1316. Linux Installation and Configuration. (2-4)
Introduction to Linux operating system. Includes Linux installation, basic administration, utilities and commands, upgrading, networking, security, and application installation. Emphasizes hands-on setup, administration, and management of Linux.

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

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. Topics may adapt to changes in industry practices.

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)
Java programming for applications and web applets.

ITSE 2421. Object-Oriented Programming. (3-3)
Program design with classes, including development, testing, implementation, and documentation.

ITSY 1342. Information Technology Security. (2-4)
Instruction in security for network computer hardware, software, virtualization, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses. Topics may adapt to changes in industry practices.

ITSY 2401. Firewalls and Network Security. (3-3)

Identify elements of secure network design that may include segmentation, Firewall implementation or a combination thereof to mitigate various types of security threats and attacks. Use Best Practices to design, implement, monitor and manage a network security plan. Examine security incident postmortem reporting and ongoing network security activities.

ITSY 2443. Computer System Forensics. (3-3)
In-depth study of system forensics including methodologies used for analysis of computer security breaches. Collect document 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.

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. This course is designed to be repeated multiple times to improve student proficiency.

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.

ITSY 2459. Security Assessment and Auditing. (2-4)
Comprehensive experience of the security curriculum. Synthesizes technical material covered in prior courses to monitor, audit, analyze, and revise computer and network security systems that ensure industry specific levels of protection are in place to assure regulatory compliance

COSMETOLOGY

CSME 1401. Orientation to Cosmetology. (2-6)
An overview of the skills and knowledge necessary for the field of cosmetology.

CSME 1405. Fundamentals of Cosmetology. (2-6)
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.

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 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.

CSME 1451. Artistry of Hair, Theory and Practice. (2-6)
Instruction in the artistry of hair design. Topics include theory, techniques, and application of hair design.

CSME 1453. Chemical Reformation and Related Theory. (2-6)
Presentation of the theory and practice of chemical reformation including terminology, application, and workplace competencies.

CSME 1543. Manicuring and Related Theory. (4-4)
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 and Skin Care Technology II. (2-9)
A continuation of the concepts and principles in skin care and other related technologies. Topics include advanced instruction in anatomy, physiology, theory, and related skills of facial/esthetic technology.

CSME 1547. Principles of Skin Care/Facials and Related Theory. (4-4)
In-depth coverage of the theory and practice of skin care, facials, and cosmetics.

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

CSME 2401. The Principles of Hair Coloring and Related Theory. (2-6)
Presentation of the theory, practice, and of hair color. Topics include terminology, application, and workplace competencies related to hair color.

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

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.

CSME 2541. Preparation for the State Licensing Examination. (4-4)

Preparation for the state licensing examination.

CRIMINAL JUSTICE

Criminal Justice - Field of Study

CRIJ 1301. Introduction to Criminal Justice. (3-0)
This course provides a historical and philosophical overview of the American criminal justice system, including the nature, extent, and impact of crime; criminal law; and justice agencies and processes.

CRIJ 1306. Court Systems and Practices. (3-0)
This course is a study of the court system as it applies to the structures, procedures, practices and sources of law in American courts, using federal and Texas statutes and case law.

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

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

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)

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

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 the 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 the content varies. Course is only offered through credit by evaluation.

CJLE 1506. Basic Peace Officer I. (3-8)
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. (3-8)
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. (3-8)
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. (3-8)
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. ***

CJLE 1329. Basic Peace Officer V. (2-2)
Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer I, II, III, and IV 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 - Substance Abuse/Addiction Counseling. (0-21)
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

DRAMA

DRAM 1120, 1121. Theater Practicum I & II. (1-3)
A Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Required of all drama majors and drama scholarship students, but open to all students.

DRAM 1310. Theater Appreciation. (3-0)
(Core option—Creative Arts component)
Survey of theater including its history, dramatic works, stage techniques, production procedures, and relation to other art forms. Participation in productions may be required.

DRAM 1330. Stagecraft I. (3-3)
Study and application of the methods and components of theatrical production which may include one or more of the following: theater facilities, scenery construction and painting, properties, lighting, costume, makeup, sound, and theatrical management.

DRAM 1341. Stage 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. Costume Technology. (3-1)
Introduction to the process and application of the fundamental skills of costume production, modification, and maintenance.

