ABDR 1207 - Collision Repair Welding
Credits: 2. A study of collision repair welding and cutting procedures.

ABDR 1215 - Vehicle Trim and Hardware
Credits: 2 (2 lecture, 1 lab). An in depth study of vehicle trim and glass service. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 1280 - Cooperative Education - Autobody / Collision and Repair Technology / Technician
Credits: 2 (1 lecture, 10 lab). 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. Prerequisite: ABDR 1431,1441,1207, 1215,1458,1442, 2441; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 1291 - Special Topics in Auto/Automotive Body Repairer
Credits: 2 (1 lecture, 2 lab). Advanced techniques in blending, matching and application in the refinishing process, including custom applications. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 1307 - Collision Repair Welding
Credits: 3 (2 lecture, 4 lab). A study of collision repair welding and cutting procedures. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 1431 - Basic Refinishing
Credits: 4 (2 lecture, 4 lab). An introduction to current refinishing products, shop safety, and equipment used in the automotive refinishing industry. Emphasis on surface preparation, masking techniques, and refinishing of trim and replacement parts. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 1441 - Structural Analysis and Damage Repair I
Credits: 4 (2 lecture, 4 lab). Expanded training in the roughing and shaping procedures on automotive sheet metal necessary to make satisfactory body repairs. Emphasis on the alignment of component parts such as doors, hood, front-end assemblies, and deck lids. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 1442 - Structural Analysis and Damage Repair II
Credits: 4 (2 lecture, 4 lab). Continuation of general repair and replacement procedures for damaged structural parts and collision damage. Prerequisite: ABDR 1441. Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 1458 - Intermediate Refinishing
Credits: 4 (2 lecture, 4 lab). Expanded training in mixing and spraying of automotive topcoats. Emphasis on formula ingredient, reducing, thinning, and special spraying techniques. Introduction to partial panel refinishing techniques and current industry paint removal techniques. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 2431 - Structural Analysis and Damage Repair III
Credits: 4 (2 lecture, 4 lab). Advanced concepts in the application of theories of auto body repair and replacement of major body units. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 2441 - Major Collision Repair and Panel Replacement
Credits: 4 (2 lecture, 4 lab). Instruction in preparation of vehicles for major repair processes. This course covers interpreting information from damage reports, planning repair sequences, selecting appropriate tools, and organizing removed parts for reinstallation. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ABDR 2449 - Advanced Refinishing
Credits: 4 (2 lecture, 4 lab). Skill development in multi-stage refinishing techniques. Further development in identification of problems and solutions in color matching and partial panel refinishing. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACCT 2301 - Principles of Financial Accounting
Credits: 3 (3 lecture). This course covers the fundamentals of financial accounting, including double-entry accounting and the accounting cycle. Other topics include cash, receivables, inventories, plant assets, liabilities, partnerships, corporation, investments, statement of cash flows and interpretation of financial statements. Prerequisite: Departmental Approval
ACCT 2302 - Principles of Managerial Accounting
Credits: 3 (3 lecture). This course covers the fundamentals of managerial accounting including manufacturing operations and planning and control. Other topics include budgets, introduction to cost accounting, cost control techniques, methods of measuring performance and financial statement analysis. Prerequisite: ACCT 2301

ACNT 1303 - Introduction to Accounting I
Credits: 3 (3 lecture). A study of analyzing, classifying, and recording business transactions in a manual and computerized environment. Emphasis on understanding the complete accounting cycle and preparing financial statements, bank reconciliations, and payroll. Coverage also includes the fundamental principles of double-entry bookkeeping, financial statements, trial balances, worksheets, special journals, adjusting entries and closing entries. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1304 - Introduction to Accounting II
Credits: 3 (3 lecture). A study of accounting for merchandising, notes payable, notes receivable, valuation of receivables and equipment, and valuation of inventories in a manual and computerized environment. Prerequisite: ACNT 1303; Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1305 - Forensic Accounting
Credits: 3 (3 lecture). Accounting fraud and examination designed to provide a basic understanding of the impact that fraud has on an organization. (This course is intended to help students understand the role of the Forensic Accountant. Upon completion of this course the students will learn special skills in accounting, auditing, finance, quantitative methods, certain areas of the law, research, and investigative skills to collect, analyze, and evaluate evidential matter and to interpret and communicate findings. Finance and quantitative skills will be addressed since they are especially important to Forensic Accountants who calculate damages. The complexity of Forensic Accounting has gained considerable attention over the past five years and will continue to gain momentum.) Prerequisite: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1313 - Computerized Accounting Applications
Credits: 3 (2 lecture, 2 lab). A study of utilizing the computer to develop and maintain accounting record-keeping systems, make management decisions, record daily business transactions, and generate financial statements using Peachtree or QuickBooks. Prerequisite: ACNT 1303 or ACCT 2301; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1329 - Payroll and Business Tax Accounting
Credits: 3 (3 lecture). A study of payroll procedures, taxing entities, and reporting requirements of local, state, and federal taxing authorities in a manual and computerized environment. Prerequisite: ACNT 1303 or ACCT 2301; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1331 - Federal Income Tax: Individual
Credits: 3 (3 lecture). A study of the laws currently implemented by the IRS, providing a working knowledge of preparing taxes for the individual. Prerequisite: ACCT 2301; Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1335 - Accounting Ethics
Credits: 3 (3 lecture). Introduction to professional ethics in the accounting and business environments. This course may also be offered for qualifying education credit for CPA examination by Texas community colleges that meet Texas State Board of Accountancy standards. Prerequisite: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1347 - Federal Income Tax for Partnerships and Corporations
Credits: 3 (3 lecture). Introduction to the tax laws as currently implemented by the Internal Revenue Service providing a working knowledge of preparing taxes for a partnership, subchapter S, and corporation. Prerequisite: ACNT 1331; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
ACNT 1382 - Cooperative Education-Accounting Technology/Technician and Bookkeeping
Credits: 3 (1 lecture/seminar and 20-hours a week employment). Career related activities encountered in the student's area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. Blend of academic and work-related activities in student's major. Prerequisite: Department Program Approval and 20 hours a week employment; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1391 - Special Topics in Accounting: Fraud Examinations
Credits: 3 (3 lecture). Course will provide an overview of how and why occupational fraud is committed, the principles and methodologies of prevention, detection and investigation of fraud using accounting, auditing and investigative skills. Prerequisite: Prerequisites: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1391 - Special Topics in Accounting : Oil and Gas Accounting
Credits: 3 (3 lecture). An introduction to particularities of recording and reporting cost and revenues incident to creation and realization of mineral interests. Prerequisite: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 1391 - Special Topics in Accounting : Ethics for Accountants
Credits: 3 (3 lecture). This course will serve as a general introduction to professional ethics in the accounting and business environments. We will discuss the fundamental ethical issues of business and society, the roles and responsibilities of accounting and auditing professionals, ethical behavior by management, and legal and professional guidelines that address the ethical concerns of society. Prerequisite: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 2303 - Intermediate Accounting I
Credits: 3 (3 lecture). Critical analysis of general accepted accounting principles, concepts, and theory underlying the preparation of financial statements. Emphasis on current theory and practice. Covers the theoretical and practical basis for financial statements, present value applications, and the theory and practice of accounting for cash, receivables, inventories, liabilities, long-term investments, depreciable and depletable property, and intangible assets. Prerequisite: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
Description of Courses

ACNT 2304 - Intermediate Accounting II
Credits: 3 (3 lecture). Continued in-depth analysis of generally accepted accounting principles underlying the preparation of financial statements including comparative analysis and statement of cash flows. Topics also include bonds, leases, pension plans, corporate paid-in-capital, special purpose securities, retained earnings, tax allocation, inflation accounting, funds statement, and financial statement analysis. Prerequisite: ACNT 2303; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 2309 - Cost Accounting
Credits: 3 (3 lecture). A study of budgeting and cost control systems including a detailed study of manufacturing cost accounts and reports, job order costing, and process costing. Includes introduction to alternative costing methods such as activity-based and just-in-time costing. Coverage also includes historical cost systems, work-in-process inventories, material and labor control, multiple products, budgeting, applying overhead, standard costs, direct costing, evaluating profit performance, and distribution costs. Prerequisite: ACNT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 2330 - Governmental and Not-for-Profit Accounting
Credits: 3 (3 lecture). Basic concepts and techniques of fund accounting, financial reporting for governmental and not-for-profit entities. Accounting cycle for funds and account groups and related financial statements. Prerequisite: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 2331 - Internal Control and Auditing
Credits: 3 (3 lecture). A study of internal control and auditing standards and processing used by internal auditors, managers, and independent public accountants. Prerequisite: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 2332 - Accounting Information Systems
Credits: 3 (3 lecture). A study of the role of accounting information systems and related subsystems, including data collection, retrieval, manipulation, filtering and sorting of data. Prerequisite: ACCT 2302; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 2333 - Advanced Accounting
Credits: 3 (3 lecture). Methods of measuring and communicating economic information, including consolidated statements, partnerships, real estate, foreign operations, and fund units. Prerequisite: ACNT 2304; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ACNT 2382 - Cooperative Education-Accounting Technology/Technician and Bookkeeping
Credits: 3 (1 lecture/seminar and 20-hours a week employment). Continuation of ACNT 1382. Career related activities encountered in the student's area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. Blend of academic and work-related activities in student's major. Prerequisite: ACNT 1382; 20 hours a week employment & departmental approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AFSC 1201 - Foundations of the US Air Force I
Credits: 2 (2 lecture, 1 lab). Overall roles and missions of the USAF; career fields available. Emphasis on military customs and courtesies, appearance standards, core values, written and personal communication. Introduction to American military History, Civilization, . Cooperative program with the University of Houston Air Force ROTC department. Prerequisite: Contact UH Air Force ROTC

AFSC 1202 - Foundations of the US Air Force II
Credits: 2 (2 lecture, 1 lab). Continuation of AFSC 1201. Cooperative program with the University of Houston Air Force ROTC department. Prerequisite: AFSC 1201.

AFSC 2201 - Evolution of Air Power I
Credits: 2 (2 lecture, 1 lab). Key historical events and milestones in the development of air power as a primary instrument of United States national security. Core values and competencies of leaders in the United States Air Force. Tenets of leadership and ethics. Cooperative program with the University of Houston Air Force ROTC department. Prerequisite: AFSC 1202.

AFSC 2202 - Evolution of Air Power II
Credits: 2 (2 lecture, 1 lab). Continuation of AFSC 2201. Cooperative program with the University of Houston Air Force ROTC department. Prerequisite: AFSC 2201.
Description of Courses

AGRI 1131 - The Agricultural Industry
Credits: 1 (1 lecture). An overview of world agriculture, nature of the industry and resource conservation, insight regarding career opportunities in agriculture and natural resources.

AGRI 1307 - Agronomy
Credits: 3 (2 lecture, 2 lab). Principles and practices in development, production, and management of field crops, plant breeding, plant diseases, soils, insect control, and weed control.

AGRI 1309 - Computers in Agriculture
Credits: 3 (2 lecture, 2 lab). Use of computers in agricultural applications. Introduction to programming languages, word processing, electronic spreadsheets and agricultural software.

AGRI 1311 - Dairy Science

AGRI 1315 - Horticulture (Lecture)
Credits: 3. Structure, growth, and development of horticultural plants. Examination of environmental effects, basic principles of reproduction, production methods ranging from outdoor to controlled climates, nutrition, and pest management. (Cross-listed as HORT 1301).

AGRI 1319 - Introductory Animal Science
Credits: 3 (2 lecture, 2 lab). Scientific methods of animal selection, reproduction, nutrition, management, and marketing of beef cattle, swine, sheep, goats, and horses. Evaluation and processing of meat, wool, and mohair. Importance of livestock and meat industries.

AGRI 1325 - Marketing of Agricultural Products
Credits: 3 (3 lecture). Introductory course covering the operations involved in the movement of agricultural commodities from producer to consumer. Essential marketing functions of buying, selling, transporting, storing, financing, standardizing, pricing and risk bearing.

AGRI 1327 - Poultry Science
Credits: 3 (2 lecture, 2 lab). Introduction to the poultry industry. Practices and principles in production and marketing of turkeys, layers, broilers, and specialized fowl. Management, automated equipment, product technology, incubation, and production economics are included.

AGRI 1329 - Principles of Food Science
Credits: 3 (3 lecture). Technological and scientific aspects of modern industrial food supply systems. Food classification, nutritional considerations, modern processing, and quality control.

AGRI 2301 - Agricultural Power Units
Credits: 3 (2 lecture, 2 lab). Fundamentals of internal combustion engines: gasoline, diesel, and liquefied petroleum. Maintenance and adjustments of the electrical, ignition, fuel, lubricating, and cooling systems.

AGRI 2303 - Agricultural Construction
Credits: 3 (2 lecture, 2 lab). Selection, use, and maintenance of hand and power tools, arc and oxyacetylene welding, construction materials and principles.

AGRI 2313 - Entomology
Credits: 3 (2 lecture, 2 lab). Principal orders of insects, relation of anatomy and physiology of insects to control methods: development habits and economic importance of more common insects with control methods for injurious species.

AGRI 2317 - Introduction to Agricultural Economics
Credits: 3 (3 lecture). Characteristics of our economic system and basic economic concepts. Survey of the farm and ranch, its organizational and management structure, and operation within the marketing system. Functional and institutional aspects of agricultural finance and government farm programs.

AGRI 2321 - Livestock Evaluation
Credits: 3 (2 lecture, 2 lab). Instruction in selecting, evaluating, and judging of beef cattle, sheep, swine and horses. The course will include the judging of both breeding and marketing animals with decisions being supported by oral reasons.

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

ANTH 2101 - Physical Anthropology (Lab)
Credits: 1 (2 lab). ANTH 2101 is a 1-unit laboratory course. Students use physical anthropological methods and tools to solve problems in the areas of genetics, human variation, human osteology, primate biology and behavior, and human evolution. A problem solving approach is stressed in applying scientific fundamentals including the techniques of observation, measurement, and critical thinking. Core Curriculum Course. Prerequisite: Must be placed into college level writing (or take GUST 0342 as a co-requisite) and be placed into college level reading (or take ARAB 1411 as a co-requisite) and be placed into college level reading (or take ENGL 0310/0349 as a co-requisite).

ANTH 2301 - Physical Anthropology (Lecture)
Credits: 3 (3 lecture). Introduction to Physical Anthropology explores the relationship between culture and biology through the methods, theory and research of biological anthropology. Students learn about basic mechanisms of genetic change in populations and the relationships between humans and the other primates. The appearance of humans and their bipedal ancestors approximately four million years ago and their culture History, Civilization, through the Paleolithic age are examined in detail. Students learn about biological variation and adaptation in human populations, responses to the environment, race, and other issues and their applications. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

ANTH 2302 - Introduction to Archaeology
Credits: 3 (3 lecture). Introduction to Archaeology provides a survey of the basic methods, theory and research of scientific archaeology. Human cultures and behaviors are identified and interpreted from material remains of over 2.5 million years of the human past. Students learn how anthropologists build cultural History, Civilization, from artifacts and material evidence of human activity, reconstruct past life ways, and explain similarities and differences of human cultures. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

ANTH 2346 - General Anthropology
Credits: 3 (3 lecture). This introductory survey of the four subfields of anthropology focuses on the cultural and biological diversity of humans including hominid prehistory, civilization, the emergence of Paleolithic cultures, and the agricultural and urban revolutions from an anthropological perspective. Past and present human adaptations and culture are surveyed and analyzed using the comparative and holistic approach of biological anthropology, archaeology, linguistics and ethnology. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

ANTH 2351 - Cultural Anthropology
Credits: 3 (3 lecture). This course focuses on culture, the ways people live and give meaning, form and organization to their lives as they adapt to various environments and conditions both in and beyond the borders of the U.S. Study of the descriptions and analysis of cultural diversity provide the basis for evaluating cultural components of everyday life including recognition of ethnocentrism, intercultural communication and understanding local and global culture in a multicultural and transforming world. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

ANTH 2389 - Academic Cooperative in Anthropology
Credits: 3 (1 lecture, 16 lab). An instructional program designed to integrate on-campus study with practical hands-on experience in anthropology. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of human culture and social behavior and/or institutions and processes. Prerequisite: Must be placed into college-level reading and college-level writing.

ARAB 1411 - Beginning Arabic I
Credits: 4 (3 lecture, 2 lab). Fundamental skills in listening comprehension, speaking, reading, and writing. Includes basic vocabulary, grammatical structures, and culture. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level reading (or take ENGL 0310/0349 as a co-requisite).
Description of Courses

ARAB 1412 - Beginning Arabic II
Credits: 4 (3 lecture, 2 lab). Continuation of ARAB 1411. Further development of listening comprehension, speaking, reading, and writing skills, and cultural awareness. More advanced grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: ARAB 1411 or department approval. Must be placed into college level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

ARAB 1411 - Intermediate Arabic I
Credits: 4 (3 lecture, 2 lab). Further development of listening, speaking, reading and writing skills and cultural awareness acquired in Beginning Arabic. Introduction of more complex language structures. Oral and written practice based on selected readings. Class conducted mainly in Arabic. Core Curriculum Course. Prerequisite: ARAB 1412 or departmental approval. Must be placed into college level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

ARAB 2311 - Intermediate Arabic II
Credits: 6 (3 lecture, 3 lab). Continuation of ARAB 2311, but with special emphasis on written communication. Readings, discussions and compositions. Class conducted mainly in Arabic. Core Curriculum Course. Prerequisite: ARAB 2312 or departmental approval. Must be placed into college level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

ARAB 2312 - Intermediate Arabian II
Credits: 6 (3 lecture, 3 lab). Similar to ARAB 2311 but with a greater emphasis on writing. Core curriculum course. Prerequisite: ARAB 2311 or departmental approval. Must be placed into college level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

ARCE 1303 - Architectural Materials and Methods of Construction
Credits: 6 (3 lecture, 3 lab). Properties, specifications, vendor references, and uses of materials as related to architectural systems of structures. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARCE 1352 - Structural Drafting
Credits: 6 (3 lecture, 3 lab). A study of structural systems including concrete foundations and frames, wood framing and trusses, and structural steel framing systems. Includes detailing of concrete, wood, and steel to meet industry standards including the American Institute of Steel Construction and the American Concrete Institute. Prerequisite: DFTG 1405 and DFTG 1309; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARCE 2352 - Mechanical and Electrical Systems
Credits: 6 (3 lecture, 4 lab). The properties of building materials (assemblies), specifications, codes, vendor references, and uses of mechanical, plumbing, conveying, and electrical systems as they relate to architecture for residential and commercial construction. Prerequisite: DFTG 1405, DFTG 1309 and DFTG 1317; must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.

ARTC 1302 - Digital Imaging I (Photoshop)
Credits: 3 (2 lecture, 4 lab). Digital imaging using raster image editing and/or image creation software: scanning, resolution, file formats, output devices, color systems, and image acquisitions. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTC 1305 - Basic Graphic Design
Credits: 3 (2 lecture, 4 lab). Graphic design with emphasis on the visual communication process. Topics include basic terminology and graphic design principles. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTC 1313 - Digital Publishing I
Credits: 3 (2 lecture, 4 lab). The fundamentals of using digital layout as a primary publishing tool and the basic concepts and terminology associated with typography and page layout. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTC 1317 - Design Communication I
Credits: 3 (2 lecture, 4 lab). Study of design development relating to graphic design terminology, tools and media, layout and design concepts. Topics include integration of type, images and other design elements, and developing computer skills in industry standard computer programs. Prerequisite: ARTC 1325 and ARTC 1305 or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
ARTC 1321 - Illustration Techniques I
Credits: 3 (2 lecture, 4 lab). A study of illustration techniques in various media. Emphasis on creative interpretation and the discipline of draftsmanship for visual communication of ideas. Prerequisite: ARTC 1309 or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTC 1325 - Introduction to Computer Graphics
Credits: 3 (2 lecture, 4 lab). A survey of computer design concepts, terminology, processes, and procedures. Topics include computer graphics hardware, electronic images, electronic publishing, vector-based graphics, and interactive multimedia. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTC 1353 - Computer Illustration (Illustrator)
Credits: 3 (2 lecture, 4 lab). Use of the tools and transformation options of an industry-standard vector drawing program to create complex illustrations or drawings. Prerequisite: ARTC 1325 or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTC 1359 - Visual Design for New Media
Credits: 3 (2 lecture, 4 lab). Visual design elements as they relate to new media. Emphasizes aesthetics and visual problem solving such as typographic issues, color management, hierarchy of information, image optimization, and effective layout. Prerequisite: ARTC 1353, ARTV 2301

ARTC 2305 - Digital Imaging II
Credits: 3 (2 lecture, 4 lab). Principles of digital image processing and electronic painting. Emphasis on bitmapted or raster-based image marking and the creative aspects of electronic illustration for commercial or fine art applications. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTC 2311 - History of Communication Graphics
Credits: 3. Survey of the evolution of graphic arts in relation to the history of art. Includes formal, stylistic, social, political, economic, and historical aspects. Emphasis on art movements, schools of thought, individuals, and technology as they interrelate with graphic arts.

ARTC 2313 - Digital Publishing II
Credits: 3 (2 lecture, 4 lab). Includes layout procedures from thumbnails and roughs to final comprehensive and print output. Emphasis on design principles for the creation of advertising and publishing materials and techniques for efficient planning and documenting projects. Prerequisite: ARTC 1305, ARTC 1313, ARTC 1325 or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTC 2317 - Typographic Design
Credits: 3 (2 lecture, 4 lab). Exploration of typographic design including computer generated letterforms as elements of design. Includes theory and techniques of traditional, contemporary, and experimental typography. Prerequisite: ARTC 1302, 1305, 1553, or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: ARTC 2313 or Department Approval

ARTC 2335 - Portfolio Development for Graphic Design
Credits: 3 (2 lecture, 4 lab). Preparation of a portfolio comprised of completed graphic design class projects. Evaluation and demonstration of portfolio presentation methods based on the student's specific area of study. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

ARTC 2347 - Design Communication II
Credits: 3 (2 lecture, 4 lab). An advanced study of the design process and art direction. Emphasis on form and content through the selection, creation, and integration of typographic, photographic, illustrative, and design elements. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

ARTC 2348 - Digital Publishing III
Credits: 3 (2 lecture, 4 lab). A project-based page layout course from concept to completion addressing design problems, preflight of files, color separations, and trapping techniques. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.
ARTS 1301 - Art Appreciation
Credits: 3 (3 lecture). 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. This introduction to the visual arts is a global investigation of artistic styles, methods of artistic production and media. Various works will be analyzed and defined in relation to the formal elements and the principles of design. Universal themes are studied within their historical, political, economic, theological, sociological, conceptual, and ethnic contexts. Students will also develop critical thinking and observational skills through the creation of hands-on art projects. This course satisfies the creative arts or component area option of the HCC core. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

ARTS 1303 - Art History I (Prehistoric to the 14th Century)
Credits: 3 (3 lecture). A chronological analysis of the historical and cultural contexts of the visual arts from prehistoric times to the 14th century. This course is a global investigation of the styles and methods of artistic production covering Prehistoric through Gothic periods. Media studied include: drawing, painting, sculpture, architecture, printmaking, textiles, ceramics, and metal arts. Using this framework, universal themes are studied within their historical, political, economic, theological, sociological, and ethnic contexts. This course satisfies the fine arts or component area option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing.

ARTS 1304 - Art History II (14th Century to the Present)
Credits: 3 (3 lecture). A chronological analysis of the historical and cultural contexts of the visual arts from the 14th century to the present day. This course is a global investigation of the styles and methods of artistic production covering the Renaissance period to Present. Media studied include: drawing, painting, sculpture, architecture, printmaking, textiles, ceramics, metal arts, photography, and digital arts. Using this framework, universal themes are studied within their historical, political, economic, theological, sociological, conceptual and ethnic contexts. ARTS 1303 is not a prerequisite. This course satisfies the fine arts or component area option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing.

ARTS 1311 - Design I (2-Dimensional Design)
Credits: 3 (2 lecture, 4 lab). An introduction to the fundamental terminology, concepts, theory, and application of two-dimensional design. This beginning studio course explores the fundamentals of two-dimensional design: line, shape, texture, value, color and composition. A variety of media will be used. Recommended but not required as a first studio course.

ARTS 1312 - Design II (3-Dimensional Design)
Credits: 3 (2 lecture, 4 lab). An introduction to the fundamental terminology, concepts, theory, and application of three-dimensional design. A beginning studio course that explores the fundamentals of three-dimensional design: line, plane, mass, surface, light and color in space. A variety of media will be used. Recommended but not required to be taken before Sculpture, Ceramics or Jewelry. Prerequisite: ARTS 1311.
ARTS 1316 - Drawing I
Credits: 3 (2 lecture, 4 lab). 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. This beginning drawing course develops students' observation skills through experimentation with various approaches, styles, techniques, and media. Recommended but not required to be taken before Life Drawing, Painting or Printmaking. Foundation Drawing I is a pre-requisite for Foundation Drawing II.

ARTS 1317 - Drawing II
Credits: 3 (2 lecture, 4 lab). 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. This studio course builds upon the skills learned in Drawing I. Emphasis will be upon further media experimentation and development of a personal style. Drawing I is a prerequisite. Prerequisite: ARTS 1316

ARTS 2311 - Design III (2D & 3D)
Credits: 3 (2 lecture, 4 lab). Elements and principles of art using two- and three-dimensional concepts. This intermediate studio course further develops two and/or three-dimensional design skills in various media. Design skills may include: line, shape, texture, color, value, composition, plane, mass, surface, light and color in space. A variety of media will be used. Prerequisite: Department approval after instructor review of student design portfolio

ARTS 2313 - Design Communications I
Credits: 3. Communication of ideas through processes and techniques of graphic design and illustration.
ARTS 2341 - Art Metals
Credits: 3 (2 lecture, 4 lab). Exploration of ideas using basic techniques in jewelry and metal construction. Fundamentals of jewelry construction including design, fabrication, and surface treatment, as well as stone setting.

ARTS 2346 - Ceramics I
Credits: 3 (2 lecture, 4 lab). Exploration of ideas using basic ceramic processes. This studio course is an introduction to arts, using the clay medium. Sculptural approaches to clay (slab, pinch, coil wheel) as well as surface treatment will be investigated. Glaze making and kiln technology will be introduced. Ceramics I is a prerequisite for Ceramics II.

ARTS 2347 - Ceramics II
Credits: 3 (2 lecture, 4 lab). Exploration of ideas using basic ceramic processes. This studio course builds on knowledge acquired in Ceramics I. Emphasis will be on form and surface experimentation, as well as development of personal expression. Traditional and nontraditional uses of clay will be explored. Ceramics I is a prerequisite for Ceramics II. Prerequisite: ARTS 2346

ARTS 2356 - Photography I (Fine Arts Emphasis)
Credits: 3 (2 lecture, 4 lab). Introduction to the basics of photography. Includes camera operation, techniques, knowledge of chemistry, and presentation skills. Emphasis on design, history, and contemporary trends as a means of developing an understanding of photographic aesthetics. The focus of this class is on manual camera skills, making better photographs and becoming familiar with a Digital Single Lens Reflex Camera and the software Lightroom. Students will demonstrate the ability to critically talk about work in relationship to social, political, and historical terms. Students will also demonstrate the ability to examine and explore photography's role in our changing visual culture. Photography I is a prerequisite for Photography II.

ARTS 2357 - Photography II (Fine Arts Emphasis)
Credits: 3 (2 lecture, 4 lab). Extends the students' knowledge of technique and guides them in developing personal outlooks toward specific applications of the photographic process. This course will build on previously acquired skills of black and white film exposure, processing and printing and guide students in developing personal outlooks toward specific applications of the photographic process. Photography I is a prerequisite for Photography II. Prerequisite: ARTS 2356

ARTS 2348 - Digital Arts I
Credits: 3 (2 lecture, 4 lab). Studio art course that explores the potential of the computer hardware and software medium for their visual, conceptual, and practical uses in the visual arts. This course introduces the student to Photoshop and will focus on manipulating images within a digital environment. Students will demonstrate the ability to critically talk about how digital manipulations affect interpretations of photographic imagery, in relationship to social, political, and historical terms, as well as examine and explore the role of Digital Media in our changing visual culture.

ARTS 2366 - Watercolor
Credits: 3 (2 lecture, 4 lab). Exploration of ideas using water-based painting media and techniques. A studio course that explores watercolor media with an emphasis on color, composition, self-expression, and technique.

ARTS 2389 - Academic Cooperative
Credits: 3 (1 lecture, 2 lab). 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 studio art. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

ARTV 1111 - Storyboard
Credits: 1 (1 lecture, 1 lab). Determine a project's content; choose or create graphics; and sequence the content to convey the message.
ARTV 1303 - Basic Animation  
Credits: 3 (2 lecture, 4 lab). Examination of animation concepts, principles, and storyboard for basic production. Emphasizes creating movement and expression utilizing traditionally or digitally generated image sequences.

ARTV 1341 - 3-D Animation I  
Credits: 3 (2 lecture, 4 lab). Intermediate level 3-D course introducing animation tools and techniques used to create movement. Emphasis on using the principles of animation. Prerequisite: ARTV 1345; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTV 1345 - 3-D Modeling and Rendering I  
Credits: 3 (2 lecture, 4 lab). Techniques of three-dimensional (3-D) modeling utilizing industry standard software. Includes the creation and modification of 3-D geometric shapes, use of a variety of rendering techniques, camera, light sources, texture, and surface mapping. Prerequisite: ARTC 1302 or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTV 1351 - Digital Video  
Credits: 3 (2 lecture, 4 lab). Producing and editing video and sound for multimedia or web productions. Emphasizes capture, editing, and outputting of video using a desktop digital video workstation. Prerequisite: IMED 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTV 1371 - Introduction to 3D Printing Technology  
Credits: 3 (2 lecture, 4 lab). The 3D Printing course is a hands-on, project-based learning (PBL) course which allows students to design and fabricate 3D objects using 3D computer applications and 3D printers. This course also focuses on prototyping an invention, creating a artwork, and building a customized product of their choice. Students will analyze real industry cases, and apply 3D printing technology appropriately while gaining hands-on experience with two leading 3D printing technologies employed in today’s industry.

ARTV 2301 - 2-D Animation I  
Credits: 3 (2 lecture, 4 lab). Skill development in the use of software to develop storyboards and two-dimensional animation including creating, importing, and sequencing media elements to create multimedia presentation. Emphasis on conceptualization, creativity, and visual aesthetics. Prerequisite: IMED 1316, IMED 1341, ITSE 2313, or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTV 2320 - Team Program Production I  
Credits: 3 (2 lecture). Students assume roles in a production team using techniques and equipment to create short-form production(s).

ARTV 2322 - Team Program Production II  
Credits: 3 (2 lecture, 4 lab). Develop an advanced level production while working in conjunction with a team; assume management production responsibilities.

ARTV 2330 - 2-D Animation II  
Credits: 3 (2 lecture, 4 lab). Advanced study of technical aspects of animation. Emphasizes aesthetic design and completion of an animation project. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ARTV 2335 - Portfolio Development for Animation  
Credits: 3 (2 lecture, 4 lab). A course in the development of a professional portfolio to showcase the student’s skills in animation. Includes self-promotion, resumes, portfolio distribution, and interview techniques.

ARTV 2341 - Advanced Digital Video  
Credits: 3 (2 lecture, 4 lab). Advanced digital video techniques for post-production. Emphasizes integration of special effects and animation for film, video, and the Internet. Exploration of new and emerging compression and video streaming technologies. Prerequisite: Must be placed into college-level reading, writing and math.

ARTV 2345 - 3-D Modeling and Rendering II  
Credits: 3 (2 lecture, 4 lab). A studio course focused on advanced 3-D modeling and rendering techniques using industry standard software, modeling techniques, camera settings, lighting, and surfacing to develop detailed environments. Prerequisite: ARTC 1302 and ARTV 1345; must be placed into college-level reading, writing and math.
ARTV 2351 - 3-D Animation II
Credits: 3. Advanced level 3-D course utilizing animation tools and techniques used to develop movement. Emphasis on advanced animation techniques.

ARTV 2355 - Character Rigging and Animation
Credits: 3. Advanced work in 3-D animation. Emphasis on character modeling, rigging and animation.

ASTR 1303 - Stars and Galaxies (Lecture)
Credits: 3 (3 lecture). An introduction to the present cosmological theories about the structure and evolution of the universe. A comparison with previous models since antiquity. A study of the celestial sphere and the constellations, the motions in the sky. A study of gravity, light, radiation, optics, telescopes and spacecraft. A survey of the stars, clusters, galaxies, superclusters, their properties, structure and evolution. This course satisfies the Life and Physical Sciences or the Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0341 (or higher) in reading and placed into MATH 0312 (or take MATH 0308 as a co-requisite).

ASTR 1304 - Solar System (lecture + lab)
Credits: 4 (3 lecture, 3 lab). An introduction to present theories about the structure and evolution of the solar system, compared to other models and theories since antiquity. A survey of the Sun, planets, moons, rings, asteroids, comets and debris in our solar system. The possibility of life in the Universe. Laboratory topics include planetary, lunar and solar observations with telescopes and/or the naked eye; measurements of the gravitational constant, gravitational acceleration and the speed of light; analysis of spectra and spacecraft images; and impact cratering simulations. This course satisfies the Life and Physical Sciences or the Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0341 (or higher) in reading and placed into MATH 0312 (or take MATH 0308 as a co-requisite).

AUMT 1305 - Introduction to Automotive Technology
Credits: 3 (2 lecture, 2 lab). An introduction to the automotive industry including automotive History, Civilization, safety practices, shop equipment and tools, vehicle subsystems, service publications, fasteners, professional responsibilities, and automotive maintenance. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0341 (or higher) in reading and placed into MATH 0312 (or take MATH 0308 as a co-requisite).

AUMT 1306 - Automotive Engine Removal and Installation
Credits: 3 (2 lecture, 4 lab). Fundamentals of engine inspection, removal and installation procedures. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
Description of Courses

AUMT 1307 - Automotive Electrical Systems
Credits: 3 (2 lecture, 4 lab). 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. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 1310 - Automotive Brake Systems
Credits: 3 (2 lecture, 4 lab). 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. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 1316 - Automotive Suspension and Steering Systems
Credits: 3 (2 lecture, 4 lab). A study of automotive suspension and steering systems including tire and wheel problem diagnosis, component repair, and alignment procedures. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 1319 - Automotive Engine Repair
Credits: 3 (2 lecture, 4 lab). Fundamentals of engine operation, diagnosis and repair including lubrication systems and cooling systems. Emphasis on overhaul of selected engines, identification and inspection, measurements, and disassembly, repair, and reassembly of the engine. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 1345 - Automotive Climate Control Systems
Credits: 3 (2 lecture, 4 lab). Theory of automotive air conditioning and heating systems. Emphasis on the basic refrigeration cycle and diagnosis and repair of system malfunctions. Covers EPA guidelines for refrigerant handling and new refrigerant replacements. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math. Corequisite: Prerequisite/Corequisite: AUMT 1307

AUMT 1380 - Cooperative Education - Automobile / Automotive Mechanics Technology / Technician
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2209 - Automotive Drive Train and Axle Theory
Credits: 2 (2 lecture, 1 lab). A study of automotive clutches, clutch operation devices, manual transmissions/transaxles, and differentials. Emphasis on theory and diagnosis of transmission/transaxle and drive line components. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2223 - Theory of Automatic Transmission and Transaxle
Credits: 2 (2 lecture, 1 lab). Theory of operation, hydraulic principles, and related circuits of modern automatic transmissions and transaxles. Discussion of diagnosing and repair techniques. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2310 - Automotive Service Consultant
Credits: 3 (2 lecture, 2 lab). Automotive service consulting skills and procedures. Includes vehicle identification, product knowledge, shop operations, warranty service contracts, communications, customer relations, internal relations, and sales skills. Emphasizes courtesy, professionalism, and communications. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2313 - Automotive Drive Train and Axles
Credits: 3 (2 lecture, 4 lab). 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. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
AUMT 2317 - Automotive Engine Performance Analysis I
Credits: 3 (2 lecture, 4 lab). Theory, operation, diagnosis, and repair of basic engine dynamics, ignition systems, and fuel delivery systems. Use of basic engine performance diagnostic equipment. May be taught with manufacturer specific instructions. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2321 - Automotive Electrical Diagnosis and Repair
Credits: 3 (2 lecture, 4 lab). 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. Prerequisite: Prerequisite/Corequisite: AUMT 1307 Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2325 - Automotive Automatic Transmission and Transaxle
Credits: 3 (2 lecture, 4 lab). A study of the operation, hydraulic principles, and related circuits of modern automatic transmissions and automatic transaxles. Diagnosis, disassembly, and assembly procedures with emphasis on the use of special tools and proper repair techniques. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2328 - Automotive Service
Credits: 3 (2 lecture, 4 lab). Mastery of automotive vehicle service and component systems repair. Emphasis on mastering current automotive competencies covered in related courses. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2334 - Automotive Engine Performance Analysis II
Credits: 3 (2 lecture, 4 lab). A study of diagnosis and repair of emission systems, computerized engine performance systems, and advanced ignition and fuel systems; and proper use of advanced engine performance diagnostic equipment. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2380 - Cooperative Education - Automobile/Automotive Mechanics Technology/Technician
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

AUMT 2437 - Automotive Electronics
Credits: 4 (2 lecture, 4 lab). Topics address electrical principles, semiconductor and integrated circuits, digital fundamentals, microcomputer systems, and electrical test equipment as applied to automotive technology. May be taught manufacturer specific. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math. Corequisite: Prerequisite/Corequisite: AUMT 1307

AUMT 2455 - Automotive Engine Machining
Credits: 4 (2 lecture, 4 lab). In-depth coverage of precision engine rebuilding, cylinder reconditioning, and crack repair. Instruction in machines and equipment necessary to complete an engine repair. May be taught with manufacturer specific instructions. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

BARB 1307 - Introduction to Hair Design
Credits: 3. Introduction to hair styling with emphasis on the fundamentals of haircutting and related skills.

BARB 1391 - Special Topics in Barber/Styling
Credits: 3 (2 lecture, 4 lab). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).
BARB 1402 - Barber Styling I
Credits: 4 (2 lecture, 7 lab). Continued development in haircutting techniques and implementation of basic styling. Introduction to chemical reformation. Perform haircutting techniques including shear, razor, and clipper. Demonstrate a variety of styling techniques; demonstrate techniques used in chemical reformation. Practice safety and sanitation. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BARB 1404 - Introduction to Barber Styling
Credits: 4 (2 lecture, 7 lab). Basic techniques for hair cutting. Introduction to the related skills of shampooing and treatments, and of trimming beards and mustaches. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BARB 1442 - Barber Styling II
Credits: 4 (2 lecture, 7 lab). Continuation of Barber Styling I with emphasis on intermediate hands-on application of skills. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BARB 2402 - Barber Styling III
Credits: 4 (2 lecture, 7 lab). Continued skill development in haircutting and styling. Emphasizes on advanced techniques in chemical procedures. Introduction to hairpieces and facials. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BARB 2431 - Advanced Barber Styling I
Credits: 4 (2 lecture, 7 lab). Advanced skills in all areas of haircutting hairstyling and skincare. Introduction to hair coloring techniques. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BARB 2432 - Barber Law and Shop Management I
Credits: 4 (2 lecture, 7 lab). Introduction to Texas barber law and business management. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BARB 2441 - Advanced Barber Styling II
Credits: 4 (2 lecture, 7 lab). Continuation of Advanced Barber Styling I with further refinement of all skills and theory for licensure. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BARB 2444 - Barber Law and Shop Management II
Credits: 4 (2 lecture, 7 lab). Continuation of Barber Law and Shop Management I. Includes advanced business management and preparation for the State Board Examination for a barber license. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BARB 2470 - Preparation for the State Licensing Examination
Credits: 4 (2 lecture, 7 lab). In depth preparation of the theory and practical skills to pass the state licensing examination for a class A barber. Topics include: sanitation, disinfection, hair coloring, hair cutting, shampooing, conditioning, hair styling, chemical reformation services and shaving services. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0308 or higher).

BCIS 1305 - Business Computer Applications
Credits: 3 (3 lecture, 3 lab). Computer terminology, hardware, software, operating systems, and information systems relating to the business environment. The main focus of this course is on business applications of software, including word processing, spreadsheets, databases, presentation graphics, and business-oriented utilization of the Internet. Prerequisite: Must be placed into college level reading & college level writing & developmental mathematics (0312 or higher).

BIOL 1106 - Biology for Science Majors I (Lab)
Credits: 1 (3 lab). Discussions focus on biological chemistry, biological processes, cellular morphology, metabolism, genetics and molecular biology. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into college level reading and writing.

BIOL 1108 - Biology for Non-Science Majors I (Lab)
Credits: 1 (3 lab). Selected laboratory experiments related to topics in BIOL 1308 (Introductory Biology I) for non-majors. Prerequisite: Prerequisite/Corequisite: BIOL 1308
Description of Courses

BIOL 1109 - Biology for Non-Science Majors II
Credits: 1 (3 lab). Selected laboratory experiments related to topics in BIOL 1309 (Introductory Biology I) for non-majors. Prerequisite: Prerequisite/Co-requisite: BIOL 1309

BIOL 1306 - Biology for Science Majors I (Lecture)
Credits: 4 (3 lecture). Discussions focus on biological chemistry, cellular processes, cellular morphology, metabolism, genetics and molecular biology. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: must be placed into college level reading and writing.

BIOL 1308 - Biology for Non-Science Majors I (Lecture)
Credits: 3 (3 lecture). Topics include basic chemistry, cell morphology and physiology, photosynthesis and respiration, cell division, and classical and molecular genetics. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

BIOL 1309 - Biology for Non-Science Majors II (Lecture)
Credits: 3 (3 lecture). Topics include evolution, classification and ecological relationships, and organ systems of animals and plants. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: BIOL 1308, Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

BIOL 1322 - Nutrition & Diet Therapy
Credits: 3 (3 lecture). A course designed to teach the fundamentals of nutrition based on basic nutrition principles. Scientific standard recommendations of levels of nutrient intake for a healthy population are discussed. Sources and functions of carbohydrates, proteins, fats, vitamins and minerals are also studied. (cross listed with HECO 1322). This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 1407 - Biology for Science Majors II (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Topics include evolution, classification and ecological relationships, and organ systems of animals and plants. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: BIOL 1406, Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 1411 - General Botany (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Plant science including survey of the plant kingdom, photosynthesis, respiration, anatomy, reproduction, ecology, and vascular plant taxonomy. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 1413 - General Zoology (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). A general overview of the animal kingdom including principles, life histories, and classification. Emphasis is placed on the vertebrates. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 2101 - Anatomy & Physiology I (lab)
Credits: 1 (3 lab). Study of the structure and function of human cells, tissues, and organ systems including integumentary skeletal, muscular, and nervous systems. Prerequisite: Must have passed ENGL 1301 (or higher) or take ENGL 1301 as a co-requisite.

BIOL 2102 - Anatomy & Physiology II (lab)
Credits: 1 (3 lab). Continuation of BIOL 2101 including the circulatory, respiratory, digestive, excretory, reproductive and endocrine systems. Prerequisite: Must have passed ENGL 1301 (or higher) or take ENGL 1301 as a co-requisite.

BIOL 2120 - Microbiology for Non-Science Majors (Lab)
Credits: 1 (3 lab). Study of microorganisms including morphology, metabolism, taxonomy, culture techniques, microbial genetics, immunology, bacteriology, virology, mycology, parasitology, and diseases. Prerequisite: BIOL 1406; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 2301 - Anatomy & Physiology I (Lecture)
Credits: 3 (3 lecture). Study of the structure and function of human cells, tissues, and organ systems including integumentary skeletal, muscular, and nervous systems. Prerequisite: Must have passed ENGL 1301 (or higher) or take ENGL 1301 as a co-requisite.

BIOL 2302 - Anatomy & Physiology II (Lecture)
Credits: 3 (3 lecture). Continuation of BIOL 2301 including the circulatory, respiratory, digestive, excretory, reproductive and endocrine systems. Prerequisite: Must have passed ENGL 1301 (or higher) or take ENGL 1301 as a co-requisite.
Description of Courses

BIOL 2320 - Microbiology for Non-Science Majors (Lecture)
Credits: 3 (3 lecture). Study of microorganisms including morphology, metabolism, taxonomy, culture techniques, microbial genetics, immunology, bacteriology, virology, mycology, parasitology, and diseases. Prerequisite: BIOL 1406; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 2406 - Environmental Biology (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Human interaction with and effect upon plant and animal communities. Conservation, pollution, energy, and other contemporary ecological problems. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 2416 - Genetics (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Study of the principles of molecular and classical genetics and the function and transmission of hereditary material. May include population genetics and genetic engineering. Prerequisite: BIOL 1406; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 2421 - Microbiology for Science Majors (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Study of microorganisms, 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. Prerequisite: CHEM 1411 and BIOL 1406 and 1407 or BIOL 1411 and 1413.

BIOL 2428 - Vertebrate Zoology
Credits: 4 (3 lecture, 3 lab). Comparative studies of the evolution of the vertebrate body including morphology, physiology, embryology, taxonomy, and paleontology. Prerequisite: BIOL 1407; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOL 2428 - Vertebrate Zoology
Credits: 4 (3 lecture, 3 lab). Comparative studies of the evolution of the vertebrate body including morphology, physiology, embryology, taxonomy, and paleontology. Prerequisite: BIOL 1407; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

BIOM 1309 - Applied Biomedical Equipment Technology
Credits: 3 (2 lecture, 3 lab). Introduction to biomedical instrumentation as related to anatomy and physiology. Detailed coverage of anatomical systems that use medical equipment for monitoring, diagnosis, and treatment. Prerequisite: CETT 1403, CETT 1425 or Department Approval. Must be placed into college-level reading, writing and math.

BIOM 2331 - Biomedical Clinical Instrumentation
Credits: 3 (2 lecture, 3 lab). A study of theory, application, and principles of operation of instruments commonly used in a medical laboratory. Prerequisite: CETT 1403, CETT 1425, or Department Approval. Must be placed into college-level reading, writing and math.

BIOM 2389 - Internship - Biomedical Technology / Technician
Credits: 3 (20 lab). 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. Prerequisite: 30 credit hours of CETT courses and Department Approval; must be placed into college-level reading, writing and math.

BIOS 1470 - Introduction to Biosafety and Biotechnology
Credits: 4 (3 lecture, 3 lab). Topics address the current development of the fields of biosafety and biotechnology. Covers the applications of biosafety and biotechnology as these relate to medical and pharmaceutical research, and health care entities. Explores biotechnology and nanotechnology unique applications, workplace environment, and occupational safety. Describes controlling mechanisms used in biotechnology and biosafety to assure a protective workplace environment. Prerequisite: Must be placed into college-level reading, writing and math.
BIOS 1471 - Introduction to Laboratory Safety
Credits: 4 (3 lecture, 3 lab). Topics include safe handling of biological, chemical, radiation and nano materials in vivo or vitro. Focuses on safety, regulations, and proper materials handling in research, clinical laboratories, and petrochemical industries. Covers the classification levels of laboratories (i.e., Biosafety Level 1, 2, 3 and 4 requirements; topics include laboratory risk identification, medical surveillance requirements as part of an occupational health program, routine safety surveillance activities, identification of appropriate decontamination methods for biological, radiological, chemical or nano particle accidents and spills in research, clinical, and petrochemical laboratories and describing the instruction materials required to educate personnel in all areas of laboratory safety, including biological safety, chemical safety, recombinant DNA research activities and nanosafety. Prerequisite: Must be placed into college-level reading, writing and math.

BIOS 2370 - Internship - Biosafety
Credits: 3 (3 lecture). Participation in real-life applications of biosafety and nanosafety measures for research laboratories, clinical laboratories and/or petrochemical laboratory environments. A work based learning experience that enables the student to apply the specialized biosafety and nanosafety skills, knowledge, theory and concepts to laboratory and institutional environment. It includes oversight of biosafety and nanosafety regulations within a facility, including the performance of environmental monitoring for contamination and air quality related to contaminants by biohazard and nano particles among others. Prerequisite: Must be placed into college-level reading, writing and math.

BIOS 2470 - Industrial Hygiene Sampling Instrumentation Laboratory
Credits: 4 (3 lecture, 3 lab). Covers applications of industrial hygiene air and environmental sampling instrumentation including biosafety, radiation safety, chemical safety and nanosafety functions for research laboratories, clinical laboratories and/or petrochemical laboratory environments. Safe practices in the use of handling hazardous materials including shipping of infectious substances, radioactive materials, and nanoparticles and disposal of hazardous wastes are also addressed. Topics also include performing the environmental monitoring for contamination and air quality related to contaminants by biohazard and nano particles to gain experience in this area. Prerequisite: Must be placed into college-level reading, writing and math.

BITC 1311 - Introduction to Biotechnology
Credits: 3 (3 lecture). An introduction to biotechnology including career exploration, History, Civilization, and applications of DNA/RNA technology, molecular biology, bioethics, and laboratory safety practices. Prerequisite: Must be placed into college-level reading, college-level writing and Math 0312.

BITC 1370 - Introduction to Biochemistry
Credits: 3 (3 lecture). The study of the knowledge of the structure, function, and cellular metabolism of various biomolecules. The course will deal with the intra- and intermolecular conversion of biomolecules. Knowledge in this area is directly applicable to the fields of analysis and processing of biomolecules and their pertinence to biotechnology as it relates to biopharmaceuticals, biodiagnostics, fermentation, and bio-manufacturing. Prerequisite: Must be placed into college-level reading, writing and math.

BITC 1402 - Biotechnology Laboratory Methods and Techniques
Credits: 4 (3 lecture, 3 lab). Laboratory operations, management, equipment, instrumentation, quality control techniques, and safety procedures. Includes laboratory practice in using pH meters, mixing buffers, performing measurements, preparing solutions, and performing separatory techniques. Prerequisite: Prerequisite/Corequisite: BITC 1311 or Department Approval; must be placed into college-level reading, writing and math.

BITC 1403 - Principles of Biochemistry
Credits: 4 (3 lecture, 3 lab). Structure, function, and cellular metabolism of various bio-molecules. Concentrates on the intra- and intermolecular conversion of bio-molecules. Knowledge in this area is directly applicable to analysis and processing of bio-molecules and their pertinence to biotechnology as it relates to biopharmaceuticals, biodiagnostics, fermentation, and bio-manufacturing. Prerequisite: BIOL 1406, CHEM 1414, and MATH 1314. Must be placed into college-level reading, writing and math.

BITC 1491 - Special Topics in Biological Technology/Technician
Credits: 4 (3 lecture, 3 lab). Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into college-level reading, college-level writing and Math 0312
Description of Courses

BITC 2386 - Internship - Biology Technician/Biotechnology Laboratory Technician
Credits: 3 (1 lecture, 20 lab). 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.
Prerequisite: BITC 1402 and Department Approval; must be placed into college-level reading, writing and math.

BITC 2411 - Biotechnology Laboratory Instrumentation
Credits: 4 (3 lecture, 3 lab). Theory, applications, and operation of various analytical instruments. Addresses separation and identification techniques including electrophoresis, spectrophotometry, and chromatography. Prerequisite: BITC 1402 or Department Approval; must be placed into college-level reading, writing and math.

BITC 2431 - Cell Culture Techniques
Credits: 4 (3 lecture, 3 lab). Theory and applications of cell culture techniques. Laboratory emphasis on the principles and practices of initiation, cultivation, maintenance, preservation of cell lines and applications. Prerequisite: BITC 1402 or Department Approval; must be placed into college-level reading, writing and math.

BITC 2441 - Molecular Biology Techniques
Credits: 4 (3 lecture, 3 lab). In depth coverage of the theory and laboratory techniques in molecular biology with an emphasis on gene expression and regulation, recombinant DNA, and nucleic acids. Prerequisite: BITC 2411 or Department Approval; must be placed into college-level reading, writing and math.

BITC 2445 - Medical Biotechnology
Credits: 4 (2 lecture, 4 lab). Biotechnology as it applies to medicine and medical research. Includes molecular mechanisms underlying diseases such as cancer, diabetes, heart disease, and AIDS. Covers the applications of biotechnology to the diagnosis and treatment of disease as well as the development of drugs and therapeutic agents. Emphasizes research and medical-related biotechnology methods and laboratory procedures. Prerequisite: BITC 1311 or Departmental Approval; must be placed into college-level reading, writing and math.

BITC 2472 - Immunological Methods and Techniques
Credits: 4 (3 lecture, 3 lab). Study of the principles and practices of modern immunology including the interactions among the various cellular and chemical components of immune response. Emphasis on the techniques used in the biotechnology industry involved in manufacturing of immunotherapeutic agents and biopharmaceuticals. Knowledge in this area is directly applicable to the fields of biopharmaceuticals, biodiagnostics, fermentation and bio manufacturing. Prerequisite: BITC 1402 or Department Approval; must be placed into college-level reading, writing and math.

BMGT 1301 - Supervision
Credits: 3 (3 lecture). A study of the role of the supervisor. Managerial functions as applied to leadership, counseling, motivation, and human skills are examined. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BMGT 1313 - Principles of Purchasing
Credits: 3 (3 lecture). The purchasing process as it relates to such topics as inventory control, price determination, vendor selection, negotiation techniques, and ethical issues. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BMGT 1325 - Office Management
Credits: 3 (3 lecture). Systems, procedures, and practices related to organizing and planning office work, supervising employee performance, and exercising leadership skills. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BMGT 1327 - Principles of Management
Credits: 3 (3 lecture). Concepts, terminology, principles, theories, and issues in the field of management. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BMGT 1331 - Production and Operations Management
Credits: 3 (3 lecture). Fundamentals of the various techniques used in the practice of production management to include location, design, and resource allocation Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
BMGT 1341 - Business Ethics
Credits: 3 (3 lecture). Discussion of ethical issues, the development of a moral frame of reference, and the need for an awareness of social responsibility in management practices and business activities. Includes ethical corporate responsibility. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BMGT 1370 - Introduction to HR / PeopleSoft Applications
Credits: 3 (2 lecture, 3 lab). A hands-on overview of the major areas of human resources/PeopleSoft, as illustrated by PeopleSoft software applications. Some topics will cover accessing PeopleSoft, navigating the PeopleSoft interface, understanding PeopleSoft panels, using PeopleSoft panels, and creating queries. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BMGT 1371 - Intermediate HR / PeopleSoft Applications
Credits: 3 (2 lecture, 3 lab). A continuation of Introduction to Human Resources/PeopleSoft with intermediate PeopleSoft applications. Additional topics will include understanding PeopleSoft processes, PeopleSoft HRMS (Human Resource Management Systems), PeopleSoft HRMS modules, and advanced query topics. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BMGT 2303 - Problem Solving and Decision Making
Credits: 3 (3 lecture). Discussion of ethical issues, the development of a moral frame of reference, and the need for an awareness of social responsibility in management practices and business activities. Includes ethical corporate responsibility. Prerequisite: ENGL 0300 or 0347, GUST 0342 (9th-11th Grade Reading, MATH 0306 (Basic Math Pre-Algebra)

BMGT 2305 - Advanced Communications in Management
Credits: 3 (2 lecture, 2 lab). Putting it all together/PeopleSoft: group projects, team applications, and implementation of results Prerequisite: BMGT 1371; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Computer Lab required)

BMGT 2310 - Financial Management
Credits: 3 (2 lecture, 3 lab). Emphasis on the development and use of accounting information to support managerial decision-making processes in manufacturing, service, and for-profit settings. Topics include managerial concepts and systems, various analysis for decision making, and planning and control. Prerequisite: BMGT 1394; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. (Computer Lab required)

BMGT 2331 - Principles of Quality Management
Credits: 3 (2 lecture, 3 lab). Quality of productivity in organizations using PeopleSoft Applications. Includes planning for quality PeopleSoft reports, implementation of reports, development of reports for business decision-making. Additional topics will include accessing and setting up queries, aggregating totals, using SQR with PeopleSoft, and reporting tables. Prerequisite: BMGT 2310; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. (Computer Lab required)

BNKG 1303 - Principles of Bank Operation
Credits: 3 (3 lecture). Overview of the fundamental banking functions and the role of regulation in the banking industry. Explanation of financial products and services to various markets. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1305 - Teller Training
Credits: 3 (3 lecture). Application of the functions related to negotiable instruments, cash control, handling money, and balancing. Explanation of compliance and regulation issues affecting bank tellers. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1340 - Money and Financial Markets
Credits: 3 (3 lecture). Monetary policy and its related effects on financial intermediaries. Includes financial markets, regulatory functions, and structures. Addresses investment and funds management. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1343 - Law and Banking
Credits: 3 (3 lecture). Sources of law and banking regulation. Emphasis on the laws relating to contracts, negotiable instruments, secured transactions, and consumer credit. Prerequisite: BNKG 1303, Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
BNKG 1345 - Consumer Lending
Credits: 3 (3 lecture). A study of the different types of consumer loans. Identify the federal regulations and state laws pertaining to collection and serving of a consumer loan and relate consumer credit to the lending process. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1349 - Commercial Lending
Credits: 3 (3 lecture). Overview of the commercial lending market and process with an emphasis on credit analysis, evaluation, federal regulation, and state laws related to business and industrial lending. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1351 - Selling Bank/Financial Products and Services
Credits: 3 (3 lecture). Characteristics and benefits of bank products and services. Emphasis on the personal selling process and quality customer service. Application of personal selling, cross-selling, and related product benefits to individual customer needs. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1353 - Mortgage Lending
Credits: 3 (3 lecture). Overview of the mortgage lending market and process with an emphasis on documentation, credit evaluation, federal regulation, and state laws related to mortgage loans. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1356 - Analyzing Financial Statements
Credits: 3 (3 lecture). A study of the process of evaluating financial statements, cash flow, and ratio analysis of individuals and businesses with an emphasis on the relationship of comparative analysis and industry standards. Prerequisite: ACCT 2301; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1373 - Teller Training Lab
Credits: 3 (2 lecture, 2 lab). An alternate continuation of BNKG 1305 Teller Training, this course affords the student practical, hands-on experience in paying and receiving teller operations. Students develop skills such as cash handling, cash drawer setup, maintenance, security and daily balancing, processing of basic paying and receiving customer transactions, quoting funds availability, implementing security precautions, operating ten-key terminal, and using automated teller machines via daily practice in a lab setting. Prerequisite: BNKG 1305; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 1380 - Cooperative Education - Banking and Financial Support Services
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 2374 - Financial Business Administration
Credits: 3 (3 lecture). Course emphasizes the managerial responsibility of coordinating the many facets of a financial institution. The course covers administration in a regulatory environment, portfolio mix, and the various changes that are happening in this fast paced industry. Special attention is placed on investment areas in which customers are allowed to participate, which banks must have a working knowledge of but are not allowed to invest in. Prerequisite: BNKG 1340; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BNKG 2380 - Cooperative Education - Banking and Financial Support Services
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
BNKG 2381 - Cooperative Education - Banking and Financial Support Services
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

BUSG 1301 - Introduction to Business
Credits: 3 (3 lecture). Fundamental business principles including structure, functions, resources, and operational processes. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BUSG 1303 - Principles of Finance
Credits: 3 (3 lecture). Financial dynamics of a business. Includes monetary and credit theory, cash inventory, capital management, and consumer and government finance. Emphasizes the time value of money. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BUSG 1307 - Entrepreneurship and Economic Development
Credits: 3 (3 lecture). Overview of entrepreneurship as an economic development strategy. Includes community support systems for entrepreneurs. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BUSG 1315 - Small Business Operation
Credits: 3. Operating a small business. Emphasizes management functions including planning, leading, organizing, staffing, and controlling operations.

BUSG 1370 - Personal Financial Planning
Credits: 3 (3 lecture). An exploration of financial planning that emphasizes topics of personal interest but also have application to business financial planning topics. Topics include budgeting, bank accounts and account reconciliation, individual retirement accounts, loans, investments, debt management, real estate, insurance, wills, trusts, and taxes. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BUSG 1371 - Principles of Securities Operations
Credits: 3 (3 lecture). An overview of the fundamental functions and the role of regulation in the securities industry. Explanation of securities products and services to a variety of markets. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BUSG 1372 - Communications for Securities Professionals
Credits: 3 (3 lecture). An overview of the fundamental functions and the role of regulation in the securities industry. Explanation of securities products and services to a variety of markets. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BUSG 1373 - Entrepreneurship & Economic Development
Credits: 3 (3 lecture). Overview of entrepreneurship as an economic development strategy. Includes community support systems for entrepreneurs. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BUSG 1374 - Business Writing Essentials
Credits: 3 (3 lecture). An interactive study of critical business writing elements. The course goal is to help students develop business writing skills to incorporate in their work environments. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

BUSG 1375 – Small Business Operations II
Credits: 3. Operating and growing a small business. Emphasizes strategic, technical and operational management functions including planning, leading, organizing, staffing, and controlling operations.

BUSG 1380 - Cooperative Education - Business / Commerce - General
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312.
**Description of Courses**

**BUSG 1382 - Cooperative Education - Entrepreneurship / Entrepreneurial Studies**
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math

**BUSG 1391 - Special Topics in Business - General**
Credits: 3 (3 lecture). Topic addresses 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. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math

**BUSG 2305 - Business Law / Contracts**
Credits: 3 (3 lecture). Principles of law which form the legal framework for business activity including applicable statutes, contracts, and agency. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math

**BUSG 2309 - Small Business Management/Entrepreneurship**
Credits: 3 (3 lecture). A course on how to start and operate a small business. Topics include facts about a small business, essential management skills, how to prepare a business plan, financial needs, marketing strategies, and legal issues. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math

**BUSG 2317 - Business Law/Commercial**
Credits: 3 (3 lecture). The relationship of law and business as they relate to commercial transactions. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math

**BUSG 2370 - Legal Issues for Enterprise**
Credits: 3 (3 lecture). Legal Aspects of Enterprise explores both the for-profit and not-for-profit legal requirements and provides applications activities to help the beginning business entrepreneur or social entrepreneur actually set up a new enterprise. Topics include: types of business structures, types of not-for-profit structures, legal forms and paperwork required to set up each type of structure, resources for assistance in setting up enterprises (such as legal clinics, lawyers who provide pro bono services for social enterprise); important considerations in retaining a lawyer, and legal pitfalls for the beginning entrepreneur to avoid. Prerequisite: Prerequisites: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math

**BUSG 2380 - Cooperative Education - Business / Commerce - General**
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312.

**BUSG 2381 - Cooperative Education - Business / Commerce - General**
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Prerequisite: Department Approval or BMGT 1301 and BMGT 1303, BUSG 1301; must be placed into college-level reading, college-level writing and MATH 0312 in math

**BUSG 2382 - Cooperative Education - Entrepreneurship / Entrepreneurial Studies**
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>BUSI 1301</td>
<td>Business Principles</td>
<td>3 (3 lecture)</td>
<td>Fundamental business principles including structure, functions, resources, and operational processes.</td>
</tr>
<tr>
<td>BUSI 2301</td>
<td>Business Law I</td>
<td>3 (3 lecture)</td>
<td>Principles of law which form the legal framework for business activity including applicable statutes, contracts, and agency.</td>
</tr>
<tr>
<td>CDEC 1313</td>
<td>Curriculum Resources for Early Childhood Programs</td>
<td>3 (2 lecture, 3 lab)</td>
<td>A study of the fundamentals of curriculum design and implementation in developmentally appropriate programs for children. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
<tr>
<td>CDEC 1317</td>
<td>Child Development Associate Training I</td>
<td>3 (2 lecture, 2 lab)</td>
<td>Based on the requirements for the Child Development Associate National Credential (CDA). Topics on CDA overview, general observational skills, and child growth and development overview. The four functional areas of study are creative, cognition, physical and communication. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
<tr>
<td>CDEC 1319</td>
<td>Child Guidance</td>
<td>3 (2 lecture, 2 lab)</td>
<td>An exploration of guidance strategies for promoting prosocial behaviors with individual and groups of children. Emphasis on positive guidance principles and techniques, family involvement, and cultural influences. Practical application through direct participation with children. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
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<tr>
<td>CDEC 1321</td>
<td>The Infant and Toddler</td>
<td>3 (2 lecture, 3 lab)</td>
<td>A study of appropriate infant and toddler (birth to 3), including an overview of development, quality care giving routines, appropriate environments, materials and activities, and teaching/guidance techniques. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
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<tr>
<td>CDEC 1323</td>
<td>Observation and Assessment</td>
<td>3 (3 lecture)</td>
<td>A study of observation skills, assessment techniques, and documentation of children's development. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
<tr>
<td>CDEC 1339</td>
<td>Early Childhood Development 0-3 Years</td>
<td>3 (2 lecture, 3 lab)</td>
<td>Principles of normal growth and development from conception through three years of age. Emphasizes physical, intellectual, and social/emotional development. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
<tr>
<td>CDEC 1356</td>
<td>Emergent Literacy for Early Childhood</td>
<td>3 (2 lecture, 3 lab)</td>
<td>An exploration of principles, methods, and materials for teaching young children language and literacy through a play-based, integrated curriculum. Prerequisite: Prerequisite/Corequisite: CDEC 1313; must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
<tr>
<td>CDEC 1358</td>
<td>Creative Arts for Early Childhood</td>
<td>3 (2 lecture, 3 lab)</td>
<td>An exploration of principles, methods, and materials for teaching young children music, movement, visual arts and dramatic play through process-oriented experiences to support divergent thinking. Prerequisite: Prerequisite/Corequisite: CDEC 1313; must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
<tr>
<td>CDEC 1359</td>
<td>Children with Special Needs</td>
<td>3 (2 lecture, 2 lab)</td>
<td>A survey of information regarding children with special needs including possible causes and characteristics of exceptionality, educational intervention, available resources, referral processes, the advocacy role and legislative issues. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
<tr>
<td>CDEC 1391</td>
<td>Special Topics in Family Life and Relations Studies</td>
<td>3 (3 lecture)</td>
<td>A study of infants and toddlers and their families. Includes appropriate assessment strategies and communication techniques to be used with families. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
<tr>
<td>CDEC 1393</td>
<td>Special Topics in Family Life and Relations Studies</td>
<td>3 (3 lecture)</td>
<td>A study of the contemporary parenting issues facing both parents and professionals who work with them. Prerequisite: Prerequisite: CDEC 1356, 1358 or 2307; must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.</td>
</tr>
</tbody>
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Description of Courses

CDEC 2186 - Internship - Child Care Provider / Assistant
Credits: 1 (6 lab). 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. (Lab hours must be completed in a NAECY accredited center). Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0308 in math.

CDEC 2280 - Cooperative Education - Early Childhood Provider / Assistant
Credits: 2 (1 lecture, 10 lab). 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. (Lab hours must be completed in a NAECY accredited center). Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0308 in math.

CDEC 2307 - Math and Science for Early Childhood
Credits: 3 (2 lecture, 3 lab). An exploration of principles, methods, and materials for teaching children math and science concepts and process skills through discovery and play. Prerequisite: Prerequisite/Corequisite: CDEC 1313; must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0308 in math.

CDEC 2315 - Diverse Cultural/Multilingual Education
Credits: 3. An overview of diverse cultural and multilingual education including familial relationships, community awareness, diversity, and the needs of each and every child.

CDEC 2322 - Child Development Associate Training II
Credits: 3 (2 lecture, 2 lab). A continuation of the study of the requirements for the Child Development Associate National Credential (CDA). The six functional areas of study include safe, healthy, learning environment, self, social, and guidance. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.

CDEC 2324 - Child Development Associate Training III
Credits: 3 (2 lecture, 2 lab). A continuation of the requirements for the Child Development Associate National Credential (CDA). Three of the 13 functional areas of study include family, program management, and professionalism. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.

CDEC 2326 - Administration of Programs for Children I
Credits: 3 (3 lecture). Application of management procedures for early child care education programs. Includes planning, operating, supervising, and evaluating programs. Topics cover philosophy, types of programs, policies, fiscal management, regulations, staffing, evaluation, and communication. Prerequisite: CDEC 1356, 1358 or 2307; must be placed into GUST 0342 in reading, ENGL 0310 or 0347 in writing and MATH 0308 in math.

CDEC 2328 - Administration of Programs for Children II
Credits: 3 (3 lecture). An in-depth study of the skills and techniques in managing early care and education programs, including legal and ethical issues, personal management, team building, leadership, conflict resolution, stress management advocacy, professionalism, fiscal analysis and planning parent education/partnerships, and technical applications in programs. Prerequisite: CDEC 2326; must be placed into GUST 0342 in reading, ENGL 0310 or 0347 in writing and MATH 0308 in math.

CDEC 2341 - The School Age Child
Credits: 3 (2 lecture, 3 lab). A study of appropriate programs for the school age child (5 to 13 years), including an overview of development, appropriate environments, materials, and activities and teaching/guidance techniques. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0347 in writing and MATH 0306 in math.

CDEC 2380 - Cooperative Education - Early Childhood Provider/Assistant
Credits: 3 (1 lecture, 10 lab). 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. (Lab hours must be completed in a NAECY accredited center). Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0308 in math.

CEC 1024 - Facebook for Business
Credits: 3. Find out what goes on behind the scenes on Facebook Pages and how to increase the chances that your message is seen and acted on. Discover new tools and proven techniques to increase business and expand your reach.
CEC 9508 - Natural Health & Healing, Introduction
Credits: 3. We will discuss the various stages of health and illness, and you will discover that true health means wholeness of the mind, body, and spirit. You will start a personal health journal to evaluate your current lifestyle and observe how your behaviors can affect your health.

CETT 1321 - Electronic Fabrication
Credits: 3 (2 lecture, 4 lab). Formerly CPMT 1407. A study of electronic circuit fabrication techniques including printed circuit boards, wire wrapping, bread boarding, and various soldering techniques. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math or Department Approval.

CETT 1357 - Linear Integrated Circuits
Credits: 3 (2 lecture, 4 lab). A study of the characteristics, operations, stabilization, testing, and feedback techniques of linear integrated circuits. Applications include computation, measurements, instrumentation, and active filtering. Prerequisite: CETT 1429 or Department Approval; must be placed into college-level reading, writing and math.

CETT 1402 - Electricity Principles
Credits: 4 (2 lecture, 2 lab). Principles of electricity including proper use of test equipment, A/C and D/C circuits, and component theory and operations.

CETT 1403 - DC Circuits
Credits: 4 (3 lecture, 3 lab). A study of the fundamentals of direct current including Ohm's law, Kirchoff's laws and circuit analysis techniques. Prerequisite: Prerequisite/Corequisite: Math 1314; must be placed into college-level reading, writing and math or Department Approval.

CETT 1405 - AC Circuits
Credits: 4 (3 lecture, 3 lab). A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, and resonance; introduction to filters. Prerequisite: CETT 1403 Corequisite: Prerequisite/Corequisite: MATH 1316 or Department Approval. Must be placed into college-level reading, writing and math.

CETT 1409 - DC-AC Circuits
Credits: 4 (2 lecture, 4 lab). Fundamentals of DC circuits and AC circuits operation including Ohm's law, Kirchoff's laws, networks, transformers, resonance, phasors, capacitive and inductive and circuit analysis techniques. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308. Department Approval

CETT 1415 - Digital Applications
Credits: 4 (2 lecture, 4 lab). An investigation of combinational and sequential logic elements and circuits with emphasis on design and troubleshooting of combinational and sequential circuits. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Department Approval

CETT 1425 - Digital Fundamentals
Credits: 4 (3 lecture, 3 lab). An entry level course in digital electronics to include numbering systems, logic gates, Boolean algebra, and combinational logic. Prerequisite: Must be placed into college-level reading, writing and math. Corequisite: Corequisite: CETT 1403 or Department Approval

CETT 1429 - Solid State Devices
Credits: 4 (3 lecture, 3 lab). A study of diodes and bipolar semiconductor devices, including analysis of static and dynamic characteristics, biasing techniques, and thermal considerations of solid state devices. Prerequisite: Prerequisite/Corequisite: CETT 1405; must be placed into college-level reading, writing and math or Department Approval

CETT 1431 - Programming for Discrete Electronic Devices
Credits: 4 (3 lecture, 3 lab). Introduction to a high level programming language. Includes structured programming and problem solving applicable to discrete electronic devices. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

CETT 1445 - Microprocessor
Credits: 4 (3 lecture, 3 lab). An introductory course in microprocessor software and hardware, its architecture, timing sequence, operation, and programming, and discussion of appropriate software diagnostic language and tools. Prerequisite: CETT 1425 or Department Approval; must be placed into college-level reading, writing and math.
Description of Courses

CETT 2435 - Advanced Microprocessor
Credits: 4 (3 lecture, 3 lab). An advanced course utilizing the microprocessor in control systems and interfacing. Emphasis on microprocessor hardware and implementation of peripheral interfacing. Prerequisite: CETT 1445, CETT 1457 or Department Approval; must be placed into college-level reading, writing and math.

CETT 2449 - Research and Project Design
Credits: 4 (2 lecture, 4 lab). Principles of electrical/electronic design, encompassing schematics wiring diagrams, materials lists, operating characteristics, completion schedules, and cost estimates. Prerequisite: CETT 1445, CETT 1457 or Department Approval; must be placed into college-level reading, writing and math.

CHEF 1205 - Sanitation and Safety
Credits: 2 (2 lecture). A study of personal cleanliness; sanitary practices in food preparation; causes, investigation, control of illness caused by food contamination (Hazard Analysis Critical Control Points); and work place safety standards. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 1301 - Basic Food Preparation
Credits: 3 (2 lecture, 4 lab). A study of the fundamental principles of food preparation and cookery to include Brigade System, cooking techniques, materials handling, heat transfer, sanitation, safety, nutrition, and professionalism. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CHEF 2201 and 2231.

CHEF 1302 - Principles of Healthy Cuisine
Credits: 3 (2 lecture, 4 lab). Introduction to the principles of planning, preparation, and presentation of nutritionally balanced meals. Adaptation of basic cooking techniques to lower the fat and caloric content. Alternative methods and ingredients will be used to achieve a healthier cooking style. Prerequisite: CHEF 1301, 1305, 2201 and 2231; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 1310 - Garde Manger
Credits: 3 (2 lecture, 4 lab). A study of specialty foods and garnishes. Emphasis on design, techniques, and display of fine foods. Prerequisite: CHEF 1301, 1305, 2201 and 2231; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 1313 - Food Service Operation/Systems
Credits: 3 (3 lecture). An overview of the information needs of food and lodging properties. Emphasis on both front, back, and material management utilizing computer systems. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 1314 - A La Carte Cooking
Credits: 3 (2 lecture, 4 lab). A course in a la carte or cooking to order concepts. Topics include menu and recipe interpretation and conversion, organization of work station, employment of appropriate cooking methods, plating, and saucing principles. Prerequisite: CHEF 1301, 1305, 2201 and 2231; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 1341 - American Regional Cuisine
Credits: 3 (2 lecture, 4 lab). A study of the development of regional cuisines in the United States with emphasis on the similarities in production and service systems. Application of skills to develop, organize, and build a portfolio of recipe strategies and production systems. Prerequisite: CHEF 1301, 1305, 2201 and 2231; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 1345 - International Cuisine
Credits: 3 (2 lecture, 4 lab). The study of classical cooking skills associated with the preparation and service of international and ethnic cuisines. Topics include similarities between food production systems used in the United States and other regions of the world. Prerequisite: CHEF 1301, 1305, 2201 and 2231; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 1381 - Cooperative Education - Culinary Arts / Chef Training
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: CHEF 1301, 1305, 2201 and 2231, Department Approval; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
CHEF 1391 - Special Topics in Culinary Arts / Chef Training
Credits: 3 (2 lecture, 4 lab). Topics address recently identified current events, skills, knowledge’s, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: CHEF 1301, 1305, 2201 and 2231, Department Approval; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

CHEF 1471 - Introduction to Food Preparation for Hospitality
Credits: 2 (1 lecture, 4 lab). A study of the fundamental principles of food preparation to introduce hospitality students to basic culinary skills. Topics will include kitchen professionalism, proper station set up, basic knife skills, basic cooking techniques, proper handling and storage of various food items, and appropriate portions and plating techniques. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 2171 - Culinary Capstone Projects Laboratory
Credits: 1. Open laboratory for reinforcement of specific culinary skills and selected culinary projects based on an individualized learning plan.

CHEF 2201 - Intermediate Food Preparation
Credits: 2 (1 lecture, 4 lab). Continuation of previous food preparation course. Topics include the concept of precooked food items, as well as scratch preparation. Covers full range of food preparation techniques. Prerequisite: CHEF 1301 and 2231; Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 2231 - Advanced Food Preparation
Credits: 2 (1 lecture, 4 lab). Topics include the concept of pre-cooked food items and the preparation of canapés, hors d'oeuvres, and breakfast items. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 2265 - Practicum (or Field Experience) - Culinary Arts / Chef Training
Credits: 2 (18 Lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: CHEF 1301, 1305, 2201 and 2231, Department Approval; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEF 2302 - Saucier
Credits: 3 (2 lecture, 4 lab). Instruction in the preparation of stocks, soups, classical sauces, contemporary sauces, accompaniments, and the pairing of sauces with a variety of foods. Prerequisite: CHEF 1301, 2201 and 2231; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CHEM 1105 - Introductory Chemistry Laboratory I (lab)
Credits: 1. Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for non-science and allied health students.

CHEM 1111 - General Chemistry I (Lab)
Credits: 1 (3 lab). Science and engineering majors study atomic structure, chemical reactions, thermodynamics, electronic configuration, chemical bonding, molecular structure, gases, states of matter, and properties of solutions. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: One year of high school Chemistry; must be placed into college-level reading (or take GUST 0342 as a corequisite) and be placed into MATH 0312 (or higher) and be placed into college-level writing (or take ENGL 0310/0349 as a corequisite).

CHEM 1305 - Introductory Chemistry I (lecture)
Credits: 3 (3 lecture). General introduction to fundamental principles of chemistry includes atomic structure, chemical formulas, molecules, reactions, and elementary thermodynamics. This course is intended to be preparatory to CHEM 1411 for science majors who have no prior knowledge of chemistry. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

CHEM 1307 - Introductory Chemistry II
Credits: 3 (3 lecture). Continuation of CHEM 1305. The organic chemistry of aliphatic and aromatic hydrocarbons, oxygen and nitrogen-containing organic compounds, and biochemistry is introduced. Prerequisite: Prerequisite: CHEM 1305, Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.
CHEM 1311 - General Chemistry I (Lecture)
Credits: 3 (3 lecture). Science and engineering majors study atomic structure, chemical reactions, thermodynamics, electronic configuration, chemical bonding, molecular structure, gases, states of matter, and properties of solutions. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: One year of high school Chemistry; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into MATH 0312 (or higher) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

CHEM 1405 - Introductory Chemistry I (lecture & lab)
Credits: 4 (3 lecture, 3 lab). A general introduction to the properties of matter. Topics include atomic structure, energy, chemical bonding, reactions, gas laws and elementary thermodynamics. This is a preparatory course to CHEM 1411 for science majors who have no prior knowledge of chemistry. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

CHEM 1407 - Introductory Chemistry II
Credits: 4 (3 lecture, 3 lab). Continuation of CHEM 1405. The chemistry of carbon compounds. Topics include aliphatic and aromatic hydrocarbons, alcohols, ethers, aldehydes, ketones, carboxylic acids, esters, amines, and amides; biochemistry topics include amino acids and proteins, enzymes, carbohydrates, and lipids. Prerequisite: CHEM 1405; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into MATH 0312 (or higher) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

CHEM 1412 - General Chemistry II (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Continuation of CHEM 1411. Topics include solutions, chemical kinetics, equilibrium and equilibrium phenomena in aqueous solution, acids and bases, pH, thermodynamics, electrochemistry, nuclear chemistry, organic chemistry, and biochemistry. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: CHEM 1411; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into MATH 0312 (or higher) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

CHEM 1413 - College Chemistry I
Credits: 4 (3 lecture, 3 lab). Nursing and allied health science majors study atomic structure, electron configuration, periodic law, radioactivity and its effects on living organisms, chemical bonding, molecules, gases, solutions, solution concentration, acids and bases, and buffers. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into MATH 0312 (or higher) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

CHEM 1414 - College Chemistry II
Credits: 4 (3 lecture, 3 lab). Continuation of CHEM 1413. Topics include the organic chemistry of hydrocarbons, alcohols, ethers, aldehydes, ketones, carboxylic acids, esters, amines, and amides; biochemistry topics include amino acids and proteins, enzymes, carbohydrates, and lipids. Prerequisite: CHEM 1413; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into MATH 0312 (or higher) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

CHEM 2423 - Organic Chemistry I (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Study of compounds of carbon. Topics include alkanes, alkenes, alkynes, alcohols, alkyl halides, stereochemistry, nucleophilic substitution, reaction mechanisms and synthesis. Study of the properties and behavior of hydrocarbon compounds and their derivatives. Designed for students in science or pre-professional programs. Prerequisite: CHEM 1412; must be placed into college-level reading and be placed into MATH 1314 (or higher) and be placed into college-level writing.

CHEM 2425 - Organic Chemistry II (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Continuation of CHEM 2423. Topics include aromaticity, benzene and EAS reactions, aldehydes, ketones, carboxylic acids and their derivatives, condensation reactions, amines, phenols, and infrared and NMR spectroscopy. Prerequisite: CHEM 2423; must be placed into college-level reading and be placed into MATH 1314 (or higher) and be placed into college-level writing.
Description of Courses

CHIN 1411 - Beginning Chinese I
Credits: 4 (3 lecture, 2 lab). Introduction to Chinese language and culture. Development of basic skills in listening comprehension, speaking, reading, writing, and cultural awareness. Course includes vocabulary building, conversation and grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

CHIN 1412 - Beginning Chinese II
Credits: 4 (3 lecture, 2 lab). Continuation of Chinese 1411. Further development of listening comprehension, speaking, reading, and writing skills, and cultural awareness. More advanced grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Chinese 1411 or satisfactory score on advanced placement examination or at least 2 years of high school Chinese within the last two years. Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

CHLT 1266 - Practicum (or Field Experience) - Community Health Services / Liaison/Counseling
Credits: 2 (14 external hours). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 038 in math.

CHLT 1291 - Special Topics in Community Health Liaison
Credits: 2 (2 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 038 in math.

CHLT 1302 - Wellness and Health Promotion
Credits: 3 (3 lecture). Overview of wellness theory and its application throughout the life span. Focus is on attitude development, impact of cultural beliefs, and communication of wellness. Includes health behavior theories and approaches to behavior modification. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 038 in math.

CHLT 1342 - Community Health Field Methods
Credits: 3 (3 lecture). Preparation for field work with individuals, families, and groups emphasizing teaching and capacity-building skills. Topics include outreach methods, area canvassing, home visiting, group work, community events, and community organizing. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 038 in math.

CHLT 1401 - Introduction to Community Health
Credits: 4 (4 lecture). Designed to provide a basic understanding of variables that affect health sectors in the community. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

CJCR 1304 - LE-Probation and Parole
Credits: 3 (3 lecture). A survey of the structure, organization, and operation of probation and parole services. Emphasis on applicable state statutes and administrative guidelines. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJCR 2325 - Legal Aspects of Corrections
Credits: 3 (3 lecture). A study of the operation, management, and legal issues affecting corrections. Analysis of constitutional issues involving rights of the convicted, as well as civil liability of correctional agencies and staff. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJLE 1506 - Basic Peace Officer I
Credits: 5 (3 lecture, 8 lab). Introduction to fitness and wellness, History, Civilization, of policing, professionalism and ethics, United States Constitution and Bill of Rights, criminal justice system, Texas Penal Code, Texas Code of Criminal Procedure, civil process, and stress management. This course taken in conjunction with Basic Peace Officer II, III, and IV will satisfy the TCLEOSE-approved Basic Peace Officer Training Academy. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.
Description of Courses

CJLE 1512 - Basic Peace Officer II
Credits: 5 (3 lecture, 8 lab). Basic preparation for a new peace officer. Covers field note taking, report writing, use of force? law and concepts, problem solving, multiculturalism, professional policing approaches, patrol procedures, victims of crime, family violence, MHMR, crowd management, HAZMAT, and criminal investigation. This course taken in conjunction with Basic Peace Officer I, III, and IV will satisfy the TCLEOSE-approved Basic Peace Officer Academy. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJLE 1518 - Basic Peace Officer III
Credits: 5 (3 lecture, 8 lab). Basic preparation for a new peace officer. Covers laws pertaining to controlled substances, crowd management, personal property, and crime scene investigation. This course taken in conjunction with Basic Peace Officer I, II, and IV will satisfy the TCLEOSE-approved Basic Peace Officer Academy. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJLE 1524 - Basic Peace Officer IV
Credits: 5 (3 lecture, 8 lab). Basic preparation for a new peace officer. Should be taken in conjunction with Basic Peace Officer I, II, and III to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Training Academy. THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS LICENSED AS A POLICE ACADEMY BY TCLEOSE. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJLE 2420 - Texas Peace Officer Procedures
Credits: 4 (3 lecture, 4 lab). Study of the techniques and procedures used by police officers on patrol. Includes controlled substance identification, handling abnormal persons, traffic collision investigation, note taking and report writing, vehicle operation, traffic direction, crowd control, and jail operations. The student will demonstrate relevant law enforcement techniques and procedures required of Texas peace officers as mandated by the Texas Commission on Law Enforcement Officer Standards and education; identify and explain required forms and documents; and explain the applicable procedures to various situations as they relate to the enforcement of law. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJLE 2421 - Texas Peace Officer Law
Credits: 4 (3 lecture, 4 lab). Study of laws directly related to police field work. Topics include Texas Transportation Code, intoxicated driver, Texas Penal Code, elements of crimes, Texas Family Code, Texas Alcoholic Beverage Code, and civil liability. The student will identify relevant sections of Texas law as mandated for this course by the Texas Commission on Law Enforcement Officer Standards and Education, discuss the Texas Penal Code, identify violations of the Texas Family Code and the Texas Alcoholic Beverage Code, define and illustrate civil liability, and discuss the transportation code, intoxicated drivers and elements of crimes. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJLE 2484 - Cooperative Education - Criminal Justice / Police Science
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: CRU 2328, Department Approval; must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJLE 2522 - Texas Peace Officer Skills
Credits: 5 (3 lecture, 4 lab). Requires the demonstration and practice of the skills of a police officer including patrol, driving, traffic stop skills, use of force, mechanics of arrest, firearm safety, and emergency medical care. The student will evaluate and explain an appropriate response for a situational scenario, demonstrate the proper and effective application of physical skill while using police equipment, and demonstrate other skills expected of Texas peace officer as mandated for this course by the Texas Commission on Law Enforcement Officer Standards and Education. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

CJSA 1393 - Special Topics In Criminal Justice Studies
Credits: 3 (3 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0306 in math.
Description of Courses

CJSA 2364 - Practicum - Criminal Justice Studies
Credits: 3 (21 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. The guided external experiences may be paid or unpaid. This course may be repeated if topics and learning outcomes vary. As outlined in the learning plan, the student will master the theory, concepts, and skills involving the tools, materials, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, and legal systems associated with the workplace; demonstrate ethical behavior, safety practices, interpersonal and teamwork skills, appropriate verbal and written communications in the workplace. Prerequisite: Prerequisite/Corequisite: CJRI 2301, Department Approval; must be placed into college-level reading, college-level writing and MATH 0306 in math.

CMSW 1266 - Practicum-Clinical and Medical Social Worker
Credits: 2 (14 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0308 in math.

CMSW 1267 - Practicum-Clinical and Medical Social Worker
Credits: 2 (14 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0308 in math.

CMSW 1313 - Assessment and Service Delivery
Credits: 3 (3 lecture). A study of interviewing and assessment instruments and approaches for working with multicultural population. Emphasis on service delivery systems. Topics include awareness of commonly used assessments, ethical standards of practice, awareness of multicultural issues and competence in service delivery. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0308 in math.

CMSW 1353 - Family Intervention Strategies
Credits: 3 (3 lecture). Study of current family intervention strategies. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

CMSW 2266 - Practicum-Clinical and Medical Social Worker
Credits: 2 (14 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0308 in math.

CMSW 2303 - Community Organization
Credits: 3 (3 lecture). Addresses community problem-solving and development procedures, including issue development and planning, and the tactics involved in community change. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0308 in math.

CNBT 1300 - Residential and Light Commercial Blueprint Reading
Credits: 3 (2 lecture, 2 lab). Introductory blueprint reading for residential and light commercial construction. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CNBT 1301 - Introduction to the Construction Industry
Credits: 3 (3 lecture). Identify types of construction and organizational structures; explain purposes for various construction documents; describe the responsibilities of the construction office and field operations; identify environmental health and safety agency requirements; identify the various construction crafts and trades; and describe green and sustainable building practices and standards. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CNBT 1302 - Mechanical, Plumbing, & Electrical Systems in Construction I
Credits: 3 (3 lecture). A presentation of the basic mechanical, plumbing, and electrical components in construction and their relationship. Prerequisite: CNBT 1201 or ELPT 1221 and TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CNBT 1311 - Construction Methods and Materials I
Credits: 3 (3 lecture). Introduction to construction materials and methods and their applications. Prerequisite: Prerequisite/Corequisite: CNBT 1201, TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

CNBT 1316 - Construction Technology I
Credits: 3 (3 lecture). Introduction to site preparation, foundations, form work, safety, tools, and equipment. Prerequisite: Prerequisite: TECM 1301. Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisite/Corequisite: CNBT 1311

CNBT 1318 - Construction Tools and Techniques
Credits: 3 (2 lecture, 2 lab). Comprehensive study of the selection and use of hand tools, portable and stationary power tools and related construction equipment. Emphasis on safety in the use of tools and equipment. Prerequisite: Prerequisites/Corequisites: CNBT 1201, TECM 1301; Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CNBT 1342 - Building Codes and Inspections
Credits: 3 (3 lecture). Building codes and standards applicable to building construction and inspection processes. Prerequisite: TECM 1301, CNBT 1300; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CNBT 1346 - Construction Estimating I
Credits: 3 (2 lecture, 2 lab). Fundamentals of estimating materials and labor costs in construction. Prerequisite: TECM 1301, CNBT 1300; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisites/Corequisite: CNBT 1311

CNBT 1391 - Special Topics in Construction/Building Technology/Technician
Credits: 3 (3 lecture). An introduction to the process of career decision-making and the foundation skills required for a variety of trades in construction and manufacturing technologies including Air Conditioning and Refrigeration, Building Maintenance, Carpenter, Construction, Industrial Electricity, Machining and Manufacturing, and Welding. Topics include educational planning and vocational requirements including analyzing personal career interests, values, and aptitudes; surveying and researching career fields with related educational and training requisites; appraising career opportunities, prevailing wages, employment outlook, advantages, challenges and limitations. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CNBT 2335 - Computer Aided Construction Scheduling
Credits: 3 (2 lecture, 2 lab). Advanced construction scheduling utilizing computer scheduling software to perform various scheduling procedures. Prerequisite: Prerequisites/Corequisites: ITSC 1309, CNBT 1346; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

CNBT 2337 - Construction Estimating II
Credits: 3 (2 lecture, 2 lab). Advanced estimating concepts using computer software programs for construction and crafts. Prerequisite: Prerequisites/Corequisites: ITSC 1309, CNBT 1346; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

CNBT 2342 - Construction Management I
Credits: 3 (3 lecture). Management skills on the job site. Topics include written and oral communications, leadership and motivation, problem solving, and decision making. Prerequisite: CNBT 1302, TECM 1301, CNBT 1300, CNBT 1311; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

COMM 1307 - Introduction to Mass Communication
Credits: 3 (3 lecture). Analyzes communication theory and mass media in 21st century society. Surveys History, Civilization, , operation, and structure of the American communication system. Identifies major legal, ethical, and sociocultural issues, studies basic communication theory, and the interrelations between media and the individual, media and society, and media and the future. Examines career potential and job prospects in today's and tomorrow's electronic culture. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a corequisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

COMM 1335 - Introduction to Electronic Media
Credits: 3 (3 lecture). A survey and analysis of History, Civilization, and principles of radio and television broadcasting and production, including programming for varied audience segments and sponsorship. Studies History, Civilization, technology, regulation, audience, and economics of radio, television, and related electronic media. Studies basic skills and theories of image and sound, equips student to communicate through audio/visual media. Includes public cable, closed-circuit television, production workshops, and individualized instructional modules. Field trip and community media guest lectures included.
Description of Courses

COMM 1336 - Video Production I
Credits: 3 (2 lecture, 2 lab). A concentrated course in the theory and application of principles, procedures, and techniques of television production. Uses lecture and laboratory setting with supervision by faculty.
Prerequisite: COMM 1335

COMM 1337 - Video Production II
Credits: 3 (2 lecture, 2 lab). The preparation and directing of television programs with emphasis on the creative application of broadcast principles and informational techniques. Uses lecture and laboratory setting with supervision by faculty. Prerequisite: COMM 1335

COMM 2129 - News Publication III
Credits: 1 (1 lecture). Work on the staff of one of the college publications. Students are required to work on the staff of at least one of the official college publications for prescribed periods under faculty supervision.