DRAM 1351. Acting I. (3-0)
An introduction to the fundamental principles and tools of acting as used in auditions, rehearsals, and performances. This may include ensemble performing, character and script analysis, and basic theater terminology. This exploration will emphasize the development of the actor's instrument: voice, body and imagination.

DRAM 1352. Acting II. (3-0)
Exploration and further training within the basic principles and tools of acting, including an emphasis on critical analysis of oneself and others. The tools include ensemble performing, character and script analysis, and basic theater terminology. This will continue the exploration of the development of the actor's instrument: voice, body and imagination. A continuation of DRAM 1351.

DRAM 2120, 2121. Theater Practicum III & IV. (1-3)
Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. A continuation of DRAM 1120, 1121.

DRAM 2331. Stagecraft II. (3-3)
Continued study and application of the methods and components of theatrical production which may include one or more of the following: theater facilities, scenery construction and painting, properties, lighting, costume, makeup, sound and theatrical management. A continuation of DRAM 1330.

DRAM 2335 Theater Design (3-3)
Survey of principles and practices of theater design and its elements. The fundamentals of art and their application to major areas of theatrical design.

DRAM 2336. Voice for the Actor. (3-0)
Principles, practices, and exercises in awareness, relaxation, freedom, flexibility, and expressiveness in the actor's vocal instrument.

DRAM 2355 Script Analysis (3-0)
Examination of foundational skills for understanding the structure and content of play scripts for interpretation and conceptualization in theater productions by directors, designers, actors, and technicians. Introduces students to significant plays in the history of dramatic literature in the playwright's social and cultural context.

DRAM 2361. History of Theater I. (3-0)
Study of the history of the theater from primitive times through Renaissance.

DRAM 2366. Film Appreciation. (2-4)
(Core option—Creative Arts component)
Survey and analyze cinema including history, film techniques, production procedures, selected motion pictures, and cinema's impact on and reflection of society. (Cross- listed as COMM 2366)

DRAM 2289. Academic Cooperative. (2--6)
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.

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

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.

Diagnostic Medical Sonography

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/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 1340. Diagnostic Electrocardiography. (2-4)
Cardiac testing includes the techniques and interpretation of patient physical assessment. Covers electrocardiography, stress testing, Holter monitoring, vital signs, and cardiovascular pharmacology.

DSAE 1440. Diagnostic Electrocardiography. (3-3)

Cardiac testing includes 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/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/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.

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.

ECONOMICS

ECON 2301. Principles of Macroeconomics. (3-0)
(Core option—Social and Behavioral Sciences component)
An analysis of the economy as a whole including measurement and determination of Aggregate Demand and Aggregate Supply, national income, inflation, and unemployment. Other topics include international trade, economic growth, business cycles, and fiscal policy and monetary policy.

ECON 2302. Principles of Microeconomics. (3-0)
(Core option—Social and Behavioral Sciences component)
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 1100. Learning Framework. (1-0)
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 1100)

EDUC 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 PSYC 1300)

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 for 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 the 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 the 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. Prerequisite: EDCU 1301 Introduction to the Teaching Profession

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 experience.

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 young children 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. The course includes a minimum of 16 hours of field experience.

TECA 1354. Child Growth and Development. (3-0)
(Core option—Social & Behavioral Sciences component)
A study of the physical, emotional, social, language, and cognitive factors impacting growth and development of children through adolescence.

EMERGENCY MEDICAL SERVICES
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.

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.

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.

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.

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.

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.

ENGINEERING

ENGR 1201 Introduction to Engineering. (2-0)
An introduction to the engineering profession with emphasis on technical communication and team-based engineering design. Prerequisite: MATH 1314 or 1414 College Algebra or equivalent academic preparation.

ENGR 1304 Engineering Graphics I. (2-4)
Introduction to computer-aided drafting using CAD software and sketching to generate two and three-dimensional drawings based on the conventions of engineering graphical communication; topics include spatial relationships, multi-view projections and sectioning, dimensioning, graphical presentation of data, and fundamentals of computer graphics. Prerequisite: MATH 1314 or 1414 College Algebra or equivalent academic preparation.

ENGR 2406 Introduction to Digital Systems. (3-0)
Introduction to theory and design of digital logic, circuits, and systems. Number systems, operations and codes; logic gates; Boolean Algebra and logic simplification; Karnaugh maps; combinational logic; functions of combinational Logic; flip-flops and related devices; counters; shift registers; sequential logic; memory and storage. Basic laboratory experiments supporting theoretical principles involving design, construction, and analysis of combinational and sequential digital circuits and systems, including logic gates, adders, multiplexers, encoders, decoders, arithmetic logic units, latches, flip-flops, registers, and counters; preparation of laboratory reports. Co-requisite: Student must also enroll in lab for the course: ENGR 2106 Introduction to Digital Systems (lab). Prerequisite: MATH 1314 or 1414 College Algebra or equivalent academic preparation.

ENGLISH

INRW 0101. Integrated Reading and Writing Success Camp.
Development of college-level reading and writing focusing on reading comprehension, college level reading expectations, idea generation, drafting, organization, revision, and utilization of standard English.

INRW 0102. Integrated Reading and Writing (BASE NCBO). (1-0)
This Intervention is designed specifically for students assessed at minimum level on TSIA and must be part of a student's co-enrollment (co-requisite) enrollment of INRW 0302: •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.

INRW 0109. Integrated Reading/Writing (NCBO).

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.

INRW 0302. Integrated Reading/Writing I. (3-3)
Integration of critical reading and academic writing skills will serve as the entry point for students who are not TSIA met in Reading and/or Writing. Successful completion of this course will allow students to enroll in INRW 0303 and a co-requisite credit course.

INRW 0303. Integrated Reading/Writing II. (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.

ENGL 1301. Composition I. (3-0)
(Core required—Communication component)
Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus on writing the academic essay as a vehicle for learning, communicating, and critical analysis.

ENGL 1302. Composition II. (3-0)
(Core required—Communication component)
Intensive study of and practice in the strategies and techniques for developing research-based expository and persuasive texts. Emphasis on effective and ethical rhetorical inquiry, including primary and secondary research methods; critical reading of verbal, visual, and multimedia texts; systematic evaluation, synthesis, and documentation of information sources; and critical thinking about evidence and conclusions. Prerequisite: ENGL 1301 or approval of the instructor.

ENGL 2307 Creative Writing (3-0)
Practical experience in the techniques of imaginative writing. May include fiction, nonfiction, poetry, screenwriting, or drama

ENGL 2311. Technical and Business Writing. (3-0)
Intensive study of and practice in professional settings. Focus on the types of documents necessary to make decisions and take action on the job, such as proposals, reports, instructions, policies and procedures, e-mail messages, letters, and descriptions of products and services. Practice individual and collaborative processes involved in the creation of ethical and efficient documents. Prerequisites: six semester hours of composition or approval of the instructor.

ENGL 2322. British Literature I. (3-0)
(Core option—Language, Philosophy & Culture component)
A survey of the development of British literature from the Anglo-Saxon period to the Eighteenth Century. Students will study works of prose, poetry, drama, and fiction in relation to their historical, linguistic, and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2323. British Literature II. (3-0)
(Core option—Language, Philosophy & Culture component)
A survey of the development of British literature from the Romantic period to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural

contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2327. American Literature I. (3-0)
(Core option—Language, Philosophy & Culture component)
A survey of American literature from the period of exploration and settlement through the Civil War. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2328. American Literature II. (3-0)
(Core option—Language, Philosophy & Culture component)
A survey of American literature from the Civil War to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Six semester hours of composition or approval of the instructor.

ENGL 2331. World Literature. (single semester) (3-0)
(Core option—Language, Philosophy & Culture component)
A survey of world literature from the ancient world to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2332 World Literature I. (3-0)
(Core option—Language, Philosophy & Culture component)
A survey of world literature from the ancient world through the sixteenth century. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2333 World Literature II. (3-0)
(Core option—Language, Philosophy & Culture component)
A survey of world literature from the seventeenth century to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: six semester hours of composition or approval of the instructor.

ENGL 2341. Special Topics in Literature. (3-0)
The study of one or more literary genres including, but not limited to, poetry, fiction, drama, and film.

ENGLISH AS A SECOND LANGUAGE

ESOL 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.

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

FIRE PROTECTION TECHNOLOGY
Fire Science/Firefighting

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

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

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

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

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

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

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

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

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

FIRT 1329. Building Codes and Construction. (3-0)
Examination of building codes and requirements, construction types, and building materials. Topics include walls, flooring, foundations, 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. Beginning French I. (1st semester French). (3-4)
Fundamental skills in listening comprehension, speaking, reading, and writing. Includes basic vocabulary, grammatical structures, and culture.

FREN 1412. Beginning French II. (2nd semester French). (3-4)
Fundamental skills in listening comprehension, speaking, reading, and writing. Includes basic vocabulary, grammatical structures, and culture.