COMM 2289 - Academic Cooperative
Credits: 2 lecture. 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 communication.

COMM 2300 - Media Literacy
Credits: 3 (3 lecture). Criticism and analysis of the function, role, and responsibility of the mass media in modern society from the consumer perspective. Includes the ethical problems and issues facing each media format, with the effect of political, economic, and cultural factors on the operation of the media.

COMM 2302 - Principles of Journalism
Credits: 3 (3 lecture). Exploration of ethical and legal boundaries as well as issues and problems facing today's journalist. Prerequisite: Must be placed at college level reading and writing skills.

COMM 2303 - Audio / Radio Production
Credits: 3 (3 lecture). Concepts and techniques of sound production, including the coordinating and directing processes. Hands-on experience with equipment, sound sources, and direction of talent.

COMM 2304 - Introduction to Cinematic Production
Credits: 3 (3 lecture). Basic single-camera production concepts and techniques.

COMM 2305 - Editing and Layout
Credits: 3 (3 lecture). Trains students in basic copy editing for publication and in handling production copy from manuscript to finished publication, including photography choice, sizing, cropping and/or handling of various types of graphic illustrations. Covers publication layout (rough, finished), type choice, color, and black/white rendering.

COMM 2309 - News Editing and Copy Reading I
Credits: 3 (2 lecture, 2 lab). Trains students in writing newspaper and magazine feature articles and editorials. Examines topic selection and location of background source material, plus market and reader analysis. Discusses free-lance market and adapting style to different audiences and publications. (formerly COMM 2310).

COMM 2311 - Media Writing
Credits: 3 (2 lecture, 2 lab). Provides training in news gathering, news writing, and editing. Develops skills in headline writing, layout, and newspaper production with experience on student newspaper or area print publications. Field trips and careers are explored. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: ENGL 1301

COMM 2315 - News Reporting
Credits: 3 (2 lecture, 2 lab). Continuation of COMM 2311. Prerequisite: ENGL 1301, COMM 2311

COMM 2324 - Practicum in Electronic Media
Credits: 3 (3 lecture). Lecture and laboratory instruction and participation.

COMM 2327 - Introduction to Advertising
Credits: 3 (3 lecture). Enables student to conceive ideas, tailor and lay out advertisements geared for TV commercials, radio, magazines, and newspapers. Assignments are based on goals, objectives, product/service fact sheets, and marketing considerations. Course integrates vital ingredients that enhance or impede advertising outcomes: product research, consumer behavior, semantics, social science knowledge, copy research and copywriting, visualization, media strategy, advertising agency knowledge, handling of client relations, and preparation of a portfolio. Field trip.
Description of Courses

COMM 2330 - Introduction to Public Relations
Credits: 3 (3 lecture). Studies principles and practices of public relations. Provides hands-on techniques to influence positive public opinion within and outside of companies. Requires creation of feature and news articles, press releases, press kit, brochure, and brief work plan utilizing the four-step planning process for resolving PR problems. Trains students to write good copy, construct PR goals and objectives, conduct practical research to determine public attitudes and opinion, arrange and conduct press conferences, and develop positive media relationships. (formerly COMM 2328).

COMM 2331 - Radio and Television Announcing
Credits: 3 (2 lecture, 2 lab). The development of skills required for efficient announcing, acting, newscasting, and other speaking before microphone and camera. Students write and present radio, TV, audiovisual announcements and assignments. Utilize lectures, lab setting with supervision by faculty.

COMM 2332 - Radio / Television News
Credits: 3 (2 lecture, 2 lab). Studies fundamentals of broadcast news. Covers broadcast writing, performing, and standard broadcasting formats. Uses lecture and laboratory setting with supervision by both sponsoring commercial studio and faculty.

COMM 2339 - Writing for Radio, Television and Film
Credits: 3 (3 lecture). Writing for production of programs and various documentaries, training materials slide/tape sets, and other situations requiring a production script.

COMM 2366 - Introduction to Cinema
Credits: 3 (3 lecture). Emphasis on the analysis of the visual and aural aspects of selected motion pictures, dramatic aspects of narrative films, and historical growth and sociological effect of film as an art(Cross-listed as DRAM 2366). This course satisfies the Creative Arts or Component Area Option of the HCC core.

COMM 2389 - Academic Cooperative
Credits: 3 (1 lecture, 8 lab). 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 communication.

COSC 1436 - Programming Fundamentals I
Credits: 4 (3 lecture, 3 lab). 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. Core curriculum course. Prerequisite: Must be at college-level skills in reading and writing, place into MATH 1314 College Algebra or higher, and have had high school computer literacy or equivalent.

COSC 1437 - Programming Fundamentals II
Credits: 4 (3 lecture, 3 lab). 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. Prerequisite: COSC 1436 or ITSE 1402, and MATH 2412 and ENGL 1301.

COSC 2425 - Computer Organization
Credits: 4 (3 lecture, 3 lab). 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, MATH 1314 and ENGL 1301.

COSC 2436 - Programming Fundamentals III
Credits: 4 (3 lecture, 3 lab). Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), and algorithmic analysis. Prerequisite: MATH 2413 and COSC 1437.

CPMT 1303 - Introduction to Computer Technology
Credits: 3 (2 lecture, 4 lab). A fundamental computer course that provides in-depth explanation of the procedures to utilize hardware and software. Emphasis on terminology, acronyms, and hands-on activities. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Department Approval.
Description of Courses

CPMT 1411 - Introduction to Computer Maintenance
Credits: 4 (3 lecture, 3 lab). Introduction to the installation, configuration, and maintenance of a microcomputer system. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math. Department Approval.

CPMT 1449 - Computer Networking Technology
Credits: 4 (3 lecture, 3 lab). Networking fundamentals, terminology, hardware, software, and network architecture. Includes local and wide area networking concepts and networking installations and operations. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math. Department Approval.

CRJ 1301 - Introduction to Criminal Justice
Credits: 3 (3 lecture). History, Civilization, philosophy, and ethical considerations of criminal justice; the nature and impact of crime; and an overview of the criminal justice system, including law enforcement and court procedures. Designated as Criminal Justice Transfer Curriculum. Prerequisite: Must be placed into college level reading and writing or higher.

CRJ 1306 - Court Systems & Practices
Credits: 3 (3 lecture). Study of the judiciary in the American criminal justice system and the adjudication processes and procedures. Designated as Criminal Justice Transfer Curriculum. Prerequisite: Must be placed into college level reading and writing or higher.

CRJ 1307 - Crime in America
Credits: 3 (3 lecture). 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. Prerequisite: Must be placed into college-level reading and writing or higher.

CRJ 1310 - Fundamentals of Criminal Law
Credits: 3 (3 lecture). Study of criminal law, its philosophical and historical development, major definitions and concepts, classifications and elements of crime, penalties using Texas statutes as illustrations, and criminal responsibility. Designated as Criminal Justice Transfer Curriculum. Prerequisite: Must be placed into college-level reading and writing or higher.

CRJ 1313 - Juvenile Justice System
Credits: 3 (3 lecture). 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. Prerequisite: Must be placed into college level reading and writing or higher.

CRJ 2301 - Community Resources in Corrections
Credits: 3 (3 lecture). 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. Prerequisite: Must be placed into college level reading and writing or higher.

CRJ 2313 - Correctional Systems and Practices
Credits: 3 (3 lecture). Corrections in the criminal justice system: organization of correctional systems; correctional role; institutional operations; alternatives to institutionalization; treatment and rehabilitation; current and future issues. Designated as Criminal Justice Transfer Curriculum. Prerequisite: Must be placed into college level reading and writing or higher.

CRJ 2314 - Criminal Investigation
Credits: 3 (3 lecture). Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation. Prerequisite: Must be placed into college-level reading and writing or higher.

CRJ 2323 - Legal Aspects of Law Enforcement
Credits: 3 (3 lecture). Police authority; responsibilities; constitutional constraints; laws of arrest, search, and seizure; police liability. Designated as Criminal Justice Transfer Curriculum. Prerequisite: Prequisite/Corequisite: CRJ 1301; must also be placed in college-level reading and writing or higher.

CRJ 2328 - Police Systems and Practices
Credits: 3 (3 lecture). The police profession; organization of law enforcement systems; the police role; police discretion; ethics; police-community interaction; current and future issues. Designated as Criminal Justice Transfer Curriculum. Prerequisite: Must be placed into college level reading and writing or higher.

CSME 1308 - Principles of Eyelash Extension
Credits: 3 (2 lecture, 4 lab). This course provides the student with the practical skills necessary to safely and effectively apply eyelash extensions. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

CSME 1391 - Special Topics in Cosmetology/Cosmetologist, General
Credits: 3 (2 lecture, 4 lab). Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CSME 1405 - Fundamentals of Cosmetology
Credits: 4 (2 lecture, 7 lab). 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. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1410

CSME 1409 - Application of Eyelash Extensions
Credits: 4 (2 lecture, 6 lab). This course provides the student with the skills necessary to perform client services using current techniques and business practices. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CSME 1410 - Introduction to Haircutting and Related Theory
Credits: 4 (2 lecture, 7 lab). Introduction to the theory and practice of hair cutting. Topics include terminology, implements, sectioning and finishing techniques. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1405, CSME 1453

CSME 1420 - Orientation to Facial Specialist
Credits: 3 (3 lecture, 4 lab). An overview of the skills and knowledge necessary for the field of facials and skin care. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1421, CSME 1447

CSME 1421 - Principles of Facial and Skin Care Technology I
Credits: 4 (2 lecture, 7 lab). 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. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1420, CSME 1447

CSME 1447 - Principles of Skin Care / Facials and Related Theory
Credits: 3 (3 lecture, 4 lab). An in-depth coverage of the theory and practice of skin care, facials, and cosmetics. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1420, CSME 1421, CSME 1545

CSME 1451 - Artistry of Hair, Theory and Practice
Credits: 4 (2 lecture, 6 lab). Instruction in the artistry of hair design. Topics include theory, techniques, and application of hair design. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2410

CSME 1452 - Orientation to Hair Weaving & Braiding
Credits: 4 (2 lecture, 7 lab). An overview of the skills and knowledge necessary for the field of hair weaving and braiding. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1457

CSME 1453 - Chemical Reformation and Related Theory
Credits: 4 (2 lecture, 7 lab). Presentation of the theory and practice of chemical reformation, including terminology, application, and workplace competencies. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2401

CSME 1491 - Special Topics in Cosmetology/Cosmetologist, General
Credits: 4 (2 lecture, 4 lab). This course is designed to introduce the student to the principles of client relations dealing with diverse populations of clients and attitudes and behaviors pertinent to the occupation of cosmetology and relevant to the professional development of the student. This course is a 2 lecture and 4 lab hours (96 contact hours) course upon successful completion of the course, the student will be awarded 4 semester credit hours. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2343, CSME 2531
Description of Courses

CSME 1507 - Orientation to Eyelash Extensions
Credits: 5 (2 lecture, 7 lab). An overview of the skills and knowledge necessary for the field of eyelash extensions. Topics include the basic knowledge of chemistry, eyelash growth cycles, proper selection and application, supplies and equipment of the industry, safety, sanitation, and laws and rules of the state licensing agency as they relate to eyelash extensions. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CSME 1534 - Cosmetology Instructor I
Credits: 5 (3 lecture, 5 lab). The fundamentals of instruction of cosmetology students. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1535, CSME 2514

CSME 1535 - Orientation to the Instruction of Cosmetology
Credits: 5 (3 lecture, 5 lab). An overview of the skills and knowledge necessary for the instruction of cosmetology students. Prerequisite: A current Texas Cosmetology Operator License. Must have 3 years recent verifiable work experience. Must obtain department approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1534, CSME 2514

CSME 1545 - Principles of Facials and Skin Care Technology II
Credits: 5 (3 lecture, 6 lab). 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 and skin care technology. Prerequisite: Prerequisite: CSME 1447; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2531, CSME 1491, CSME 1447

CSME 1557 - Applications of Hair Weaving & Braiding
Credits: 4 (2 lecture, 7 lab). Emphasis on the application of hair weaving and braiding techniques and preparation for the Texas Department of Licensing and Regulation (TDLR) examination. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1452

CSME 2204 - Introduction to the Theory and Chemistry of Hair Color
Credits: 3 (3 lecture, 1 lab). The introduction of basic theory and chemistry of hair color. Topics include the Law of Color, terminology and chemical composition of hair color products. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

CSME 2337 - Advanced Cosmetology Techniques
Credits: 3 (1 lecture, 8 lab). Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services, and workplace competencies Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2439

CSME 2343 - Salon Development
Credits: 3 (2 lecture, 4 lab). Exploration of salon development. Topics include professional ethics and goals, salon operation, and record keeping. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1491

CSME 2410 - Advanced Haircutting and Related Theory
Credits: 4 (2 lecture, 7 lab). Advanced concepts and practice of haircutting. Topics include haircuts utilizing scissors, razor, and/or clippers. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1451

CSME 2439 - Advanced Hair Design
Credits: 4 (2 lecture, 6 lab). Advanced concepts in the theory and practice of hair design. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2337

CSME 2501 - The Principles of Hair Coloring and Related Theory
Credits: 4 (2 lecture, 7 lab). Presentation of the theory, practice, and chemistry of hair color. Topics include terminology, application, and workplace competencies related to hair color. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1453
Description of Courses

CSME 2514 - Cosmetology Instructor II
Credits: 5 (3 lecture, 5 lab). A continuation of the fundamentals of instructing cosmetology students. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1534, CSME 1535, CSME 2515

CSME 2531 - Principles of Facial / Skin Care Technology III
Credits: 5 (3 lecture, 6 lab). Advanced concepts and principles of skin care and other related technologies. Prerequisite: CSME 1447; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 1491, CSME 1545

CSME 2541 - Preparation for the State Licensing Examination
Credits: 5 (3 lecture, 6 lab). Preparation for the state licensing examination. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME1451

CSME 2544 - Cosmetology Instructor IV
Credits: 5 (3 lecture, 5 lab). Advanced concepts of instruction in a cosmetology program. Topics include demonstration, development, and implementation of advanced evaluation and assessment techniques. Prerequisite: CSME 1534, CSME 1535, CSME 2514; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2515, CSME 2545,

CSME 2545 - Instructional Theory and Clinic Operation
Credits: 5 (3 lecture, 5 lab). An overview of the objectives required by the Texas Department of Licensing and Regulation Instructor Examinations. Prerequisite: CSME 1534, CSME 1535, CSME 2514; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2515, CSME 2544

CSME 2549 - Cosmetology Instructor III
Credits: 5 (3 lecture, 5 lab). Presentation of lesson plan assignments and evaluation techniques. Prerequisite: CSME 1534, CSME 1535, CSME 2514; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: CSME 2544, CSME 2545, CSME 2514

CTEC 1213 - Introduction to Chemical Technology
Credits: 2 (2 lecture). Introduction to the educational and professional requirements of the chemical technician. Topics include safety, industrial site visits, chemical literature, and computer applications. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0312 or 0349 in writing and MATH 0312 in math.

CTEC 1345 - Chemical Laboratory Safety
Credits: 3 (3 lecture). Study of the safety problems encountered in the operation of a chemical laboratory. Topics include chemical and safety regulations, chemical hygiene plans, the Lab Standard, and safe laboratory procedures. Prerequisite: Must be placed into college-level reading, writing and math.

CTEC 1349 - Environmental Chemistry
Credits: 3 (2 lecture, 3 lab). Instruction in laboratory operations for the analysis of environmental contaminants according to current federal, state, and local standards. Prerequisite: SCIT 1414 or CHEM 1411 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0312 or 0349 in writing and MATH 0312 in math.

CTEC 1391 - Special Topics in Chemical Technology / Technician
Credits: 3 (3 lecture). Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

CTEC 1401 - Applied Petrochemical Technology
Credits: 4 (3 lecture, 3 lab). Instruction in the basic principles of physics and their application to process facilities. Topics include units of measurement; gas laws; thermodynamics; temperature; pressure; and the properties of solids, liquids, and gases and how these properties relate to the operation of process equipment. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0312 or 0349 in writing and MATH 0312 in math.

CTEC 1441 - Applied Instrumental Analysis
Credits: 4 (2 lecture, 4 lab). Principles of instrumental chemical analysis. Topics include chromatography, spectroscopy, and electroanalytical chemistry. Prerequisite: Must be placed into college-level reading, writing and math.
Description of Courses

CTEC 1470 - Principles of Pipeline Technology
Credits: 4 (3 lecture, 1 lab). Topics include: reliable operations of pumps and compressors, calculation of flow, requirements for flow control valves and mechanics, pressure relief devices, turbo-expanders, pumps, water hammer, valve noise, calculation of pressure drops in single and two phase systems, transport maintenance and troubleshooting, transport material safety and operations, corrosion of piping systems, pipe sizing, and solids fluidization. Students will learn pipe design and manufacturing material along with economics associated with transporting of material through piping systems. Students will use software and actual pipeline systems for level and flow control and operations. Prerequisite: PTAC 1410 or Department Approval; must be placed into college-level reading, writing and math.

CTEC 2333 - Comprehensive Studies in Chemical Technology
Credits: 3 (1 lecture, 5 lab). Course requiring a special laboratory research project. Prerequisite: Department Approval; must be placed into college-level reading and into ENGL 0312 or 0349 in writing and MATH 0312 in math.

CTEC 2381 - Cooperative Education - Chemical Technology / Technician
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: SCIT 1414 or Department Approval; must be placed into college-level reading, writing and math.

CTEC 2386 - Internship - Chemical Technology / Technician
Credits: 3 (18 lab). 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. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

CTEC 2431 - Applied Instrumental Analysis II
Credits: 4 (2 lecture, 4 lab). Advanced topics in instrumental analysis. Topics include atomic absorption, inductively coupled plasma, nuclear magnetic resonance, gas chromatography/mass spectrometry, liquid chromatography, and infrared spectroscopy. Prerequisite: CTEC 1441 or Departmental Approval; must be placed into college-level reading, writing and math.

CTEC 2441 - Polymers I
Credits: 4 (3 lecture, 2 lab). Study of the concepts of polymer science. Topics include classification, structure, properties, synthesis, characterization, and industrial application. Prerequisite: SCIT 2401 or Concurrent Enrollment or Department Approval; must be placed into college-level reading, writing and math.

CTEC 2443 - Polymers II
Credits: 4 (3 lecture, 2 lab). Continuation of Polymers I with emphasis on polymeric materials. Prerequisite: CTEC 2441 or Department Approval; must be placed into college-level reading, writing and math.

CTEC 2445 - Unit Operations
Credits: 4 (3 lecture, 2 lab). Instruction in the principles of chemical engineering and process equipment with emphasis on scale-up from laboratory bench to pilot plant. Prerequisite: PTAC 2420 or Department Approval; must be placed into college-level reading, writing and math.

CTEC 2470 - Process Control and Design
Credits: 4 (3 lecture, 3 lab). Develop knowledge and skills on practical chemical/industrial process control. Understand control room functions and operation. Identify process dynamics using real-time plant data. Understand industrial controllers_PID/feed-forward/model-based controller, dead-time compensators and non-linear controllers. Design, build and tune controllers. Optimize tuning parameters. Simulate controllers and optimize them in a simulated plant environment. Students will use software for dynamics identification and controller tuning optimizations and conduct numerous hands-on exercises to prepare them for the industrial environment. Prerequisite: PTAC 1410 or Department Approval; must be placed into college-level reading, writing and math.

CTMT 2336 - Computer Tomography Equipment and Methodology
Credits: 3 (3 lecture). Skill development in the operation of computed tomographic equipment, focusing on routine protocols, image quality, quality assurance and radiation protection. Prerequisite: Registered and in good standing with ARRT or NMTCB; must be placed into college-level reading, writing and math. Corequisite: Corequisite: RADR 2340
Description of Courses

CTMT 2360 - Clinical-Radiologic Technology / Science - Radiographer
Credits: 3 (12 external lab). 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. Prerequisite: Registered and in good standing with ARRT or NMTCB; must be placed into college-level reading, writing and math. Corequisite: RADR 2340, CTMT 2336, CTMT 2460

CTMT 2361 - Clinical-Radiologic Technology / Science - Radiographer
Credits: 3 (12 external lab). 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. Prerequisite: Registered and in good standing with ARRT or NMTCB; must be placed into college-level reading, writing and math. Corequisite: RADR 2340, CTMT 2336, CTMT 2460

CTMT 2362 - Clinical - Radiologic Technology/Science - Radiographer
Credits: 3 (12 lab). 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. This course is assigned to Nuclear Medicine Technology students only. Prerequisite: Must be placed into college-level reading, writing and math.

CTMT 2363 - Clinical - Radiologic Technology/Science - Radiographer
Credits: 3 (12 lab). 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. This course is assigned to Nuclear Medicine Technology students only. Prerequisite: Must be placed into college-level reading, writing and math.

DAAC 1264 - Practicum (or Field Experience) - Substance Abuse/Addiction Counseling
Credits: 2. Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

DAAC 1304 - Pharmacology of Addiction
Credits: 3 (3 lecture). Describes the psychological, physiological, and sociological effects of mood altering substances and behaviors. Emphasizes pharmacological effects of tolerance, dependency/withdrawal, cross addiction, and drug interaction. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

DAAC 1305 - Co-Occurring Disorders
Credits: 3 (3 lecture). Provides students with an understanding of co-occurring psychiatric and substance abuse disorders and their impact on the individual, family, and community. Includes an integrated approach to address the issues accompanying the illness. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0308 in math.

DAAC 1311 - Counseling Theories
Credits: 3 (3 lecture). An examination of the major theories and current treatment modalities used in the field of counseling. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0308 in math.

DAAC 1319 - Substance-Related and Addictive Disorders
Credits: 3 (3 lecture). An overview of causes and consequences of substance-related and addictive disorders, the major drug classifications, and the counselor’s code of ethics. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

DAAC 1417 - Basic Counseling Skills
Credits: 4 (2 lecture, 8 lab). Presents the basic counseling skills necessary to develop an effective helping relationship with clients. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

DAAC 2267 - Practicum (or Field Experience) - Substance Abuse / Addiction Counseling
Credits: 2 (19 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0308 in math.

DAAC 2306 - Substance Abuse Prevention I
Credits: 3 (3 lecture, 1 lab). Focuses on aspects of substance abuse prevention from a public health model. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

DAAC 2353 - Substance Abuse Prevention II
Credits: 3 (3 lecture, 1 lab). Focuses on the incorporation of research and evaluation methods into advanced program designs and outcomes, and research and application of ethics as applied to substance abuse prevention. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

DAAC 2354 - Dynamics of Group Counseling
Credits: 3 (3 lecture). Exploration of group counseling skills, techniques, and stages of group development. Prerequisite: DAAC 1417; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

DANC 1110 - Tap Dance
Credits: 1 (3 lab). Instruction in the fundamental techniques and concepts associated with Tap dance. May be repeated for credit once. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DANC 1112 - Dance Practicum
Credits: 1 (0 lecture, 3 lab). Practicum in dance related topics with emphasis on practical skills necessary for the field. May be repeated for credit once. Prerequisite: Department Approval required.

DANC 1128 - Ballroom and Social Dance
Credits: 1 (0 lecture, 2 lab). Introductory instruction in the fundamental techniques and concepts associated with Ballroom and Social Dance. May be repeated for credit once.

DANC 1151 - Freshman Dance Performance
Credits: 1 (1 lecture, 3 lab). Instruction in dance performance through experiential projects at the freshman level. May be repeated for credit once. Prerequisite: Prerequisites: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DANC 1201 - Dance Composition - Improvisation
Credits: 2 (1 lecture). This introductory course in improvisation will investigate spontaneous problem solving as a means of generating movement for dance composition. Students will be called upon to explore and respond to various forms of stimuli in a safe and supportive learning environment within solo and group work. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DANC 1241 - Beginning Ballet
Credits: 2 (1 lecture, 3 lab). Instruction in the fundamental techniques and concepts associated with ballet. May be repeated for credit once. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DANC 1245 - Beginning Modern Dance
Credits: 2 (1 lecture, 3 lab). Instruction in the intermediate techniques and concepts associated with the concert form of modern dance. May be repeated for credit once. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DANC 1247 - Beginning Jazz Dance
Credits: 3 (1 lecture, 2 lab). Instruction in the fundamental techniques and concepts associated with jazz dance. May be repeated for credit once. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DANC 1301 - Dance Composition - Choreography
Credits: 3 (3 lecture). This course is an examination of the principles of movement generation, phrasing, choreographic structure, and manipulation. Integration of choreographic principles will foster the growth of personal artistic style. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DANC 1305 - World Dance
Credits: 3 (2 lecture, 2 lab). Students will learn cultural dances of Africa and the African Diaspora, with emphasis on rhythmic awareness and movement development. The cultural origins, significance, and motivation, as well as the use of costumes and music, will be explored in lecture and research through live performances, guest artists, and the use of multi-media sources. Instruction will include experiential and written assignments. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DANC 2151 - Sophomore Dance Performance
Credits: 1(1 lecture, 3 lab). Instruction in dance performance through experiential projects at the sophomore level. May be repeated for credit once. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.
Description of Courses

DANC 2241 - Intermediate Ballet
Credits: 2 (2 lecture, 2 lab). Instruction in the intermediate techniques and concepts associated with ballet. May be repeated for credit once.

DANC 2245 - Intermediate Modern Dance
Credits: 2 (2 lecture, 2 lab). Instruction in the intermediate techniques and concepts associated with the concert form of modern dance.

DANC 2247 - Intermediate Jazz Dance
Credits: 2 (2 lecture, 2 lab). Instruction in the intermediate techniques and concepts associated with jazz dance. May be repeated for credit once. Prerequisite: DANC 1348 Jazz II or instructor's approval.

DANC 2303 - Dance Appreciation
Credits: 3 (3 lecture). A general survey of dance forms designed to create an appreciation of the vocabulary, techniques, and purposes of the creative process. This course includes critical interpretation and evaluations of choreographic works and dance forms within cultural and historical contexts. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing.

DANC 2389 - Academic Cooperative in Dance
Credits: 3 (1 lecture, 16 lab). An instructional program designed to integrate on-campus study with practical hands-on experience in dance. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of dance. Prerequisite: Must be placed into college-level reading and college-level writing.

DEMR 1306 - Diesel Engine I
Credits: 3 (2 lecture, 4 lab). An introduction to the basic principles of diesel engines and systems. Prerequisite/Prerequisite/Corequisite: DEMR 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DEMR 1310 - Diesel Engine Testing and Repair I
Credits: 3 (2 lecture, 4 lab). An introduction to testing and repairing diesel engines including related systems specialized tools. Prerequisite/Prerequisite/Corequisite: DEMR 1313; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DEMR 1316 - Basic Hydraulics
Credits: 3 (1 lecture, 4 lab). Fundamentals of hydraulics including components and related systems. Prerequisite: Prerequisite/Corequisite: DEMR 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DEMR 1317 - Basic Brake Systems
Credits: 3 (2 lecture, 4 lab). Basic principles of brake systems of diesel powered equipment. Emphasis on maintenance, repairs, and troubleshooting. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DEMR 1323 - Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair
Credits: 3 (2 lecture, 4 lab). Introduction to heating, ventilation, and air conditioning theory, testing, and repair. Emphasis on refrigerant reclamation, safety procedures, specialized tools, and repairs. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DEMR 1329 - Preventative Maintenance
Credits: 3 (2 lecture, 2 lab). An introductory course designed to provide the student with basic knowledge of proper servicing practices. Content includes record keeping and condition of major systems. Prerequisite: DEMR 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DEMR 1330 - Steering and Suspension I
Credits: 3 (2 lecture, 4 lab). A study of design, function, maintenance, and repair of steering and suspension systems. Emphasis on troubleshooting and repair of failed components. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
**DEM 1342 - Power Train Applications I**
Credits: 3 (2 lecture, 4 lab). In-depth coverage of the mechanics and theory of power trains. Emphasis on disassembly, inspection, and repair of power train components. Prerequisite: Prerequisite/Corequisite: DEMR 1349; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DEM 1381 - Cooperative Education - Diesel Mechanics Technology/Technician**
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Prerequisite/Corequisite: DEMR 2312 and Department Approval; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DEM 2312 - Diesel Engine Testing and Repair II**
Credits: 3 (2 lecture, 4 lab). Coverage of testing and repairing diesel engines including related systems specialized tools. Prerequisite: Prerequisite/Corequisite: DEMR 1342; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DEM 2332 - Electronic Controls**
Credits: 3 (2 lecture, 4 lab). Advanced skills in diagnostic and programming techniques of electronic control systems. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DEM 2439 - Advanced Electrical Systems**
Credits: 4 (2 lecture, 4 lab). A continuation of basic electrical systems to include lighting, computer controls and accessories. Emphasis on diagnosis, testing, and repair using the various diagnostic tools and procedures for current electronic systems. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DFTG 1302 - Introduction to Technical Animation and Rendering**
Credits: 3 (2 lecture, 4 lab). Basic terminology and concepts associated with the development of computer modules used in technical computer animation. Topics include basic animation principles, model creation, light sources, camera positioning, rendering, importing and modification of external files. Prerequisite: DFTG 2319; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DFTG 1305 - Technical Drafting**
Credits: 3 (2 lecture, 4 lab). Introduction to the principles of drafting to include terminology and fundamentals, including size and shape descriptions, projection methods, geometric construction, sections, auxiliary views, and reproduction processes. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DFTG 1309 - Basic Computer Aided Drafting**
Credits: 3 (2 lecture, 4 lab). An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined drafting shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinate systems and plot/print to scale. Corequisite: Co-requisite: DFTG 1405 or Departmental Approval; Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DFTG 1310 - Specialized Basic Computer Aided Drafting (CAD)**
Credits: 3 (2 lecture, 4 lab). A supplemental course to Basic Computer Aided Drafting using an alternative computer-aided drafting (CAD) software to create detail and working drawings. Prerequisite: DFTG 1405 and DFTG 1309 or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DFTG 1313 - Drafting for Specific Occupations**
Credits: 3 (2 lecture, 2 lab). Discussion of theory and practice with drafting methods and the terminology required to prepare working drawings in specific or various occupational fields. Prerequisite: CMBT 1300; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**DFTG 1315 - Architectural Blueprint Reading**
Credits: 3 (2 lecture). The fundamentals of blueprint reading for the construction industry will be examined. Prerequisite: CMBT 1201; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
**Description of Courses**

DFTG 1317 - Architectural Drafting - Residential
Credits: 3 (2 lecture, 4 lab). Architectural drafting procedures, practices, and symbols, including preparation of detailed working drawings for residential structure with emphasis on light frame construction methods. Prerequisite: DFTG 1405 and DFTG 1309; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1329 - Electro - Mechanical Drafting
Credits: 3 (2 lecture, 4 lab). A basic course including layout and design of electro-mechanical equipment from engineering notes and sketches. Emphasis on drawing of electronics enclosures, interior hardware, exterior enclosure, detailed and assembly drawings with a parts list, and flat-pattern layouts. Prerequisite: DFTG 1405 and DFTG 1309; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1333 - Mechanical Drafting
Credits: 3 (2 lecture, 4 lab). Detail drawings with proper dimensioning and tolerances, use of sectioning techniques, common fasteners, pictorial drawings, including bill of materials. Prerequisite: DFTG 1405 and DFTG 1309; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1358 - Electrical / Electronic Drafting
Credits: 3 (2 lecture, 4 lab). Electrical and electronic drawings stressing modern representation used for block diagrams, schematic diagrams, logic diagrams, wiring/assembly drawings, printed circuit board layouts, motor control diagrams, power distribution diagrams, and electrical one-line diagrams. Prerequisite: DFTG 1405 and DFTG 1309; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1370 - Basic CAD-Microstation
Credits: 3 (2 lecture, 3 lab). A study of process plant design and layout while developing the basic knowledge of pipe fittings, symbols, specifications, and their applications in the piping process systems. The learner will demonstrate the use of piping symbols and the processes used to develop flow diagrams, piping plans, elevations, and isometrics. Prerequisite: DFTG 1405 and DFTG 1309 or Department Approval.

DFTG 1372 – Smart Print 3D Drafting
Credits: 3. Use process, power and marine design software for 3D modeling design. Learn to define a workspace that opens a new 3D intelligent design world. Manipulate designed equipment, specialty items, piping and refining where required.

DFTG 1376 - Revit Residential
Credits: 3 (2 lecture, 4 lab). Use architectural design software for 2D and 3D modeling design and drafting. Prerequisite: DFTG 1405, DFTG 1309, and DFTG 1317. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1391 - Special Topics Pro-E or PDMS in Drafting
Credits: 3 (2 lecture, 4 lab). Use parametric feature-based solid modeling tool which unites 3D parametric features with 2D tools. Work in 3D environments and calculate mass properties directly from the created geometry. Design, analyze, test, and build prototypes by using high end CAD/CAM/CAE tools. Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: DFTG 2319. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1392 - Special Topics in Architectural Drafting and Architectural CAD/CADD
Credits: 3 (2 lecture, 4 lab). The total method of building construction, focused on energy conservation, green and sustainable building, improved construction practices, accessibility, and whole-building design techniques. Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Prerequisite: DFTG 2319, DFTG 1317.
DFTG 1393 - Special Topics in Civil Drafting and Civil Engineering ; Civil 3D
Credits: 3 (2 lecture, 4 lab). Use Civil 3D software to enhance alignment layout of civil engineering projects. Use tools that enable easier sharing of drafting and design standards across organizations. Prerequisite: DFTG 2330. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1394 - Special Topics in Electrical / Electronics Drafting and Electrical / Electronics CAD / CADD
Credits: 3 (2 lecture, 4 lab). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: DFTG 1358. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1395 - Special Topics in Mechanical Drafting and Mechanical Drafting CAD / CADD AutoPlant Isometrics
Credits: 3 (2 lecture, 4 lab). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: DFTG 2323 and DFTG 2371. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1396 - Special Topics in Computer Graphics : Smart Plant 3D Drafting SmartPlant
Credits: 3 (2 lecture, 4 lab). Use process, power & marine design software for 3D modeling design. Define a workspace in a 3D intelligent design world. Manipulate designed equipment, specialty items, valves and route sloped pipe and insert splits where required. Prerequisite: DFTG 2323 and DFTG 2308; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 1396 - Special Topics in Computer Graphics : Piping Design Systems
Credits: 3 (2 lecture, 4 lab). Provides training in 3D modeling. Create walk throughs allowing operations and maintenance personnel to interactively view the plant before it is constructed.

DFTG 2300 - Intermediate Architectural Drafting - Residential
Credits: Credit 3 (2 lecture, 4 lab). Continued application of principles and practices used in residential construction. Prerequisite: DFTG 1317; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2302 - Machine Drafting
Credits: 3 (2 lecture, 4 lab). Production of detail and assembly drawings of machine, threads, gears, cams, tolerances and limit dimensioning, surface finishes, and precision drawings. Prerequisite: DFTG 1333; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2305 - Printed Circuit Board Design
Credits: 3 (2 lecture, 4 lab). Course includes single-sided and double-sided printed circuit board design, emphasizing the drawings, standards, and processes required to layout printed circuit board and manufacturing documentation. Prerequisite: DFTG 1358. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2306 - Machine Design
Credits: 3 (2 lecture, 4 lab). Theory and practice of design. Projects in problem solving, including press fit, bolted and welded joints, and transmission components. Prerequisite: DFTG 2302. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2307 - Electrical Drafting
Credits: 3. A study of area lighting, control systems and power layouts, electrical and safety codes, load factors and distribution requirements.

DFTG 2308 - Instrumentation Drafting
Credits: 3 (2 lecture, 4 lab). Principles of instrumentation as applicable to industrial applications; fundamentals of measurements and control devices; currently used ISA (Instrument Society of America) symbology; basic flow sheet layout, and drafting practices. Prerequisite: DFTG 2323. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2317 - Descriptive Geometry
Credits: 3 (2 lecture, 4 lab). Graphical solutions to problems involving points, lines, and planes in space. Prerequisite: DFTG 1405 and DFTG 1309; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

DFTG 2319 - Intermediate Computer-Aided Drafting
Credits: 3 (2 lecture, 4 lab). A continuation of practices and techniques used in basic computer-aided drafting emphasizing advanced dimensioning techniques, the development and use of prototype drawings, construction of pictorial drawings, construction of 3-dimensional drawings, interfacing 2-D and 3-D environments and extracting data. Prerequisite: DFTG 1309 and DFTG 1405. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2321 - Topographical Drafting
Credits: 3. Plotting of surveyor's field notes. Includes drawing elevations, contour lines, plan and profiles, and laying out traverses.

DFTG 2323 - Pipe Drafting
Credits: 3 (2 lecture, 4 lab). A study of pipe fittings, symbols, specifications, and their applications to a piping process system. Creation of symbols and their usage in flow diagrams, plans, elevations, and isometrics. Prerequisite: DFTG 1405 and DFTG 1309; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2328 - Architectural Drafting - Commercial
Credits: 3 (2 lecture, 4 lab). Architectural drafting procedures, practices, and symbols including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods. Prerequisite: DFTG 1317. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2330 - Civil Drafting
Credits: 3 (2 lecture, 4 lab). An in-depth study of drafting methods and principles used in civil engineering. Prerequisite: DFTG 1405 and DFTG 1309. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2331 - Advanced Technologies in Architectural Design and Drafting
Credits: 3 (2 lecture, 4 lab). Use of architectural specific software to execute the elements required in designing standard architectural exhibits utilizing custom features to create walls, windows and specific design requirements for construction in residential/commercial and industrial architecture. Prerequisite: DFTG 1376. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2332 - Advanced Computer-Aided Drafting
Credits: 3 (2 lecture, 4 lab). Advanced techniques, including the use of a customized system. Presentation of advanced drawing applications, such as three-dimensional solids modeling and linking graphic entities to external non-graphic data. Prerequisite: DFTG 2319. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2335 - Advanced Technologies in Mechanical Design and Drafting
Credits: 3 (2 lecture, 4 lab). Use parametric based mechanical design software for mechanical assembly design and drafting. Prerequisite: DFTG 2319. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2338 - Final Project - Advanced Drafting
Credits: 3 (2 lecture, 4 lab). A drafting course in which students participate in a comprehensive project from conception to conclusion. This course is designed to be repeated multiple times to improve student proficiency. Prerequisite: DFTG 1405 and DFTG 1309. Must be at the last semesters before obtaining Drafting Certificate or AAS Degree.

DFTG 2340 - Solid Modeling/Design
Credits: 3 (2 lecture, 4 lab). A computer-aided modeling course. Development of three-dimensional drawings and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work. This course is designed to be repeated multiple times to improve student proficiency. Prerequisite: DFTG 2319. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2345 - Advanced Pipe Drafting
Credits: 3 (2 lecture, 4 lab). A continuation of pipe drafting concepts building on the basic principles acquired in pipe drafting. Prerequisite: DFTG 2323. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2358 - Advanced Machine Design
Credits: 3 (2 lecture, 4 lab). Design process skills for the production of complete design package, which includes jig and fixture design, extrusion dies, and injection mold design. Prerequisite: DFTG 2306; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

DFTG 2370 - Intermediate CAD (Microstation)
Credits: 3 (2 lecture, 4 lab). A continuation of practices and techniques used in the basic computer-aided drafting (Microstation), emphasizing advanced dimensioning techniques, the development and use of prototype drawings, construction of pictorial drawings, construction of three (3) dimensional drawings, interfacing 2D and 3D environments and extracting data. Prerequisite: DFTG 1310. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2371 - Advanced Technologies in Process Plant Design - (AutoPlant)
Credits: 3 (2 lecture, 4 lab). Use process plant based mechanical design software for specific applications in industrial design and drafting. Prerequisite: Prerequisite: DFTG 2323, DFTG 2319 or 2370; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2372 - Piping Plans and Process Equipment
Credits: 3 (2 lecture, 4 lab). A continuation of process pipe design concepts, building on the principles acquired in Process Plant Layout. Prerequisite: DFTG 2319 or DFTG 2370 or Departmental Approval. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2373 - Piping Design Management System (PDMS)
Credits: 3 (2 lecture, 4 lab). Uses process plant management systems based Piping design software for 2D and 3D modeling design and drafting. Prerequisite: DFTG 2319. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2374 - Civil 3-D
Credits: 3 (2 lecture, 4 lab). DFTG 2374 Civil 3D covers the essentials of Autodesk Civil 3D. Students learn how to work with point data in Autodesk Civil 3D, how to create and analyze a surface, how to develop a site, how to model roads, corridors, and pipe networks, how to work with survey data, and how to import and export data. Hands-on exercises throughout the course explore how to create 2D and 3D drawings. Prerequisite: DFTG 1405, DFTG 1509, DFTG 2330; Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2375 - Introduction to GIS
Credits: 3 (2 lecture, 4 lab). DFTG 2375 Introduction to GIS is designed to teach students: general application of GIS software, acquire qualitative methods skills in data and document gathering, analyzing information, and presenting results. Prerequisite: DFTG 1405 and DFTG 1309. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

DFTG 2380 - Cooperative Education - Drafting and Design Technology / Technician, General
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Prerequisite: Completed at least 12 semester hours in Drafting Certificate Program and Departmental Approval.

DHYG 1207 - General & Dental Nutrition
Credits: 2 (2 lecture). General nutrition and nutritional biochemistry emphasizing the effect nutrition has on oral health. Prerequisite: BIOL 2301, 2101, CHEM 1305, ENGL 1301, SOCI 1301; Completion of the prerequisites and first semester of the dental hygiene curriculum with 75% or higher in all dental hygiene courses. Must be placed into college-level reading, college-level writing and MATH 0312 in math.

DHYG 1211 - Periodontology
Credits: 2 (2 lecture). Normal and diseased periodontium including the structural, functional, and environmental factors. Emphasis on etiology, pathology, treatment modalities, and therapeutic and preventive periodontics. Prerequisite: Completion of first year dental hygiene curriculum with 75% or higher in all dental hygiene courses. Must be placed into college-level reading, college-level writing and MATH 0312 in math.
Description of Courses

DHYG 1215 - Community Dentistry
Credits: 2 (1 lecture, 3 lab). The principles and concepts of community public health and dental health education emphasizing community assessment, educational planning, implementation, and evaluation including methods and materials used in teaching dental health education in various community settings. Prerequisite: Completion of first year of dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 1227 - Preventive Dental Hygiene Care
Credits: 2 (2 lecture, 1 lab). The role of the dental hygienist as a therapeutic oral health care provider with emphasis on concepts of disease management, health promotion, communication, and behavior modification. Prerequisite: BIOL 2301, 2101; CHEM 1305, ENGL 1301; SOCI 1301; Admission to the Dental Hygiene Program. Must be placed into college-level reading, college-level writing and MATH 0312 in math.

DHYG 1235 - Pharmacology For The Dental Hygienist
Credits: 2 (2 lecture). Classification of drugs and their uses, actions, interactions, side effects, contraindications, with emphasis on dental applications. Prerequisite: Completion of first year dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 1260 - Clinical - Dental Hygiene / Hygienist
Credits: 2 (12 lab). 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. Prerequisite: Completion of first year dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 1261 - Clinical - Dental Hygiene / Hygienist
Credits: 2 (12 lab). 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. Prerequisite: Completion of first year dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 1301 - Orofacial Anatomy , Histology & Embryology
Credits: 3 (2 lecture, 4 lab). The histology and embryology of oral tissues, gross anatomy of the head and neck, tooth morphology, and individual tooth identification. Prerequisite: BIOL 2301, 2101; CHEM 1305; ENGL 1301; SOCI 1301; Admission to the Dental Hygiene Program. Must be placed into college-level reading, college-level writing and MATH 0312 in math.

DHYG 1304 - Dental Radiology
Credits: 3 (2 lecture, 4 lab). Fundamentals of oral radiography, including techniques, interpretation, quality assurance, and ethics. Prerequisite: BIOL 2301, 2101; CHEM 1305; ENGL 1301; SOCI 1301; Admission to the Dental Hygiene Program. Must be placed into college-level reading, college-level writing and MATH 0312 in math.

DHYG 1319 - Dental Materials
Credits: 3 (2 lecture, 3 lab). Physical and chemical properties of dental materials including the application and manipulation of the various materials used in dentistry. Prerequisite: Completion of first/second semester dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 1331 - Preclinical Dental Hygiene
Credits: 3 (1 lecture, 7 lab). Foundational knowledge for performing clinical skills on patients with emphasis on procedures and rationale for performing dental hygiene care. Introduction to ethical principles as they apply to dental hygiene care. Prerequisite: BIOL 2301,2101; CHEM 1305; ENGL 1301; SOCI 1301; Admission to the Dental Hygiene Program. Must be placed into college-level reading, college-level writing and MATH 0312 in math.

DHYG 1339 - General And Oral Pathology
Credits: 3 (3 lecture). Disturbances in human body development, diseases of the body, and disease prevention measures with emphasis on the oral cavity and associated structures. Prerequisite: Completion of first semester dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 2153 - Dental Hygiene Practice
Credits: 1 (1 lecture, 1 lab). Emphasis on the laws governing the practice of dentistry and dental hygiene, moral standards, and the ethical standards established by the dental hygiene profession. Practice settings for the dental hygienist, office operations, and preparation for employment. Explain the Dental Practice Act governing the practice of dentistry and dental hygiene, moral standards, and the ethical standards established by the dental hygiene profession. Practice settings for the dental hygienist, office operations, and preparation for employment. Explain the Dental Practice Act governing. Prerequisite: DHYG 2201; Completion of first semester dental hygiene curriculum with 75% or higher in all dental hygiene courses.
Description of Courses

DHYG 2201 - Dental Hygiene Care I
Credits: 2 (2 lecture, 1 lab). Dental hygiene care for the medically or dentally compromised patient including supplemental instrumentation techniques. Prerequisite: Completion of first semester dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 2231 - Dental Hygiene Care II
Credits: 2 (2 lecture). A continuation of Dental Hygiene Care I. Dental hygiene care for the medically or dentally compromised patient including advanced instrumentation techniques. Prerequisite: Completion of first year dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 2260 - Clinical - Dental Hygiene/Hygienist
Credits: 1 (2 lab). Intermediate Level: 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. Prerequisite: Completion of first year dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DHYG 2261 - Clinical - Dental Hygiene/Hygienist (#Capstone Course)
Credits: 3 (12 lab). Advanced Level: 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. Prerequisite: Completion of first year dental hygiene curriculum with 75% or higher in all dental hygiene courses.

DMSO 1202 - Basic Ultrasound Physics
Credits: 2 (1 lecture, 3 lab). Basic acoustical physics and acoustical waves in human tissue. Emphasis is on ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission and resolution of sound beams. Prerequisite: Admission to the program; must be placed into college-level reading, writing and math.

DMSO 1210 - Introduction to Sonography
Credits: 2 (1 lecture, 2 lab). An introduction to the profession of sonography and the role of the sonographer. Emphasis on medical terminology, ethical/legal aspects, written and verbal communication, and professional issues relating to registry, accreditation, professional organizations and History, Civilization, of the profession. Prerequisite: Admission to the program; must be placed into college-level reading, writing and math.

DMSO 1266 - Practicum (or Field Experience) - Diagnostic Medical Sonography / Sonographer and Ultrasound Technician
Credits: 2 (16 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: DMSO 1302, 1355, 1441,1451; must be placed into college-level reading, writing and math.

DMSO 1342 - Intermediate Ultrasound Physics
Credits: 3 (3 lecture, 1 lab). Continuation of Basic Ultrasound Physics. Includes interaction of ultrasound with tissues, mechanics of ultrasound production and display, various transducer designs and construction, quality assurance, bioeffects, and image artifacts. May introduce methods of Doppler flow analysis. Prerequisite: DMSO 1302; must be placed into college-level reading, writing and math.

DMSO 1355 - Sonographic Pathophysiology
Credits: 3 (2 lecture; 2 lab). Pathology and pathophysiology of the abdominal structures visualized with ultrasound. Includes abdomen, pelvis, and superficial structures. Prerequisite: Admission to program; must be placed into college-level reading, writing and math.

DMSO 1441 - Abdominopelvic Sonography
Credits: 4 (3 lecture, 4 lab). Normal anatomy and physiology of the abdominal and pelvic cavities as related to scanning techniques, transducer selection, and scanning protocols. Prerequisite: Admission to program; must be placed into college-level reading, writing and math.

DMSO 1451 - Sonographic Sectional Anatomy
Credits: 4 (3 lecture, 2 lab). Sectional anatomy of the male and female body. Includes anatomical relationships of organs, vascular structures, and body planes and quadrants. Prerequisite: Admission to program; must be placed into college-level reading, writing and math.

DMSO 2130 - Advanced Ultrasound and Review
Credits: 1 (3 lab). Knowledge, skills, and professional values within a legal and ethical framework addressing emerging technologies and professional development. Prerequisite: Admission to program; must be placed into college-level reading, writing and math.
DMSO 2243 - Advanced Ultrasound Physics
Credits: 2 (2 lecture). Theory and application of ultrasound principles. Includes advances in ultrasound technology. Prerequisite: DMSO 1302, DMSO 1342 and DMSO 2351; must be placed into college-level reading, writing and math.

DMSO 2253 - Sonography of Superficial Structures
Credits: 2 (1 lecture, 2 lab). Detailed study of normal and pathological superficial structures as related to scanning techniques, patient History, Civilization, and laboratory data, transducer selection and scanning protocols. Prerequisite: DMSO 2405; must be placed into college-level reading, writing and math.

DMSO 2266 - Practicum (or Field Experience) - Diagnostic Medical Sonography / Sonographer and Ultrasound Technician
Credits: 2 (16 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: DMSO 1266; must be placed into college-level reading, writing and math.

DMSO 2342 - Sonography of High Risk Obstetrics
Credits: 3 (3 lecture). Maternal disease and fetal abnormalities. Includes scanning techniques, patient History, Civilization, and laboratory data, transducer selection, and scanning protocols. Prerequisite: DMSO 2405; must be placed into college-level reading, writing and math.

DMSO 2351 - Doppler Physics
Credits: 3 (3 lecture). Doppler and hemodynamic principles relating to arterial and venous imaging and testing. Prerequisite: DMSO 1342; must be placed into college-level reading, writing and math.

DMSO 2405 - Sonography of Obstetrics / Gynecology
Credits: 4 (4 lecture, 1 lab). Detailed study of the pelvis and obstetrics/gynecology as related to scanning techniques, patient History, Civilization, and laboratory data, transducer selection and scanning protocols. Prerequisite: DMSO 1355, DMSO 1451; must be placed into college-level reading, writing and math.

DMSO 2441 - Sonography of Abdominopelvic Pathology
Credits: 4 (3 lecture, 2 lab). Pathologies and disease states of the abdomen and pelvis as related to scanning techniques, patient History, Civilization, and laboratory data, transducer selection, and scanning protocols. Emphasizes endocavitary sonographic anatomy and procedures including pregnancy. Prerequisite: DMSO 1355, DMSO 1441, DMSO 1451; must be placed into college-level reading, writing and math.

DMSO 2467 - Practicum (or Field Experience) - Diagnostic Medical Sonography / Sonographer and Ultrasound Technician
Credits: 4 (32 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: All DMSO courses; must be placed into college-level reading, writing and math. Corequisite: Corequisites: DMSO 2243, DMSO 2245

DNTA 1102 - Communication and Behavior in the Dental Office
Credits: 1 (1 lecture). The study of human interaction and communication in the dental office. Prerequisite: DNTA 1167; ENGL 1301, MATH 0306

DNTA 1167 - Practicum (or Field Experience) - Dental Assisting/Assistant
Credits: 1 (10 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: DNTA 1305, DNTA 1245, DNTA 1401, DNTA 1411, DNTA 1415, ENGL 1301, MATH 0306

DNTA 1245 - Preventive Dentistry
Credits: 2 (2 lecture, 1 lab). The study of nutrition and preventable dental disease and community dental health. Prerequisite: Program Admittance, ENGL 1301, MATH 0306

DNTA 1305 - Dental Radiology
Credits: 3 (2 lecture, 3 lab). Introduction to radiation physics, radiation protection, and the operation of radiographic equipment. Instruction in exposure, processing and mounting of dental radiographs, and study of federal and state safety and standard practices. Prerequisite: Program Admittance, ENGL 1301

DNTA 1349 - Dental Radiology in the Clinic
Credits: 3 (2 lecture, 3 lab). The practical application of exposing, processing, and mounting diagnostically acceptable radiographs obtained by utilizing various radiographic techniques. Prerequisite: DNTA 1305, ENGL 1301
Description of Courses

DNTA 1351 - Dental Office Management
Credits: 3 (3 lecture). Use computers and or manual systems to process dental information and interpret and practice learned dental office management skills. Prerequisite: DNTA 1415, ENGL 1301

DNTA 1401 - Dental Materials
Credits: 4 (3 lecture, 2 lab). Composition, properties, procedures and safety standards related to dental materials. Prerequisite: Program Admittance, ENGL 1301

DNTA 1411 - Dental Science
Credits: 4 (4 lecture). A fundamental study of anatomical systems with emphasis placed on head and neck anatomy. Topics include embryology of the teeth along with basic dental terminology. Prerequisite: Program Admittance, ENGL 1301

DNTA 1415 - Chairside Assisting
Credits: 4 (3 lecture, 3 lab). A study of pre-clinical chairside assisting procedures, instrumentation, OSHA and other regulatory agencies’ standards. Prerequisite: Program Admittance, ENGL 1301

DNTA 1447 - Advanced Dental Science
Credits: 4 (4 lecture). An advanced study of anatomical systems, pharmacology, oral pathology, and developmental abnormalities. Prerequisite: DNTA 1411, ENGL 1301

DNTA 1453 - Dental Assisting Applications
Credits: 4 (3 lecture, 3 lab). Course Description should be: An extended study of dental assisting techniques with emphasis on four-handed dentistry and utilization of armamentarium for general practice and specialty procedures. Prerequisite: DNTA 1401, DNTA 1415, ENGL 1301

DNTA 2130 - Seminar for the Dental Assistant
Credits: 1 (1 lecture). Analysis of case studies during the clinical phase of practicum/clinical. Prerequisite: DNTA 1167, DNTA 1349, DNTA 1351, DNTA 1447, DNTA 1453, ENGL 1301

DNTA 2267 - Practicum (or Field Experience) -Dental Assisting/Assistant
Credits: 2 (15 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: DNTA 1167, DNTA 1349, DNTA 1351, DNTA 1447, DNTA 1453; ENGL 1301

DRAM 1120 - Theater Practicum I
Credits: 1 (0 lecture, 4 lab). Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1121 - Theater Practicum II
Credits: 1 (0 lecture, 4 lab). Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1161 - Musical Theatre I
Credits: 1 (0 lecture, 4 lab). Focus on the study and performance of works from the musical theatre repertory, including musical comedy, reviews, operetta, and basic vocal and movement skills. Theatre attendance and/or assistance in college productions required. (formerly DRAM 1172) Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1162 - Musical Theatre II
Credits: 1 (0 lecture, 4 lab). Focus on the study and performance of works from the musical theatre repertory, including musical comedy, reviews, operetta, and basic vocal and movement skills. Theatre attendance and/or assistance in college productions required. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1310 - Introduction to Theater
Credits: 3 (3 lecture). Basic principles of theatre, including the various styles of theatrical production and present practices in the theatre. Required of majors. Open to non-majors. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1320 - Performance
Credits: 3 (2 lecture, 4 lab). This class is devoted to the rehearsal and performance of one or more plays and is designed to give the student experience in applying his performance techniques for an audience. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.
Description of Courses

DRAM 1322 - Stage Movement
Credits: 3 (2 lecture, 2 lab). A course to develop the actor's expressive use of the body through pantomime, tumbling, acrobatics, fencing, and stage fighting. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1330 - Stagecraft I
Credits: 3 (2 lecture, 2 lab). Stagecraft, stage properties, and makeup. Practical experience on technical crews is provided. Laboratory hours may be arranged. Required of majors. Open to non-majors. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1341 - Makeup
Credits: 3 (3 lecture). Principles of straight and character makeup. Student must purchase basic makeup kit. Theatre attendance and/or assistance in college productions required. Required of majors. Open to non-majors. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1351 - Acting I
Credits: 3 (2 lecture, 2 lab). An introduction to the problems of internal acting technique, creation of visual images, reaction to stimulus, and creation of inner life of character. Scene work: finding beats, developing subtext, and playing intentions. Theatre attendance and/or assistance in college productions required. Required of majors. Open to non-majors. Core Curriculum Course. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 1352 - Acting II
Credits: 3 (2 lecture, 2 lab). An introduction to the problems of external acting technique with emphasis on characterization using animal, color and inanimate object improvisational techniques. Scene work focuses on comedic technique including analyzing incongruities, playing opposites, and timing. Theatre attendance and/or assistance in college productions required. Required of majors. Open to non-majors. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing. DRAM 1351

DRAM 2120 - Theater Practicum III
Credits: 1 (0 lecture, 4 lab). Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 2331 - Stagecraft II
Credits: 3 (2 lecture, 2 lab). A continuation of DRAM 1330. Required of majors. Open to non-majors. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 2336 - Voice for the Theater
Credits: 3 (3 lecture). Emphasis on vocal production: breathing and support, resonance, pitch, range, quality projection. Emphasis on oral interpretation skills. SPCH 1342 recommended. Prerequisite: Recommended Prerequisite: SPCH 1342; must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 2337 - Voice for the Actor I
Credits: 3 (3 lecture). Acting with voice: combining proper production techniques and correct pronunciation and articulation, the actor learns to be expressive vocally. Analysis of the emotional potential of vowel and consonant sounds and combinations. Scansion, phrasing, rhythm and dynamics. Prerequisite: SPCH 1342, DRAM 2336, or Department Approval; must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 2338 - Voice for the Actor II
Credits: 3 (3 lecture). Accents and dialects. Using the International Phonetic Alphabet (IPA) students learn the alterations from English needed to produce correctly the sounds of most needed foreign accents, including standard British, Cockney, French, German, American New York, and Southerners, among others. Prerequisite: SPCH 1342 or a demonstrable knowledge of the IPA; must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 2351 - Acting III
Credits: 3 (2 lecture, 2 lab). A study of classical acting style with an emphasis on Shakespeare. Special attention is paid to movement and vocal technique dealing with the problems of period movement and heightened language. Prerequisite: DRAM 1351,1352 or Department Approval Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.
DRAM 2361 - History of the Theater I
Credits: 3 (3 lecture). Survey of the theatre from its beginning. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 2366 - Introduction to Cinema
Credits: 3 (3 lecture). Emphasis on the analysis of the visual and aural aspects of selected motion pictures, dramatic aspects of narrative films, and historical growth and sociological effect of film as an art. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 2367 - The Art of Film Making
Credits: 3 (3 lecture). The analysis of key masterworks of American and international films with particular emphasis on works by famed and influential directors. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

DRAM 2389 - Academic Cooperative in Drama
Credits: 3 (1 lecture, 16 lab). An instructional program designed to integrate on-campus study with practical hands-on experience in drama. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of drama. Prerequisite: Must be placed into college-level reading and college-level writing.

ECON 1301 - Introduction to Economics
Credits: 3 (3 lecture). Examination of the structure and operation of the American economic system. Introduction to selected economic principles essential to the understanding of contemporary issues. May not be substituted for ECON 2301 or ECON 2302.

ECON 2301 - Principles of Macroeconomics
Credits: 3 (3 lecture). Macroeconomics examines the fundamentals of the American economy as it relates to social welfare. Emphasis is on basic concepts and theories as they affect domestic and international markets. This course integrates behavioral social sciences to present solutions to real world problems. Macroeconomics includes measurements of GDP, fiscal and monetary policy. Core Curriculum Course. Prerequisite: Must be placed into college-level reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

ECON 2302 - Principles of Microeconomics
Credits: 3 (3 lecture). Microeconomics examines the fundamentals of the American economy as it relates to business and individual welfare. Emphasis is on basic concepts and theories as they affect domestic and international markets. Microeconomics includes cost and production decisions and discusses the role of competition, monopolies and oligopolies. Core Curriculum Course. Prerequisite: Must be placed into college-level reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

ECON 2389 - Academic Cooperative in Economics
Credits: 3 (1 lecture, 16 lab). An instructional program designed to integrate on-campus study with practical hands-on experience in economics. 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. Prerequisite: Department Approval

ECRD 1211 - Electrocardiography
Credits: 2 (1 lecture, 3 lab). Fundamentals of cardiovascular anatomy and physiology. Includes basic electrocardiography procedures, interpretation of basic dysrhythmias, and appropriate treatment modalities. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

EDUC 1300 - Learning Framework
Credits: 3 (3 lecture). EDUC 1300 is 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. In addition, the course focuses on numerous college, career, and life management topics necessary for students to make the most of their college investment. Core curriculum course. Prerequisite: Must be placed into GUST 0341 (or higher).

EDUC 1301 - Introduction to the Teaching Profession
Credits: 3 (3 lecture). An enriched, integrated pre-service course and content experience that provides active recruitment and institutional support of students interested in a teaching career, especially in high need fields. The course provides students with opportunities to participate in early field observations at all levels of P-12 schools with varied and diverse student populations and provides students with support from college and school faculty, preferably in small cohort groups, for the purpose of introduction to and analysis of the culture of schooling and classrooms. Course content should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards; and the course must include a minimum of 16 contact hours of field experience in P-12 classrooms. Prerequisite: Must be placed into college-level reading and college-level writing.

EDUC 1325 - Multicultural Education
Credits: 3 (3 lecture). An examination of cultural diversity found in society and reflected in the classroom. Topics will include the study of major cultures and their influence on lifestyle, behavior, learning, intercultural communication and teaching, as well as psychosocial stressors encountered by diverse cultural groups. Prerequisite: Prerequisite/Corequisite: EDUC 1301; must be placed into college-level reading and college-level writing.

EDUC 2301 - Introduction to Special Populations
Credits: 3 (3 lecture). An enriched, integrated pre-service course and content experience that provides an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic and academic diversity, and equity with an emphasis on factors that facilitate learning. The course provides students with opportunities to participate in early field observations of P-12 special populations and should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Must include a minimum of 16 contact hours of field experience in P-12 classrooms with special populations. Prerequisite: EDUC 1301, Must be placed into college-level reading and college-level writing.

EECT 1440 - Telecommunications Transmission Media
Credits: 4 (3 lecture, 2 lab). Fundamentals of telecommunications media, including installation, maintenance, and troubleshooting. Topics address media characteristics and connectorization. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math or Department Approval.

EECT 2337 - Wireless Telephony Systems
Credits: 3 (2 lecture, 4 lab). Principles of wireless/cellular telephony systems to include call processing, hand-off, site analysis, antenna radiation patterns, commonly used test/maintenance equipment and access protocol. Prerequisite: EECT 2439; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math or Department Approval.

EECT 2433 - Telephone Systems
Credits: 4 (3 lecture, 3 lab). Study of installation and maintenance systems including telephone set, public switched networks, local exchanges, networks, two- and four-wire systems, tip and ringing requirements, and digital transmission techniques. Prerequisite: CETT 1409 or Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

EECT 2439 - Communications Circuits
Credits: 4 (3 lecture, 3 lab). A study of communications systems with emphasis on amplitude modulation, frequency modulation, phase modulation, and digital pulse modulation. Discussion of several types of modulators, demodulators, receivers, transmitters, and transceivers. Prerequisite: CETT 1429 or Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.
Description of Courses

EEIR 1307 - Introductory Security Systems
Credits: 3 (2 lecture, 3 lab). A study of the security system components, maintenance, troubleshooting, and repair procedures. Emphasis on the installation of security systems as directed. Prerequisite: ELPT 1311; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EEIR 1345 - Intermediate Security Systems
Credits: 3 (2 lecture, 3 lab). A study of maintenance, troubleshooting, and repair of security systems of moderate complexity. Emphasis on the maintenance of security systems with limited instructor direction. Prerequisite: EEIR 1307; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

ELMT 1301 - Programmable Logic Controllers
Credits: 3 (2 lecture, 3 lab). An introduction to programmable logic controllers as used in industrial environments including basic concepts, programming, applications, troubleshooting of ladder logic, and interfacing of equipment. Prerequisite: ELPT 1311; must be placed into GUST 0339 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

ELMT 1305 - Basic Fluid Power
Credits: 3 (3 lecture, 0 lab). Basic fluid power course covering pneumatic and hydraulic systems, fluid power symbols, operating theory, components, and basic electrical and manual controls.

ELMT 1311 - Solar Fundamentals
Credits: 3 (2 lecture, 3 lab). Study of heat transference, motors, pumps and other mechanical devices; solid state switches; photovoltaic plates and energy conversion; thermal dynamics; and solar energy.

ELMT 1402 - Solar Photovoltaic Systems
Credits: 4 (3 lecture, 4 lab). Design and installation of solar photovoltaic systems and their applications. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ELPT 1311 - Basic Electrical Theory
Credits: 3 (2 lecture, 3 lab). Basic theory and practice of electrical circuits. Includes calculations as applied to alternating and direct current. Prerequisite: ELPT 1311; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ELPT 1315 - Electrical Calculations I
Credits: 3 (3 lecture). Introduction to mathematical applications utilized to solve problems in the electrical field. Topics include fractions, decimals, percentages, simple equations, ratio and proportion, unit conversions, and applied geometry. Prerequisite: ELPT 1311; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ELPT 1321 - Introduction to Electrical Safety and Tools
Credits: 3 (2 lecture, 2 lab). A comprehensive overview of safety rules and regulations and the selection, inspection, use, and maintenance of common tools for electricians. Emphasis is given to safety rules and accepted safety practices in the workplace, the use of hand tools, power tools and the proper selection, function and operation of common electrical measuring instruments. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ELPT 1325 - National Electrical Code I
Credits: 3 (3 lecture). 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. Prerequisite: ELPT 1311; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ELPT 1329 - Residential Wiring
Credits: 3 (2 lecture, 3 lab). Wiring methods for single family and multi-family dwellings. Includes load calculations, service entrance sizing, proper grounding techniques, and associated safety procedures. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: ELPT 1221 or CNBT 1201;
ELPT 1341 - Motor Control
Credits: 3 (2 lecture, 3 lab). Operating principles of solid-state and conventional controls along with their practical applications. Includes braking, jogging, plugging, safety interlocks, wiring, and schematic diagram interpretations. Prerequisite: Prerequisite/Corequisite: ELPT 1311 or HART 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ELPT 1345 - Commercial Wiring
Credits: 3 (2 lecture, 3 lab). Commercial wiring methods. Includes overcurrent protection, raceway panel board installation, proper grounding techniques, and associated safety procedures. Prerequisite: Prerequisites/Corequisites: ELPT 1221 and ELPT 1329; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: ELPT 1325

ELPT 1355 - Electronic Applications
Credits: 3 (2 lecture, 3 lab). Electronic principles and the use of electronic devices. Includes diodes, transistors, and rectifiers. Prerequisite: Prerequisite: ELPT 1311, TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ELPT 1451 - Electrical Machines
Credits: 4 (3 lecture, 3 lab). Direct current (DC) motors, single-phase and polyphase alternating current (AC) motors, generators, and alternators. Emphasis on construction, characteristics, efficiencies, starting, and speed control. Prerequisite: Prerequisite/Corequisite: CETT 1405; must be placed into college-level reading, writing and math or Department Approval.

ELPT 1457 - Industrial Wiring
Credits: 4. Wiring methods used for industrial installations. Includes motor circuits, raceway and busway installations, proper grounding techniques, and associated safety procedures.

ELPT 2301 - Journeyman Electrician Exam Review
Credits: 3 (3 lecture). Preparation for journeyman electrician licensure with emphasis on calculations and the National Electrical Code (NEC). Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ELPT 2325 - National Electrical Code II
Credits: 3 (3 lecture). In-depth coverage of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring protection and methods, special conditions, and advanced calculations. Topics include hazardous location classifications and divisions, wiring methods and materials for electrical installations in special occupancies. Prerequisite: Prerequisite/Corequisite: TECM 1301 and ELPT 1325; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ELPT 2337 - Electrical Planning and Estimating
Credits: 3. Planning and estimating for residential, commercial, and industrial wiring systems. Includes a variety of electrical techniques.

ELPT 2419 - Programmable Logic Controllers I
Credits: 4 (3 lecture, 2 lab). Fundamental concepts of programmable logic controllers, principles of operation, and numbering systems as applied to electrical controls. Prerequisite: Prerequisite: ELMT 1301, TECM 1301; Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ELPT 2449 - Industrial Automation
Credits: 4 (3 lecture, 2 lab). Electrical control systems, applications, and interfacing utilized in industrial automation. Prerequisite: Prerequisite/Corequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ELPT 2455 - Programmable Logic Controllers II
Credits: 4 (3 lecture, 2 lab). Advanced concepts in programmable logic controllers and their applications and interfacing to industrial controls. Prerequisite: ELPT 2419; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

EMSP 1160 - Clinical - Emergency Medical Technology/Technician (EMT Paramedic)
Credits: 1 (4 lab). 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. Prerequisite: EMSP 1501; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 1191 - Special Topics in Emergency Medical Technology/Technician
Credits: 1. The course will examine the role of EMS in the US health care delivery system including current and past
Description of Courses

issues and topics that framed the current practice of emergency medical services profession. Topics will include recently identified current events, skills, knowledge and/or attitudes and behaviors pertinent to the delivery of health care and relevant to the professional development of the student and in preparation for the Associate Degree in EMS to assume a leadership role in with EMS with the US health care system. This is a Hybrid program – students will be doing the majority of the coursework online – using computers, reading and interpreting information, and show responsibility + self-management to be successful in the course.

EMSP 1263 - Clinical - Emergency Medical Technology/Technician (EMT Paramedic) Credits: 2 (9 lab). 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. Prerequisite: EMSP 1355; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 1338 - Introduction to Advanced Practice Credits: 3 (2 lecture, 3 lab). An exploration of the foundations necessary for mastery of the advanced topics of clinical practice out of the hospital. Prerequisite: EMSP 1160; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 1355 - Trauma Management Credits: 2 (2 lecture, 4 lab). A detailed study of the knowledge and skills in the assessment and management of patients with traumatic injuries. Prerequisite: EMSP 1356; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 1356 - Patient Assessment and Airway Management Credits: 3 (2 lecture, 3 lab). A detailed study of the knowledge and skills required to perform patient assessment and airway management. Prerequisite: EMSP 1338; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 1491 - Special Topics in Emergency Medical Technology/Technician Credits: 1 (3 lab). Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: EMSP 2243; Must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 1501 - Emergency Medical Technician - Basic Credits: 5 (3 lecture, 8 lab). Preparation for certification as an Emergency Medical Technician (EMT)-Basic. Includes all the skills necessary to provide emergency medical care at a basic life support level with an emergency service or other specialized services. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

EMSP 2160 - Clinical - Emergency Medical Technology/Technician (EMT Paramedic) Credits: 1 (6 lab). 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. Prerequisite: EMSP 2444; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: EMSP 2205

EMSP 2205 - EMS Operations Credits: 2 (2 lab). Knowledge and skills to safely manage multi-casualty incidents and rescue situations; utilize air medical resources; identify hazardous materials and other specialized incidents. Prerequisite: EMSP 1356; Must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 2243 - Assessment Based Management Credits: 2 (1 lecture, 4 lab). A capstone course covering comprehensive, assessment based patient care management. Includes specific care when dealing with pediatric, adult, geriatric, and special-needs patients. Prerequisite: EMSP 2262; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
EMSP 2252 - Emergency Medical Services Research
Credits: 2 (1 lecture, 3 lab). Primary and/or secondary research in current and emerging issues in EMS. Basic research principles, scientific inquiry, and interpretation of professional literature are emphasized. Prerequisite: EMSP 2243; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 2261 - Clinical - Emergency Medical Technology/Technician (EMT Paramedic)
Credits: 2 (9 lab). 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. Prerequisite: EMSP 2434; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: EMSP 2430

EMSP 2262 - Clinical - Emergency Medical Technology/Technician (EMT Paramedic)
Credits: 2 (9 lab). 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. Prerequisite: EMSP 2330; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite:

EMSP 2306 - Emergency Pharmacology
Credits: 3 (2 lecture, 4 lab). A study of drug classifications, actions, therapeutic uses, adverse effects, routes of administration, and calculation of dosages. Prerequisite: EMSP 1263; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 2330 - Special Populations
Credits: 3 (2 lecture, 2 lab). A detailed study of the knowledge and skills necessary to assess and manage ill or injured patients in diverse populations. Prerequisite: EMSP 2261; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 2434 - Medical Emergencies
Credits: 4 (3 lecture, 4 lab). A detailed study of the knowledge and skills in the assessment and management of patients with medical emergencies. Prerequisite: EMSP 2160; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 2444 - Cardiology
Credits: 4 (3 lecture, 4 lab). Assessment and management of patients with cardiac emergencies. Includes single and multi-lead ECG interpretation. Prerequisite: EMSP 2348; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

EMSP 2553 - Emergency Medical Services Certification for Health Care Professionals
Credits: 5. An equivalency course for Emergency Medical Services (EMS) certification under Texas Administrative Code for EMS Personnel Certification.

ENGL 0100 - Development Writing
Credits: 1 (1 lecture). An individualized curriculum for students whose test scores demonstrate high proficiency but do not meet state requirements for placement into college level course work. This course will present a concentrated review of the Writing Process and basic grammar and sentence structure. Department Chair approval required. Prerequisite: Prerequisite: Department Chair approval

ENGL 0310 - Fundamentals of Grammar and Composition II
Credits: 3 (3 lecture). A course designed to prepare students for ENGL 1301. Students will ordinarily proceed to ENGL 0310 after taking ENGL 0300. Some students may, however, test directly into ENGL 0310 (ENGL 0300 is not a prerequisite for ENGL 0310). ENGL 0310 provides a basic review of the principles of grammar, usage and mechanics and utilizes the writing process to teach the students to write short essays (350-500 words). Prerequisite: Must be placed into ENGL 0310 or completion of ENGL 0300.

ENGL 0340 - English Grammar and Conversation for Foreign Speakers I
Credits: 3 (3 lecture, 1 lab). A course in English grammar and conversation. This course is intended to aid foreign students in acquiring fluency in spoken English. The approach is communicative, involving grammar study, oral exercises, dialogues, and role playing. All four language skills (listening, speaking, reading, and writing) are developed. Prerequisite: A satisfactory score on the CELSA Test
ENGL 0341 - English Grammar and Conversation for Foreign Speakers II
Credits: 3 (3 lecture, 2 lab). An intermediate course in English grammar and conversation. This course is a continuation of the skills acquired in ENGL 0340 and uses the same approach. It should be taken prior to ENGL 0346, although some students whose assessment score qualifies them for ENGL 0346 may be advised to take ENGL 0341 as a companion course. Prerequisite: A satisfactory score on the CELSA Test or completion of ENGL 0340

ENGL 0343 - Advanced Conversation for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). Students discuss current events and cultural topics in English. Pronunciation, vocabulary development, and group discussion skills are stressed. May be taken concurrently with other English courses. Prerequisite: English 0341 or sufficient assessment score for English 0346 or above

ENGL 0346 - Grammar and Composition for Foreign Speakers I
Credits: 3 (3 lecture, 1 lab). An intermediate course in English grammar and composition designed to help the student acquire a greater facility in written English. This course is designed for the student who already possesses adequate conversational skill and is pursuing a college career. This course emphasizes grammar, vocabulary, sentence composition, and paragraph writing. It may be taken with ENGL 0341 or 0343 if the student placed into 0346 wishes more proficiency in conversation. Important: This course is now offered as ESOL 0351/0354. Prerequisite: A satisfactory score on the CELSA Test or completion of ENGL 0341

ENGL 1301 - Composition I
Credits: 3 (3 lecture). 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. Note: ENGL 1301 is a pre-requisite for all 2000-level literature courses. Core Curriculum Course. Prerequisite: Appropriate score on TSI/ACT/SAT/STAAR, INRW 0420, Grade of C or better in ELA College Prep course from participating ISDs

ENGL 1302 - Composition II
Credits: 3 (3 lecture). 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. Core Curriculum Course. Prerequisite: Composition 1301 or its equivalent

ENGL 2307 - Creative Writing
Credits: 3 (3 lecture). Practical experience in the techniques of imaginative writing. May include fiction, nonfiction, poetry, screenwriting, or drama. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: ENGL 1301

ENGL 2311 - Technical & Business Writing
Credits: 3 (3 lecture). 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. Core Curriculum Course. Prerequisite: Prerequisite: ENGL 1301

ENGL 2322 - British Literature I
Credits: 3 (3 lecture). 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. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301

ENGL 2323 - British Literature II
Credits: Credit 3 (3 lecture). 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. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301
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ENGL 2327 - American Literature I
Credits: 3 (3 lecture). 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 a diverse group of authors for what they reflect and reveal about the evolving American experience and character. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301

ENGL 2328 - American Literature II
Credits: 3 (3 lecture). 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 a diverse group of authors for what they reflect and reveal about the evolving American experience and character. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301

ENGL 2332 - World Literature I
Credits: 3 (3 lecture). A survey of world literature from the ancient world through the sixteenth century. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301

ENGL 2333 - World Literature II
Credits: 3 (3 lecture). 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. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301

ENGL 2342 - Forms of Literature I
Credits: 3 (3 lecture). The study of one or more literary genres including, but not limited to, poetry, fiction, drama, and film. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301

ENGL 2343 - Forms of Literature II
Credits: 3 (3 lecture). The study of one or more literary genres including, but not limited to, poetry, fiction, drama, and film. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301

ENGL 2351 - Mexican - American Literature
Credits: 3 (3 lecture). A survey of Mexican-American/Chicano/a literature including fiction, non-fiction, poetry, and drama. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Prerequisite: ENGL 1301

ENGL 2389 - Technical Writing Cooperative Education
Credits: 3 (3 lecture, minimum 20 hours career-related work experience per week). A cooperative study effort integrating classroom study with work experience that enables students to learn more about organizational functions. Students also have the opportunity to learn about occupational roles in their fields as their supervising employers cooperate with the College to insure a blend of work and study. Prerequisite: ENGL 1301, minimal GPA of 2.5 overall and/or approval of the instructor or department chair; must be placed into college-level reading and college-level writing.

ENGR 1201 - Introduction to Engineering
Credits: 2 (2 lecture). Introduction to engineering as a discipline and a profession. Includes instruction in the application of mathematical and scientific principles to the solution of practical problems for the benefit of society. Prerequisite: MATH 1314 or higher with a grade of C or higher.

ENGR 1204 - Engineering Graphics I
Credits: 2 (2 lecture, 1 lab). Introduction to basic engineering graphics using the latest version of AutoCAD. Basic AutoCAD commands will be introduced and emphasized throughout this course. Development of technical drawing skills including: freehand sketching, text, orthographic projection, dimensioning, sectional views, and other viewing conventions. Required for all ASES degrees. Prerequisite: Prerequisite: MATH 1314 or equivalent academic preparation

ENGR 2301 - Engineering Mechanics - Statics
Credits: 3 (3 lecture, 1 lab). Composition and resolution of forces, free body diagrams, analysis of forces acting on structures and machines, friction, centroids, and moments of inertia. Prerequisite: PHYS 2425 and MATH 2414
Description of Courses

ENGR 2302 - Engineering Mechanics - Dynamics
Credits: 3 (3 lecture, 1 lab). Dynamics of rigid bodies, force-mass acceleration, work-energy, impulse momentum and introduction of mechanical vibrations. Prerequisite: ENGR 2301

ENGR 2304 - Programming for Engineers
Credits: 3 (2 lecture, 2 lab). Course designed for students who intend to obtain a degree in an engineering discipline. Course covers problem solving, algorithm development for advanced topics in engineering and mathematics. Prerequisite: MATH 2413; Recommended co-enrollment in MATH 2414.

ENGR 2332 - Mechanics of Material
Credits: 3 (3 lecture). Concepts of stresses and strains, engineering properties of materials including thin-walled pressure vessels, torsional and flexural members, shear, moment, equation of elastic curve, deflection of members, combined loadings, column behavior. Prerequisite: MATH 2414 and ENGR 2302

ENGR 2302 - Electrical Circuits I
Credits: 4 (3 lecture, 3 lab). Principles of electrical circuits and systems. Basic circuit elements (resistance, inductance, mutual inductance, capacitance, independent and dependent controlled voltage, and current sources). Topology of electrical networks; Kirchhoff's laws; node and mesh analysis; DC circuit analysis; operatioanal amplifiers; transient and sinusoidal steady-state analysis; AC circuit analysis; first- and second-order circuits; Bode plots; and use of computer simulation software to solve circuit problems. Prerequisite: MATH 2414 or higher and PHYS 2326/2126 (or 2426) with grades of C or higher.

ENTC 1343 - Statics
Credits: 3 (3 lecture). A study of the composition and resolution of forces and the equilibrium of forces acting on structures. Includes the concepts of friction, moments, couples, centroids, and moment of inertia. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ENTC 1347 - Safety and Ergonomics
Credits: 3 (2 lecture, 2 lab). Occupational Safety and Health Administration (OSHA) safety guidelines including electrical, chemical, and hazardous material safety. Ergonomic considerations to include repetitive motion, plant layout, and machine design. Industrial safety awareness, accident cost and prevention, and workman's compensation issues. Prerequisite: TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ENTC 2314 - Facility Operations and Maintenance
Credits: 3 (2 lecture, 2 lab). Interaction of facility, people, equipment, operation, service, and maintenance. Topics include building structure and interior elements, air conditioning, furniture, grounds, and waste management. Prerequisite: TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ENTC 2331 - Manufacturing Materials
Credits: 4 (2 lecture, 3 lab). Identification of various materials used in manufacturing including metals, plastics, composite materials, concrete, ceramics, and wood. Examination of the properties of these materials and standards for quality measurement. Prerequisite: TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

ENTC 1423 - Strength of Materials
Credits: 4 (3 lecture, 3 lab). Study of the relationship between externally applied forces and internally induced stresses and the resulting deformations in structural members. The student will identify the principle behind moments of intermid and explain the relationship between that principle and the shape's cross-sectional geometry and reference axis; and calculate the torsional shearing stress on a solid round shaft subjected to various torques and horsepower requirements. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ENTC 1421 - Special Topics in Engineering Technology, General
Credits: 4 (2 lecture, 5 lab). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ENTC 2311 - Manufacturing Materials
Description of Courses

ENTC 2381 - Cooperative Education - Engineering Technology / Technician, General
Credits: 3 (1 lecture, 20 lab). Career related activities encountered in the student’s area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. This course may be repeated if topics and learning outcomes vary. Prerequisite: Department Approval; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

ENTC 2410 - Machine Design
Credits: 4 (2 lecture, 6 lab). Design considerations for machinery. Includes selection of mechanical components and machine construction principles. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

ENVR 1301 - Environmental Science
Credits: 3. A survey of the forces, including humans, that shape our physical and biologic environment, and how they affect life on Earth. Introduction to the science and policy of global and regional environmental issues, including pollution, climate change, and sustainability of land, water, and energy resources. (Cross-listed with ENVR 1301) Recommended Co-requisite: GEOL 1105 Environmental Science (lab).

ESOL 0307 - Integrated Reading & Writing Course for ENGL 1301
Credits: 3 (3 lecture). A corequisite course in support of ENGL 1301 for ESOL students: 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. Prerequisite: ESOL 0353, 0354 and 0355 with a C grade or better or have a satisfactory score.

ESOL 0349 - Advanced Intermediate Conversation for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0345. This course is designed to further develop conversational skills by incorporating more complicated vocabulary and grammatical structures. Students are also required to present oral reports at various times during the semester. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0345. Corequisite: ESOL 0350, ESOL 0351 and ESOL 0352

ESOL 0350 - Advanced Intermediate Reading for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0346. This advanced intermediate course in reading academically oriented English. This course further develops reading comprehension skills and expands vocabulary. Emphasis is on distinguishing main ideas from supporting details and drawing conclusions. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0346. Corequisite: ESOL 0349, ESOL 0351 and ESOL 0352

ESOL 0351 - Advanced Intermediate Composition for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0347. This course concentrates on the development of writing skills, reviews the paragraph and its essential elements, and introduces the multi-paragraph essay. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0347. Corequisite: ESOL 0349, ESOL 0350 and ESOL 0352

ESOL 0352 - Advanced Intermediate Grammar for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0348. This course provides a review of essential grammatical and structural features while introducing their finer points. Emphasis is placed on compound and complex sentence structures and is designed to lead students toward active mastery of the patterns and principles of formal written English. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0348. Corequisite: ESOL 0349, ESOL 0350 and ESOL 0351

ESOL 0353 - Advanced Reading for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0350. An advanced course designed to develop reading and critical thinking skills for college-bound students. Reading skills are refined to guide students towards mastery of deduction, inference, and figurative language. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0350. Corequisite: ESOL 0354, ESOL 0355 and ESOL 0356
ESOL 0354 - Advanced Composition for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0351. This course concentrates on elements of essay organization. Students are required to produce well-organized, well-substantiated essays. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0351. Corequisite: ESOL 0353, ESOL 0355 and ESOL 0356

ESOL 0355 - Advanced Grammar for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0352. This course provides a review of both essential and finer points of the grammatical structural features of formal written English. Emphasis is placed on active production and error analysis of standard English. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0352. Corequisite: ESOL 0353, ESOL 0354 and ESOL 0356

ESOL 0356 - Advanced Conversation for Foreign Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0349. This course is designed to encourage students' use of high-level grammatical structures and vocabulary skills. Students are required to present an oral book report, an oral report of a personal, off-campus interview, and an oral research report. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0349. Corequisite: ESOL 0353, ESOL 0354 and ESOL 0355

ESOL 0360 - Integrated Reading/Writing for Non-Native Speakers
Credits: 3 (3 lecture, 2 lab). A continuation of ESOL 0345. This course is designed to further develop conversational skills by incorporating more complicated vocabulary and grammatical structures. Students are also required to present oral reports at various times during the semester. Prerequisite: A satisfactory score on the COMPASS-ESL. Test or successful completion of ESOL 0345. Corequisite: ESOL 0350, ESOL 0351 and ESOL 0352

ESOL 0370 - ESL Integrated Read/Write Course for ENGL 1301
Credits: 3 (3 lecture). A co-requisite course in support of ENGL 1301 for ESOL students: 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.

ETWR 1302 - Introduction to Technical Writing

Credits: 3. Introduction to the principles, techniques, and skills needed for scientific, technical, and business writing.

FIRS 1191 - Special Topics Fire Fighting
Credits: 1 (1 lecture). The activities involved in live fire training techniques including fire ground organization, water supply, ventilation, ladder raises, and attack line advancement for the suppression of fire. This course is designed to be used multiple times. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRS 1203 - Firefighter Agility and Fitness Preparation
Credits: 2 (1 lecture, 2 lab). Physical ability testing methods. Rigorous training in skills and techniques needed in typical fire department physical ability tests. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRS 1301 - Fire Fighter Certification I
Credits: 3 (2 lecture, 4 lab). One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, III, 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*** Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRS 1313 - Fire Fighter Certification III
Credits: 3 (2 lecture, 3 lab). 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*** Prerequisite: Prerequisite or Corequisite: FIRS 1407; must be placed into college-level reading, college-level writing and MATH 0306 in math.
Description of Courses

FIRS 1319 - Fire Fighter Certification IV
Credits: 3 (2 lecture, 2 lab). One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, III, 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*** Prerequisite: Prerequisite or Corequisite: FIRS 1313; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRS 1329 - Fire Fighter Certification VI
Credits: 3 (2 lecture, 3 lab). One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, III, IV, V, 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*** Prerequisite: Prerequisite or Corequisite: FIRS 1313; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRS 1407 - Fire Fighter Certification II
Credits: 3 (2 lecture, 2 lab). One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, III, 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*** Prerequisite: Prerequisite or Corequisite: FIRS 1301; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRS 1423 - Fire Fighter Certification V
Credits: 4 (3 lecture, 3 lab). One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, III, IV, 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*** Prerequisite: Prerequisite or Corequisite: FIRS 1319; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRS 1433 - Fire Fighter Certification VII
Credits: 4 (3 lecture, 4 lab). One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, III, IV, V, and VI 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*** Prerequisite: Prerequisite or Corequisite: FIRS 1329; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1202 - Plan Examiner I
Credits: 2 (2 lecture). Examination of plans submitted for approval by businesses, industry, or other regulated entities. Includes applicable codes and/or standards that meet certification requirements of the Texas Commission on Fire Protection. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1301 - Fundamentals of Fire Protection
Credits: 3 (3 lecture). Orientation to the fire service, career opportunities, related fields. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1303 - Fire and Arson Investigation I
Credits: 3 (2 lecture, 3 lab). Basic fire and arson investigation practices. Emphasis on fire behavior principles related to fire cause and origin determination. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1305 - Public Education Programs
Credits: 3 (3 lecture). Preparation of fire fighters and fire officers to develop public fire safety awareness. Emphasis on implementation of fire and public safety programs in an effort to reduce the loss of life. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1307 - Fire Prevention Codes and Inspections
Credits: 3 (3 lecture). Local building and fire prevention codes. Fire prevention inspections, practices, and procedures. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.
Description of Courses

FIRT 1309 - Fire Administration I
Credits: 3 (3 lecture). Introduction to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis on fire service leadership from the perspective of the company officer. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1311 - Fire Service Hydraulics
Credits: 3 (3 lecture). The use of water in fire protection. Application of hydraulic principles to analyze and solve water supply problems. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1315 - Hazardous Materials I
Credits: 3 (3 lecture). The chemical characteristics and behavior of various materials. Storage, transportation, handling hazardous emergency situations, and the most effective methods of hazard mitigation. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1319 - Firefighter Health and Safety
Credits: 3 (3 lecture). Firefighter occupational safety and health in emergency and non-emergency situations. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1327 - Building Construction in the Fire Service
Credits: 3 (3 lecture). Components of building construction that relate to life safety. Includes relationship of construction elements and building design impacting fire spread in structures. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1329 - Building Codes and Construction
Credits: 3 (3 lecture). Examination of building codes and requirements, construction types, and building materials. Includes walls, floorings, foundations, and various roof types and the associated dangers of each. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1338 - Fire Protection Systems
Credits: 3 (3 lecture). 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 portable fire extinguishers. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1340 - Fire Inspector II
Credits: 3 (2 lecture, 3 lab). Fire inspection rules, procedures, and inspection practices to meet the Texas Commission on Fire Protection requirements for Fire Inspector II. Prerequisite: FIRT 1408; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1342 - Fire Officer I
Credits: 3 (3 lecture). Meets the curriculum requirements of the Texas Commission on Fire Protection (TCFP) for Fire Officer I certification. **THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED AS A TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION** Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1343 - Fire Officer II
Credits: 3 (3 lecture). Meets the curriculum requirements of the Texas Commission on Fire Protection (TCFP) for Fire Officer II certification. **THIS COURSE MAY BE OFFERED ONLY BY INSTITUTIONS CERTIFIED AS A TRAINING FACILITY BY THE TEXAS COMMISSION ON FIRE PROTECTION** Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1345 - Hazardous Materials II
Credits: 3 (3 lecture). Mitigation practices and techniques to effectively control hazardous material spills and leaks. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1347 - Industrial Fire Protection
Credits: 3 (3 lecture). Industrial emergency response teams and specific needs related to hazards in business and industrial facilities. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.
FIRT 1349 - Fire Administration II  
Credits: 3 (3 lecture). In depth study of fire service management as pertaining to budgetary requirements, administration, organization of divisions within the fire service and relationships between the fire service and outside agencies. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1353 - Legal Aspects of Fire Protection  
Credits: 3 (3 lecture). Study of the rights, duties, liability concerns, and responsibilities of public fire protection agencies while performing assigned duties. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1391 - Special Topics in Fire Protection and Safety Technology / Technician  
Credits: 3 (3 lecture). 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. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1392 - Special Topics in Fire Services Administration  
Credits: 3 (3 lecture). 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. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1408 - Fire Inspector I  
Credits: 4 (2 lecture, 4 lab). Fire inspection including rules, codes, and field inspection practices to meet certification requirements of the Texas Commission on Fire Protection. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 1433 - Fire Chemistry I  
Credits: 4 (2 lecture, 4 lab). Chemical nature and properties of inorganic compounds as related to the fire service. Fundamental laws of chemistry, states of matter, gas laws, chemical bonding, and thermodynamics. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 2188 - Internship-Emergency Management  
Credits: 1. 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. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 2305 - Fire Instructor I  
Credits: 3 (3 lecture, 1 lab). Preparation of fire and emergency services personnel to deliver instruction from a prepared lesson plan. Includes the use of instructional aids and evaluation instruments to meet the Texas Commission on Fire Protection requirements for Fire Instructor I certification. Prerequisite: Prerequisite: FIRS 1433 or proof of Firefighter II level certification; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 2307 - Fire Instructor II  
Credits: 3 (3 lecture, 1 lab). Development of individual lesson plans for a specific topic including learning objectives, instructional aids, and evaluation instruments. Includes techniques for supervision and coordination of activities of other instructors to meet Texas Commission on Fire Protection requirements for Fire Instructor II certification. Prerequisite: Prerequisite: FIRT 2305, or proof of Fire Instructor I certification; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 2309 - Fire Fighting Strategies and Tactics I  
Credits: 3 (3 lecture). Analysis of the nature of fire problems and selection of initial strategies and tactics including an in-depth study of efficient and effective use of manpower and equipment to mitigate the emergency. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 2333 - Fire & Arson Investigation II  
Credits: 3 (2 lecture, 3 lab). Fire Investigation techniques and defense of findings in a court room setting. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.
Description of Courses

FIRT 2351 - Company Fire Officer
Credits: 3 (3 lecture). A capstone course covering fire ground operations and supervisory practices. Includes performance evaluation of incident commander, safety officer, public information officer, and shift supervisor duties. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 2380 - Cooperative Education Fire Protection and Safety Technology / Technician
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Prerequisite: 15 semester hours of FIRT/FIRS and Department Approval; must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 2419 - Fire Chemistry II
Credits: 4 (2 lecture, 4 lab). Chemical compounds related to the fire service. Includes effective selection of extinguishing agents and method of application. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

FIRT 2459 - Fire Instructor III
Credits: 4 (3 lecture, 2 lab). Development of comprehensive training curriculum and programs. Includes organization of needs analysis and development of training goals and implementation strategies to meet Texas Commission on Fire Protection requirements for Fire Instructor III. Prerequisite: Prerequisite: FIRT 2307, or proof of the Fire Instructor II Certification

FLMC 1292 - Special Topics in Film - Video Making / Cinematography and Production
Credits: 2 (2 lecture). Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: RTVB 1321; must be placed into GUST 0342 in reading, ENGL 0310 in writing and MATH 0312 in math.