FREN 2311. Intermediate French I. (3rd semester French). (3-2)
Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture.

FREN 2312. Intermediate French II. (4th semester French). (3-2)

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

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/ENVIROMENTAL SCIENCE

ENVR 1401. 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. Laboratory activities will cover methods used to collect and analyze environmental data. Co-requisite: Student must also enroll in lab for the course: ENVR 1101.

ENVR 1402. Environmental Science II. (3-3)
(Core option—Life & Physical Sciences component)
General interest course requiring a minimum of previous background and relating scientific knowledge to problems involving energy and the environment. Laboratory activities will cover methods used to collect and analyze environmental data. Co-requisite: Student must also enroll in lab for the course: ENVR 1102.

GEOL 1401. Earth Sciences for Non-Science Majors I. (3-3)
(Core option—Life & Physical Sciences component)
Survey of geology, meteorology, oceanography, and astronomy. Laboratory activities will cover methods used to collect and analyze data in geology, meteorology, oceanography, and astronomy. Co-requisite: Student must also enroll in lab for the course: GEOL 1101

GEOL 1402. Earth Sciences for Non-Science Majors II. (3-3)
(Core option—Life & Physical Sciences component)
Extension of the study of geology, astronomy, meteorology and oceanography, focusing on natural resources, hazards and climate variability. Laboratory activities will focus on methods used to collect and analyze data related to natural resources, hazards and climate variability. Pre/Co-requisite: GEOL 1401 Earth Science for Non-Science Majors I.

GEOL 1403. Physical Geology. (3-3)

(Core option—Life & Physical Sciences component)
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. Laboratory activities will cover methods used to collect and analyze earth science data. Co-requisite: Student must also enroll in lab for the course: GEOL 1103

GEOL1404. Historical Geology. (3-3)
(Core option—Life & Physical Sciences component)
A comprehensive survey of the history of life and major events in the physical development of Earth as interpreted from rocks and fossils. Laboratory activities will introduce methods used by scientists to interpret the history of life and major events in the physical development of Earth from rocks and fossils. Prerequisites: GEOL 1403 Physical Geology. Co-requisite: Student must also enroll in lab for the course: GEOL 1104

GEOL 1445. Oceanography. (3-3)
(Core option—Life & Physical Sciences component)
Survey of oceanography and related sciences. Co-requisite: Student must also enroll in lab for the course: GEOL 1145

GEOL 1447. Meteorology. (3-3)
(Core option—Life & Physical Sciences component)
Survey of meteorology and related sciences. Co-requisite: Student must also enroll in lab for the course: GEOL 1147

GOVERNMENT

GOVT 2304. Intro to Political Science. (3-0)
Introductory survey of the discipline of political science focusing on the scope, and methods of the field, and the substantive topics in the discipline including the theoretical foundations of politics, political interaction, political institutions and how political systems function.

GOVT 2305. Federal Government. (3-0)
(Core required Government/Political Sciences component)
Origin and development of the U.S. Constitution, structure and powers of the national government including the legislative, executive, and judicial branches, federalism, political participation, the national election process, public policy, civil liberties and civil rights.

GOVT 2306. Texas Government. (3-0)
(Core required Government/Political Sciences component)
Origin and development of the Texas constitution, structure and powers of state and local government, federalism and inter-governmental relations, political participation, the election process, public policy, and the political culture of Texas.

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, VENTALIATION, 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.

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.

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.

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

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.

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

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.

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.

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.

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.

HISTORY

HIST 1301. United States History I. (3-0)
(Core required—History component)
A survey of the social, political, economic, cultural, and intellectual history of the United States from the pre-Columbian era to the Civil War/Reconstruction period. United States History I includes the study of pre-Columbian, colonial, revolutionary, early national, slavery and sectionalism, and the Civil War/Reconstruction eras. Themes that may be addressed in United States History I include American settlement and diversity, American culture, religion, civil and human rights, technological change, economic change, immigration and migration, and creation of the federal government.

HIST 1302. United States History II. (3-0)
(Core required—History component)
A survey of the social, political, economic, cultural, and intellectual history of the United States from the Civil War/Reconstruction era to the present. United States History II examines industrialization, immigration, world wars, the Great Depression, Cold War and post-Cold War eras. Themes that may be addressed in United States History II include American culture, religion, civil and human rights, technological change, economic change, immigration and migration, urbanization and suburbanization, the expansion of the federal government, and the study of U.S. foreign policy.