FLMC 1300 - Production Management
Credits: 3 (2 lecture, 4 lab). Managing above- and below-the-line film or video production costs. Emphasizes analysis of scripts and treatments to determine production costs, crewing requirements, location needs, equipment rentals, and associated production costs. Prerequisite: RTVB 1321; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

FLMC 1304 - Lighting for Film or Video
Credits: 3 (2 lecture, 4 lab). Lighting techniques for 16mm film or video production. (This class demonstrates advanced lighting techniques for 16mm film and video productions. Using a variety of lab projects and location settings, students will use lights, filters, in-camera special effects and mood setting techniques to enhance shot composition and camera movement. Topics also include operating film cameras, light meters and selecting film stock. Students are required to attend additional lab hours outside of class.) Prerequisite: RTVB 2337; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0312 in math.

FLMC 1311 - Survey of the Motion Picture
Credits: 3 (2 lecture, 4 lab). Overview of film History, Civilization, and techniques including introduction to cinematic elements and approaches to analysis and criticism. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

FLMC 1331 - Video Graphics and Visual Effects I
Credits: 3 (2 lecture, 4 lab). A course in the applications of computers for video production. Design of computer graphic workstations and development of a rationale for selecting software, hardware, and peripherals. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

FLMC 1371 - Film and New Media
Credits: 3 (2 lecture, 4 lab). This interdisciplinary and multimedia course explores the origins, dynamics, and innovation of new media involvement/inclusion in filmmaking. This course will cover the history and importance of evolving technology (smartphones, wearable cameras, digital cameras) and its applications in social communication platforms. The course is designed as an entry-level, general interest class open to all students who have an interest in the roles of New Media in communication, information, and commerce. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 in writing and MATH 0312 in math.
Description of Courses

FLMC 1391 - Special Topics in Film / Cinema Studies
Credits: 3 (2 lecture, 4 lab). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.
Prerequisite: RTVB 1321; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

FLMC 2305 - Film-Style 3-D Animation Production
Credits: 3 (2 lecture, 4 lab). Techniques in 3-D animation for film-style and live action production. Topics include animations fundamentals, 3D modeling, splines and loft, keyframing, particle effects, rendering. Prerequisite: RTVB 2331; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.
Corequisite: Co-requisite: FLMC 2370

FLMC 2308 - Film Business and Marketing
Credits: 3 (2 lecture, 4 lab). The fundamentals of budgeting, financial records, and the distribution and marketing of films. (The course will introduce the fundamentals of budgeting, financial records, and the distribution of films. Starting with a brief historical review of the American film industry, the course will describe the major film corporations and their subsidiaries and the rise of the independent film industry. Additional topics include basic accounting issues, marketing concepts, distribution, advertising, the Internet, publicity, finding a distribution partner, negotiation tactics and strategies, and establishing a "paper trail" for financial transactions.) Prerequisite: MUSB 2355 and FLMC 1300; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

FLMC 2310 - Film - style Production
Credits: 3 (2 lecture, 4 lab). Writing, directing, and producing film-style productions. Prerequisite: RTVB 1321; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

FLMC 2330 - Audio Post Production
Credits: 3 (2 lecture, 4 lab). The technology, creative application and requirements for producing audio soundtracks for film and video. (This course explores the technology, creative application and requirements for producing audio soundtracks for film and video projects. Topics include time code, synchronization, mixing, Foley, dialog replacement, sound effects and location sound. The students will work on computerized workstations to produce finished audio tracks for various projects. Students are required to attend additional lab hours outside of class.) Prerequisite: RTVB 2337 and RTVB 2330; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

FLMC 2331 - Video Graphics and Visual Effects II
Credits: 3 (2 lecture, 4 lab). Advanced concepts of designing vector and raster graphics, executing rendering techniques, designing and producing three-dimensional (3-D) materials, and selecting hardware, software, and peripherals for video production. Prerequisite: FLMC 1331; must be placed into college-level reading, writing and math.

FLMC 2333 - Cinematography
Credits: 3 (2 lecture, 4 lab). Theoretical elements and practical applications of cinematography. (This class teaches theoretical elements and practical application of cinematography. While learning techniques of film production, students study historical and contemporary trends and styles. Theoretical topics include differences in film stocks, exposure, color theory and filters. Professional techniques that alter an image's character are demonstrated and discussed. Practical tests and scenes are shot using color and black and white film stocks. Students are required to attend additional lab hours outside of class.) Prerequisite: FLMC 1304; Must be placed into college-level reading, writing and math.

FLMC 2334 - Directing for Film or Video
Credits: 3 (2 lecture, 4 lab). Directing to lead a production team. (This course teaches the craft of directing to students who aspire to lead a production team. By analyzing the work of classic and contemporary directors, the class investigates the art and language of filmmaking. Topics include framing and composition, camera angles, camera movement, blocking of actors, visualizing action, and creating a sequence, script breakdown, and techniques for establishing mood, character, and conflict.) Prerequisite: FLMC 1300; must be placed into college-level reading, writing and math.
FLMC 2335 - Screenwriting for Features, Shorts and Documentaries
Credits: 3 (2 lecture, 4 lab). Screenwriting for the principle genres of film. (This class emphasizes screenwriting for the principle genres of film. Students will create treatments from dramatic concepts, turn these treatments into screenplays and complete full shooting scripts by the course's end. Topics include scriptwriting, formatting conventions and structural analysis of comedies, dramas, documentaries and short films. At the conclusion of the course students will submit an original script to a scriptwriting contest. Students are required to attend additional lab hours outside of class.) Prerequisite: RTVB 1429; must be placed into college-level reading, college-level writing and MATH 0308 in math.

FLMC 2336 - Production Development - Producing
Credits: 3 (2 lecture, 4 lab). Sequential steps of supervision in all phases of film production and distribution. Includes resource acquisition and allocation. (During this class the student will address three primary questions posed when developing an idea for a film: What are you going to film? How are you going to film it? How are you going to structure the production? This class will teach students how to explore these questions fully before production begins. Class discussions, student projects and instructor analysis will emphasize the pre-production process: storyboarding shot lists, scheduling, location scouting, stock footage and budgeting. The class will also address design and aesthetic decisions in costuming, makeup and set design. Students are required to attend additional lab hours outside of class.) Prerequisite: FLMC 1300, RTVB 2337; must be placed into college-level reading, writing and math.

FLMC 2342 - Film Editing and Sound Synchronization
Credits: 3 (2 lecture, 4 lab). Design and theory of film editing from raw footage to a final release print. Includes preparing film for the lab, setting up opticals, making and shooting titles, hot splicing, sound track dubbing, and obtaining a final release print. Also may include special effects and sync vs. non-sync sound. Prerequisite: RTVB 2337; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

FLMC 2344 - Advanced Film and Video Editing
Credits: 3 (2 lecture, 4 lab). Exploration of the creative possibilities of non-linear film and video editing. Includes editing aesthetics, titles, graphic design, compositing, and special effects. Prerequisite: Prerequisite: FLMC 1331, RTVB 2330; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

FLMC 2380 - Cooperative Education / Cinematography and Film / Video Production
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: FLMC 2336 and Department Approval; must be placed into college-level reading, writing and math.

FMKT 1301 - Floral Design
Credits: 3 (2 lecture, 2 lab). Principles of floral art with an emphasis on commercial design. Topics include basic design styles and color harmonies; identification, use, and care of processing of cut flowers and foliages; mechanical aids and containers; personal flowers; holiday designs; and plant identification and care. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FMKT 2331 - Advanced Floral Design
Credits: 3 (3 lecture). An in-depth coverage of advanced floral design practices for the retail floral industry. Topics include contemporary floral arrangement styles and trends. Prerequisite: FMKT 1301; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FMKT 2335 - Flower Shop Management
Credits: 3 (3 lecture). Modern principles and practices used in management and operations of retail florist shops. Topics include structure of the industry, shop location, business plan organization, marketing methods and management practices. Prerequisite: FMKT 1301; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FREN 1300 - Conversational French I
Credits: 3 (3 lecture). An introductory French course that emphasizes listening comprehension and speaking skills. Reading and writing may be done as reinforcement to oral communication skills. The course is slower-paced and less comprehensive than French 1411. It is highly recommended for students without previous experience in the French language. This course is not open to students whose first language is French. Generally, does not transfer as foreign language credit, but may transfer as elective credit.
FREN 1411 - Beginning French I
Credits: 4 (3 lecture, 2 lab). Introduction to the French language and culture. Development of basic skills in listening comprehension, speaking, reading, writing, and cultural awareness. Course includes vocabulary building, conversation and grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Must be placed into college - level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

FREN 1412 - Beginning French II
Credits: 4 (3 lecture, 2 lab). Continuation of FREN 1411. Further development of listening comprehension, speaking, reading and writing skills and cultural awareness. More advanced grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: FREN 1411 or satisfactory score on an advanced placement examination or at least two years of high school French within the last two years; must be placed into college - level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing. Corequisite: Or take ENGL 0310/0349 as a co-requisite.

FREN 2311 - Intermediate French I
Credits: 3 (3 lecture). Further development of listening, speaking, reading and writing skills and cultural awareness acquired in Beginning French. Introduction of more complex language structures. Oral and written practice based on selected readings. Class conducted mainly in French. Prerequisite: FREN 1411 or equivalent; must be placed into college - level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

FREN 2312 - Intermediate French II
Credits: 3 (3 lecture). Continuation of FREN 2311 but with special emphasis on written communication. Readings, discussions and compositions. Class conducted mainly in French. Prerequisite: FREN 2311 or equivalent; must be placed into college - level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

FSHD 1233 - Fashion Study Tour
Credits: 2 (2 lecture). A course which combines the study of fashion with travel. Exploration of fashion, art, architecture, textiles, costume, business, and cultural activities in major art and fashion cities. Examination of the most current work in the industry from a global perspective. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHD 1235 - Millinery
Credits: 2 (2 lecture, 1 lab). A study of the basic skills and methods used to create hats. An application of the techniques used to design and produce hats for fashion, theater, historic reproduction and educational instruction purposes. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHD 1191 - Special Topics in Fashion Design and Illustration: Knitwear
Credits: 1 (1 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

FSHD 1302 - Introduction to Fashion
Credits: 3 (3 lecture). Survey of the world of fashion businesses. Introduction to the creation and merchandising of fashion through the study of fashion vocabulary, the fashion process, fashion publications and career opportunities. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

FSHD 1308 - Fashion Trends
Credits: 3 (3 lecture). A study of the effects of Eastern and Western cultures on the development of fashion. Examination of the relationship of social, psychological, economic, demographic and life-style trends to fashion trends. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHD 1311 - Fashion History
Credits: 3 (3 lecture). Survey of the evolution of fashion change traced through garment development from ancient times to present day. A study of customs and silhouettes of each historical period and their modern day adaptations. Examination of twentieth century fashion designers. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHD 1313 - Art for Fashion
Credits: 3. A study of the basic elements and principles of art applied to the design of clothing for the human form. Emphasis on the basic body types; clothing silhouettes; fabric weights; and the use of line, movement, proportion, and color to achieve flattering, marketable fashion design.

FSHD 1318 - Apparel Computer Systems
Credits: 3 (3 lecture, 1 lab). An introduction to apparel computer systems used in wholesale and retail fashion businesses. Applications demonstrated include computer-aided garment and textile design, fashion illustration, pattern making, pattern grading, marker making, newsletters, brochures, advertisements and catalogs. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

FSHD 1322 - Fashion Sketching
Credits: 3 (3 lecture, 1 lab). Fundamentals of quick sketching to communicate design ideas. Instruction in drawing the male and female fashion figure. Emphasis on simple methods for making quick sketches to illustrate style information. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHD 1324 - Ready-To-Wear Construction
Credits: 3 (2 lecture, 4 lab). Fundamentals of mass production of apparel, focusing on the operation of industrial sewing and pressing equipment. Survey of materials selection and construction techniques used at all price levels of mass produced apparel. Introduction to industry seam allowances. Identification of differences between ready-to-wear and couture construction. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHD 1328 - Flat Pattern Design I
Credits: 3 (2 lecture, 3 lab). An introduction to the creative design of clothing through the flat pattern method. General principles of pattern making using the basic five-piece dress sloper. A study of dart manipulation, slashing and spreading the pattern and contouring sew lines. Prerequisite: Prerequisite: FSHD 1324; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

FSHD 1332 - Custom Patterns
Credits: 3 (2 lecture, 3 lab). Skill development in taking body measurements. Instruction in developing custom fittings for customized patterns. In depth coverage of the process of transferring a custom body fitted canvas to a basic dress form and padding it for custom sizing. Prerequisite: FSHD 1328 and FSHD 2306; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHD 1333 - Fashion Study Tour
Credits: 3 (3 lecture). A course which combines the study of fashion with travel. Exploration of fashion, art, architecture, textiles, costume, business, and cultural activities in major art and fashion cities. Examination of the most current work in the industry from a global perspective. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

FSHD 1351 - Design Construction Techniques
Credits: 3 (2 lecture, 4 lab). A continuation of Ready-to-Wear Construction with emphasis on design details. Instruction in basic manipulation of a commercial pattern to create individual design details, dressmaking and fully lined unstructured garments in intermediate level fabrics. Prerequisite: Prerequisite: FSHD 1324; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
Description of Courses

**FSHD 1355 - Flat Pattern Design II**  
Credits: 3 (2 lecture, 3 lab). A continuation of Flat Pattern Design I with emphasis on patterns for tailored garments. Instruction in creating a jacket sloper with a two piece suit sleeve to make patterns for a variety of jacket silhouettes. Adding shoulder pad allowance, drafting patterns for jacket linings and interfacing pieces, lapel and collar variations and various pants shapes.  
Prerequisite: FSHD 1328; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

**FSHD 1391 - Special Topics in Fashion Design and Illustration: Advanced Fashion Sketching**  
Credits: 3 (3 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.  
Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

**FSHD 2215 - Bustier Construction**  
Credits: 2 (1 lecture, 3 lab). Instruction in the skills and techniques for creating a boned bodice. Production of strapless bodices from fashion and theatrical sources through the pattern-making and construction process.  
Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

**FSHD 2305 - Computer Aided Apparel Design**  
Credits: 3 (3 lecture, 3 lab). Fundamentals of computerized pattern design and marker making, as they pertain to the industrial production of apparel products.  
Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

**FSHD 2306 - Draping**  
Credits: 3 (2 lecture, 3 lab). A study of three-dimensional fashion design conceptualizing by draping in muslin or fashion fabric directly on the dress form. Skill development in observing grain of fabric, identifying drapable fabrics and creating designs suitable for draping. Presentation of major fashion designers’ draping techniques.  
Prerequisite: FSHD 1324; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

**FSHD 2310 - Fabric Design**  
Prerequisite: FSHD 1324, FSHN 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**FSHD 2312 - Theatrical Costume Design**  
Credits: 3 (2 lecture, 3 lab). A study of garment design for the theater in which costumes are researched and designed for theatrical productions. Instruction in the effect of lighting and staging in relationship to costuming.  
Prerequisite: DRAM 1310; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**FSHD 2337 - Couture Dressmaking**  
Credits: 3 (2 lecture, 4 lab). A study of advanced apparel construction addressing couture dressmaking techniques, the traditional highest-quality methods for planning, cutting, sewing and pressing garments. Instruction in designing and producing couture fashion garments in advanced level fabrics.  
Prerequisite: FSHD 1353; Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**FSHD 2341 - Pattern Grading**  
Credits: 3 (3 lecture, 1 lab). Instruction in sizing standard patterns larger and smaller for the mass production of apparel. A study of 1", 1-1/2", and 2" and S-M-L-XL grade rules and their applications. Skill development in grading basic and fashion patterns with the ruler, the grading machine, and the computer.  
Prerequisite: FSHD 1328; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

**FSHD 2343 - Fashion Collection Design**  
Credits: 3 (2 lecture, 3 lab). Advanced concepts in designing a collection of marketable apparel. Instruction in developing a design work board for a specific target market and selecting the most marketable ideas for the collection. Projects in resource development, fabric selection, estimating wholesale costs and initial pattern and garment production.  
Prerequisite: FSHD 1355, FSHD 1328; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
FSHD 2344 - Fashion Collection Production
Credits: 3 (2 lecture, 3 lab). A continuation of the Fashion Collection Design course. Emphasis on the production, costing and marketing of a cohesive collection of fashion apparel. Instruction in completing production patterns for all collection garments. Prerequisite: Prerequisite: FSHD 2343; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

FSHD 2388 - Internship - Fashion / Apparel Design
Credits: 3 (16 lab) (256 hours work experience). 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. Prerequisite: Prerequisite: Department Approval; must be placed into GUST 0341 in reading, college-level writing and MATH 0306 in math.

FSHN 1301 - Textiles
Credits: 3 (3 lecture, 1 lab). A general study of textiles with emphasis on factors that affect the hand, appearance and performance in clothing use. Examination of the properties of natural and man-made fibers, how yarn is formed, methods of production and the properties of a wide variety of fabrics. Application of textiles used in the apparel industry. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0301 or 0349 in writing and MATH 0308 in math.

FSHN 1305 - Apparel Alterations
Credits: 3 (2 lecture, 3 lab). Skill development in fitting, altering, conserving and restyling apparel for men, women and children. Preparation for fitting, alterations, conservation and restoration work for a retail store, dry cleaning establishment, wedding gown business or historical costume collection. Prerequisite: Prerequisite: FSHD 1324; must be placed into GUST 0341 in reading, ENGL 0301 or 0349 in writing and MATH 0308 in math.

FSHN 1320 - Fashion Selling
Credits: 3 (3 lecture). Examination of selling techniques for fashion apparel and accessories in retail and wholesale settings. Identification of buying motives, sales psychology, customer approach and closure. Instruction in product analysis, building a regular clientele, developing a fashion vocabulary and training and motivating a sales staff. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

FSHN 1329 - Basic Men's Tailoring
Credits: 3 (2 lecture, 3 lab). An introduction to tailoring men's structured apparel including fundamentals of sewing machine operations, fabric preparation and cutting, machine and hand sewing techniques, and pressing proficiency including instruction in pattern and alterations, assembling men's jackets, vests and pants, and fitting and alterations procedures. Prerequisite: Prerequisite: FSHD 1324; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

FSHN 1307 - Fashion Advertising
Credits: 3 (3 lecture). General principles and practices of fashion advertising and consumer directed communication. A study of persuasive media approaches for public relations induced publicity and advertising produced sales promotions. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
FSHN 2309 - Fashion Image  
Credits: 3 (3 lecture). Instruction in the techniques used to analyze the fashion image of individual clients. Emphasis on personal coloring, color harmonies, appropriate fabric textures, body proportion and silhouette, figure, facial and hair analysis, and wardrobe coordination. Study of fashion image consultant business practices and job qualifications. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHN 2320 - Visual Merchandising  
Credits: 3 (2 lecture, 3 lab). Skill development in the creation of showroom or retail store window/interior displays that sell merchandise. Study of the basic techniques of store planning, mannequin dressing, alternate form design, and display space conceptualization and implementation. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHN 2388 - Internship - Fashion Merchandising  
Credits: 3 (16 lab) (256 hours work experience). Principles and practices in resume and cover letter 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. Prerequisite: Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

FSHN 2432 - Advanced Pattern Drafting  
Credits: 4 (4 lecture, 1 lab). Advanced techniques for drafting patterns.) Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0301 or 0349 in writing and MATH 0308 in math.

GAME 1212 - Game Theory  
Credits: 2 (1 lecture, 3 lab). Game and simulation design. Application of design theories to production-based projects from the conceptual stage to a completed project. Prerequisite: GAME 1306; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GAME 1302 - Interactive Storyboarding  
Credits: 3 (2 lecture, 4 lab). In-depth coverage of storyboarding for the development of interactive media. Addresses target audience analysis, purpose, goals and objectives, content outline, flow chart, and interactive storyboarding. Prerequisite: Prerequisite: GAME 1371; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GAME 1303 - Introduction to Game Design and Development  
Credits: 3. Introduction to electronic game development and game development careers. Includes examination of history and philosophy of games, the game production process, employee factors for success in the field, and current issues and practices in the game development industry.

GAME 1304 - Level Design  
Credits: 3 (2 lecture, 4 lab). Introduction to the tools and concepts used to create levels for games and simulations. Incorporates level design, architecture theory, concepts of critical path and flow, balancing, play testing, and storytelling. Includes utilization of toolsets from industry titles. Prerequisite: Prerequisite: Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GAME 1306 - Design and Creation of Games  
Credits: 3 (2 lecture, 4 lab). Introduction to game and simulation development. Includes analysis of existing applications and their play elements. In-depth coverage of the elements of the application and examination of social issues, genres, and trends. Also covers creation of design documents, investigation of why people play games, review of technological and cultural History, Civilization, of electronic games, survey of the major innovators and historical figures of the industry, and examination of the trends and taboos that motivate game design. Prerequisite: Prerequisite: Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GAME 1314 - Character Sculpting  
Credits: 3 (2 lecture, 4 lab). Creation of original characters from the drawing stage to sculpting clay status. Explores a variety of poses using clay and aluminum armatures. Prerequisite: GAME 1336; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GAME 1334 - Video Game Art I  
Credits: 3 (2 lecture, 4 lab). Explores the role of the artist in the gaming industry. Introduces tools and techniques used in the creation of assets for a game engine. Covers art pipeline, team integration and communication.
Description of Courses

GAME 1335 - Interactive Writing I
Credits: 3 (2 lecture 4 lab). Instruction in writing plot, story, setting, and description for every game element and verbal communication based on game concept. Includes the study of traditional narrative practices and interactive fiction requiring creative writing. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0306 in math.

GAME 1336 - Introduction to 3D Game Modeling
Credits: 3 (2 lecture, 4 lab). Architectural spaces and modeling in a real-time game editor. Includes techniques for building, texturing, and lighting a game level to function in realtime. Prerequisite: GAME 1336; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

GAME 1337 - Introduction to Perspective Drawing
Credits: 3. An introduction to perspective drawing, light and object shading for the purpose of creating 2D game assets for gaming and simulation. Also covers code optimization. Prerequisite: GAME 1371; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

GAME 1338 - Mathemathical Applications for Game Development
Credits: 3 (2 lecture 4 lab). Presents applications of mathematics and science in game and simulation programming. Includes the utilization of matrix and vector operations, kinematics, and Newtonian principles in games and simulations. Also covers code optimization. Prerequisite: GAME 1306 and programming; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 1339 - Level Design II
Credits: 3 (2 lecture, 4 lab). Intermediate approach to the tools and concepts used to develop levels of games and simulations. Incorporates an intermediate exploration of level design, architecture theory, concepts of critical path and flow, balancing, play testing and storytelling. Includes utilization of toolsets from industry titles. Prerequisite: GAME 1304; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GAME 1340 - Interactive Writing II
Credits: 3 (2 lecture, 4 lab). Dialog, story, and character development in writing for video games. Prerequisite: GAME 1335; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.
Description of Courses

GAME 2308 - Portfolio for Game Development
Credits: 3 (2 lecture 4 lab). Design and management of an industry standard portfolio. Includes techniques in self-promotion, resume writing, portfolio distribution systems, and interviewing. Prerequisite: GAME 2332; must be placed into college-level reading, college-level writing and MATH 0308 in math.

GAME 2309 - Video Game Art II
Credits: 3 (2 lecture, 4 lab). Explores the role of the artist in the gaming industry. Introduces tools and techniques used in the creation of assets for a game engine. Covers art pipeline, team integration and communication.

GAME 2319 - Game Engine
Credits: 3 (2 lecture, 4 lab). Commercial and open source gaming engines. Includes discussions and recommendations for game engines to fit industry specifications. Prerequisite: Prerequisites: GAME 2347; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 2325 - 3D Animation II-Character Setup
Credits: 3 (2 lecture, 4 lab). Skinning and weighting, forward kinematics, inverse kinematics, constraints, expressions, scripting and driven keys, mesh deformers, morph targets/blend shapes, and animation user interfaces. Prerequisite: GAME 1374; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 2332 - Project Development I
Credits: 3 (2 lecture, 4 lab). Skill development in an original modification based on a current game engine. Includes management of version control; development of project timeliness; integration of sound, models, and animation; production of demos; and creation of original levels, characters, and content for a real-time multiplayer game. Applies skills learned in previous classes in a simulated real-world design team experience. Prerequisite: GAME 1371, GAME 1372, GAME 1212; must be placed into college-level reading, college-level writing and MATH 0308 in math.

GAME 2334 - Project Development II
Credits: 3 (2 lecture, 4 lab). Continuation of an original modification based on a current game engine with an emphasis on new content and significant changes in game play over the base game experience. Includes creation of original levels, characters, and content for a real-time multiplayer game applying skills learned in previous classes. (formerly GAME 2375) Prerequisite: GAME 1336, GAME 2332; must be placed into college-level reading, college-level writing and MATH 0308 in math.

GAME 2336 - Lighting, Shading and Texture
Credits: 3 (2 lecture, 4 lab). Lighting, shading, and texture painting for 3D models using digital painting techniques. Emphasizes lighting, shading, and texture creation of limited resolution to increase system performance for digital games and simulation training models. Prerequisite: GAME 1336; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

GAME 2338 - Game Testing
Credits: 3 (2 lecture, 4 lab). Testing and debugging gaming and simulation applications in the alpha and beta stages of production. Includes critiques of the product and written documentation of the testing and debugging processes. Prerequisite: Prerequisites: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 2341 - Game Scripting
Credits: 3 (2 lecture, 4 lab). Scripting languages with emphasis on game concepts and simulations. Prerequisite: GAME 1372; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 2342 - Game Development Using C++
Credits: 3 (2 lecture, 4 lab). Skill development in C++ programming for games and simulations. Examines real-world C++ development issues. Prerequisite: GAME 2347; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 2344 - DirectX Programming
Credits: 3 (2 lecture, 4 lab). Exploration of the advanced suite of multimedia application programming interfaces (API) built into the Microsoft Windows operating system. Prerequisite: GAME 2347; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.
Description of Courses

GAME 2347 - Advanced Game Programming
Credits: 3 (2 lecture, 4 lab). Optimization of student-created games. Includes performance tuning, debugging, designing for test, software architecture design, object-oriented practices for game play, asset management, and coding best practices. Prerequisite: GAME 2347; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 2371 - Level Design III
Credits: 3 (2 lecture, 4 lab). Advanced approach to the tools and concepts used to create levels for games and simulations. Incorporates an advanced exploration of level design, architecture theory, concepts of critical path and flow, balancing, play testing, and storytelling. Includes utilization of toolsets from industry titles. Prerequisite: GAME 2304; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GAME 2372 - Emerging Game Technology
Credits: 3 (2 lecture, 4 lab). Explore significant developments within the gaming and simulation field. Research emerging technologies and systems recently developed in the gaming and simulation industry. Prerequisite: GAME 1336; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 2373 - 2D Game Programming
Credits: 3 (2 lecture, 4 lab). Design and development of 2D games and simulations. Includes the design of the user interface, animation, and software development techniques using industry standard development tool. Prerequisite: GAME 1372; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GAME 2374 - 3D Rigging for Games and Simulation
Credits: 3 (2 lecture, 4 lab). An introduction to bone rigs and morph targets to properly set up a character for animation. In addition, rig bipedal characters, quadrupedal characters and props. Prerequisite: Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GAME 2378 - Techniques of Game Art
Credits: 3 (2 lecture, 4 lab). A study of industry-used, game-art techniques and its applications of 3D game art assets. Prerequisite: GAME 1371; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

GAME 2386 - Internship
Credits: 3 (15 external lab). 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. Prerequisite: GAME 2334; must be placed into college-level reading, college-level writing and MATH 0312 in math.

GEOG 1301 - Physical Geography
Credits: 3 (3 lecture). An introduction to the earth’s physical elements. Emphasis is placed on the interrelationships within and between the atmosphere, hydrosphere, lithosphere, and biosphere. Map applications and other tools are used to help understand topics such as weather and climate, soils, ecosystems, and natural resources (Non Lab Natural Science). This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-require) and be placed into college-level writing (or take ENGL 0310/0349 as a co-require).

GEOG 1302 - Human Geography
Credits: 3 (3 lecture). A survey of the cultural diversity found on earth. Topics include population, language, religion, ethnicity, and popular culture, with a special focus on spatial attributes and expressions of culture. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-require) and be placed into college-level writing (or take ENGL 0310/0349 as a co-require).

GEOG 1303 - World Regional Geography
Credits: 3 (3 lecture). A study of the world’s regions with an emphasis on prevailing conditions and developments. Using a spatial lens, the course looks at cultural, physical, and historical characteristics of regions around the world, and develops awareness of the diversity of ideas and practices found in these regions. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-require) and be placed into college-level writing (or take ENGL 0310/0349 as a co-require).

GEOL 1301 - Earth Sciences for Non-Science Majors I (Lecture)
Credits: 3 (3 lecture). Survey of geology, meteorology, oceanography, and astronomy. Prerequisite: Must qualify to take GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing or INRW 0420 or ESOL 0360.
Description of Courses

GEOL 1305 - Environmental Science (Lecture)
Credits: 3 (3 lecture). 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. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must qualify to take GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing or INRW 0420 or ESOL 0360.

GEOL 1345 – Oceanography (Lecture)
Credits: 3 (3 lecture). An introduction to the world's oceans, emphasizing the geological, physical, biological, chemical, and ecological aspects of the marine environment. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must qualify to take GUST 0342 or INRW 0420 (or higher) in reading and qualify to take MATH 0312 (or higher) in mathematics and qualify to take ENGL 0310/0349 or INRW 0420 (or higher) in writing.

GEOL 1347 – Meteorology (Lecture)
Credits: 3 (3 lecture). The study of basic principles of weather and climate and the pervasive effects of weather conditions on daily lives, commerce, agriculture, urban planning and other human activity. The course offers basic scientific theory with applications familiar to the student. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must qualify to take GUST 0342 or INRW 0420 (or higher) in reading and qualify to take MATH 0312 (or higher) in mathematics and qualify to take ENGL 0310/0349 or INRW 0420 (or higher) in writing.

GEOL 1403 - Physical Geology (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). 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. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must qualify to take GUST 0342 or INRW 0420 (or higher) in reading and qualify to take MATH 0312 (or higher) in mathematics and qualify to take ENGL 0310/0349 or INRW 0420 (or higher) in writing.

GEOL 1404 - Historical Geology (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). A comprehensive survey of the History, Civilization, 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, Civilization, of life and major events in the physical development of Earth from rocks and fossils. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: GEOL 1403

GERM 1300 - Beginning German Conversation I
Credits: 3 (3 lecture). An introductory German course which emphasizes listening comprehension and speaking skills. Reading and writing may be done as reinforcement to oral communication skills. The course is slower-paced and less comprehensive than German 1411. It is highly recommended for students without previous experience in the German language. This course is not open to students whose first language is German. Generally, does not transfer as foreign language credit, but may transfer as elective credit.

GERM 1311 - Beginning German II
Credits: 4 (3 lecture, 2 lab). Continuation of GERM 1411. Further development of listening comprehension, speaking, reading, and writing skills, and cultural awareness. More advanced grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: GERM 1411 or satisfactory score on an advanced placement examination or at least 2 years of high school German within the last two years; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

GERM 1411 - Beginning German I
Credits: 4 (3 lecture, 2 lab). Introduction to German language and culture. Development of basic skills in listening comprehension, speaking, reading, writing, and cultural awareness. Course includes vocabulary building, conversation and grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

GERM 1412 - Beginning German II
Credits: 4 (3 lecture, 2 lab). Continuation of GERM 1411. Further development of listening comprehension, speaking, reading, and writing skills, and cultural awareness. More advanced grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: GERM 1411 or satisfactory score on an advanced placement examination or at least 2 years of high school German within the last two years; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)
GERM 2311 - Intermediate German I
Credits: 3 (3 lecture). Further development of listening, speaking, reading and writing skills and cultural awareness acquired in Beginning German. Introduction of more complex language structures. Oral and written practice based on selected readings. Class conducted mainly in German. Prerequisite: GERM 1412 or equivalent; must be placed into college level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

GERM 2312 - Intermediate German II
Credits: 3 (3 lecture). Continuation of GERM 2311. Special emphasis on writing. Readings, discussions and compositions. Class conducted mainly in German. Prerequisite: GERM 2311 or equivalent; must be placed into college level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

GERS 1301 - Introduction to Gerontology
Credits: 3 (3 lecture). Overview of the social, psychological, and biological changes that accompany aging and an overview of the implications of these changes for the individual, as well as for the larger society. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

GISC 1401 - Cartography and Geography in Geographical Information Systems (GIS) and Global Positioning Systems
Credits: 4 (2 lecture, 4 lab). Introduction to the principles of cartography and geography. Emphasis on global reference systems and the use of satellites for measurements and navigation. Prerequisite: GISC 1411 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GISC 1411 - Introduction to Geographic Information Systems (GIS)
Credits: 4 (2 lecture, 4 lab). Introduction to basic concepts of vector GIS using several industry specific software programs including nomenclature of cartography and geography. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

GISC 1421 - Introduction to Raster - Based Geographic Information Systems (GIS)
Credits: 4 (2 lecture, 4 lab). Instruction in GIS data sets including raster-based information such as images or photographs, acquisition of such data, and processing and merging with vector data. Prerequisite: GISC 1411 or Department Approval; must be placed into college level reading, writing and math.

GISC 1491 - Special Topics in Cartography
Credits: 4 (2 lecture, 4 lab). 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. Prerequisite: Department Approval; must be placed into college level reading, writing and math.

GISC 2250 - Scripting for Geographic Information Systems (GIS)
Credits: 2 (1 lecture, 2 lab). Using scripting languages (Python) to automate tasks in Geographic Information Systems (GIS) environments. Introduces scripting and model building techniques used to enhance and customize GIS applications. Prerequisite: GISC 1401, GISC 1411; must be placed into college level reading, writing and math.

GISC 2359 - Web-Served Geographic Information Systems (GIS)
Credits: 3 (2 lecture, 3 lab). Delivery of geographic data via the Internet. Includes composition of the map features distributed and introduction on the use of markup languages to customize web-based Geographic Information Systems (GIS). Prerequisite: GISC 1401, GISC 1411; must be placed into college-level reading, writing and math.

GISC 2364 - Practicum (or Field experience) - Cartography
Credits: 3 (2 lecture, 3 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.
Description of Courses

GISC 2380 - Cooperative Education - Cartography
Credits: 3 (1 lecture, 20 external hours). Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

GISC 2401 - Data Acquisition and Analysis in Geographic Information Systems (GIS)
Credits: 4 (2 lecture, 4 lab). Study of the management of geographic information, system life cycles, and costs and benefits. Includes institutional issues such as data providers, data management, combination of attribute and graphical data, information storage and access, Texas and national standards for spatial data; and applications of GIS for data modeling and analysis. Prerequisite: GISC 1401 or Department Approval; must be placed into college-level reading, writing and math.

GISC 2411 - Geographic Information Systems (GIS) Applications
Credits: 4 (2 lecture, 4 lab). Application of GIS technology to real workplace applications from public and private sectors. Completion of Global Positioning Systems (GPS) fieldwork required for lab exercises. Prerequisite: GISC 1401,1421, or Department Approval; must be placed into college-level reading, writing and math.

GOVT 2107 - Federal and Texas Constitutions
Credits: 3 (3 lecture). 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. Core Curriculum Course. Prerequisite: Must have passed ENGL 1301 (Composition I) or co-enrolled in ENGL 1301 as a corequisite.

GOVT 2305 - Federal Government
Credits: 3 (3 lecture). 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. Core Curriculum Course. Prerequisite: Must have passed ENGL 1301 (Composition I) or co-enrolled in ENGL 1301 as a corequisite.

GOVT 2306 - Texas Government
Credits: 3 (3 lecture). 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. Core Curriculum Course. Prerequisite: Must have passed ENGL 1301 (Composition I) or co-enrolled in ENGL 1301 as a corequisite.

GOVT 2311 – Mexican American and Latinx Politics
Credits: 3. The study of Mexican American and Latinx politics within the American political experience. Topics include historical, cultural, socioeconomic, and constitutional issues that pertain to the study of Mexican Americans and other Latinx populations in the United States. Other topics such as political participation, governmental institutions, electoral politics, political representation, demographic trends, and other contemporary public policy debates will also be addressed.

GOVT 2389 - Academic Cooperative in Government
Credits: 3 (1 lecture, 16 lab). An experiential-learning instruction program designed to integrate textbook and classroom knowledge with practical hands-on experience in an applied area of political science. Primary implementation of student activities will occur in pre-selected legislative institutions or other related governmental organizations. Prerequisite: Completion of GOVT 2305 or GOVT 2306 with a grade of "B" or better, a grade point average of at least 3.0, and the written recommendation of an HCC government instructor. Must be placed into college-level reading and college-level writing.

GUST 0100 - Developmental Reading
Credits: 1 (1 lecture). An individualized curriculum for students whose test scores demonstrate high proficiency but do not meet state requirements for placement into core course work. This course will present a concentrated review of basic Reading and Vocabulary Skills. Department Chair approval is required. Prerequisite: Department Approval
**Description of Courses**

**GUST 0339 - Introduction to Reading**
Credits: 3 (3 lecture, 1 lab). A basic reading course designed to improve students' overall reading skills. Emphasis is on reading comprehension, vocabulary development, study techniques, career planning and critical reading. Classroom instruction is enhanced by a variety of self-paced activities. Prerequisite: Must be placed into GUST 0339 (or higher) in reading.

**GUST 0341 - Developmental Reading I**
Credits: 3 (3 lecture, 1 lab). Developmental Reading I is designed to address the developmental reader's need for direct instruction in basic reading behaviors that are essential to the acquisition of knowledge in the content areas. Instruction is based on an interactive reading method with emphasis on learning to learn. These key skills include previewing chapters, selecting and organizing the information read and critical reading, making informed decisions about that information. Prerequisite: Must be placed into GUST 0341 in reading or completion of GUST 0339 or 0340.

**GUST 0342 - Developmental Reading II**
Credits: 3 (3 lecture, 1 lab). Developmental Reading II is a continuation of reading skills introduced in GUST 0341. Stronger emphasis is on critical reading and thinking skills. The goal of GUST 0342 is to teach students to analyze materials thoughtfully, synthesize materials from various sources, and apply this information to their reading. Prerequisite: Must be placed into GUST 0342 in reading or completion of GUST 0341.

**GUST 3040 - Developmental Reading for Non-Native Speakers of English**
Credits: 3 (3 lecture, 1 lab). A basic reading course for non-native English speakers designed to improve students' overall reading skills. Emphasis on reading comprehension, vocabulary development, study techniques, and critical reading. Classroom instruction is enhanced by a variety of self-paced activities. Recommended on the basis of CELSA test scores. Prerequisite: Satisfactory score on CELSA test.

**HALT 1211 - Shrubs, Vines and Groundcovers**
Credits: 2 (1 lecture, 3 lab). In-depth coverage of the shrubs, vines and groundcovers used in the horticulture industry. Topics include identification, characteristics, adaptation, cultural requirements, pest and disease problems, and use in the landscape. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**HALT 1301 - Principles of Horticulture**
Credits: 3 (3 lecture). An overview of the horticulture industry, plant science, terminology, classification, propagation, environmental responses, and careers and opportunities in the field of horticulture. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**HALT 1306 - Introduction to Landscape Maintenance**
Credits: 3. An introductory course related to the care of landscapes, including the selection, installation, care and maintenance of plants.

**HALT 1307 - Plant Diseases**
Credits: 3 (2 lecture, 2 lab). An overview of the factors causing plant diseases. Topics include physiological disorders, fungi, bacteria, viruses, nematodes, parasitic plants, nonpathogenic factors, and control methods. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**HALT 1309 - Interior Plants**
Credits: 3 (2 lecture, 2 lab). Instruction in the identification and classification of the plants used in home and commercial interior landscapes. Topics include design characteristics for interiorscapes and environmental requirements of the plants. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**HALT 1319 - Landscape Construction**
Credits: 3 (2 lecture, 2 lab). Exploration of landscape construction materials and methods of installation. Topics on soil preparation, including wood, concrete, masonry construction and landscape lighting including pools, spas, and general construction details. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

**HALT 1322 - Landscape Design**
Credits: 3 (2 lecture, 2 lab). A study of the principles and elements of landscape design. Topics include client interview, site analysis, plan view, scale, plant selection, basic drawing and drafting skills, and plan preparation. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

HALT 1324 - Turfgrass Science & Management
Credits: 3 (2 lecture, 2 lab). Coverage of various species of warm and cool season grasses including their uses, application, adaptability, environmental tolerances, anatomy, and physiological responses. Discuss turfgrass quality, selection, and adaptation; describe cultural practices of major cool and warm season turfgrasses; examine turfgrass responses to different environmental conditions; and identify cultural practices. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1325 - Landscape Plant Material
Credits: 3 (2 lecture, 2 lab). Study of the identification, characteristics, cultural requirements, and landscape uses of native and adapted plants. Identify plants; select plants for various landscape situations; list characteristics of plants; and describe cultural requirements of plants. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1327 - Horticultural Equipment Management
Credits: 3 (2 lecture, 2 lab). Application of various types of powered equipment used in the horticulture industry. Presentation of functions, operations, troubleshooting techniques, and repair of equipment. Describe the functions, operations, and maintenance of various types of equipment; and troubleshoot problems. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1331 - Woody Plant Materials
Credits: 3 (2 lecture, 2 lab). Study of woody plant materials used in the horticulture industry. Topics include identification, characteristics, adaptation, cultural requirements, pest and disease problems, and use in the landscape. Identify woody plants in various growth stages; describe morphological, anatomical, or other botanical features; and explain cultural requirements of woody plants. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1333 - Landscape Irrigation
Credits: 3 (2 lecture, 2 lab). In-depth coverage of irrigation systems including equipment, design, performance, and maintenance. Topics include residential and commercial applications, troubleshooting, repair, and technological advances in irrigation systems. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1351 - Landscape Business Operations
Credits: 3 (2 lecture, 2 lab). Instruction in the structure of the landscape business including cost estimation; organization; equipment needs; interpretation of financial reports; and material, labor, and equipment management. Emphasis on the types of landscape operations, marketing, legal forms, construction law, and safety. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1370 - Introduction to Aquaponics
Credits: 3 (2 lecture, 2 lab). This course provides instruction in the principles and practical applications of Aquaponics and Hydroponics culture systems. Students will be introduced to the History, Civilization, as well as a variety of system designs that maintain water quality by various solids removal techniques. In-depth coverage of fish production, plant production, economics and fingerling production. Participants will learn the technology through presentation of the theory and practical skill development. Water quality labs will cover the methods of analysis and the use of water quality test kits. Field work will include fish handling, vegetable production and system operation. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1371 - Introduction to Landscape Maintenance
Credits: 3 (3 lecture). An introductory course related to the care of landscapes, including the selection, installation, care and maintenance of plants. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1380 - Cooperative Education - Applied Horticulture/Horticultural Operations, General
Credits: 3 (1 lecture, 20 lab). 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. As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry; and will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
**Description of Courses**

HALT 1381 - Cooperative Education - Applied Horticulture/Horticultural Operations, General Credits: 3 (1 lecture, 20 hours per week employment). Career-related activities encountered in the student's area of specialization are 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. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1382 - Cooperative Education - Applied Horticulture/Horticultural Operations Credits: 3 (1 lecture/seminar and 20 hrs a week employment). Career-related activities encountered in the student's area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. This course may be repeated if topics and learning outcomes vary. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1396 - Special Topics in Nursery Operations and Management Credits: 3 (2 lecture, 2 lab). 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. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 1491 – Special Topics in Horticulture Services Operations and Management, General Credits: 4. Topics address recently identified current events, skills, knowledge's, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

HALT 2307 - Horticulture Food Crops Credits: 3 (2 lecture, 2 lab). A study of commercial and home cultivated food crops including various vegetables, fruits, and nuts. Topics address planting, maintenance, harvest, and storage of the various crops. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 2308 - Greenhouse Management Credits: 3 (2 lecture, 2 lab). Fundamentals of greenhouse construction and operation. Topics include architectural styles, construction materials, environmental systems and controls, growing media, fertilizers, post harvest handling, marketing, and business management. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 2312 - Turfgrass Maintenance Credits: 3 (3 lecture). Instruction in common turfgrass cultural practices. Topics include calculations, application of materials, and the operation and maintenance of equipment. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 2314 - Plant Propagation Credits: 3 (2 lecture, 2 lab). A study of the sexual and asexual propagation of plants used in horticulture. Topics include propagation by seeds, cuttings, grafting, budding, layering, division separation, and tissue culture, and environmental factors of propagation. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 2315 - Landscape Management Credits: 3 (2 lecture, 2 lab). A study of the procedures and practices used in the horticulture industry for proper landscape maintenance. Topics include landscape installation, lawn maintenance, shrub and tree care, and management practices. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 2318 - Soil Fertility and Fertilizers Credits: 3 (2 lecture, 2 lab). An in-depth study of the chemistry, soil interaction, plant uptake, and utilization of essential plant nutrients. Topics include deficiency and toxicity symptoms, and the selection, application, and characteristics of fertilizer materials. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 2320 - Nursery Production and Management Credits: 3 (2 lecture, 2 lab). An overview of the procedures for establishing and operating a commercial nursery. Topics include site selection, structures, equipment, stock selection, production practices, harvesting, marketing, and management practices. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HALT 2323 - Horticultural Pest Control
Description of Courses

Credits: 3. Examination of federal, state, and local laws and regulations governing the control of horticultural pests. Topics include procedures; methods; safety requirements; integrated pest management (IPM); and chemical, natural, and biological controls.

HALT 2331 - Advanced Landscape Design
Credits: 3 (2 lecture, 2 lab). In-depth coverage of advanced practices in landscape planning for commercial and residential landscapes. Topics include advanced design analysis, architectural elements, space articulation, and land engineering concepts. Prerequisite: HALT 1322; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAME 1166 - Practicum (or Field Experience) – Hospitality Administration/Management, General
Credits: 1. Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

HAMG 1313 - Front Office Management
Credits: 3 (3 lecture, 1 lab). A study of the flow of activities and functions in today’s lodging operation. Topics include a comparison of manual, machine assisted, and computer based methods for each front line function. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAMG 1321 - Introduction to Hospitality Industry
Credits: 3 (3 lecture). Introduction to the elements of the hospitality industry. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAMG 1324 - Hospitality Human Resources Management
Credits: 3 (3 lecture). A study of the principles and procedures of managing people in the hospitality workplace. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAMG 1340 - Hospitality Legal Issues
Credits: 3 (3 lecture). A course in legal and regulatory requirements that impact the hospitality industry. Topics include Occupational Safety and Health Administration (OSHA), labor regulations, tax laws, tip reporting, franchise regulations, and product liability laws. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAMG 1342 - Guest Room Maintenance
Credits: 3 (2 lecture, 3 lab). Demonstrates the working relationship in the lodging industry between housekeeping and maintenance. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAMG 2307 - Hospitality Marketing and Sales
Credits: 3 (3 lecture). Identification of the core principles of marketing and their impact on the hospitality industry. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAMG 2332 - Hospitality Financial Management
Credits: 3 (3 lecture). Methods and application of financial management within the hospitality industry. Primary emphasis on sales accountability, internal controls, and reports analysis. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAMG 2337 - Hospitality Facilities Management
Credits: 3 (3 lecture). Identification of building systems, facilities management, security and safety procedures. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HAMG 2380 - Cooperative Education - Hospitality Administration/Management, General
Credits: 3 (1 lecture, 20 hours work experience). 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. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math. Corequisite: Corequisite: 20 hours or more a week of approved hotel or restaurant related employment


**Description of Courses**

HAMG 2381 - Cooperative Education II - Hospitality Administration and Management  
Credits: 3 (1 lecture, 20 hours work experience). 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. Prerequisite:  
Prerequisite: HAMG 2380; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math  Corequisite: Corequisite: 20 hours or more a week of approved hotel or restaurant related employment

HART 1301 - Basic Electricity for HVAC  
Credits: 3 (2 lecture, 3 lab). Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits, and component theory and operation. Prerequisite: Prerequisites/Corequisites: TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HART 1303 - Air Conditioning Control Principles  
Credits: 3 (2 lecture, 3 lab). 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. Prerequisite: Prerequisites/Corequisites: TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HART 1307 - Refrigeration Principles  
Credits: 3 (2 lecture, 3 lab). An introduction to the refrigeration cycle, basic thermodynamics, heat transfer, temperature/pressure relationship, safety, refrigeration containment, and refrigeration components. Prerequisite: Prerequisites/Corequisites: TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HART 1341 - Residential Air Conditioning  
Credits: 3 (2 lecture, 3 lab). A study of components, applications, and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair, and charging of air conditioning systems. Prerequisite: Prerequisite: HART 1301,1307; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisite/Corequisite: TECM 1301

HART 1345 - Gas and Electric Heating  
Credits: 3 (2 lecture, 3 lab). A study of components, applications and installation of mechanical air conditioning systems including operating conditions, troubleshooting repair, and charging of air conditioning systems. Prerequisite: Prerequisite: HART 1301, HART 1307; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisite/Corequisite: HART 1341

HART 1356 - EPA Recovery Certification Preparation  
Credits: 3 (2 lecture, 3 lab). Certification training for HVAC refrigerant recovery and recycling. Instruction will provide a review of EPA guidelines for refrigerant recovery and recycling during the installation, service, and repair of all HVAC and refrigeration systems. Prerequisite: Prerequisite: HART 1301, HART 1307; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisite/Corequisite: TECM 1301

HART 2301 - Air Conditioning and Refrigeration Codes  
Credits: 3 (2 lecture, 3 lab). HVAC standards and concepts with emphasis on the understanding, and documentation of the codes and regulations required for the state mechanical contractors license and local codes. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

HART 2302 - Commercial Air Conditioning System Design  
Credits: 3. Advanced study in essential elements of commercial air conditioning contracting including duct systems design; equipment selection using manufacturers’ data; and preparation of shop drawings and submittals.

HART 2334 - Advanced Air Conditioning Controls  
Credits: 3 (2 lecture, 3 lab). Theory and application of electrical control devices, electromechanical controls, and/or pneumatic controls. Prerequisite: HART 1341, HART 1345, TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

HART 2336 - Air Conditioning Troubleshooting  
Credits: 3 (2 lecture, 3 lab). 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. Prerequisite: Prerequisite: HART 1341, HART 1345, HART 2342; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
Description of Courses

HART 2341 - Commercial Air Conditioning
Credits: 3 (2 lecture, 3 lab). Apply and describe the sequence of operation for commercial air conditioning systems and their accessories; identify components relative to commercial air conditioning; and explain energy efficient and renewable energy technologies. Prerequisite: HART 1341; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisites/Corequisite: HART 1345

HART 2342 - Commercial Refrigeration
Credits: 3 (2 lecture, 3 lab). Theory of and practical application in the maintenance of commercial refrigeration; medium and low temperature applications and ice machines. Prerequisite: HART 1341; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisites/Corequisite: HART 1345

HART 2345 - Residential Air Conditioning System Design
Credits: 3 (2 lecture, 3 lab). 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. Prerequisite: HART 1341, HART 1345, TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisites/Corequisite: HART 1345

HART 2349 - Heat Pumps
Credits: 3 (2 lecture, 3 lab). A study of heat pumps, heat pump control circuits, defrost controls, auxiliary heat, air flow, and other topics related to heat pump systems. Prerequisite: Prerequisite: HART 1341; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Prerequisites/Corequisite: HART 1345

HART 2357 - Specialized Commercial Refrigeration
Credits: 3 (2 lecture, 3 lab). An advanced course covering the components, accessories, and service of specialized refrigeration units such as ice machines, soft-serve machines, cryogenics, and cascade systems. Prerequisite: HART 2342, TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

HART 2374 - Building Control Systems and Automation
Credits: 3. Theory and application of building control systems and automation, components, hardware and software.

HIST 1301 - United States History I
Credits: 3 (3 lecture). The American nation from the English colonization to the close of the Civil War through Reconstruction. This course satisfies the History or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing. Must have passed ENGL 1301 (Composition I) or be co-enrolled in ENGL 1301 as a co-requisite.

HIST 1302 - United States History II
Credits: 3 (3 lecture). The American nation from the end of the Reconstruction Era to the present. This course satisfies the History or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing. Must have passed ENGL 1301 (Composition I) or be co-enrolled in ENGL 1301 as a co-requisite?

HIST 2301 - Texas History
Credits: 3 (3 lecture). A survey of the political, economic, social, cultural, and intellectual development of Texas from the period of Spanish discovery to the present. History, Civilization, of Texas may be substituted for either HIST 1301 or HIST 1302. This course satisfies the History or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing. Must have passed ENGL 1301 (Composition I) or be co-enrolled in ENGL 1301 as a co-requisite?

HIST 2311 - Western Civilization I
Credits: 3 (3 lecture). Development of ancient, medieval, and early modern civilizations to 1660. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing.

HIST 2312 - Western Civilization II
Credits: 3 (3 lecture). Development of modern western civilization from 1660 to 1945. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing.
HIST 2321 - World Civilizations I  
Credits: 3 (3 lecture). A survey of the major western and non-western civilizations which developed from Sumeria to the end of the Middle Ages. Centered around a series of themes, particular emphasis is placed on the commonality of the human experience as illustrated in Europe, the Middle East, Asia and Sub-Saharan Africa. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing.

HIST 2322 - World Civilizations II  
Credits: 3 (3 lecture). This course analyzes the effect on the world of the changing relationship between the West and the non-West over the past 500 years. Emphasis will be placed on the social, political and economic dynamics of this interchange. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing.

HIST 2327 - Mexican-American History I  
Credits: 3 (3 lecture). A survey of the role of the Mexican-American in United States history. Emphasis will be placed on economic, social, and cultural development with particular focus on contributions to American society. This course satisfies the History or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing. Must have passed ENGL 1301 (Composition I) or be co-enrolled in ENGL 1301 as a co-requisite.

HIST 2328 - Mexican-American History II  
Credits: 3 (3 lecture). A survey of the role of the Mexican-American in United States History, Civilization, . Emphasis will be placed on economic, social, and cultural development with particular focus on contributions to American society. This course satisfies the History or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing. Must have passed ENGL 1301 (Composition I) or be co-enrolled in ENGL 1301 as a co-requisite.

HIST 2371 - Women in American History, Civilization,  
Credits: 3 (3 lecture). The course explores the History, Civilization, of women’s experience in American Society. The course will introduce students to the field of American women's History, Civilization, . Women’s History, Civilization, is the study of women in past times and across cultures. Its goals are to find women missing from the pages of our History, Civilization, books; to analyze and understand their experience as lived, felt, and understood; to integrate that knowledge into the History, Civilization, of particular times, places, and societies; and to develop from that knowledge conceptual frameworks with which to understand the role and significance of gender in American culture and society. Prerequisite: Must be placed into college-level reading and college-level writing.

HIST 2381 - African-American History  
Credits: 3 (3 lecture). A survey of the role of the Afro-American in United States History, Civilization, . Emphasis will be placed on economic, social, and cultural development with particular focus on contributions to American society. This course satisfies the History or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading and college-level writing. Must have passed ENGL 1301 (Composition I) or be co-enrolled in ENGL 1301 as a co-requisite.

HITT 1166 - Practicum (or Field Experience) – Health Information/Medical Records Technology/Technician  
Credits: 1 (8 lab). Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student’s general and technical course of study. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.
Description of Courses

HITT 1167 - Practicum (or Field Experience) – Health Information/Medical Records Technology/Technician
Credits: 1 (8 Lab). Practical general training and experiences in the workplace. The college, with the employer, develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student’s general and technical course of study. The guided external experiences may be paid or unpaid. This course may be repeated if topics and learning outcomes vary. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1205 - Medical Terminology I
Credits: 2. Study of word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols, surgical procedures, medical specialties, and diagnostic procedures.

HITT 1211 - Health Information Systems
Credits: 2 (2 lecture, 1 lab). Concepts of computer technology related to health care data. Prerequisite: POFI 1301 or ITSC 1309; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1249 - Pharmacology
Credits: 2 (2 lecture). Overview of the basic concepts of the pharmacological treatment of various diseases affecting major body systems. Prerequisite: HITT 1305, HITT 1345, BIOL 2302, 2102; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1253 - Legal and Ethical Aspects of Health Information
Credits: 2 (2 lecture, 1 lab). Apply local, state, and federal standards and regulations for the control and use of health information; demonstrate appropriate health information disclosure practices; and identify and discuss ethical issues in health care. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1255 - Health Care Statistics
Credits: 2 (1 lecture, 3 lab). General principles of health care statistics with emphasis in hospital statistics. Skill development in computation and calculation of health data with overview of guidelines for Texas Department of Health Vital Statistics and Studies Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1301 - Health Data Content and Structure
Credits: 3 (2 lecture, 2 lab). Introduction to system and processes for collecting, maintaining and disseminating primary and secondary health related information. Introduction in delivery and organizational structure to include content of health record, documentation requirements, registries, indices, licensing, regulatory agencies, forms, and screens. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1305 - Medical Terminology I
Credits: 3 (2 lecture, 4 lab). Study of word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols, surgical procedures, medical specialties, and diagnostic procedures. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1307 - Cancer Data Management I
Credits: 3 (3 lecture). Introduction to Cancer Data Management. Includes cancer program requirements, the American College of Surgeons Cancer Program survey process, and data collection/retrieval-abstracting, coding, staging, and reporting. Prerequisite: HITT 1301, HITT 1355, HITT 1305; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1341 - Coding and Classification Systems
Credits: 3 (2 lecture, 4 lab). Application of basic coding rules, principles, guidelines, and conventions. Prerequisite: HPRS 2301, HITT 1349; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 1345 - Health Care Delivery Systems
Credits: 3 (3 lecture). Examination of delivery systems including organization, financing, accreditation, licensure, and regulatory agencies. Prerequisite: HITT 1301; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 2149 - RHIT Competency Review
Credits: 1 (3 lab). Review of HIT competencies, skills, and knowledge base pertinent to the technology and relevant to the professional development of the student. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.
HITT 2166 - Practicum (or Field Experience) - Health Information/Medical Records Technology/Technician
Credits: 1. Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

HITT 2167 - Practicum (or Field Experience) - Health Information/Medical Records Technology/Technician
Credits: 1 (8 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 2239 - Health Information Organization and Supervision
Credits: 2. Principles of organization and supervision of human, financial, and physical resources.

HITT 2267 - Practicum (or Field Experience) - Health Information / Medical Records Technology / Technician
Credits: 2 (15 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 2307 - Cancer Data Management II
Credits: 3 (3 lecture). A continuation of Cancer Data Management I. Application of cancer registry data. Prerequisite: HITT 1307; must be placed into college-level reading, college-level writing and MATH 0312.

HITT 2335 - Coding and Reimbursement Methodologies
Credits: 3 (2 lecture, 3 lab). Advanced coding techniques with emphasis on case studies, health records, and federal regulations regarding prospective payment systems and methods of reimbursement. Prerequisite: HITT 1341; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 2339 - Health Information Organization and Supervision
Credits: 3 (3 lecture). Principles of organization and supervision of human, fiscal and capital resources. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 2340 - Advanced Medical Billing and Reimbursement
Credits: 3 (2 lecture, 2 lab). Health insurance and reimbursement in various health care settings. Includes application of coding skills to prepare insurance forms for submission to third party payers. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 2343 - Quality Assessment and Performance Improvement
Credits: 3. Study of quality standards and methodologies in the health information management environment. Topics include licensing, accreditation, compilation and presentation of data in statistical formats, quality management and performance improvement functions, utilization management, risk management, and medical staff data quality issues. Approaches to assessing patient safety issues and implementation of quality management and reporting through electronic systems and approaches to assessing patient safety issues and implementation of quality management and reporting through electronic systems.

HITT 2367 - Practicum (or Field Experience) - Health Information / Medical Records Technology / Technician
Credits: 3 (21 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

HITT 2443 - Quality Assessment and Performance Improvement
Credits: 4 (4 lecture, 1 lab). Study of the many facets of quality standards and methodologies in the health information management environment. Topics include licensing, accreditation, compilation and presentation of data in statistical formats, quality improvement functions, quality tools, utilization management, risk management, and medical staff data quality issues. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.

HLAB 1266 - Practicum (or Field Experience) - Histologic Technology/Histotechnologist
Credits: 2 (15 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.
HLAB 1267 - Practicum (or Field Experience) - Histologic Technology/Histotechnologist
Credits: 2 (15 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: HLAB 1266; Department Approval; must be placed into college-level reading, writing and math.

HLAB 1268 - Practicum (or Field Experience) - Histologic Technology/Histotechnologist
Credits: 2 (15 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: HLAB 1267; Department Approval; must be placed into college-level reading, writing and math.

HLAB 1301 - Introduction to Histotechnology
Credits: 3 (3 lecture, 1 lab). Introduction to the healthcare environment and the histology laboratory. Includes laboratory safety and infection control; healthcare professionals; medical terminology; basic anatomy and physiology; laboratory mathematics; communication; and ethics, legal, and professional issues. Prerequisite: Must be placed into college-level reading, writing and math.

HLAB 1305 - Functional Histology I
Credits: 3 (3 lecture, 1 lab). Recognition, composition, and function of cells, cell life cycles, blood, and basic tissue types. Prerequisite: HLAB 1401; must be placed into college-level reading, writing and math.

HLAB 1346 - Functional Histology II
Credits: 4 (4 lecture). A continuation of Functional Histology I. Emphasis on the recognition, composition, and function of organ systems. Includes skeletal tissues, central nervous system, circulatory system, endocrine glands, and reproductive system. Prerequisite: HLAB 1405; must be placed into college-level reading, writing and math.

HLAB 1402 - Histotechnology I
Credits: 4 (3 lecture, 3 lab). Introduction to the basic theories and practices of histotechnology. Includes laboratory safety, fixation, tissue processing, embedding, microtomy and cryotomy, and routine staining. Prerequisite: HLAB 1401; must be placed into college-level reading, writing and math.

HLAB 1443 - Histotechnology II
Credits: 4 (3 lecture, 3 lab). A continuation of Histotechnology I. Introduces both theory and practice of common histochemical staining techniques. Topics include laboratory safety; laboratory mathematics and reagent preparation; basic tissue/dye bonding; differentiation and quality control; and nuclear, connective tissue, and carbohydrate staining techniques. Prerequisite: HLAB 1402; must be placed into college-level reading, writing and math.

HLAB 2341 - Registry Review
Credits: 3 (3 lecture). Review of the major theoretical/practical applications in histotechnology. Includes fixation, processing, embedding, microtomy, frozen cryotomy, routine and special stains, tissue identification, immunohistochemistry, enzyme histochemistry, and electron microscopy. Emphasis on employment skills, review of ethical and legal behavior, and professional development. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

HLAB 2434 - Histotechnology III
Credits: 4 (3 lecture, 3 lab). A continuation of Histotechnology II. Further introduces theory and practice of routine histochemical staining techniques. Techniques include microorganisms, tissue pigments and minerals, and neural tissue. Includes specialized techniques such as electron microscopy, immunohistochemistry, and muscle enzyme histochemistry. Prerequisite: HLAB 1443; must be placed into college-level reading, writing and math.
Description of Courses

HMSY 1391 - Border Security and Transportation
Credits: 3 (3 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. This course will also provide an overview of modern border and transportation security challenges, as well as different methods employed to address these challenges. The course explores topics associated with border security and security for transportation infrastructure, to include: seaports, ships, aircraft, airports, trains, train stations, trucks, bridges, rail lines, pipelines, and buses. The course will include an exploration of technological solutions employed to enhance security of borders and transportation systems. Students will be required to discuss the legal economic, political, and cultural concerns and impacts associated with transportation and border security. The course provides students with a knowledge level understanding of the variety of challenges inherent in transportation and border security. Prerequisite: HMSY 1337, HMSY 1340

HPRS 1106 - Essentials of Medical Terminology
Credits: 1 (1 lecture). A study of medical terminology, word origin, structure, and application. Prerequisite: Must be placed into college-level reading, writing and math.

HPRS 1201 - Introduction to Health Professions
Credits: 2 (2 lecture, 1 lab). An overview of roles of various members of the health care system, educational requirements, and issues affecting the delivery of health care. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HPRS 1206 - Essentials of Medical Terminology
Credits: 2 (2 lecture). A study of medical terminology, word origin, structure, and application. Prerequisite: Must be placed into college-level reading, writing and math.

HPRS 1304 - Basic Health Profession Skills
Credits: 3 (2 lecture, 3 lab). A study of concepts that serve as the foundation for health profession courses, including client care and safety issues, basic client monitoring and health documentation. Includes CPR, OSHA safety guidelines, universal health precautions, emergency preparedness and response to basic medical emergencies. Prerequisite: Must be placed into college-level reading, writing and math.

HPRS 2201 - Pathophysiology
Credits: 2 (2 lecture). Study of the pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms, and the physical and psychological reaction to diseases and injuries. Prerequisite: Prerequisite: BIOL 2402; must be placed into college-level reading, writing and math.

HPRS 2232 - Health Care Communications
Credits: 2. Methods of communication with clients, client support groups, health care professionals, and external agencies. Prerequisite: PTHA 1305, PTHA 1413, PTHA 1229, PTHA 1201, HPRS 1106; must be placed into college-level reading, writing and math.

HRPO 1302 - Human Resources Training and Development
Credits: 3 (3 lecture). An overview of the human resource development function specifically concentrating on the training and development component. Topics include training as related to organizational mission and goals; budgeting; assessment; design, delivery, evaluation, and justification of training. Included are new trends in training, including distance and virtual education. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HRPO 1305 - Management and Labor Relations
Credits: 3 (3 lecture). The development and structure of the labor movement including labor legislation, collective bargaining, societal impact, labor/management relationships and international aspects. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HRPO 1311 - Human Relations
Credits: 3 (3 lecture). Practical application of the principles and concepts of the behavioral sciences to interpersonal relationships in the business and industrial environment. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HRPO 1392 - Special Topics in Labor / Personnel Relations and Studies
Credits: 3 (3 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

HRPO 2301 - Human Resources Management
Credits: 3 (3 lecture). Behavioral and legal approaches to the management of human resources in organizations. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306.

HRPO 2303 - Employment Practices
Credits: 3 (3 lecture). A study of employment issues including techniques for human resource forecasting, selection, and placement including interview techniques, pre-employment testing and other predictors. Topics include recruitment methods, the selection process, Equal Employment Opportunity (EEO), EEO recordkeeping, and Affirmative Action Plans.

HRPO 2306 - Benefits and Compensation
Credits: 3 (3 lecture). An overview of employee compensation systems. Topics include compensation systems, direct and indirect compensation, internal and external determination of compensation, benefits administration, managing and evaluating for effectiveness, legal and regulatory issues, pay equity, job analysis affecting job compensation and competencies. Prerequisite: Must be placed into college-level reading, writing and MATH 0312 in math.

HRPO 2307 - Organizational Behavior
Credits: 3 (3 lecture). The analysis and application of organizational theory, group dynamics, motivation theory, leadership concepts and the integration of interdisciplinary concepts from the behavioral sciences. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HRPO 2371 - Recruiting, Interviewing and Placement of Human Resources
Credits: 3 (3 lecture). A study of the concepts, techniques and regulations that apply to employment, recruitment, interviewing, selection and placement of human resources. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

HUMA 1301 - Introduction to Humanities I
Credits: 3 (3 lecture). 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. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: Must be placed at or passed appropriate coursework to qualify for college-level reading and college-level writing requirements.

HUMA 1305 - Introduction to Mexican American Studies
Credits: 3 (3 lecture). This interdisciplinary survey examines the different cultural, artistic, economic, historical, political, and social aspects of the Mexican-American/Chicano/a communities. It also covers issues such as dispossession, immigration, transnationalism, and other topics that have shaped the Mexican-American experience. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: Must qualify to take college-level reading and writing OR take INRW 0420 (or GUST 0349 and ENGL 0310) as a co-requisite.

HUMA 1311 - Mexican American Fine Arts Appreciation
Credits: 3 (3 lecture). This course is an exploration of the purposes and processes in the visual and performing arts (such as music, painting, drama, and dance) and the ways in which they express the values of the Mexican-American/Chicano/a experience. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: Prerequisite Engl. 0310/0349, GUST 0342

HUMA 2319 - American Minority Studies
Credits: 3 (3 lecture). This interdisciplinary survey examines the diverse cultural, artistic, economic, historical, political, and social aspects of American minority communities. Topics may include race/ethnicity, gender, socioeconomic class, sexual orientation, national origin, age, disability, and religion. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: ENGL 1301 or higher

HUMA 2323 - World Cultures
Credits: 3 (3 lecture). This course is a general study of diverse world cultures. Topics include cultural practices, social structures, religions, arts, and languages. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: ENGL 1301 or higher

HYDR 1345 - Hydraulics and Pneumatics
Credits: 3 (2 lecture, 2 lab). Discussion of the fundamentals of hydraulics and pneumatics, components of each system and the operations, maintenance, and analysis of each system. Prerequisite: TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
IBUS 1191 - Special Topics in International Business
Credits: 1 (1 lecture). This course prepares students to sit for the Certified Global Business Professional (CGBP) credential exam. The CGBP designation is recognized internationally as a professional credential for people who work in all fields related to international trade. This course must be taken in the last semester of any International Business program and it was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IBUS 1291 - Special Topics in International Business
Credits: 2 (1 lecture, 10 lab). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. (This course substitutes for IBUS 2280.) Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

IBUS 1300 - Global Logistics Management
Credits: 3. Global logistics, management processes, procedures, and regulations used in transportation, physical distribution, warehousing, inventory control, materials handling, packaging, plant and warehouse location, risk management, customer service, and networks for logistics, suppliers, and information. Includes decision making and case resolution techniques to solve problems and to develop logistical and information networks for supply chain management appropriate for global corporations.

IBUS 1301 - Principles of Exports
Credits: 3 (3 lecture). Export management processes and procedures. Includes governmental controls and compliance, licensing of products, documentation, commercial invoices, and traffic procedures. Emphasizes human and public relations, management of personnel, finance, and accounting procedures. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IBUS 1302 - Principles of Imports
Credits: 3 (3 lecture). Practices and processes of import management operations. Includes government controls and compliance. Emphasizes the preparation and understanding of import documents such as customs invoices, packing lists, and commercial invoices. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IBUS 1305 - Introduction to International Business and Trade
Credits: 3 (3 lecture). The techniques for entering the international marketplace. Emphasis on the impact and dynamics of sociocultural, demographic, economic, technological, and political-legal factors in the foreign trade environment. Topics include patterns of world trade, internationalization of the firm, and operating procedures of the multinational enterprise. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IBUS 1354 - International Marketing Management
Credits: 3 (3 lecture). Analysis of international marketing strategies using market trends, costs, forecasting, pricing, sourcing and distribution factors. Development of an international export/import marketing plan. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

IBUS 1357 - Economic Geography
Credits: 3 (3 lecture). A study of material management, government regulations and distribution systems throughout the world as related to economic factors regarding agriculture, manufacturing, and materials utilization. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IBUS 2280 - Cooperative Education - International Business / Trade / Commerce
Credits: 2 (1 lecture, 10 lab). 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. **Requires Departmental approval. Prerequisite: IBUS 1305; must be placed into college-level reading, college-level writing and MATH 0312 in math. **Requires Departmental approval.
IBUS 2332 - Global Business Simulation
Credits: 3 (3 lecture). A simulation of a global environment. Students will engage in business practice and theory. The simulation may include researching foreign business cultures and importing and exporting products. Emphasizes participation in all business decisions related to running a simulated company. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IBUS 2335 - International Business Law
Credits: 3 (3 lecture). A course in law as it applies to international business transactions in the global political-legal environment. Study of inter-relationships among laws of different countries and the legal effects on individuals and business organizations. Topics include agency agreements, international contracts and administrations, regulations of exports and imports, technology transfers, regional transactions, intellectual property, product liability, and legal organization. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Must complete IBUS 1301 & 1302 OR IBUS 1305.

IBUS 2339 - International Banking and Trade Finance
Credits: 3 (3 lecture). A course in international monetary systems, financial markets, flow of capital, foreign exchange, and financial institutions. Topics include export-import payments and financing the preparation of letters of credit, related shipping documentation, and electronic transfers. An introduction to multinational financial decisions, such as financing foreign investment or working capital. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

IBUS 2341 - Intercultural Management
Credits: 3 (3 lecture). Cross-cultural comparisons of management and communications processes. Emphasizes cultural geographic distinctions and antecedents that affect individual, group, and organizational behavior. May include sociocultural demographics, economics, technology, political-legal issues, negotiations, and processes of decision making in the international cultural environment. Prerequisite: IBUS 1305; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IBUS 2370 - Global Issues for Enterprise
Credits: 3 (3 lecture). Global Issues in Enterprise provides an overview of the challenges and opportunities that exist in different countries for creating social enterprise organizations. Topics include: lack of resources, lack of infrastructure, differing legal systems, cultural and social taboos on certain products or means of earning a living, corruption, lack of education as well as upcoming changes such as the impact of the Internet on education in lesser developed countries. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IMED 1301 - Digital Media
Credits: 3 (2 lecture, 4 lab). A survey of the theories, elements, and hardware/software components of digital media. Emphasis on conceptualizing and producing digital media presentations. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: ARTC 1325

IMED 1305 - Digital Media Courseware Development II
Credits: 3 (2 lecture, 4 lab). Instruction in courseware development. Topics include interactivity, branching, navigation, evaluation techniques and interface/information design using industry standard authoring software. Prerequisite: Associate Degree in Digital Communication or Departmental Approval, IMED 1316, IMED 1341.

IMED 1316 - Web Design I
Credits: 3 (2 lecture, 4 lab). Instruction in web design and related graphic design issues including mark-up languages, web sites, and browsers. Prerequisite: Prerequisites/corequisite: ARTC 1325; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IMED 1341 - Interface Design
Credits: 3 (2 lecture, 4 lab). Interface design process including selecting interfaces that are relative to a project’s content and delivery system. Emphasis on aesthetic issues such as iconography, screen composition, colors, and typography. Prerequisite: Prerequisites/corequisite: ARTC 1325 or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
IMED 1345 - Interactive Digital Media I
Credits: 3 (2 lecture, 4 lab). Exploration of the use of graphics and sound to create interactive digital media applications and/or animations using industry standard authoring software. Prerequisite: ARTC 1302/1325. Corequisite: IMED 1341.

IMED 1359 - Writing for Digital Media
Credits: 3 (2 lecture, 4 lab). Written communication for digital media environments including professional websites or other digital content. Prerequisite: Prerequisites/corequisite: ARTC 1325; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

IMED 2301 - Instructional Design
Credits: 3 (2 lecture, 4 lab). An in-depth study of the instructional design process based on learning theories, including evaluation of models and design examples. Prerequisite: Associate Degree in Digital Communication or Departmental Approval.

IMED 2309 - Internet Commerce
Credits: 3 (2 lecture, 4 lab). An overview of the Internet as a marketing and sales tool with emphasis on developing a prototype for electronic commerce. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IMED 2312 - Interactive Audio
Credits: 3 (2 lecture, 4 lab). Music and sound effects. Includes formats, working within memory budgets, interactive systems, and foley libraries. Addresses a range of practical audio-related areas. Prerequisite: Must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IMED 2313 - Project Analysis and Design
Credits: 3 (2 lecture, 4 lab). Application of the planning and production processes for digital media projects. Emphasis on copyright and other legal issues, content design and production management. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

IMED 2315 - Web Design II
Credits: 3. Mark-up language and advanced layout techniques for creating web pages. Emphasis on identifying the target audience and producing web sites, according to accessibility standards, cultural appearance, and legal issues.

IMED 2351 - Digital Media Programming
Credits: 3 (2 lecture, 4 lab). Advanced topics in digital media programming including custom scripts for data tracking. Emphasis on developing digital media programs customized to the client's needs. Prerequisite: IMED 1316 or Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

IMED 2359 - Interactive Web Elements
Credits: 3 (2 lecture, 4 lab). Production of projects using current web development tools that may incorporate dynamic data, web graphics, animation, video and audio streaming. Select and utilize web animation and graphic programs applicable to specified business conditions and applications, create and add animation to a website; stream a video segment to/from a website; and utilize World Wide Web Consortium (W3C) standards.

IMED 2371 - Content Management System (Joomla and Wordpress)
Credits: 3. An advanced class in Web Design that explores designing and developing server-side web pages that incorporate text, graphics, and other supporting elements using current technologies (content management systems) and authoring tools.

IMED 2388 - Internship - Digital Communication and Media / Multimedia
Credits: 3 (13 lab). 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. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

INCR 1302 - Physics of Instrumentation
Credits: 3 (2 lecture, 2 lab). An introduction to a simple pneumatic control loop. Introduction to pressure, temperature, level, and flow transmitters and the various transducers used in the detection of changes in process variables. This course is designed to familiarize the student with the instrumentation devices utilized in industrial automation and process control environments. Prerequisite: Prerequisite/Corequisite: ELPT 1311; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

INDS 1301 - Basic Elements of Design
Credits: 3 (2 lecture, 3 lab). A study of basic design concepts with projects in shape, line, value, texture, pattern, spatial illusion, and form. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1301 - Fundamentals of Interior Design
Credits: 3 (1 lecture, 3 lab). An introduction to the elements and principles of design, the interior design profession, and the interior design problem-solving process. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1315 - Materials, Methods and Estimating
Credits: 3 (2 lecture, 3 lab). A study of materials, methods of construction and installation, and estimating for interior design applications. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1315 - Technical Drawing for Interior Designers
Credits: 3 (2 lecture, 4 lab). An introduction to reading and preparing technical construction drawings for interior design, including plans, elevations, details, schedules, dimensions and lettering. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1301 - Color Theory and Application
Credits: 3 (2 lecture, 3 lab). A study of color theory and its application to interior design. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1301 - Commercial Design I
Credits: 3 (2 lecture, 4 lab). A study of design principles applied to furniture layout and space planning for commercial interiors. Prerequisite: IND 1313; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1301 - Fundamentals of Space Planning
Credits: 3 (2 lecture, 3 lab). The study of residential and light commercial spaces, including programming, codes, standards, space planning, drawings and presentations. Prerequisite: IND 1301, IND 1319 and IND 1311 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1301 - History, Civilization, of Interiors I
Credits: 3 (3 lecture, 1 lab). A historical survey of design in architecture, interiors, furnishings, and decorative elements from the ancient cultures through the Italian Renaissance time period. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1301 - History, Civilization, of Interiors II
Credits: 3 (3 lecture, 1 lab). A multi-cultural historical survey of design in architecture, interiors, furnishings, and decorative elements from the post-Renaissance period to present time. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1301 - History of Interiors
Credits: 3 (3 lecture, 1 lab). The course is a multi-cultural, historical survey of various styles and periods of antiquities, architecture, interiors, and furnishings with consideration of Asia, Egypt, Greece, Italy, Spain, France, post-Renaissance through the present. It offers a critical overview of the History, Civilization, of interior design, its connection to different periods and cultures, and its integral relationship with architecture and decorative arts. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 1301 - Special Topics /Interior Design
Credits: 3 (3 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Associate Degree in Interior Design or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2237 - Portfolio Presentation
Credits: 3 (2 lecture, 3 lab). A course in the preparation and presentation of a comprehensive interior design portfolio, including resume preparation, employment interview skills, and goal setting. Prerequisite: Approval of course instructor or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2264 - Practicum (or Field Experience) - Interior Design
Credits: 2 (0 lecture, 18 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.
Description of Courses

INDS 2270 - Photoshop for Interior Design
Credits: 3 (2 lecture, 6 lab). An exploration of Adobe Photoshop and its application to the practice of interior design to create visual design communication materials, renderings, and presentations. Prerequisite: IND 1317; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2271 - Digital Presentation Methods
Credits: 2. An exploration of Adobe Illustrator, Adobe InDesign, Adobe Photoshop, Google SketchUp and their application to the practice of interior design to create visual design communication materials, renderings, and presentations.

INDS 2305 - Interior Design Graphics
Credits: 3 (2 lecture, 4 lab). Skill development in computer-generated graphics and technical drawings for interior design applications. Prerequisite: IND 1319 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2307 - Textiles for Interior Design
Credits: 3 (2 lecture, 3 lab). The study of interior design textiles including characteristics, care, codes, and applications. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2310 - Kitchen and Bath Design
Credits: 2 (0 lecture, 5 lab). The study and application of the National Kitchen and Bath Association’s Guideline and Planning Standards and Safety Criteria for residential kitchens and bathrooms including Universal Design concepts. Also includes the study and selection of kitchen and bath materials, equipment and cabinetry. Computer aided kitchen and bath design software is introduced. Prerequisite: Prerequisite: IND 1349, IND 2305 and IND 2317; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2311 - Interior Environment Factors
Credits: 3 (2 lecture, 4 lab). A study of human factors affecting the interior environment, including proxemics, ergonomics, and universal design. Prerequisite: Associate Degree in Interior Design or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2313 - Residential Design I
Credits: 3 (2 lecture, 4 lab). The study of residential spaces, including the identification of client needs, programming, standards, space planning, drawings, and presentations. Prerequisite: IND 1311, IND 1341, IND 1349, IND 2330 and IND 2317; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2315 - Lighting for Interior Designers
Credits: 3 (2 lecture, 3 lab). Fundamentals of lighting design, including lamps, luminaries, lighting techniques, and applications for residential and commercial projects. Prerequisite: IND 1319 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2317 - Rendering Techniques
Credits: 3 (2 lecture, 3 lab). A study of rendering techniques for formal interior design presentation, using a variety of media. Prerequisite: IND 2321; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2321 - Presentation Drawing
Credits: 3 (2 lecture, 3 lab). An introduction to two- and three-dimensional presentations, including drawings with one- and two-point perspectives, plans, and elevations. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2325 - Professional Practices for Interior Designers
Credits: 3 (3 lecture, 1 lab). A study of business practices and procedures for interior designers, including professional ethics, project management, marketing, and legal issues. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2330 - Interior Design Building Systems
Credits: 3. An overview of building materials, mechanical systems, and construction techniques as applied to interior design. Discussion of codes, project sequencing and the interpretation of detailed working drawings.

INDS 2331 - Commercial Design II
Credits: 3 (2 lecture, 4 lab). Advanced concepts of specialized commercial interior design projects, including hospitality, corporate, retail, health care, institutional or other specialized commercial design projects. Prerequisite: Associate Degree in Interior Design or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.
INDS 2335 - Residential Design II
Credits: 3 (2 lecture, 4 lab). A comprehensive study of complex residential interior design problems, including advanced space planning, documentation, specifications, budgets, and presentation renderings. Prerequisite: Prerequisite: Associate Degree in Interior Design or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INDS 2370 - Digital Presentation Methods
Credits: 2 (2 lecture, 4 lab). An exploration of Adobe Illustrator, Adobe InDesign, Adobe Photoshop, Google SketchUp and their application to the practice of interior design to create visual design communication materials, renderings, and presentations. Prerequisite: Prerequisite: INDs 2321

INDS 2371 - Advanced Kitchen and Bath Design
Credits: 3. Kitchen and bath design students upon completion of this course demonstrate the knowledge of advanced approaches to their solutions including knowledge of NKBA Planning Guidelines for the kitchen and bath, and NKBA Access Planning Guidelines used in universal design projects. Upon completion students acquire mastery of solving problems, mastery of developing a concept and theme design, mastery of producing professional working documents, mastery of presenting the idea, and mastery of processing NKBA forms through development of an advanced kitchen project and an advanced bathroom project from inception to completion.

INDS 2386 - Internship - Interior Design
Credits: 3 (18 lab) (288 hours Work Experience). An experience external to the college for an advanced student in the specialized field involving a written agreement between the educational institution and a business or industry. Mentored and supervised by a workplace employee, the student achieves objectives that are developed and documented by the college and that are directly related to specific occupational outcomes. This may be a paid or unpaid experience. This course may be repeated if topics and learning outcomes vary. Prerequisite: Associate Degree in Interior Design or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

INEW 1340 - ASP.NET Programming
Credits: 3 (2 lecture, 4 lab). Theory of server side web programming concepts to implement solutions for common web programming tasks. Includes Basic ASP.Net web controls, user management and authentication, state management, and development of database-driven web applications. Prerequisite: ITSE 1447 or ITSE 1430; must be placed into college-level reading, writing and math.

INEW 2332 - Comprehensive Software Project: Coding, Testing, and Implementation
Credits: 3 (2 lecture, 4 lab). A comprehensive application of skills learned in previous semesters in a simulated workplace. Includes coding, testing, maintenance, and documentation of a complete software and/or hardware solution. This course may be used as a capstone course for a certificate or degree. Prerequisite: Must be placed into college-level reading, writing and math.

INEW 2418 - Web Programming Using Java Server Pages and Servlets
Credits: 4 (2 lecture, 4 lab). Web application development using Java, HTML, Java Servlets, Java Server Pages (JSPs), and a web server. Prerequisite: ITSE 1356 and ITSE 2417; must be placed into college-level reading, writing and math.

INEW 2434 - Advanced Web Programming
Credits: 3 (2 lecture, 4 lab). Web programming using industry-standard languages and data stores. Prerequisite: Must be placed into college-level reading, writing and math.
Description of Courses

INEW 2438 - Advanced Java Programming
Credits: 4 (2 lecture, 4 lab). A continuation of advanced JAVA programming techniques such as servlets and advanced graphical functions. Prerequisite: ITSE 2417 or COSC 1437 and ITSE 1356; must be placed into college-level reading, writing and math.

INEW 2475 - SharePoint Administration I

INEW 2476 – SharePoint Administration II

INMT 1311 - Computer Integrated Manufacturing
Credits: 3 (2 lecture, 3 lab). A study of the principles and application of computer integrated manufacturing. Employs all aspects of a system including but not limited to integration of material handling, manufacturing, and computer hardware and programming. Prerequisite: TECM 1301, ITSC 1309; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

INMT 1317 - Industrial Automation
Credits: 3 (2 lecture, 3 lab). A study of the applications of industrial automation systems including identification of system requirements, equipment integration, motors, controllers, and sensors. Coverage of set-up, maintenance, and testing of the automated system. Prerequisite: TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

INMT 1343 - Computer Aided Design / Computer Aided Manufacturing (CAD/CAM)
Credits: 3 (2 lecture, 3 lab). Computer-assisted applications in integrating engineering graphics and manufacturing. Emphasis on the conversion of a working drawing using computer aided design/computer aided manufacturing (CAD/CAM) software and related input and output devices to translate into machine code. Prerequisite: MCHN 1302, TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math. Corequisite: Prerequisites/Corequisite: ITSC 1309

INMT 1345 - Computer Numerical Controls
Credits: 3 (2 lecture, 3 lab). A study of numerical controlled machine operations. Emphasis on standard and computer numerical controlled (CNC) procedures for planning, preparing, and operating a computer-assisted program. Prerequisite: Prerequisites/Corequisites: TECM 1301, MCHN 1302, ENTC 1347; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

INMT 1370 - Lean Manufacturing
Credits: 3 (2 lecture, 3 lab). Study of principles of lean manufacturing - manufacturing engineering; including a systematic approach to reducing costs and lead-time. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

INMT 1371 - Materials and Applications
Credits: 3 (2 lecture, 3 lab). Introduction to metallic and non-metallic materials assessment and characterization. Examination of the selection and applications of materials, and processing characteristics on materials properties. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

INMT 1372 - Quality and Assessment
Credits: 3 (2 lecture, 3 lab). Introduction to statistical tools and techniques required for solving industrial problems and for the continuous improvement of processes. The laboratory component provides hands-on experience with modern metrology tools and techniques. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

INMT 1373 - Machine Shop Logistics
Credits: 3 (3 lecture). Study of concepts, issues, and techniques used to plan, analyze, and maximize the productivity of machine shop logistics; examination of key production planning decision making areas such as inventories, layout, capacity, and supply chain management. Particular interest will be the study of techniques and technologies for managing and optimizing the materials supply chain in a manufacturing domain. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
Description of Courses

INMT 2370 - Project Management
Credits: 3 (3 lecture). Provide principles of project management directed toward supervisory and project management duties and responsibilities in technology based organizations and the methods required to fulfill these functions. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

INRW 0100 - INRW 0410 Companion Course
 Credits: 1 (1 lecture). This course is a combined 1 hour lecture/ lab performance-based companion course designed to develop students’ critical reading and academic writing skills. Students who enroll in this course are required to enroll in INRW 0410. INRW 0100 is a companion course to INRW 0410. The content of this course is based upon the needs of the accompanying INRW 0410 course. The focus is to prepare, support, and enable students to successfully perform in INRW 0410. The course integrates complementary reading and writing assignments with special emphasis given to reasoning and responding to issues arising from class readings. Students who successfully complete this course and INRW 0410 will qualify to take INRW 0420.

INRW 0300 - Integrated Reading & Writing Course for ENGL 1301
Credits: 3 (3 lecture). A corequisite course in support of ENGL 1301: 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.

INRW 0410 - Integrated Read & Write I
Credits: 4 (3 lecture, 2 lab). This course is a combined 3 hour lecture/ 2 hour lab (1 hour technology lab & 1 hour writing lab), performance-based course designed to develop student’s critical reading and academic writing skills. The focus of the course will be on applying critical reading skills for organizing, analyzing, and retaining material and developing written work appropriate to the audience, purpose, situation, and length of the assignment. The course integrates intermediate reading skills with intermediate writing skills needed in writing a variety of academic essays and written assignments. This course is designed to prepare students for advanced integrated reading and writing and provide the framework to excel in writing intensive courses. Lab required. Students who successfully complete this course will qualify to take INRW 0420.

INRW 0420 - Integrated Read and Write II
Credits: 4 (3 lecture, 2 lab). This course is a combined 3 hour lecture/ 2 hour lab (1 hour technology lab & 1 hour writing lab), performance-based course designed to develop students critical reading and academic writing skills. The focus of the course will be on applying critical reading skills for organizing, analyzing, and retaining material and developing written work appropriate to the audience, purpose, situation, and length of the assignment. The course integrates intermediate reading skills with intermediate writing skills needed in writing a variety of academic essays and written assignments. This course is designed to prepare students for advanced integrated reading and writing and provide the framework to excel in writing intensive courses. Lab required.

INSR 1117 - Insurance Customer Service Representative
Credits: 1. Fundamental front-line customer service support for the delivery of information and quality service. Includes information about general insurance policies, terminology, and customer service procedures. May prepare students to take the licensing exam sponsored by the Texas Department of Insurance.