HIST 2301. Texas History. (3-0)
A survey of the political, social, economic, cultural, and intellectual history of Texas from the pre-Columbian era to the present. Themes that may be addressed in Texas History include Spanish colonization and Spanish Texas; Mexican Texas; the Republic of Texas; statehood and secession; oil, industrialization, and urbanization; civil rights; and modern Texas.

HIST 2311. Western Civilization I. (3-0)
A survey of the social, political, economic, cultural, religious, and intellectual history of Europe and the Mediterranean world from human origins to the 17th century. Themes that should be addressed in Western Civilization I include the cultural legacies of Mesopotamia, Egypt, Greece, Rome, Byzantium, Islamic civilizations, and Europe through the Middle Ages, Renaissance, and Reformations.

HIST 2312. Western Civilization II. (3-0)

A survey of the social, political, economic, cultural, religious, and intellectual history of Europe and the Mediterranean world from the 17th century to the modern era. Themes that should be addressed in Western Civilization II include absolutism and constitutionalism, growth of nation states, the Enlightenment, revolutions, classical liberalism, industrialization, imperialism, global conflict, the Cold War, and globalism.

HIST 2321. World Civilizations I. (3-0)
A survey of the social, political, economic, cultural, religious, and intellectual history of the world from the emergence of human cultures through the 15th century. The course examines major cultural regions of the world in Africa, the Americas, Asia, Europe, and Oceania and their global interactions over time. Themes include the emergence of early societies, the rise of civilizations, the development of political and legal systems, religion and philosophy, economic systems and trans-regional networks of exchange. The course emphasizes the development, interaction and impact of global exchange.

HIST 2322. World Civilizations II. (3-0)
A survey of the social, political, economic, cultural, religious, and intellectual history of the world from the 15th century to the present. The course examines major cultural regions of the world in Africa, the Americas, Asia, Europe, and Oceania and their global interactions over time. Themes include maritime exploration and transoceanic empires, nation/state formation and industrialization, imperialism, global conflicts and resolutions, and global economic integration. The course emphasizes the development, interaction and impact of global exchange.

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. (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.

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 2245. Industrial Troubleshooting (1-2)
An advanced study of the techniques used in troubleshooting various types of industrial equipment to include mechanical, electrical, hydraulic, and pneumatic systems and their control devices. Emphasis will be placed on the use of schematics and diagrams in conjunction with proper troubleshooting procedures.

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 are included. Emphasis is placed on shop safety, housekeeping, and preventative maintenance.

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

MATHEMATICS

MATH 0102 Developmental Math (BASE NCBO) (1-0)
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 TSIA2 level 1. It must be part of a student's 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 a degree or transferable credit.

MATH 0302. Beginning Algebra. (3-0)
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). (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 a 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 a degree or transferable credit. Co-requisite: MATH 1324.

MATH 0332. Developmental Contemporary Math. (3-0)
The course is developmental and will not result in a degree or transferable credit. Co-requisite: MATH 1332.

MATH 0342. Developmental Statistics. (3-0)
The course is developmental and will not result in a degree or transferable credit. Co-requisite: MATH 1342.

MATH 1314. College Algebra. (3-0)
(Core option—Mathematics component)
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.

MATH 1316. Plane Trigonometry. (3-0)
(Core option—Mathematics component)
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. (3-0)
(Core option—Mathematics component)
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.

MATH 1325. Calculus for Business and Social Sciences. (3-0)
(Core option—Mathematics component)
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. (3-0)
(Core option—Mathematics component)
Intended for Non-STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate application. Number sense, proportional reasoning, estimation, technology, and communication should be embedded throughout the course. Additional topics may be covered.

MATH 1342. Elementary Statistical Methods. (3-0)
(Core option—Mathematics component)
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)
This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the conceptual development of the following: sets, functions, numeration systems, number theory, and properties of the various number systems with an emphasis on

problem solving and critical thinking. Prerequisite: MATH 1314 College Algebra or the equivalent course work.

MATH 1351. Mathematics for Teachers II. (3-0)
This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the concepts of geometry, measurement, probability, and statistics with an emphasis on problem solving and critical thinking. 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. (3-2)
(Core option—Mathematics component)
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. (3-3)
(Core option—Mathematics component)
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 20th century. Topics discussed will include pedagogical technique as well as reading music notation for beginning to intermediate levels. Admission is by the consent of the Director. May be repeated four times for credit.