INSR 1191 - Special Topics in Insurance
Credits: 1 (1 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.
INSR 1205 - Personal Insurance
Credits: 2 (2 lecture). Introduction to personal loss exposures and personal insurance policies for handling these exposures including auto, homeowners, life, health, marine, and various government insurance programs. At the end of the course the student would be able to describe the types of property loss exposures, the financial consequences of a property loss, and the insurance available for each; describe liability loss exposures and the insurance available for these losses; describe human loss exposures and the life, health, and disability insurance available; and identify covered losses and calculate the amount of insurance payable in various situations. This course helps prepare for the Insurance (INS) 22 exam.

INSR 1209 - Principles of Insurance
Credits: 2 (2 lecture). Organization of insurance companies, state regulations, types of policies, and career opportunities in the field. Topics include concepts of risk, insurance protection, and prohibited practices. Discuss the differences between the types of insurance companies; describe the state regulatory environment for the insurance industry; explain the concept of risk and risk management; differentiate between the types of insurance coverage; and describe the professional career opportunities in the insurance industry. This course helps prepare for the Insurance (INS) 21 exam. Corequisite: INSR 1205

INSR 1217 - Insurance Customer Service Representative
Credits: 2 (2 lecture). Preparers participants to work in insurance agencies as entry-level customer service representatives. Includes information about policies, terminology, and customer service procedures. May prepare students to take the licensing exam sponsored by the Texas Department of Insurance. Define insurance terms and concepts; identify and explain violations of insurance regulations; and explain applicable policy provisions.

INSR 1301 - Commercial Insurance
Credits: 3 (3 lecture). Introduction to personal loss exposures and personal insurance policies for handling these exposures including auto, homeowners, life, health, marine, and various government insurance programs. Describe the types of property loss exposures, the financial consequences of a property loss, and the insurance available for each; describe liability loss exposures and the insurance available for these losses; describe human loss exposures and the life, health, and disability insurance available; and identify covered losses and calculate the amount of insurance payable in various situations. This course helps prepare for the Insurance (INS) 22 exam.

INSR 1371 - Sales and Marketing/Multiline Insurance Sales
Credits: 3 (3 lecture). For agents who market property and/or casualty insurance. Includes prospecting and presentation, types of coverage, identifying client needs, terminology, and analyzing homeowners coverage. Also covers sales transitions, analyzing automobile and specialized coverage, tax implications, loss ratios and agent responsibilities. Basic telemarketing including selling strategies, prompts, and communication skills. Development of a positive attitude to create a personal selling style. A study of marketing, sales techniques, promotions, and advertising theories as applied to the insurance industry.

INSR 2340 - Multiline Insurance Sales and Marketing
Credits: 3 (3 lecture). Prospecting and presentation, types of coverage, identifying client needs, terminology, and analyzing homeowners coverage. Includes information related to sales transitions, analyzing automobile and specialized coverage, tax implications, loss ratios and agent responsibilities.

INTC 1312 - Instrumentation and Safety
Credits: 3 (3 lecture). An overview of industries employing instrument technicians. Includes instrument safety techniques and practices as applied to the instrumentation field. Prerequisite: Must be placed into college-level reading, writing and math.

INTC 1343 - Application of Industrial Automatic Controls
Credits: 3 (3 lecture). Automatic process control including measuring devices, analog and digital instrumentation, signal transmitters, recorders, alarms, controllers, control valves, and process and instrument drawings. Includes connection and troubleshooting of loops. Prerequisite: INTC 1441 or Departmental Approval; must be placed into college-level reading, writing and math.

INTC 1356 - Instrumentation Calibration
Credits: 3 (2 lecture, 4 lab). Techniques for configuring and calibrating transmitters, controllers, recorders, valves, and valve positioners. Prerequisite: Must be placed into college-level reading, writing and math.

INTC 1441 - Principles of Automatic Control
Credits: 4 (3 lecture, 3 lab). Basic measurements, automatic control systems and design, closed loop systems, controllers, feedback, control modes, and control configurations. Prerequisite: CETT 1403, INTC 1312, INTC 1456, MATH 1314 or Departmental Approval; must be placed into college-level reading, writing and math.
Description of Courses

INTC 2330 - Instrumentation Systems Troubleshooting
Credits: 3 (2 lecture, 4 lab). Techniques for troubleshooting instrumentation systems in a process environment. Includes troubleshooting upsets in processes Prerequisite: INTC 1414 or Departmental Approval; must be placed into college-level reading, writing and math.

INTC 2336 - Distributed Control and Programmable Logic Controls
Credits: 3 (2 lecture, 2 lab). An overview of distributed control systems including configuration of programmable logic controllers, smart transmitters, and field communicators. Functions of digital systems in a process control environment. Prerequisite: INTC 1343 or Department Approval; must be placed into college-level reading, writing and math.

INTC 2370 - Linking Process Control Systems
Credits: 3 (2 lecture, 4 lab). An introduction to linking controls systems, including Distributed Control Systems and Programmable Logic Controllers, using OPC (Ole for Process Control) server systems. Prerequisite: INTC 1441, Must be placed into college-level reading, writing and math.

INTC 2380 - Cooperative Education - Instrumentation Technology / Technician
Credits: 3 (1 lecture, 14 lab). 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. Prerequisite: INTC 1343 or Department Approval; must be placed into college-level reading, writing and math.

ITCC 1309 - CISCO Voice and Data Cabling
Credits: 3 (2 lecture, 4 lab). Introduces the physical aspects of CISCO voice and data network cabling and installation; skills development in reading network design documentations, part list setup and purchase, pulling and mounting cable, cable management, choosing wiring closets and patch panel installation and termination, installing jacks and testing cable. Prerequisite: Must be placed into college-level reading, writing and math.

ITCC 1408 - Introduction to Voice over Internet Protocol (VOIP)
Credits: 4 (2 lecture, 4 lab). Basic concepts of voice over internet protocol (VoIP). Focuses on technology integration of and data transmission in network communications. Prerequisite: ITCC 1401

ITCC 1414 - CCNA 1: Introduction to Networks
Credits: 4 (2 lecture, 4 lab). This course covers networking architecture, structure, and functions; introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations to provide a foundation for the curriculum. Prerequisite: Prerequisites: _Must be placed into college-level reading, writing and math.

ITCC 1440 - CCNA 2: Routing and Switching Essentials
Credits: 4 (2 lecture, 4 lab). Describes the architecture, components, and basic operation of routers and explains the basic principles of routing and routing protocols. It also provides an in-depth understanding of how switches operate and are implemented in the LAN environment for small and large networks. Prerequisite: Prerequisites: _ITCC 1414; must be placed into college-level reading, writing and math.

ITCC 2359 - Advanced Voice Over Internet Protocol (VOIP)
Credits: 3 (2 lecture, 4 lab). Voice Over Internet Protocol (VOIP) architecture, components, and functionality. Includes VOIP signaling, call control, voice dial plans, configuring voice interfaces, dial peers, and quality of service (QoS) technologies. Prerequisite: Prerequisite: _ITCC 1401; must be placed into college-level reading, writing and math.

ITCC 2412 - CCNA 3: Scaling Networks
Credits: 4 (2 lecture, 4 lab). CCNA R&S: Scaling Networks (ScaN) covers the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches using advanced protocols. Prerequisite: Prerequisites: _ITCC 1414; must be placed into college-level reading, writing and math.

ITCC 2413 - CCNA 4: Connecting Networks
Credits: 4 (2 lecture, 4 lab). WAN technologies and network services required by converged applications in a complex network; enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Prerequisite: Prerequisites: _ITCC 1414, ITCC 2412; must be placed into college-level reading, writing and math.

ITCC 2441 - CCNA Security
Credits: 4 (3 Lecture, 3 Lab). Overall security processes with particular emphasis on hands-on skills in the following areas: security policy design and management; security technologies, products, and solutions; and secure router design, installation, configuration, and maintenance; AAA and VPN implementation using routers and firewalls.
Description of Courses

ITCC 2454 - CCNP R & S ROUTE
Credits: 4 (2 lecture, 4 lab). How to implement, monitor, and maintain routing services in an enterprise network. How to plan, configure, and verify the implementation of complete enterprise LAN and WAN routing solutions using a range of routing protocols in IPv4 and IPv6 environments. Configuration of secure routing solutions to support branch offices and mobile workers.

ITCC 2455 - CCNP R & S SWITCH
Credits: 4 (2 lecture, 4 lab). How to implement, monitor, and maintain switching in converged enterprise campus networks. How to plan, configure, and verify the implementation of complex enterprise switching solutions. How to secure integration of VLANs, WLANs, voice and video into campus networks.

ITCC 2456 - CCNP R & S TSHOOT
Credits: 4 (2 lecture, 4 lab). How to monitor and maintain complex, enterprise and switched IP networks. Skills learned include the planning and execution of regular network maintenance, as well as support and troubleshooting using technology-based processes and best practices based on systematic and industry recognized approaches.

ITMT 1305 - Configuring Advanced Window Server Operating Systems
Credits: 3 (2 lecture, 4 lab). Advanced configuration tasks required to deploy, manage, and maintain a Windows Server operating system infrastructure. Additional topics include fault tolerance, certificate services, and identity federation. Prerequisite: must be placed into college-level reading, writing and math.

ITMT 1340 - Managing and Maintaining a Microsoft Windows Server 2003 Environment
Credits: 3 (2 lecture, 4 lab). Managing accounts and resources, maintaining server resources, monitoring server performance, and safeguarding data in a Microsoft Windows Server 2003 environment. Prerequisite: ITMT 1300; must be placed into college-level reading, writing and math.

ITMT 1350 - Implementing , Managing , and Maintaining a Microsoft Windows Server 2003 Network Infrastructure Network Services
Credits: 3 (2 lecture, 4 lab). Implementing routing; implementing, managing, and maintaining Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Windows Internet Name Service (WINS); securing Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates; implementing a network access infrastructure by configuring the connections for remote access clients, and managing and monitoring network access. Prerequisite: Prerequisite: ITMT 1300; must be placed into college-level reading, writing and math.

ITMT 1357 - Administering a Windows Server Operating System
Credits: 3 (2 lecture, 4 lab). A study of administrative tasks needed to maintain a Windows Server operating system including user and group management, network assess and data security. Topics include how to implement, configure and manage Group Policy infrastructure, Group Policy objects (GPOs) using links, security groups, WMI filters, loopback processing, preference targeting and troubleshooting policy application. Prerequisite: must be placed into college-level reading, writing and math.

ITMT 1358 - Windows Client Operating System
Credits: 3 (2 lecture, 4 lab). A study of Windows operating system; installation, configuration, and troubleshooting; file management; users accounts and permissions; security features; network connectivity; setup of external devices; optimization and customization; and deployment of application, with hands-on experience. Prerequisite: Must be placed into college-level reading, writing and math.

ITMT 1371 - Windows 7 Configuration
Credits: 3 (2 lecture, 4 lab). A study of Windows 7 operating system; installation, configuration, and troubleshooting; file management; users accounts and permissions; security features; network connectivity; setup of external devices; optimization and customization; and deployment of application, with hands-on experience. Prerequisite: ITNW 1358: Network+ or ITNW 1425 or Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.
### Description of Courses

**ITMT 2301 - Windows Server 2008 Network Infrastructure Configuration**
Credits: 3 (2 lecture, 4 lab). A course in Windows Server 2008 networking infrastructure to include installation, configuration, and troubleshooting of Internet Protocol (IP) addressing, network services and security. Prerequisite: ITMT 1371, ITMT 2302 (70-640); must be placed into college-level reading, writing and math.

**ITMT 2302 - Windows Server 2008 Active Directory Configuration**
Credits: 3 (2 lecture, 4 lab). A study of Active Directory Service on Windows Server 2008. Concepts of resource management within an enterprise network environment. Prerequisite: ITMT 1371; must be placed into college-level reading, college-level writing and MATH 0312 in math.

**ITMT 2304 - Implementing an Advanced Server Infrastructure**
Credits: 3 (2 lecture, 4 lab). This course covers managing and maintaining a server infrastructure, planning and implementing a highly available enterprise infrastructure, planning and implementing a server virtualization infrastructure, and designing and implementing identity and access solutions. Prerequisite: Must be placed into college-level reading, writing and math.

**ITMT 2305 - Designing and Implementing a Server Infrastructure**
Credits: 3 (2 lecture, 4 lab). This course covers planning and deploying a server infrastructure; designing and implementing network infrastructure services; designing and implementing network access services and Active Directory infrastructure. Prerequisite: Must be placed into college-level reading, writing and math.

**ITMT 2351 - Windows Server 2008 Server Administrator**
Credits: 3 (2 lecture, 4 lab). Knowledge and skills for the entry-level server administrator or information technology (IT) professional to implement, monitor and maintain Windows Server 2008 servers. Prerequisite: ITMT 2301; must be placed into college-level reading, college-level writing and MATH 0312 in math. ITNW138

**ITMT 2374 - Storage Area Network (SAN)**
Credits: 3 (2 lecture, 4 lab). Foundational knowledge necessary to perform essential job duties in a Storage Area Network (SAN) environment. Students learn the architecture and components of a SAN and the technology underpinning that make SANs work. Prerequisite: must be placed into college-level reading, writing and math.

**ITMT 2403 - Administering a Microsoft SQL Server Database**
Credits: 3 (2 lecture, 4 lab). In-depth coverage of the knowledge and skills required to install, configure, administer, and troubleshoot the client-server database management system of Microsoft SQL Server databases. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

**ITNW 1308 - Implementing & Supporting Client Operating Systems**
Credits: 3 (2 Lecture, 4 lab). The fundamentals of managing and configuring network clients. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

**ITNW 1313 - Computer Virtualization**
Credits: 3 (2 lecture, 4 lab). Implement and support virtualization of clients of servers in a networked computing environment. This course explores installation, configuration, and management of computer virtualization workstation and servers. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

**ITNW 1351 - Fundamentals of Wireless LANs**
Credits: 3 (2 Lecture, 4 ab). Designing, planning, implementing, operating, and troubleshooting wireless LANs (WLANs). Includes WLAN design, installation, and configuration; and WLAN security issues and vendor interoperability strategies. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

**ITNW 1358 - Network+**
Credits: 3 (2 lecture, 4 lab). Prepares individuals for a career as a Network Engineer in the Information Technology support industry. Includes the various responsibilities and tasks required for service engineer to successfully perform in a specific environment. Prepares individuals to pass the Computing Technology Industry Association (CompTIA) Network+ certification exam. Prerequisite: ITNW 1425 or Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math. Corequisite: MATH 1314

**ITNW 1380 - Cooperative Education - Computer Systems Networking & Telecommunications**
Credits: 3. 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.
Description of Courses

**ITNW 1425 - Fundamentals of Networking Technologies**
Credits: 4 (2 lecture, 4 lab). Instruction in networking technologies and their implementation. Topics include the OSI reference model, network protocols, transmission media, and networking hardware and software. Prerequisite: College ready for English and math (i.e. no remediation needed) and high school computer literacy or equivalent.

**ITNW 1492 - Special Topics in Computer Systems Networking and Telecommunications**
Credits: 4 (4 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to technology or occupation and relevant to the professional development of the student. Prerequisite: Prerequisite: Department Approval

**ITNW 2335 - Network Troubleshooting and Support**
Credits: 3 (2 Lecture, 4 lab). Troubleshoot and support networks with emphasis on solving real world problems in a hands-on environment. Topics include troubleshooting and research techniques, available resources, and network management hard/software. Prerequisite: ITMT 2301 with a minimum grade of C or better or ITCC 2408 with a minimum grade of C or better or ITSY 2300 with a minimum grade of C or better

Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0312 in math. Corequisite: Department Approval

**ITNW 2380 - Cooperative Education - Computer Systems Networking and Telecommunications**
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

**ITNW 2432 - UNIX Network Integration**
Credits: 4 (2 lecture, 4 lab). Installation, configuration, management, and support of a network infrastructure in a large computing environment that uses a version of the UNIX server operating system. Includes connectivity requirements, network services, and applications including file, print, database, messaging, proxy server, firewall, Dynamic Host Configuration Protocol, Network Time Protocol, Domain Name Service, and Internet Protocol Version 6 configuration and use. Prerequisite: ITSC 1458 Must be college-level in reading, writing and math.

**ITSC 1301 - Introduction to Computers**
Credits: 3 (2 lecture, 2 lab). Overview of computer information systems. Introduces computer hardware, software, procedures, and human resources. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

**ITSC 1302 - Computer Control Language**
Credits: 3 (2 lecture, 4 lab). Skill development in the use of system control language on mid-range/mainframe computers. Topics include command formats, file management, job scheduling, resource management, and utilities. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

**ITSC 1307 - UNIX Operating System I**
Credits: 3 (2 lecture, 4 lab). A study of the UNIX operating system including multi-user concepts, terminal emulation, use of system editor, basic UNIX commands, and writing script files. Topics include introductory systems management concepts. Prerequisite: Prerequisite/Corequisite: COSC 1436 or Department Approval; must be placed into college-level reading, writing and math.

**ITSC 1309 - Integrated Software Applications I**
Credits: 3 (2 lecture, 2 lab). Integration of applications from popular business productivity software suites. Instruction in embedding data, linking and combining documents using word processing, spreadsheets, databases, and/or presentation media software. Emphasis is on developing end-user proficiency skills for the workplace. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
Description of Courses

ITSC 1316 - LINUX Installation and Configuration  
Credits: 3 (2 lecture, 4 lab). Open-source Linux operating system. Includes Linux installation, basic administration, utilities and commands, upgrading, networking, security, and application development. Emphasizes hands-on setup, administration, and management of Linux. Also covers maintaining and securing reliable Linux systems. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

ITSC 1319 - Internet / Web Page Development  
Credits: 3 (2 lecture, 4 lab). Instruction in the use of Internet concepts and the introduction to web page design and web site development. Prerequisite: BCIS 1405 or ITSC 1309 or ITSC 1301; must be placed into college-level reading, writing and math.

ITSC 1321 - Intermediate PC Operating Systems  
Credits: 3 (2 lecture, 4 lab). Continued study in advanced installation and configuration troubleshooting, advanced file management, memory and storage management. Update peripheral device drivers, and use of utilities to increase system performance. Prerequisite: BCIS 1405 or ITSC 1309; must be placed into college-level reading, writing and math.

ITSC 1342 - Shell Programming  
Credits: 3 (2 lecture, 4 lab). Reading, writing, and debugging shell scripts. Development of scripts to automate frequently executed sequences of commands. Covers conditional logic, user interaction, loops, and menus to enhance the productivity and effectiveness of the user. Intended for programmers who are familiar with operating environments and reading and writing various shell scripts. Prerequisite: ITSC 1307; must be placed into college-level reading, writing and math.

ITSC 1358 - UNIX System Administration I  
Credits: 4 (2 lecture, 4 lab). Provide new system administrators the basics of administering UNIX workstations. Students will perform basic system administration tasks, such as installing a standalone system, adding users, backing up and restoring file systems, and adding new printer support. Emphasis on the procedures needed to perform these system administration tasks. Introduces the concept of the system and disk management. Prerequisite: ITSC 1307; must be placed into college-level reading, writing and math.

ITSC 1380 - Cooperative Education - Computer and Information Sciences, General  
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

ITSC 1425 - Personal Computer Hardware  
Credits: 4 (2 lecture, 4 lab). Current personal computer hardware including assembly, upgrading, setup, configuration, and troubleshooting. Prerequisite: Must be placed into college-level reading, writing and math.

ITSC 1447 - UNIX System Administration II  
Credits: 4 (2 lecture, 4 lab). Provides students with the necessary skills to administer UNIX workstations in a network environment. System security features will be presented. Prerequisite: ITSC 1458; must be placed into college-level reading, writing and math.

ITSC 1458 - UNIX System Administration I  
Credits: 4. Basic UNIX administration. Includes installing a standalone system, adding users, backing up and restoring file systems, and adding printer support. Perform system administration tasks. Introduces the concept of system and disk management.

ITSC 2321 - Integrated Software Applications II  
Credits: 3 (2 lecture, 2 lab). Continued study of computer applications from business productivity software suites. Instruction in embedding data and linking and combining documents using word processing, spreadsheets, databases, and/or presentation media software. Prerequisite: ITSC 1309 or BCIS 1405 or Department Approval; must be placed into college-level reading, writing and math.

ITSC 2339 - Personal Computer Help Desk Support  
Credits: 3 (2 lecture, 4 lab). Diagnosis and solution of user hardware and software related problems with on-the-job projects in either a Help Desk lab or in short-term assignments for local business. Topics include planning, diagnostic techniques, problem resolution, call tracking, staffing, training, knowledge engineering, work orders, service level agreements, metrics, telephony, scheduling, management issues, customer expectation, selling your services.
Description of Courses

ITSC 2425 - Advanced Linux
Credits: 4 (2 lecture, 4 lab). Provides instruction in advance open-source Linux operating system. Develops directory services for clients, support users remotely, and install and configure network services. Prerequisite: ITSC 1458, ITSC 1447

ITSE 1301 - Web Design Tools
Credits: 3 (2 lecture, 4 lab). Designing and publishing Web documents. Includes graphic design issues and exploration of tools available for creating and editing Web documents. Prerequisite: BCIS 1405, ITSC 1309 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0312 in math.

ITSE 1306 - PHP Programming
Credits: 3 (2 lecture, 4 lab). Introduction to PHP including the design of web-based applications, arrays, strings, regular expressions, file input/output, e-mail and database interfaces, stream and network programming, debugging, and security. Prerequisite: IMED 2309, IMED 2351; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0312 in math.

ITSE 1345 - Introduction to Oracle SQL
Credits: 3 (2 lecture, 4 lab). An introduction to the design and creation of relational databases using Oracle. Topics include storing, retrieving, updating, and displaying data using Structured Query Language (SQL). Prerequisite: COSC 1436, ENGL 1301, and MATH 1314; must be placed into college-level reading, writing and math.

ITSE 1346 - Database Theory and Design
Credits: 3 (2 lecture, 4 lab). Introduction to the analysis and utilization of data requirements and organization intro normalized tables using the four normal forms of database design. Prerequisite: BCIS 1405 or ITSC 1309; must be placed into college-level reading, writing and math.

ITSE 1350 - System Analysis and Design
Credits: 3 (2 lecture, 2 lab). Comprehensive introduction to the planning, design, and construction of computer information systems using the systems development life cycle and other appropriate design tools. Prerequisite: COSC 1436 or Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and college-level math.

ITSE 1380 - Cooperative Education - Computer Programming/Programmer, General
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

ITSE 1391 - Special Topics in Computer Programming: Oracle 10g New Features
Credits: 3 (2 lecture, 4 lab). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: ITSE 1345; must be placed into college-level reading, writing and math.

ITSE 1402 - Computer Programming-Swift I
Credits: 4 (2 lecture, 4 lab). Introduction to computer programming with emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files. Prerequisite: Must be placed into college-level reading, writing and math.

ITSE 1430 - Introduction to C# Programming
Credits: 4 (2 lecture, 4 lab). Data types, control structures, functions, syntax, and semantics of the language, classes, class relationships, and exception handling. Prerequisite: Prerequisite: COSC 1437 or Department Approval; must be placed into college-level reading, writing and math.

ITSE 1432 - Introduction to Visual Basic.Net Programming
Credits: 4 (2 lecture, 4 lab). Introduction to Visual Basic.NET (VB.NET) including data types, control structures, functions, syntax, and semantics of the language, classes, class relationships, and exception handling. Prerequisite: COSC 1437 or Department Approval; must be placed into college-level reading, writing and math.
ITSE 1447 - Programming with Visual Basic.Net
Credits: 4 (2 lecture, 4 lab). Designing and developing enterprise applications using Microsoft Visual Basic.Net in the Microsoft.Net Framework. Includes reference types, class relationships, polymorphism, operators overloading, and creating and handling exceptions. Prerequisite: ITSE 1432; must be placed into college-level reading, writing and math.

ITSE 1456 - Extensible Markup Language (XML)
Credits: 4 (2 lecture, 4 lab). Introduction of skills and practices related to Extensible Markup Language (XML). Includes Document Type Definition (DTD), well-formed and valid XML documents, XML schemas, and Extensible Style Language (XSL). Prerequisite: BCIS 1405, ITSC 1309, or ITSE 1301; must be placed into college-level reading, writing and math.

ITSE 2309 - Database Programming
Credits: 3 (2 lecture, 4 lab). Database development using database programming techniques emphasizing database structures, modeling, and database access. Prerequisite: Departmental approval

ITSE 2313 - Web Authoring
Credits: 3 (2 lecture, 4 lab). Instruction in designing and developing web pages that incorporate text, graphics, and other supporting elements using current technologies and authoring tools. Prerequisite: ARTC 1325, IMED 1316; must be placed into college-level reading, writing and math.

ITSE 2333 - Implementing a Database on Microsoft SQL Server
Credits: 3. Skills development in the implementation of a database solution using Microsoft SQL Server client/server database management system.

ITSE 2337 - Assembly Language Programming
Credits: 3 (2 lecture, 4 lab). Comprehensive coverage of low-level computer operations and architecture. Includes design, development, testing, implementation, and documentation of programs; language syntax; data manipulation; input/output devices and operations; and file access. Prerequisite: COSC 1436, ITSC 1302, or ITSE 1402; must be placed into college-level reading, writing and math.

ITSE 2339 - Advanced Computer Programming
Credits: 3 (2 lecture, 4 lab). Advanced programming techniques including file access methods, data structures, modular programming, program testing and documentation. This course covers theory and application of the methodology of Object-Oriented Analysis and Design, emphasizing static and dynamic system decomposition into objects and classes. Students may use either C++, C# or Java for the project’s programming language.

ITSE 2402 - Intermediate Web Programming
Description of Courses

ITSE 2417 - JAVA Programming
Credits: 4 (2 lecture, 4 lab). Introduction to Java programming with object-orientation. Emphasis is on the fundamental syntax and semantics of Java for applications and web applets. Prerequisite: COSC 1437; must be placed into college-level reading, writing and math.

ITSE 2421 - Object-Oriented Programming
Credits: 4 (2 lecture, 4 lab). Introduction to object-oriented programming. Emphasis on the fundamentals of structured design with classes, including development, testing, implementation, and documentation. Includes object-oriented programming techniques, classes, and objects. Prerequisite: COSC 1437; must be placed into college-level reading, writing and math.

ITSE 2434 - Advanced Visual Basic.NET Programming
Credits: 4 (2 lecture, 4 lab). Continuation of Visual Basic.NET programming using advanced features. Prerequisite: ITSE 1447; must be placed into college-level reading, writing and math.

ITSE 2444 - Oracle Database Structure and Data Warehousing
Credits: 4 (2 lecture, 4 lab). A practical application course for modeling and designing an Oracle data warehouse using case studies. Prerequisite: ITSE 2456; must be placed into college-level reading, writing and math.

ITSE 2453 - Advanced C# Programming
Credits: 4 (2 lecture, 4 lab). Continuation of C# programming using advanced features of the .NET Framework Class Library. Prerequisite: ITSE 1430 and ITSE 1356; must be placed into college-level reading, writing and math.

ITSE 2456 - Oracle Database Administration I
Credits: 4 (2 lecture, 4 lab). Fundamentals of the tasks and functions required of a database administrator using Oracle. Prerequisite: ITSE 1345; must be placed into college-level reading, writing and math. Corequisite: ITSC 1307

ITSE 2458 - Oracle Database Administration II
Credits: 4 (2 lecture, 4 lab). A continuation of Oracle Database Administration I. Topics include recovery procedures, logical backups, standby database capabilities, and performance tuning of the Oracle Server. Common performance problems and the use of diagnostic tools to troubleshoot and optimize throughout will be discussed. Prerequisite: ITSE 2456; must be placed into college-level reading, writing and math.

ITSE 2471 - Mobile Application Programming I
Credits: 4. Install and configure development tools, identify and follow different phase of mobile application development life cycle, use appropriate programming language and API to develop apps for one or more mobile device platforms, and test and deploy apps using emulator and physical devices.

ITSE 2472 - Mobile Application Programming II
Credits: 4. Develop mobile apps focusing on features, such as Location Services API, SQLite for data intensive problems, Connectivity for the Cloud, Media and Camera for multimedia experience, and Voice Typing, Speech, and multi-touch for input.

ITSW 1391 - Special Topics in Data Processing Technology / Technician
Credits: 3 (2 lecture, 4 lab). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into college-level reading, writing and math.

ITSW 2334 - Advanced Spreadsheets
Credits: 3 (2 lecture, 2 lab). Advanced techniques for developing and modifying spreadsheets. Includes macros and data analysis functions. Prerequisite: ITSC 1309 or BCIS 1405; must be placed into college-level reading, writing and math.

ITSW 2337 - Advanced Database
Credits: 3 (2 lecture, 2 lab). Advanced concepts of database design and functionality. Prerequisite: ITSC 1309 or BCIS 1405; must be placed into college-level reading, writing and math.

ITSY 1300 - Fundamentals of Information Security
Credits: 3 (2 lecture, 4 lab). An introduction to information security including vocabulary and terminology, ethics, the legal environment, and risk management. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. The importance of appropriate planning, policies and controls is also discussed. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
ITSY 1342 - Information Technology Security
Credits: 3 (2 lecture, 4 lab). Instruction in security for network hardware, software, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses. Prerequisite: ITMT 2301; must be placed into college-level reading, writing and math.

ITSY 1371 - Security+
Credits: 3 (2 lecture, 4 lab). Introduction to security systems that will provide the student a solid foundation of understanding the different computer security concepts, functions, and applications. The course maps to CompTIA Security+ exam objectives which cover general security concepts, communication security, and infrastructure security, basics of cryptography, and operations/organizational security. Upon completion of this course, the student will be prepared to sit for the CompTIA Security+ certification exam.

ITSY 1491 - Special Topics in Computer Systems Network & Telecommunications
Credits: 4. Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the information security technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

ITSY 2300 - Operating System Security
Credits: 3 (2 lecture, 4 lab). Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats and monitor network security implementations. Use best practices to configure operating systems to industry security standards. Prerequisite: ITSY 1342; must be placed into college-level reading, writing and math.

ITSY 2330 - Intrusion Detection
Credits: 3 (2 lecture, 4 lab). Computer information systems security monitoring, intrusion detection, and crisis management. Includes alarm management, signature configuration, sensor configuration, and troubleshooting components. Emphasizes identifying, resolving, and documenting network crises and activating the response team. Prerequisite: Prerequisite: ITSY 1342; must be placed into college-level reading, writing and math.

ITSY 2345 - Network Defense and Countermeasures
Credits: 3 (2 lecture, 4 lab). This is a practical application and comprehensive course that includes the planning, design, and construction of a complex network that will sustain an attack, document events, and mitigate the effects of the attack. This is a capstone course.

ITSY 2401 - Firewalls and Network Security
Credits: 4. Identify elements of firewall design, types of security threats and responses to security attacks. Use Best Practices to design, implement, and monitor a network security plan. Examine security incident postmortem reporting and ongoing network security activities.

ITSY 2443 - Computer System Forensics
Credits: 4 (3 lecture, 3 lab). In-depth study of system forensics including methodologies used for analysis of computer security breaches. Gather and evaluate evidence to perform postmortem analysis of a security breach. Prerequisite: Prerequisite: ITSY 1342; must be placed into college-level reading, writing and math.

ITSY 2471 - Cyber Competitions
Credits: . This course provides an in-depth understanding of how to effectively protect computer networks. Students will learn the tools and penetration testing methodologies used by ethical hackers. Prerequisite: Departmental Approval

JAPN 1300 - Beginning Japanese Conversation I
Credits: 3 (3 lecture). An introductory Japanese course that emphasizes listening comprehension and speaking skills. Reading and writing may be done as reinforcement to oral communication skills. The course is slower-paced and less comprehensive than Japanese 1411. It is highly recommended for students without previous experience in the Japanese language. This course is not open to students whose first language is Japanese. Generally, does not transfer as foreign language credit but may transfer as elective credit.

JAPN 1411 - Beginning Japanese I
Credits: 4 (3 lecture, 2 lab). Introduction to Japanese language and culture. Development of basic skills in listening comprehension, speaking, reading, writing, and cultural awareness. Course includes vocabulary building, conversation and grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)
Description of Courses

JAPN 1412 - Beginning Japanese II
Credits: 4 (3 lecture, 2 lab). Continuation of JAPN 1411. Further development of listening comprehension, speaking, reading, and writing skills, and cultural awareness. More advanced grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: JAPN 1411 or satisfactory score on an advanced placement examination or at least 2 years of high school Japanese within the last two years. Must be placed into college - level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite).

JAPN 2311 - Intermediate Japanese I
Credits: 3 (3 lecture). In-depth study of Japanese grammar. Oral practice based on selected readings on culture and current events. Continuing practice in reading and writing in Hiragana and Katakana, as well as in Kanji (Chinese five characters). Prerequisite: JAPN 1412 or equivalent Must be placed into college - level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

JAPN 2312 - Intermediate Japanese II
Credits: 3 (3 lecture). Continuation of JAPN 2311. Extensive practice in conversation and composition with emphasis on reading and writing in Kanji. Prerequisite: JAPN 2311 or equivalent Must be placed into college - level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

KINE 1100 - Golf
Credits: 1 (1 lecture, 2 activity). The student will learn the basic fundamental skills of golf and become familiar with the basic rules, tournament play and terminology involved with beginning golf.

KINE 1103 - Yoga
Credits: 1 (1 lecture, 2 activity). This class will acquaint the student with history, development, branches and practices of yoga with emphasis on physical practice of individual postures, sets of postures, breathing techniques, meditation and relaxation techniques.

KINE 1105 - Jogging
Credits: 1 (1 lecture, 2 activity). The student will learn proper and safe walking/jogging/running techniques to begin a cardiovascular training program and will learn the basic physiological principles for distance walking/jogging/running.

KINE 1106 - First Aid
Credits: 3 (3 lecture). 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.

KINE 1146 - Beginning Bowling
Credits: 1 (1 lecture, 2 activity). This course includes everything the beginning bowler needs to know about the game of bowling: rules, regulations, and techniques. In addition to the basics of bowling, this course attempts to give each student a better understanding of the elements involved in the game and enhance his or her enjoyment and performance of the number one indoor participant lifetime sport in the United States.

KINE 1164 - Introduction to Physical Fitness and Wellness
Credits: 1 (1 lecture, 2 activity). This course will provide an overview of the lifestyle necessary for fitness and health. Students will participate in physical activities and assess their fitness status. Students will be introduced to proper nutrition, weight management, cardiovascular health, flexibility, and strength training. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing. INRW 0420

KINE 1301 - Foundations of Kinesiology
Credits: 3 (3 lecture). The purpose of this course is to provide students with an introduction to human movement that includes the historical development of physical education, exercise science, and sport. This course offers the student both an introduction to the knowledge base, as well as, information on expanding career opportunities. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

KINE 1304 - Personal/Community Health
Credits: 3 (3 lecture). 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. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

KINE 1306 - First Aid
Credits: 3 (3 lecture). 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.
Description of Courses

KINE 1338 - Concepts of Physical Fitness
Credits: 3 (3 lecture). 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.

KINE 1346 - Drug Use & Abuse
Credits: 3 (3 lecture). 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.

KINE 2111 - Weight Training & Conditioning
Credits: 1 (1 lecture, 2 activity). Basic fundamental skills and techniques of a strength and conditioning program. Emphasis is placed on correct procedures and use of equipment.

KINE 2113 - Individual Fitness Training
Credits: 1 (1 lecture, 2 activity). Provides opportunity to accomplish fitness objectives at own pace. Some knowledge of concepts of fitness and weight training recommended.

KINE 2115 - Weight Training and Conditioning II
Credits: 1 (1 lecture, 2 activity). Emphasis is placed on acquiring advanced training techniques for improving muscular strength, including competitive lifting skills. Prerequisite: Weight training experience is required.

KORE 1411 - Beginning Korean I
Credits: 4 (3 lecture, 2 lab). Fundamental skills in listening comprehension, speaking, reading, and writing. Includes basic vocabulary, grammatical structures, and culture. Core Curriculum Course. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

KORE 1412 - Beginning Korean II
Credits: 4 (3 lecture, 2 lab). Continuation of fundamental skills in listening comprehension, speaking, reading, and writing. Includes basic vocabulary, grammatical structures, and culture. Core Curriculum Course. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

KORE 2311 - Intermediate Korean I
Credits: 3 (3 lecture). In-depth study of Korean grammar. Oral practice based on selected readings on culture and current events. Continuing practice in reading and writing in Korean. Prerequisite: KORE 1412 or equivalent. Must be placed into college level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

KORE 2312 - Intermediate Korean II
Credits: 3 (3 lecture). Continuation of KORE 2311. Extensive practice in conversation and composition with emphasis on reading and writing in Korean. Prerequisite: KORE 2311 or equivalent Must be placed into college level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

LANG 1311 - Beginning Foreign Language I
Credits: 3. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 1411 is utilized

LANG 1312 - Beginning Foreign Language II
Credits: 3. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 1412 is utilized.

LANG 1411 - Beginning Foreign Language I
Credits: 4. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 1411 is utilized

LANG 1412 - Beginning Foreign Language II
Credits: 4. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 1412 is utilized.
Description of Courses

LANG 1511 - Beginning Foreign Language I
Credits: 5. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 1411 is utilized.

LANG 1512 - Beginning Foreign Language II
Credits: 5. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 1412 is utilized.

LANG 2311 - Intermediate Foreign Language I
Credits: 3. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 2311 is utilized.

LANG 2312 - Intermediate Foreign Language II
Credits: 3. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 2312 is utilized.

LANG 2411 - Intermediate Foreign Language I
Credits: 4. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 2311 is utilized.

LANG 2412 - Intermediate Foreign Language II
Credits: 4. This is a state-approved course prefix for posting transfer credit of a foreign language course where there is no home equivalent. Transfer credit with the LANG prefix is utilized in HCC degree plans in the same way as home foreign language courses with the number 2312 is utilized.

LBRA 1191 - Information Literacy, Student Inquiry and Libraries
Credits: 1 (1 lecture). An introduction to the nature, relevance, varieties, availability, and uses of information accessible in libraries and elsewhere, with special emphasis on processes of inquiry and self-directed learning in social and academic contexts.

LEAD 1370 - Workforce Leadership and Critical Thinking Skills for Student Success
Credits: 3 (3 lecture, 0 lab). A study of the development of leadership skills and critical thinking strategies that promote employment readiness, retention, advancement, and promotion for student success.

LGLA 1303 - Legal Research
Credits: 3 (3 lecture). This course provides a working knowledge of the fundamentals of effective legal research. Topics include law library techniques, computer assisted legal research, citation forms, briefs, and court opinion discussions. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 1305 - Legal Writing
Credits: 3 (3 lecture). This course provides a working knowledge of the fundamentals of effective legal writing. Topics include briefs, legal memoranda, case and fact analysis, citation forms, and legal writing styles. Prerequisite: LGLA 1303; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 1344 - Texas Civil Litigation
Credits: 3 (3 lecture). Fundamental concepts and procedures of Texas civil litigation with emphasis on the paralegal’s role. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 1345 - Civil Litigation
Credits: 3 (3 lecture). This course presents fundamental concepts and procedures of civil litigation with emphasis on the paralegal’s role. Topics include pretrial, trial, and post trial phases of litigation. Prerequisite: LGLA 1344; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 1351 - Contracts
Credits: 3 (3 lecture). This course presents fundamental concepts of contract law with emphasis on the paralegal’s role. Topics include formation, performance, and enforcement of contracts under the common law and the Uniform Commercial Code. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

LGLA 1353 - Wills, Trusts and Probate Administration
Credits: 3 (3 lecture). This course presents fundamental concepts of the law of wills, trusts, and probate administration with emphasis on the paralegal's role. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 1355 - Family Law
Credits: 3 (3 lecture). This course presents fundamental concepts of family law with emphasis on the paralegal role. Topics include formal and informal marriages, divorce, annulment, marital property, and the parent-child relationship. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 1370 - Pro Doc for Paralegals
Credits: 3 (3 lecture). The Pro Doc class in Paralegal Technology will include instruction using the automated legal document assembly computer software. The software generates a finished work product for Texas Legal Practitioners. Pro Doc certification is also available for students after passing an exam offered by Pro Doc. Prerequisite: LGLA 1303; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 1380 - Cooperative Education - Legal Assistant / Paralegal
Credits: 3 (1 lecture, 19 lab). 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. Prerequisite: LGLA 1303 and LGLA 1344; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 2303 - Torts and Personal Injury Law
Credits: 3 (3 lecture). This course presents fundamental concepts of tort law with emphasis on the paralegal role. Topics include intentional torts, negligence, and strict liability. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 2307 - Law Office Management
Credits: 3 (3 lecture). This course presents the fundamentals of principles and structure of management, administration, and substantive systems in the law office including law practice technology as applied to paralegals. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 2309 - Real Property
Credits: 3 (3 lecture). This course presents fundamental concepts of real property law with emphasis on the paralegal's role. Topics include the nature of real property, rights and duties of ownership, land use, voluntary and involuntary conveyances, and the recording of and searching for real estate documents. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 2311 - Business Organizations
Credits: 3 (3 lecture). This course presents basic concepts of business organizations with emphasis on the paralegal's role. Topics include law of agency, sole proprietorships, forms of partnerships, corporations, and other emerging business entities. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 2313 - Criminal Law and Procedure
Credits: 3 (3 lecture). This course introduces the criminal justice system including procedures from arrest to final disposition, principles of federal and state law, and the preparation of pleadings and motions. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

LGLA 2315 - Oil and Gas Law
Credits: 3 (3 lecture). This course presents fundamental concepts of oil and gas law including the relationship between landowners and oil and gas operators, government regulation, and documents used in the industry. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

LMGT 1170 - Certified Logistics Assistant
Credits: 1 (1 lecture, 1 lab). This course satisfies the requirements for a student to take the national Manufacturing Skill Standards Council (MSSC) test for certification as a Certified Logistics Associate. Major topics include understanding the life cycle of global chain logistics, the logistics environment and familiarization with different material handling equipment, introduction to safety principles and safe equipment handling, quality control principles, workplace communications, teamwork and problem solving. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

LMGT 1193 - Special Topics in Logistics and Materials Management
Credits: 1 (1 lecture). An overview of Workplace Essentials, Supply Chain Management, Transportation Management, Warehouse Management and Computer Systems utilizing SAP ERP. Prerequisites: Students must be in the last semester of completing the requirements for either a certificate or an AAS degree in Logistics and Global Supply Chain Management. Students with a background in Logistics must have at least one year experience in the field. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

LMGT 1270 - Equipment Operation
Credits: 2 (1 lecture, 2 lab). This course provides students with skills to demonstrate proficiency in the use of equipment used in material handling. Topics include forklift truck safety principles and driving, lifting and delivery proficiency with the forklift. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

LMGT 1271 - Certified Logistics Technician
Credits: 2 (2 lecture). Students who have successfully completed the first level logistics associate course are prepared for the second level certification. The focus of the course is on product receiving, storage order processing, packaging and shipment, inventory control, evaluation of transportation modes and dispatch and tracking. This second course is a second level certification from the Manufacturing Skills Standards Council, (MSSC). These are industry led nationally validated skills standards. The assessment for certification will be at the conclusion of the course. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

LMGT 1319 - Introduction to Business Logistics
Credits: 3 (3 lecture). A systems approach to managing activities associated with traffic, transportation, inventory management and control, warehousing, packaging, order processing, and materials handling. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0306 in math.

LMGT 1321 - Introduction to Materials Handling
Credits: 3 (3 lecture). Introduces the concepts and principles of materials management to include inventory control and forecasting activities. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

LMGT 1323 - Domestic and International Transportation Management
Credits: 3 (3 lecture). An overview of the principles and practices of transportation and its role in the distribution process. Emphasis on the physical transportation systems involved in the United States as well as on global distribution systems. Topics include carrier responsibilities and services, freight classifications, rates, tariffs, and public policy and regulations. Also includes logistical geography and the development of skills to solve logistical transportation problems and issues. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

LMGT 1325 - Warehouse and Distribution Center Management
Credits: 3 (3 lecture). Emphasis on physical distribution and total supply chain management. Includes warehouse operations management, hardware and software operations, bar codes, organizational effectiveness, just-in-time manufacturing, continuous replenishment, and third party. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.
LMGT 1345 - Economics of Transportation and Distribution
Credits: 3 (3 lecture). A study of the basic economic principles and concepts applicable to transportation and distribution. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

LMGT 1349 - Materials Requirement Planning
Credits: 3 (3 lecture). A study of materials requirement planning that includes net change versus regenerative systems, lot sizing, and the time sharing of dependent demand. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

LMGT 2288 - Internship: Logistics and Materials Management
Credits: 2 (12 lab). 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. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

LMGT 2334 - Principles of Traffic Management
Credits: 3 (3 lecture). A study of the role and functions of a transportation traffic manager within a commercial or public enterprise. Includes training in rate negotiation, carrier and mode selection, carrier service evaluation, quality control, traffic pattern analysis, documentation for domestic and international shipments, claims, hazardous materials movement, and the state, federal, and international environments of transportation. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

LMGT 2389 - Internship: Logistics and Materials Management
Credits: 3 (1 lecture, 17 lab). 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 as applicable to maritime transportation logistics. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

MATH 0309 - Introductory Algebra
Credits: 3 (3 lecture). Topics include real numbers, introduction to Logic, polynomials, basic factoring, linear equations, linear models, percentage models, order of operations, set operations, and an introduction to other topics which may include linear and quadratic modelling and math for financial management. A departmental final examination must be passed with a score of 60% or more in order to pass the course. Prerequisite: TSIA ABE level 5 or 6; TSIA Math Score 336 – 347 with Elementary Algebra Score 5 – 15 and Intermediate Algebra

Diagnosis Score 0 – 6; Math 0106: Pass with “C” or better.

MATH 0314 - Intermediate Algebra
Credits: 3 (3 lecture, 1 lab). Topics include factoring techniques, radicals, algebraic fractions, absolute value, complex numbers, graphing linear equations and inequalities, quadratic equations, systems of equations, graphing quadratic equations and an introduction to functions. Emphasis is placed on algebraic techniques needed in order to successfully complete MATH 1314: College Algebra. A departmental final examination must be passed with a score of 60% or more in order to pass this course. Prerequisite: Prerequisite: Must be placed into MATH 0312 (or higher) or completion of MATH 0308.