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

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

MUSB 1305. Survey of Music Business. (3-3)
An overview of the music industry including songwriting, live performance, the record industry, music merchandising, contracts and licenses, and career opportunities.

MUSI 1116. Sight Singing and Ear Training I. (1-1)
Singing tonal music in treble and bass clefs, and aural study of elements of music, such as scales, intervals and chords, and dictation of basic rhythm, melody and diatonic harmony. Must be taken concurrently with MUSI 1311.

MUSI 1117. Sight Singing and Ear Training II. (1-1)
Singing tonal music in various clefs, continued aural study of the elements of music, and dictation of intermediate rhythm, melody and diatonic harmony. Must be taken concurrently with MUSI 1312.

MUSI 1306. Music Appreciation. (3-0)
Understanding music through the study of cultural periods, major composers, and musical elements. Illustrated with audio recordings and live performances. (Does not apply to a music major degree.)

MUSI 1307. Music Literature. (single semester) (2-3)
(Core option—Creative Arts component)
A survey of the styles and forms of music as it developed from the Middle Ages to the present. This course will familiarize the student with cultural context, terminology, genres, and notation.

MUSI 1310. American Music. (3-0)
(Core option—Creative Arts component)
General survey of various styles of music of the Americas, including but not limited to jazz, folk, rock, and contemporary art music.

MUSI 1311. Music Theory I. (4-2)
The study of analysis and writing of tonal melody and diatonic harmony, including fundamental music concepts, scales, intervals, chords, 7th chords, and early four-part writing. Analysis of small compositional forms. Optional correlated study at the keyboard.

MUSI 1312. Music Theory II. (4-2)
The study of analysis and writing of tonal melody and diatonic harmony, including all diatonic chords and seventh chords in root position and inversions, non-chord tones, and functional harmony. Introduction to more complex topics, such as modulation, may occur. Optional correlated study at the keyboard.

MUSI 2116. Sight Singing & Ear Training III. (1-1)
Singing more difficult tonal music in various clefs, aural study including dictation of more complex rhythm, melody, chromatic harmony, and extended tertian structures. Must be taken concurrently with MUSI 2311.

MUSI 2117. Sight Singing & Ear Training IV. (1-1)
Singing advanced tonal music and introduction of modal and post-tonal melodies. Aural study includes dictation of advanced rhythm, melody, and harmony. It must be taken concurrently with

MUSI 2311. Music Theory III. (3-1)
Advanced harmony voice leading, score analysis and writing of more advanced tonal harmony including chromaticism and extended-tertian structures. Optional correlated study at the keyboard.

MUSI 2312. Music Theory IV. (3-1)
Continuation of advanced chromaticism and survey of analytical and compositional procedures in post-tonal music. Optional correlated study at the keyboard. 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 nonmusic 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 are required. One ½ hour lesson per week is required. Fee charged.

MUSI 1160. Italian Diction. (1-0)
MUSI 1161.English Diction. (1-0)
MUSI 2160. German Diction. (1-0)
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. Piano Class I. (1-2)
Class instruction in the fundamentals of keyboard technique for beginning piano students.

MUSI 1182. Piano Class II. (1-2)
Advanced beginning class instruction in the fundamentals of keyboard technique.

MUSI 2181. Piano Class III. (1-2)
Intermediate class instruction of keyboard technique.

MUSI 2182. Piano Class IV. (1-2)
Advanced class instruction of keyboard technique.

MUSI 1183. Voice Class. (1-2)
Class instruction in the fundamentals of singing including breathing, tone production, and diction. Designed for students with little or no previous voice training. Does not apply to a music major degree.

MUSI 1192. Guitar Class. (1-2)
Class instruction in fundamental guitar playing, including technique, music-reading, fretboard theory, melodic and harmonic realizations.

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. Co-requisite RNSG1412 and RNSG1441

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 date, 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 Childbearing 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 Professional 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.

POFI 1349. 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.

POFI 2340. Advanced Word Processing. (2-4)
Advanced word processing techniques using merging, macros, graphics, and desktop publishing. Includes extensive formatting for technical documents. This course is designed to be repeated multiple times to improve student proficiency.

POFI 2301. Word Processing. (2-4)
Word processing software focusing on business applications. This course is designed to be repeated multiple times to improve student proficiency.

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.

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 Admin./Executive Asst./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 Admin./Executive Asst./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 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 1313. Professional Workforce Preparation. (2-4)
Preparation for career success including ethics, interpersonal relations, professional attire, and advancement.

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 1328. Business Presentations. (2-4)
Skill development in planning and conducting business presentations including communication and media skills. This course is designed to be repeated multiple times to improve student proficiency.

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 – Admin. Asst./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 – Admin. Asst./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.

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/KINESIOLOGY

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. (03)
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, 2121. Swimming, Beginning & Advanced. (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. Advance swimming will build upon skills and techniques from PHED 1121.

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 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 and 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 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. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; emphasis will be on problem solving. 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. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. 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. (3-3)
(Core option—Life & Physical Sciences component)
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 1410. Elementary Physics. (3-3)
Conceptual level survey of topics in physics intended for liberal arts and other non-science majors. May or may not include a laboratory.

PHYS 2425. University Physics I. (3-3)
(Core option—Life & Physical Sciences component)
Fundamental principles of physics, using calculus, for science, computer science, and engineering majors; the principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics; and emphasis on problem solving. Basic laboratory experiments supporting theoretical principles involving the principles and applications of classical mechanics, including harmonic motion and physical systems; experimental design, data collection and analysis, and preparation of laboratory reports. Co-requisite: Student must also enroll in lab for the course: PHYS 2125. Prerequisite: MATH 2413 Calculus I

PHYS 2426. University Physics II. (3-3)
(Core option—Life & Physical Sciences component)
Principles of physics for science, computer science, and engineering majors, using calculus, involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics. Laboratory experiments supporting theoretical principles involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics; experimental design, data collection and analysis, and preparation of laboratory reports. 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. (Cross-listed as EDUC 1100)

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)

PSYC 2301. General Psychology. (3-0)
(Core option—Social and Behavioral Sciences component)
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. (3-0)
(Core option—Social and Behavioral Sciences component)
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)
This course covers descriptive and inferential statistics used in psychological research and assessment. It includes measurement, characteristics of distributions; measures of central tendency and variability; transformed scores; correlation and regression; probability theory; and hypotheses testing and inference. (PSYC 2317 is included in the Psychology Field of Study.)
Prerequisite:
PSYC 2301 General Psychology
MATH 1314 College Algebra (3 SCH version)

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, self, social cognition, and research methods (Cross-listed as SOCI 2326)

PSYC 2320. Abnormal Psychology. (3-0)
This course provides an introduction to the psychological, biological, and socio-cultural factors involved in the development, diagnosis, and treatment of psychological disorders. It includes a review of the historical understanding of abnormal behavior and the development of modern diagnostic systems. It includes discussion of psychological research and practice as it relates to mental health and psychological functioning, as well as legal and ethical issues. (PSYC 2320 is included in the Psychology Field of Study.) Prerequisite: PSYC 2301 General Psychology

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.

SOCIAL WORK

SOCW 2361. Introduction to Social Work. (3-0)
An overview of the history and development of social work as a profession. The course is designed to foster a philosophical, historical, and critical understanding of the social work profession, including social work values, ethics, and areas of practice utilized under a Generalist Intervention Model. (SOCW 2361 is included in the Social Work Field of Study.)

SOCW 2362. Social Welfare: Legislation, Programs, and Services. (3-0)
This course offers a historical and contemporary examination of legislation and resulting programs, policies, and services in the context of the social welfare system in the United States. Special attention is given to the political, economic, environmental, and social conditions that prompted the development of legislation to meet the needs of vulnerable populations. Societal responses to legislation are also considered. (SOCW 2362 is included in the Social Work Field of Study.)

SOCW 2389. Academic Cooperative. (2-3)
A supervised experiential learning course designed to integrate program study with introductory exposure to the field of social work. In conjunction with individual study and/or seminars, the student will set specific goals and objectives in the study of social work and/or social institutions. The academic cooperative is not a social work skills-based practice experience, but instead, an observational volunteer experience. The course must include a minimum of 80 contact hours (48 hours in a social service setting). (SOCW 2389 is included in the Social Work Field of Study.) Prerequisite: SOCW 2361 Introduction to Social Work

SOCIOLOGY

SOCI 1301. Introductory Sociology. (3-0)
(Core option—Social and Behavioral Sciences component)
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. (3-0)
(Core option—Social and Behavioral Sciences component)
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. (3-0)
(Core option—Social and Behavioral Sciences component)
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 2336. Criminology. (3-0)
The course surveys various theories of crime, with an emphasis on understanding the social causes of criminal behavior. The techniques for measuring crime as a social phenomenon and the characteristics of criminals are examined. This course addresses crime types (such as consensual or white-collar crimes), the criminal justice system, and other social responses to crime.

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. Beginning Spanish I. (1st semester Spanish, 4 SCH version) (3-2)
Basic Spanish language skills in listening, speaking, reading, and writing within a cultural framework. Students will acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the beginner level.

SPAN 1412. Beginning Spanish II. (2nd semester Spanish, 4 SCH version) (3-2)
Continued development of basic Spanish language skills in listening, speaking, reading, and writing within a cultural framework. Students acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the high beginner to low intermediate level. Prerequisite: SPAN 1411 or equivalent or one year of high school Spanish or consent of the instructor.

SPAN 2311. Intermediate Spanish I. (3rd semester Spanish) (3-0)
(Core option—Language, Philosophy & Culture component)
The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis on comprehension, appreciation, and

interpretation of the cultures of the Spanish-speaking world. Prerequisite: SPAN 1411 and SPAN 1412 or equivalent or two years of high school Spanish or consent of the instructor.

SPAN 2312. Intermediate Spanish II. (4th semester Spanish) (3-0)
(Core option—Language, Philosophy & Culture component)
The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis on comprehension, appreciation, and interpretation of the cultures of the Spanish-speaking world. Prerequisite: SPAN 2311 or equivalent or consent of the instructor.

SPAN 2289. Academic Cooperative (2 SCH version)
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 Spanish language and literature.

SPAN 2389. Academic Cooperative. (3-0)
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 Spanish language and literature.

SPEECH/COMMUNICATIONS

COMM 1307. Introduction to Mass Communication. (3-0)
Survey of basic content and structural elements of mass media and their functions and influences on society.

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)
Introduces basic human communication principles and theories embedded in a variety of contexts including interpersonal, small group, and public speaking.

SPCH 1315. Public Speaking. (3-0)
(Core required—Component Area Option component)
Application of communication theory and practice to the public speaking context, with emphasis on audience analysis, speaker delivery, ethics of communication, cultural diversity, and speech organizational techniques to develop students' speaking abilities, as well as ability to effectively evaluate oral presentations. 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 mediated formats.

SPCH 1342. Voice and Diction. (3-0)
Physiology and mechanics of effective voice production with practice in articulation, pronunciation, and enunciation.

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

SPCH 2335. Argumentation and Debate. (3-0)
Theories and practice in argumentation and debate including analysis, reasoning, organization, evidence, and refutation.

SPCH 2341. Oral Interpretation. (3-0)
Theories and techniques in analyzing and interpreting literature. Preparation and presentation of various literary forms.

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 are 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 equipment and safety practices, including OSHA standards for industry.

WLDG 1327. Welding Codes and Standards. (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 Welding Metallurgy. (3-0)
A study of 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, machinability, and ductility.

WLDG 1380, 1381. Cooperative Education - Welder/Welding Tech. (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.

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 various joints using Flux Cored Arc Welding (FCAW) 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 placed on power sources, electrode selection, and various joint designs.

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)
Principles of gas tungsten arc welding (GTAW), including setup, GTAW equipment. Instruction in various positions and joint designs.

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 various welding positions and electrodes.

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

WLDG 1457. Intermediate Shielded Metal Arc Welding (SMAW). (2-4)
A study of the production of various fillet and groove welds. Preparation of specimens testing in all positions.

WLDG 2380, 2381. Cooperative Education - Welder/Welding Technologist. (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.

WLDG 2406. Intermediate Pipe Welding. (2-4)
A comprehensive course on the welding of pipe using the shielded metal arc welding (SMAW) and/or other processes. Welds will be done using various positions. Topics covered include electrode selection, equipment setup, and safe shop practices.

WLDG 2413. Welding Using Multiple Processes. (2-4)
Instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes: oxy-fuel gas cutting and welding, shield metal arc welding (SMAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW)).

WLDG 2432. Welding Automation. (2-4)
Overview of automated welding and cutting applications. Special emphasis on safe use and operation of equipment.

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 Shielded 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 various positions.

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

WLDG 2451. Advanced Gas Tungsten Arc Welding (GTAW). (2-4)
Advanced topics in GTAW welding, including welding in various positions and directions.

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