MATH 1314 - College Algebra
Credits: 3 (3 lecture). Topics include quadratics, polynomial, rational, logarithmic and exponential functions, system of equations, progression, sequences and series, matrices and determinants. A departmental final examination will be given in this course. Core Curriculum Course. Prerequisite: Prerequisite: Must be placed into college-level mathematics or completion of MATH 0312.

MATH 1316 - Plane Trigonometry
Credits: 3 (3 lecture). Topics include solutions of triangles, Euler identity, graphing of trigonometric and inverse trigonometric functions, identities, trigonometric equations and an introduction to vector analysis. Core Curriculum Course. Prerequisite: MATH 1314; must be placed into college-level mathematics.

MATH 1324 - Mathematics for Business & Social Sciences
Credits: 3 (3 lecture). A survey of finite mathematics and its application to problems of business and the natural and social sciences. Topics include set theory, probability, an introduction to matrices, linear programming, and an introduction to statistics. Core Curriculum Course. Prerequisite: MATH 1314; must be placed into college-level mathematics.

MATH 1325 - Calculus for Business & Social Sciences
Credits: 3 (3 lecture). A survey of differential and integral calculus including the study of functions and graphs from a calculus viewpoint as applied to problems in business and the natural and social sciences. Core Curriculum Course. Prerequisite: MATH 1314; must be placed into college-level mathematics.

MATH 1332 - Contemporary Mathematics
Credits: 3 (3 lecture). Mathematics for Liberal Arts is a course designed for liberal and fine arts, non-mathematics, non-science, and non-business majors. The course provides students with an appreciation of the History, Civilization, art, and beauty of mathematics in the world around us. Topics include an examination of sets with applications, probability, and statistics, financial management, mathematical modeling, and fundamentals of geometry and its application. Core Curriculum Course. Prerequisite: Prerequisite: Must be placed into college-level mathematics or completion of MATH 0312.

MATH 1342 - Elementary Statistical Methods
Credits: 3 (3 lecture). Topics include histograms, probability, binomial and normal distributions and their applications, correlation and prediction, and tests of statistical hypotheses. Core Curriculum Course. Students who have completed MATH 1342 successfully should NOT take MATH 1442. Students will Not receive credit for both MATH 1342 and MATH 1442. Core curriculum course Prerequisite: Prerequisite: MATH 1314; must be placed into college-level mathematics.

MATH 1350 - Mathematics for Teachers I
Credits: 3 (3 lecture). Concepts of sets, functions, numeration systems, number theory, and properties of the natural numbers, integers, rational, and real numbers systems with an emphasis on problem-solving and critical thinking. Field of Study Course. Core Curriculum Course. Prerequisite: Prerequisite: MATH 1314 or equivalent; must be placed into college-level mathematics.

MATH 1351 - Mathematics for Teachers II
Credits: 3 (3 lecture). Concepts of geometry, probability, and statistics, as well as applications of the algebraic properties of real numbers to concepts of measurement with an emphasis on problem solving and critical thinking. Field of Study Course. Core Curriculum Course. Prerequisite: Prerequisite: MATH 1314 or equivalent; must be placed into college-level mathematics.
MATH 1442 - Stat II: Statistics for Non-STEM Majors
Credits: 4 (4 lecture). Topics include probability, binomial and normal distributions, and their applications, random sampling, statistical inference, estimation, confidence intervals, and tests of statistical hypotheses, and analysis of variance. Students who have completed MATH 1342 successfully should NOT take MATH 1442. Students will Not receive credit for both MATH 1342 and MATH 1442.
Prerequisite: Must pass MATH 0311 with a grade of C or higher.

MATH 2305 - Discrete Mathematics
Credits: 3 (3 lecture). Topics selected from logic, set theory, combinatories and graph theory. Prerequisite: MATH 2318

MATH 2318 - Linear Algebra
Credits: 3 (3 lecture). Topics include systems of linear equations, vector spaces, matrices, linear mappings, and determinants. Core Curriculum Course. Prerequisite: MATH 2413

MATH 2320 - Differential Equations
Credits: 3 (3 lecture). Topics include initial value problems for first order and linear second order equations, Picard iteration, series solutions, boundary value problems, Laplace transforms and numerical methods. Core Curriculum Course. Prerequisite: Prerequisite: MATH 2413

MATH 2412 - Pre-Calculus Math
Credits: 4 (4 lecture). Topics include elementary theory of functions and equations, analytic geometry, vectors, introductory logic, mathematical induction, sequences and finite series. Core Curriculum Course. Prerequisite: Prerequisite: MATH 1314 and MATH 1316 or Department Approval

MATH 2413 - Calculus I
Credits: 4 (4 lecture). An integrated study of differential calculus with analytic geometry including the study of functions, limits, continuity, differentiation, and an introduction to integration. Core Curriculum Course. Prerequisite: Prerequisite: MATH 2412 or consent of the Department Chair

MATH 2414 - Calculus II
Credits: 4 (4 lecture). Integral calculus including discussions of transcendental functions, applications of integration, techniques and improper integrals, infinite series, Taylor series, plane curves, and polar coordinates. Core Curriculum Course. Prerequisite: Prerequisite: MATH 2413

MATH 2415 - Calculus III
Credits: 4 (4 lecture). A survey of advanced topics in calculus including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, Jacobians, divergence and Stokes theorems. Core Curriculum Course. Prerequisite: Prerequisite: MATH 2414

MCHN 1302 - Print Reading for Machining Trades
Credits: 3 (3 lecture). A study of blueprints for machining trades with emphasis on machine drawings. Use of sketching techniques to create pictorial and multiple-view drawings. Offered as an 8 week hybrid course. Co-requisite Classes introduced include TECM 1301 Industrial Mathematics, MCHN 1338 Basic Machine Shop. This class should be taken before MCHN 1320 Precision Tools & Measurements. Prerequisite: Prerequisites: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: TECM 1301; MCHN 1338

MCHN 1305 - Metals and Heat Treatment
Credits: 3 (2 lecture, 2 lab). Designed for students going into the workforce as manual machinists, tool designers, or heat treat operators. Topics include properties of metals and heat treatment of metals. Prerequisite: TECM 1301, MCHN 1302; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

MCHN 1308 - Basic Lathe
Credits: 3 (1 lecture, 7 lab). An introduction to the common types of lathes. Emphasis on basic parts, nomenclature, lathe operations, safety, machine mathematics, blueprint reading, and theory. Prerequisite: Prerequisites: TECM 1301, MCHN 1302, ENTC 1347; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MCHN 1313 - Basic Milling Operations
Credits: 3 (1 lecture, 7 lab). An introduction to the common types of milling machines, part nomenclature, basic machine operations and procedures, safety, machine mathematics, blueprint reading, and theory. Prerequisite: Prerequisite Classes introduced include TECM 1301 Industrial Mathematics, MCHN 1302 Blueprint Reading for Machine Trades, and MCHN 1338 Basic Machine Shop. Prerequisite: Prerequisites/Corequisites: TECM 1301, MCHN 1302, MCHN 1338, ENTC 1347; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

MCHN 1320 - Precision Tools and Measurement
Credits: 3 (3 lecture, 1 lab). 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. Offered as an 8 week hybrid course. Lecture/Lab combination more accurately reflects class. Prerequisite class introduced - MCHN 1302 Print Reading for Machine Trades. Prerequisite: MCHN 1302, TECM 1301 Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

MCHN 1338 - Basic Machine Shop I
Credits: 3 (2 lecture, 4 lab). An introductory course that assists the student in understanding the machinist occupation in industry. The student begins by using basic machine tools such as the lathe, milling machine, drill press, power saw, and bench grinder. Machine terminology, theory, math, part layout, and bench work using common measuring tools is included. Emphasis is placed on shop safety, housekeeping, and preventative maintenance. Prerequisite: Prerequisites: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: TECM 1301, MCHN 1302, MCHN 1320

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

MCHN 1370 - Lean Manufacturing - Machinist
Credits: 3 (2 lecture, 3 lab). Study of principles of lean manufacturing for machinists; including a systematic approach to reducing costs and lead-time. Prerequisite: TECM 1301, MCHN 1302, ENTC 1347; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MCHN 2303 - Fundamentals of Computer Numerical Controls (CNC) Machine Controls
Credits: 3 (2 lecture, 3 lab). An introduction to G and M codes (RS274-D) necessary to program Computer Numerical Controlled (CNC) machines. Prerequisite: TECM 1301, MCHN 2433, MCHN 2437; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

MCHN 2331 - Operation of CNC Turning Centers
Credits: 3 (2 lecture, 3 lab). Continuation of Fundamentals of CNC Machine Controls with an emphasis on turning centers. Prerequisite: MCHN 1302, TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math. Corequisite: Prerequisites/Corequisite: ITSC 1309

MCHN 2333 - Advanced Lathe Operations
Credits: 3 (1 lecture, 7 lab). A study of advanced lathe operations. Identify and use of special cutting tools and support tooling, such as form tools, carbide inserts, taper attachments, follower and steady rest. Close tolerance machining required. Prerequisite: MCHN 1308, TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

MCHN 2334 - Operation of CNC Machining Centers
Credits: 3 (1 lecture, 6 lab). CNC operations with an emphasis on machining centers. Prerequisite: ENTC 1347, HYDR 1345, MCHN 1308, MCHN 1313, MCHN 1320, MCHN 1338, MCHN 1345, MCHN 2344. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

MCHN 2335 - Advanced CNC Machining
Credits: 3. Advanced CNC operation with an emphasis on programming and operations of machining and turning centers.

MCHN 2337 - Advanced Milling Operations
Credits: 3 (1 lecture, 7 lab). An advanced study of milling machine operations. Identification and/or use of milling cutters and support tooling. Prerequisite: MCHN 1313, TECM 1301; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

MCHN 2341 - Advanced Machining I
Credits: 3 (2 lecture, 4 lab). A study of advanced lathe and milling operations. Emphasis on advanced cutting operations of the lathe and milling machines, including the use of special tooling, bench assembly, and materials identification. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: MCHN 2333, MCHN 2337

MCHN 2344 - Computerized Numerical Control Programming
Credits: 3 (1 lecture, 6 lab). An introduction to G and M codes (RS274-D) necessary to program Computer Numerical Controlled (CNC) machines. Prerequisite: ENTC 1347, MCHN, 1303, MCHN 1338, MCHN 1345. Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
Description of Courses

MCHN 2447 - Specialized Tools and Fixtures
Credits: 4 (3 lecture, 2 lab). An advanced course in the designing and building of special tools, such as jigs, fixtures, punch press dies, and molds. Machining and assembling of a production tool using conventional machine shop equipment. Application of production tool theory, care, and maintenance. Prerequisite: TECM 1301, MCHN 1302, MCHN 1320; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

MDCA 1165 - Practicum (or Field Experience) - Medical/Clinical Assistant
Credits: 1 (7 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MDCA 1205 - Medical Law and Ethics
Credits: 2 (2 lecture). Instruction in principles, procedures, and regulations involving legal and ethical relationships among physicians, patients, and medical assistants in ambulatory care settings. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MDCA 1213 - Medical Terminology
Credits: 2 (2 lecture). A study and practical application of a medical vocabulary system. Includes structure, recognition, analysis, definition, spelling, pronunciation, and combination of medical terms from prefixes, suffixes, roots, and combining forms. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MDCA 1254 - Medical Assisting Credentialing Exam Review
Credits: 2 (1 lecture, 2 lab). A preparation for one of the National Commission for Certifying Agencies (NCCA) recognized credentialing exams. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: Corequisite: MDCA 1360 or Department Approval

MDCA 1264 – Practicum (or Field Experience) - Medical / Clinical Assistant
Credits: 2 (15 hours externship per week). A health-related work-based external learning experience that enables the student to apply specialized occupational theory, skills and concepts relating to specific occupational outcomes. Practical workplace training is supported by an individualized learning plan developed by the employee, college and student. Direct supervision is provided by the clinical (workplace) professional. Prerequisite: Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MDCA 1291 - Special Topics in Medical Assistant : Clinical Protocols in Healthcare
Credits: 2 (2 lecture). Topics in the course address clinical protocols for healthcare management for families in acute illness when rendering advice and coordination of care in patient-center mode home/ambulatory care settings. Prerequisite: Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MDCA 1310 - Medical Assistant Interpersonal and Communication Skills
Credits: 3 (3 lecture). Emphasis on the application of basic psychological principles and the study of behavior as they apply to special populations. Topics include procedures for self-understanding and social adaptability in interpersonal communication with patients and co-workers in an ambulatory care setting. Prerequisite: Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MDCA 1313 - Medical Terminology
Credits: 3 (3 lecture). A study and practical application of a medical vocabulary system. Includes structure, recognition, analysis, definition, spelling, pronunciation, and combination of medical terms from prefixes, suffixes, roots, and combining forms. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MDCA 1321 - Administrative Procedures
Credits: 3 (2 lecture, 3 lab). Medical office procedures including appointment scheduling, medical records creation and maintenance, interpersonal communications, bookkeeping tasks, coding, billing, collecting, third party reimbursement, credit arrangements, and computer use in the medical office. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

**MDCA 1343 - Medical Insurance**
Credits: 3 (2 lecture, 2 lab). Emphasizes medical office coding procedures for payment and reimbursement by patient or third party payers for ambulatory care settings. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

**MDCA 1352 - Medical Assistant Laboratory Procedures**
Credits: 3 (2 lecture, 4 lab). Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

**MDCA 1372 - Electronic Medical Record Documentation for Scribes**
Credits: 3 (2 lecture, 3 lab). This course addresses the basics of history and physical documentation in the electronic medical record. Provides practical application utilizing dictation and/or activities developed for the scribe industry in an ambulatory care setting. Topics include fundamentals of the Electronic Medical Record related to billing and coding. The course prepares students for hands-on skills of medical scribing. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

**MDCA 1391 - Special Topics in Medical Assisting**
Credits: 3 (2 lecture, 3 lab). This course addresses the basics of History, Civilization, and physical documentation in the electronic medical record. Provides practical application utilizing dictation and/or activities developed for the scribe industry in an ambulatory care setting. Topics include fundamentals of the EMR related to billing and coding. The course prepares students for hands-on skills of medical scribing. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

**MDCA 1409 - Anatomy and Physiology for Medical Assistants**
Credits: 4 (4 lecture). Emphasis on normal human anatomy and physiology of cells, tissues, organs, and systems with overview of common pathophysiology. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

**MDCA 1417 - Procedures in a Clinical Setting**
Credits: 4 (3 lecture, 3 lab). Emphasis on patient-centered assessment, examination, and treatment as directed by physician. Includes vital signs, collection and documentation of patient information, asepsis, office clinical procedures, and other treatments as appropriate for the ambulatory care settings. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

**MDCA 1448 - Pharmacology and Administration of Medications**
Credits: 4 (2 lecture, 4 lab). Instruction in concepts and application of pharmacological principles. Focuses on drug classifications, principles and procedures of medication administration, mathematical systems and conversions, calculation of drug problems, and medico-legal responsibilities of the medical assistant. Prerequisite: Must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

**MDCA 1471 - Ambulatory Care and Emergency Procedures**
Credits: 4 (3 lecture, 2 lab). An introduction to Basic Health Profession skills including, CPR, OSHA safety guidelines, universal health precautions; emergency preparedness and response to basic medical emergencies; perform client monitoring skills; and document health care. Prerequisite: Prerequisite: Department Approval; must be placed into college-level reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

**METL 1301 - Introduction to Metallurgy**
Credits: 3 (3 lecture). A study of refining mechanical and physical properties of ferrous and nonferrous materials including: the theory of alloys, heat treatment, and testing. Prerequisite: Must be placed into GUST 0342 in reading, ENGL1310 in writing and MATH 0312 in math.

**METL 1313 - Introduction to Corrosion**
Credits: 3 (3 lecture). An introduction to internal, external, and atmospheric corrosion including terminology, causes of common problems in industry, and generic remedies such as cathodic protection, protective coatings, material selection, and chemical treatments. Prerequisite: Must be placed into GUST 0342 in reading, ENGL1310 in writing and MATH 0312 in math.
Description of Courses

METL 2405 - Atmospheric Corrosion Control
Credits: 4 (3 lecture, 3 lab). An in-depth study of atmospheric corrosion control by coatings which includes surface preparation, coating selection, coating application, inspection, and failure analysis. Prerequisite: Must be placed into GUST 0342 in reading, ENGL1310 in writing and MATH 0312 in math.

METL 2441 - Cathodic Protection
Credits: 4 (3 lecture, 3 lab). An in-depth study of corrosion control of buried or submerged metallic structures utilizing both impressed and galvanic cathodic protection systems. Emphasis on regulatory compliance for pipelines and underground storage tanks. Prerequisite: Must be placed into GUST 0342 in reading, ENGL1310 in writing and MATH 0312 in math.

MLAB 1101 - Introduction to Clinical Laboratory Science
Credits: 1 (1 lecture, 1 lab). Introduction to medical laboratory science, structure, equipment, and philosophy. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 1127 - Coagulation
Credits: 2 (1 lecture, 4 lab). A course in coagulation theory, procedures, and practical applications. Includes laboratory exercises which rely on commonly performed manual and semiautomatic methods. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 1166 - Practicum (or Field Experience) - Clinical/Medical Laboratory Technician
Credits: 1 (10 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

MLAB 1167 - Practicum (or Field Experience) - Clinical/Medical Laboratory Technician
Credits: 1 (10 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

MLAB 1201 - Urinalysis and Body Fluids
Credits: 2 (1 lecture, 4 lab). An introduction to urinalysis and body fluid analysis, including the anatomy and physiology of the kidney, and physical, chemical and microscopic examination of urine, cerebrospinal fluid, and other body fluids.. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 1211 - Parasitology/Mycology
Credits: 2 (1 lecture, 4 lab). A study of the taxonomy, morphology, and pathogenesis of human parasites and fungi, including the practical application of laboratory procedures. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 1250 - Immunology/Serology
Credits: 2 (1 lecture, 4 lab). An introduction to the theory and application of basic immunology, including the immune response, principles of antigen-antibody reactions, and the principles of serological procedures. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 1266 - Practicum (or Field Experience) - Clinical/Medical Laboratory Technician
Credits: 2 (15 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

MLAB 1267 - Practicum (or Field Experience) - Clinical/Medical Laboratory Technician
Credits: 2 (15 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

MLAB 1270 - Hematology I
Credits: 2 (1 lecture, 4 lab). Introduction to the theory and practical application of routine and special hematology procedures, both manual and automated, red blood cells and white blood cells maturation sequences, and normal and abnormal morphology and associated diseases. This course is the first part of a two-part course and concentrates on red cell disorders. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 1271 - Hematology II
Credits: 2 (1 lecture, 4 lab). Introduction to the theory and practical application of routine and special hematology procedures, both manual and automated, red blood cells and white blood cells maturation sequences, and normal and abnormal morphology and associated diseases. This course is the first part of a two-part course and concentrates on white blood cell disorders. Prerequisite: MLAB 1270; must be placed into college-level reading, writing and math.
MLAB 1371 - Registry Review
Credits: 3 (3 lecture). 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. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 2232 - Seminar in Medical Laboratory Technology
Credits: 2 (4 lab). Designed to reinforce didactic information with laboratory methodologies and to allow exploration of advanced techniques in medical laboratory technology. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 2238 - Advanced Topics in Medical Laboratory Technician/Assistant
Credits: 2 (1 lecture, 2 lab). This course examines the integration of all areas of the clinical laboratory and correlates laboratory test data with diagnostic applications and pathophysiology using critical thinking skills. Prerequisite: Must be placed into college-level reading, writing and math.

MLAB 2264 - Practicum V (or Field Experience) - Clinical / Medical Laboratory Technician
Credits: 2 (14 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Department Approval; must be placed into college-level reading, writing and math.

MLAB 2270 - Clinical Chemistry I
Credits: 2 (1 lecture, 4 lab). An introduction to the principles and procedures of various tests performed in Clinical Chemistry. Presents the physiological basis for the test, the principle and procedure for the test, and the clinical significance of the test results, including quality control and normal values. Also includes basic chemical laboratory technique, chemical laboratory safety, electrolytes and acid-base balance, enzymes, cardiac, pancreatic, and liver function, vitamins and endocrinology. Prerequisite: MLAB 2270; must be placed into college-level reading, writing and math.

MLAB 2271 - Clinical Chemistry II
Credits: 2 (1 lecture, 4 lab). An introduction to the principles and procedures of various tests performed in Clinical Chemistry. Presents the physiological basis for the test, the principle and procedure for the test, and the clinical significance of the test results, including quality control and normal values. Also includes basic chemical laboratory technique, chemical laboratory safety, electrolytes and acid-base balance, enzymes, cardiac, pancreatic, and liver function, vitamins and endocrinology. Prerequisite: MLAB 2270; must be placed into college-level reading, writing and math.

MLAB 2331 - Immunohematology
Credits: 3 (2 Lecture, 4 lab). A study of blood antigens and antibodies. Performance of routine blood banking procedures, including blood group and Rh typing, antibody screens, antibody identification, cross matching, elution, and absorption techniques. Presents quality control, basic laboratory technique and safety. Includes the principles, procedures and clinical significance of test results in genetics, blood group systems, pre-transfusion testing, adverse effects of transfusions, donor selection and components, and hemolytic disease of the newborn. Prerequisite: MLAB 1235; must be placed into college-level reading, writing and math.

MLAB 2434 - (Clinical) Microbiology
Credits: 4 (3 lecture, 4 lab). Instruction in the theory, practical application, and pathogenesis of clinical microbiology, including collection, setup, identification, susceptibility testing, and reporting procedures. Prerequisite: BIOL 2120 and BIOL 2320; must be placed into college-level reading, writing and math.

MLSC 1210 - Military Leadership I
Credits: 2 (2 lecture). Open to all students. No military commitment is required. Principles of effective leadership; reinforcement of self-confidence through participation in physically and mentally challenging training with upper division ROTC students; development of communication skills to improve individual performance and group interaction. Relate ethical values to the effectiveness of leadership. Survival skills and self-defense. Cooperative program with the University of Houston Army ROTC department. Prerequisite: Contact UH Army ROTC

MLSC 1220 - Military Leadership II
Credits: 2 (2 lecture). Continuation of MLSC 1210. Cooperative program with the University of Houston Army ROTC department. Prerequisite: MLSC 1210
MLSC 2210 - Military Leadership Development I
Credits: 2 (2 lecture). Characteristics of leadership, problem analysis, decision making, oral presentations, first aid, small unit tactics, land navigation, basic radio communication, marksmanship, fitness training, rappelling. Fitness training required three times per week in addition to class and lab. Cooperative program with the University of Houston Army ROTC department. Prerequisite: Prerequisite: MLSC 1220

MLSC 2220 - Military Leadership Development II
Credits: 2 (2 lecture). Continuation of MLSC 2210. Cooperative program with the University of Houston Army ROTC department. Prerequisite: Prerequisite: MLSC 2210

MRKG 1302 - Principles of Retailing
Credits: 3 (3 lecture). Introduction to the retailing environment and its relationship to consumer demographics, trends, and traditional/nontraditional retailing markets. The employment of retailing techniques and the factors that influence modern retailing. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 1311 - Principles of Marketing
Credits: 3 (3 lecture). Introduction to the marketing functions: identification of consumer and organizational needs; explanation of economic, psychological, sociological, and global issues; and description and analysis of the importance of marketing research. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 1313 - Public Relations
Credits: 3 (3 lecture). Exploration of theories, techniques, and processes of public relations including means of influencing methods of building good will, analysis of media, obtaining publicity, and implementation of public relations programs. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 1370 - Enterprise Mindset
Credits: 3 (3 lecture). Enterprise Skills provides an overview of the crucial skills needed for individuals to excel at developing both for profit and not-for profit (social) enterprise ventures. All the pertinent skills will be covered, including action oriented activities to provide students with skills necessary to succeed. Topics will include: creativity, experimentation, risk-taking, self-reliance, character, self-leadership, growth mindset, action orientation, persistence, resourcefulness, collaboration and empathy. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 1391 - Special Topics in Business Marketing and Marketing Management
Credits: 3 (3 lecture). Sports and Entertainment Marketing introduces the basic principles of marketing, economic impact, the History, Civilization, of sports and entertainment, careers, as well as legal and business risks involved in the industry. Students will also learn characteristics and buying behaviors of sports consumers as well as entertainment consumers Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2312 - e-Commerce Marketing
Credits: 3. Explore electronic tools utilized in marketing; focus on marketing communications in developing customer relationships.

MRKG 2333 - Principles of Selling
Credits: 3 (3 lecture). Overview of the selling process. Identification of the elements of the communication process between buyers and sellers. Examination of the legal and ethical issues of organizations which affect salespeople. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2348 - Marketing Research and Strategies
Credits: 3 (3 lecture). A simulated marketing environment for experience in marketing decision-making. Provides practical experiences in analyzing marketing cases. Includes dynamic interrelationships among marketing price, channels of distribution, promotion, and product responsibility. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

MRKG 2349 - Advertising and Sales Promotion
Credits: 3 (3 lecture). Integrated marketing communications. Includes advertising principles and practices. Emphasizes multi-media of persuasive communication including buyer behavior, budgeting, and regulatory constraints. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2370 - Creativity and Innovation
Credits: 3 (3 lecture). Creativity and Innovation will introduce the concepts of creativity and how those concepts spur innovation and the economy. Processes for the development of individual and organizational creativity will be covered as well as importance of innovation in economic communities, strategies for systematic development of innovative products/services/ideas, and topics related to using innovation in marketing to create demand, drive growth and build new industries. Prerequisite: MRKG 1311; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2371 - Services Marketing
Credits: 3 (3 lecture). An analysis of the principles, methods and problems of marketing for both professional and consumer services. A study of competition, customer service, services design, pricing, services promotion and distribution strategies. Prerequisite: Prerequisite: MRKG 1311; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2372 - Consumer Behavior
Credits: 3 (3 lecture). A study of buyer motives, reference groups, social class, culture, and family and social interrelationships are examined. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2373 - Services Promotion
Credits: 3 (3 lecture). Principles and practices of services promotion including public relations, image advertising, proposal writings, sales presentation design, media planning, public relations campaign planning, lobbying, crisis management, positioning, services selling and event planning are discussed. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2374 - Marketing Case Studies
Credits: 3 (3 lecture). A study of marketing problems and challenges through the use of case histories and actual marketing situations involving advertising, prices, distribution, product selection, client or consumer behavior, marketing training, market segmentation and international marketing. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2375 - Social Enterprise
Credits: 3 (3 lecture). Social Enterprise is a comprehensive overview of the important aspects of enterprise as related to social needs and the development of not-for-profit organizations. Topics will include: the development of enterprise skills related to the creation of not-for-profit social organizations such as fund-raising, public affairs, analyses of social needs (market assessment for social interests); organizational planning, marketing and leadership for the social organization, building community support, social media strategy and other topics related to not-for-profit social organizations. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2376 - Enterprise Opportunity Analysis
Credits: 3 (3 lecture). A comprehensive overview of all aspects of opportunity analysis, including how to differentiate a good idea from a lucrative idea, how to analyze current and future markets for products/services, how to develop marketing and operations strategies based on the analyses. The course will culminate in an Enterprise Plan (similar to a business plan, but with more emphasis on analysis for innovation, strategies for taking action and being flexible as the market changes. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2377 - Financial Management/Budgeting for Enterprise Marketing
Credits: 3 (3 lecture). Financial Management/Budgeting for Enterprise Marketing provides a comprehensive overview of the budgeting needs and processes of financial management that relate specifically to marketing the start-up enterprise (profit or not-for-profit). Enterprises have different financial needs and issues related directly to the development of innovation. This course will teach the students how to market and manage an enterprise will little or no funds, as well as options for obtaining capital with which to launch new ventures. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
MRKG 2378 - Franchises
Credits: 3 (3 lecture). Franchising is a comprehensive course that explores all aspects of utilizing the franchise model for developing a new venture. The pros and cons of the franchising model are explored. The financial requirements and risks, the legal pitfalls and obligations of franchises, and the process for expanding into franchises (for both franchisee and franchisor) are explored. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2380 - Cooperative Education - Marketing /Marketing Management, General
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval and MRKG 1311; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRKG 2381 - Cooperative Education - Business Marketing /Marketing Management
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval and MRKG 1311; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MRMT 1307 - Medical Transcription I
Credits: 3 (2 lecture, 3 lab). Fundamentals of medical transcription with hands-on experience in transcribing physician dictation including basic reports such as History, Civilization, and physicals, discharge summaries, consultations, operative reports, and other medical reports. Utilizes transcribing and information processing equipment compatible with industry standards. Designed to develop speed and accuracy. Prerequisite: MDCA 1313, POFT 1329; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUAP 1169 - Piano
Credits: 2. For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate major(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1181 - Improvisation I
Credits: 1 (0 lecture, 3 lab). Private applied lessons (MUAP) are designed to foster development of skills in music performance. Private lessons are for students who wish to complete an AA Music degree, and for students who wish to transfer to a four-year institution. Enrollment in the corresponding MUAP Studio class is required. Permission numbers for lessons and studio are required to register. A one-time fee will be required for private lessons each semester. A minimum number of weekly practice hours will be required. A final performance judged by a panel of instructors is required. Students must provide their own instruments except piano, organ, and percussion.

MUAP 1182 - Improvisation II
Credits: 1 (0 lecture, 3 lab). Private applied lessons (MUAP) are designed to foster development of skills in music performance. Private lessons are for students who wish to complete an AA Music degree, and for students who wish to transfer to a four-year institution. Enrollment in the corresponding MUAP Studio class is required. Permission numbers for lessons and studio are required to register. A one-time fee will be required for private lessons each semester. A minimum number of weekly practice hours will be required. A final performance judged by a panel of instructors is required. Students must provide their own instruments except piano, organ, and percussion.
Description of Courses

MUAP 1201 - Violin
Credits: 2. For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1213 - Strings / Bass
Credits: 2. For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1217 - Flute / Piccolo
Credits: 2. For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1233 - Saxophone
Credits: 2. For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1237 - Trumpet / Cornet
Credits: 2. For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1245 - Trombone
Credits: 2. For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).
Description of Courses

MUAP 1257 - Percussion
Credits: 2. For courses numbered 11xx and 12xx, theses are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1261 - Guitar
Credits: 2. For courses numbered 11xx and 12xx, theses are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1265 - Organ
Credits: 2. For courses numbered 11xx and 12xx, theses are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1281 - Voice
Credits: 2. For courses numbered 11xx and 12xx, theses are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1285 - Improvisation
Credits: 2. For courses numbered 11xx and 12xx, theses are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 1289 - Special Topics : Keyboard
Credits: 2. For courses numbered 11xx and 12xx, theses are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).
Description of Courses

MUAP 1292 - Arranging & Composition
Credits: 2. For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons per week by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate majors(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn 1 credit (1 lecture). Hour lessons earn 2 credits (2 lecture).

MUAP 2149 - Euphonium/Baritone Horn III
Credits: 1 (1 lecture). Half hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided into two 30-minute lessons by mutual consent of the student and the instructor. Lessons may be repeated (maximum 7 times in any combination) with permission of the respective department heads and are required of appropriate major(s). Juries are required. Students provide all instruments but piano and percussion equipment. A MUSI co-requisite is required. Private instruction is offered to music majors only. Half-hour lessons earn one credit (1 lecture), hour lessons earn two credits (2 lecture).

MUAP 2181 - Improvisation III
Credits: 1 (0 lecture, 3 lab). Private applied lessons (MUAP) are designed to foster development of skills in music performance. Private lessons are for students who wish to complete an AA Music degree, and for students who wish to transfer to a four-year institution. Enrollment in the corresponding MUAP Studio class is required. Permission numbers for lessons and studio are required to register. A one-time fee will be required for private lessons each semester. A minimum number of weekly practice hours will be required. A final performance judged by a panel of instructors is required. Students must provide their own instruments except piano, organ, and percussion.

MUAP 2182 - Improvisation IV
Credits: 1 (0 lecture, 3 lab). Private applied lessons (MUAP) are designed to foster development of skills in music performance. Private lessons are for students who wish to complete an AA Music degree, and for students who wish to transfer to a four-year institution. Enrollment in the corresponding MUAP Studio class is required. Permission numbers for lessons and studio are required to register. A one-time fee will be required for private lessons each semester. A minimum number of weekly practice hours will be required. A final performance judged by a panel of instructors is required. Students must provide their own instruments except piano, organ, and percussion.

MUAP 2209 - Cello
Description of Courses

MUAP 2281 - Voice

MUAP 2285 - Improvisation

MUEN 1121 - Symphonic Orchestra I
Credits: 1 (3 lab). Examples of major instrumental ensembles may include but are not limited to concert band, marching band, collaborative piano, jazz band, and orchestra.

MUEN 1122 - Symphonic Orchestra II
Credits: 1 (3 lab). Examples of major instrumental ensembles may include but are not limited to concert band, marching band, collaborative piano, jazz band, and orchestra.
MUEN 1124 - Symphonic Band
Credits: 1 (3 lab). The study of a wide variety of literature for wind, brass and percussion instruments through rehearsal and performance. Open to all students with instrumental music experience. A maximum of four credit hours may be earned.

MUEN 1125 - Symphonic Band
Credits: 1 (3 lab). The study of a wide variety of literature for wind, brass and percussion instruments through rehearsal and performance. Open to all students with instrumental music experience. A maximum of four credit hours may be earned.

MUEN 1127 - Major Jazz Ensemble I
Credits: 1 (0 lecture, 3 lab). Large ensemble specializing in jazz improvisation and performance.

MUEN 1128 - Major Jazz Ensemble II
Credits: 1 (0 lecture, 3 lab). Large ensemble specializing in jazz improvisation and performance.

MUEN 1130 - Guitar Ensemble I
Credits: 1 (3 lab). This course serves to enhance reading and performance skills through the practice and performance of technical exercises and ensemble pieces written specifically for the guitar.

MUEN 1134 - Small Jazz Ensemble I
Credits: 1 (0 lecture, 3 lab). Small ensemble specializing in jazz improvisation and performance.

MUEN 1135 - Small Jazz Ensemble II
Credits: 1 (0 lecture, 3 lab). Small ensemble specializing in jazz improvisation and performance.

MUEN 1137 - Chamber Ensemble I
Credits: 1 (0 lecture, 3 lab). Examples of small instrumental ensembles may include but are not limited to wind, string, percussion, piano, and mixed ensembles in various styles.

MUEN 1138 - Chamber Ensemble II
Credits: 1 (0 lecture, 3 lab). Examples of small instrumental ensembles may include but are not limited to wind, string, percussion, piano, and mixed ensembles in various styles.

MUEN 1140 - Guitar Ensemble II
Credits: 1 (3 lab). This course serves to enhance reading and performance skills through the practice and performance of technical exercises and ensemble pieces written specifically for the guitar.

MUEN 1154 - Show Choir I
Credits: 1 (3 lab). Examples of small vocal ensembles may include but are not limited to show choir, glee club, madrigals, opera/musical theater, commercial, and folk. Open to non-majors. Performances required.

MUEN 1155 - Show Choir II
Credits: 1 (3 lab). Examples of small vocal ensembles may include but are not limited to show choir, glee club, madrigals, opera/musical theater, commercial, and folk. Open to non-majors. Performances required.

MUEN 2121 - Symphonic Orchestra III
Credits: 1 (3 lab). Examples of major instrumental ensembles may include but are not limited to concert band, marching band, collaborative piano, jazz band, and orchestra.

MUEN 2122 - Symphonic Orchestra IV
Credits: 1 (3 lab). Examples of major instrumental ensembles may include but are not limited to concert band, marching band, collaborative piano, jazz band, and orchestra.

MUEN 2124 - Symphonic Band
Credits: 1 (3 lab). The study of a wide variety of literature for wind, brass and percussion instruments through rehearsal and performance. Open to all students with instrumental music experience. A maximum of four credit hours may be earned.

MUEN 2125 - Symphonic Band
Credits: 1 (3 lab). The study of a wide variety of literature for wind, brass and percussion instruments through rehearsal and performance. Open to all students with instrumental music experience. A maximum of four credit hours may be earned.

MUEN 2127 - Major Jazz Ensemble III
Credits: 1 (0 lecture, 3 lab). Large ensemble specializing in jazz improvisation and performance.

MUEN 2128 - Major Jazz Ensemble IV
Credits: 1 (0 lecture, 3 lab). Large ensemble specializing in jazz improvisation and performance.
MUEN 2134 - Small Jazz Ensemble III  
Credits: 1 (0 lecture, 3 lab). Small ensemble specializing in jazz improvisation and performance.

MUEN 2135 - Small Jazz Ensemble IV  
Credits: 1 (0 lecture, 3 lab). Small ensemble specializing in jazz improvisation and performance.

MUEN 2137 - Chamber Ensemble III  
Credits: 1 (0 lecture, 3 lab). Examples of small instrumental ensembles may include but are not limited to wind, string, percussion, piano, and mixed ensembles in various styles.

MUEN 2138 - Chamber Ensemble IV  
Credits: 1 (0 lecture, 3 lab). Examples of small instrumental ensembles may include but are not limited to wind, string, percussion, piano, and mixed ensembles in various styles.

MUEN 2154 - Show Choir III  
Credits: 1 (3 lab). Examples of small vocal ensembles may include but are not limited to show choir, glee club, madrigals, opera/musical theater, commercial, and folk. Open to non-majors. Performances required.

MUEN 2155 - Show Choir IV  
Credits: 1 (3 lab). Examples of small vocal ensembles may include but are not limited to show choir, glee club, madrigals, opera/musical theater, commercial, and folk. Open to non-majors. Performances required.

MUSB 1191 - Special Topics in Music Business Management and Merchandising  
Credits: 1 (1 lecture). 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. Learning outcomes/objectives are determined by local occupational need, and business and industry trends. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSB 1305 - Survey of the Music Business  
Credits: 3 (3 lecture). An overview of the music industry including song writing, live performance, the record industry, music merchandising, contracts and licenses, and career opportunities. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSB 1341 - Concert Promotion and Venue Management  
Credits: 3 (3 lecture, 1 lab). A course in the basics of concert promotion and venue management including considerations in purchasing a club; concert promotion and advertising; talent buying; city codes; insurance; Texas Alcoholic Beverage Commission Regulation; American Society of Composers, Arrangers, and Publishers (ASCAP/BMI) licenses; personnel management; and concert production and administration. Prerequisite: MUSB 1305; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSB 1391 - Special Topics in Music Business  
Credits: 3 (3 lecture). Students will define and implement a music marketing strategy that defines career goals and creates online branding; utilizes various forms of social media to enforce online presence, build fan base and drive sales in the digital environment. Students will also participate in a self directed course of independent study that constitutes one hour per week. Proof of participation will be provided by submissions of blog posts that reflect a meaningful contribution each week. Prerequisite: MUSB 1305; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSB 2301 - Music Marketing  
Credits: 3 (3 lecture). A study of the methods of distribution, retailing, and wholesaling. Topics include the basics of purchasing, inventory control, shipping and receiving, returns, pricing and cost analysis, merchandising, retail display, sales promotion, advertising, security and shrinkage, personnel management, and relationships between retailers and distributors. Prerequisite: MUSB 1305; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSB 2305 - Music Publishing  
Credits: 3 (3 lecture). A study of the administrative and marketing aspects of music publishing including the application of current copyright law, developing songwriters, rights exploration, and royalty collection. Prerequisite: MUSB 1305; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305
MUSB 2309 - The Record Industry  
Credits: 3 (3 lecture). Overview of the record industry and the organization of large and small record companies. Emphasizes record company functions such as artist and repertoire (A & R), promotion, marketing, business affairs, and administration and distribution including Internet-based distribution. Prerequisite: MUSB 1305; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSB 2345 - Live Music and Talent Management  
Credits: 3 (3 lecture). An examination of the role, scope, and activities of the talent manager including establishing the artist/manager relationship; planning the artist's career; and developing goals, strategies, and tactics with an overall view of the live music business. Prerequisite: MUSB 1305; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSB 2355 - Legal Aspects of the Entertainment Industry  
Credits: 3 (3 lecture). Copyright law and the various agreements used in the entertainment industry. Emphasizes contracts used by music publishers, record companies, artist managers, record producers, film and television producers, and booking agencies. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSB 2380 - Cooperative Education - Music Business Management and Merchandising  
Credits: 3 (1 lecture, 20 lab). Career-related activities encountered in the student's area of specialization are offered through an individualized agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: 12 hrs. of MUSB and Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSB 2381 - Cooperative Education - Music Management  
Credits: 3 (1 lecture 20 lab). 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. Prerequisite: 12 hrs. of MUSB and Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: MUSB 1305

MUSC 1249 - Applied Music: Conducting  
Credits: 2 (1 lecture, 4 lab). Private lessons in conducting. Development of technique through the practice of basic beat patterns, beginning beats, gesturing, and cueing. Emphasis on score reading and knowledge of musical terminology. Prerequisite: Commercial Music Theory I and II; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 1305 - Live Sound I  
Credits: 3. An overview of the field of live sound. Includes principles of live sound and the theory and interconnection of the components of a sound reinforcement system.

MUSC 1309 - Conducting Class  
Credits: 3 (2 lecture, 2 lab). Introduction to the art of conducting including regular and irregular beat patterns, subdivision, and beat pattern varieties applied to musical literature and practical experience. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

MUSC 1321 - Songwriting I
Credits: 3 (3 lecture). Introduction to techniques of writing marketable songs including the writing of lyrics and melodies, setting lyrics to music, developing lyrical and musical "hooks," analyzing the marketplace, and developing a production plan for a song demo. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 1323 - Audio Electronics
Credits: 3 (2 lecture, 4 lab). Basic concepts in electricity, Ohm's Law, circuit analysis and troubleshooting audio problems. Topics include soldering techniques, audio electronic alignment procedures for tape machines, console maintenance, and sound reinforcement equipment maintenance. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 1325 - Acoustics
Credits: 3 (2 lecture, 4 lab). Principles of sound in air, sound in recording, and sound reinforcement. Topics include acoustical properties of studios, live performance facilities, resonance, and electronic and acoustic control. Students will be able to describe specific characteristics of sound in air; describe acoustical properties of halls, rooms, and studios; measure and quantify sound characteristics; and utilize electronic and acoustic control measures. Prerequisite: MUSC 1427 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 1327 - Audio Engineering I
Credits: 3 (2 lecture, 4 lab). The tools, personnel and standard workflow of a recording studio. Topics include fundamentals of sound and overview of tracking, editing, and mixing audio. Prerequisite: MUSC 1335.

MUSC 1331 - MIDI I
Credits: 3 (2 lecture, 4 lab). An overview of the Musical Instrument Digital Interface (MIDI) system and applications. Topics include the History, Civilization, and evolution of MIDI, hardware requirements, computer numbering systems, channels and modes, the MIDI language, and typical implementation of MIDI applications in the studio environment using software-based sequencing programs. Students are required to attend additional lab hours outside of class. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 1335 - Commercial Music Software
Credits: 3 (2 lecture, 4 lab). Specialized training in commercial music software applications. This course includes integration of computer-based hardware and software with an emphasis on the utilization of DAW (digital audio workstation) technology in the professional studio environment. Prerequisite: Frequent Requisites: MATH 1308, GUST 0342, ENGL 0310 or 0349

MUSC 1350 - Remixed
Credits: 3 (2 lecture, 4 lab). Basic techniques necessary to produce finished remixes of previously recorded musical compositions. Includes using audio and MIDI "beats" and "loops." Prerequisite: MUSC 1331 or Department Approval

MUSC 1396 - Special Topics in Recording Arts Technology / Technician: Advanced Mixing and Mastering in Protools
Credits: 3 (2 lecture, 4 lab). Topics address advanced mixing and mastering concepts within the ProTools digital software environment. Topics include analysis of mixes by genre, use of advanced effects processing to emphasize depth, clarity, and frequency balance, and time-based editing processes such as time stretching. Students will also practice software-based mastering techniques to optimize mixes for various digital distribution methods. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 1405 - Live Sound I
Credits: (3 lecture, 2 lab). An overview of the field of live sound. Includes principles of live sound and the theory and interconnection of the components of a sound reinforcement system. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

MUSC 2141 - Forum/Recital
Credits: 1 (1 lecture). Stylistic analysis of commercial music performances presented by students, faculty, and guest artists. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2201 - Audio Engineering Practices
Credits: 2 (1 lecture, 2 lab). Application of the concepts and techniques presented in Audio Engineering I and II. (May be repeated three times for credit. Students are required to attend additional lab hours outside of class.) Prerequisite: MUSC 2447, RTVB 2232; must be placed into college-level reading, writing and math. Corequisite: MUSC 2448, 2457 or 2458

MUSC 2214 - Improvisation Theory I
Credits: For courses numbered 11xx and 12xx, these are Freshman level, one-half hour lesson and one-hour lessons per week, respectively. Half-hour lessons require six practice hours per week; hour lessons, ten practice hours per week. Hour lessons may be divided in. A study of the chordal structures of jazz, rock, country, and fusion with emphasis on extemporaneous performance. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2230 - Commercial Music Arranging and Composition
Credits: 2 (1 lecture, 4 lab). Presentation of arranging and composition for projects in industry recognized genres including song writing, show writing, video, and film. Prerequisite: MUSC 1321; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2234 - Improvisation Theory II
Credits: 2 (2 lecture, 1 lab). A continuation of the study of chordal structures of jazz, rock, country, and fusion with emphasis on extemporaneous performance. Prerequisite: MUSC 2214; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2249 - Applied Music : Conducting II
Credits: 2 (1 lecture, 4 lab). Advanced private lessons in conducting. Continues development of conducting techniques, score reading abilities, and study of musical terminology. Prerequisite: MUSC 1249; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2250 - Computer Music Notation II
Credits: 3 (1 lecture, 4 lab). Study and practices in music notation software at a professional level, including large score notation. Prerequisite: MUSC 1330; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2319 - Orchestration
Credits: 3 (lecture). Exploration of writing for voices and instruments to include ranges, transportation, and idiosyncrasies of each instrument with emphasis on commercial music chord voicings. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2345 - Synthesis II
Credits: 3 (2 lecture, 3 lab). Course emphasizes technology that integrates MIDI sequencing with digital audio. Topics include computer based hard disk recording systems, MIDI machine control, advanced techniques in synthesizer editing, digital transfers of audio data and CD mastering. The student will demonstrate advanced skill in FM and hybrid synthesis techniques; explain and utilize digital sampling; complete projects using advanced synthesis techniques; and edit samples and synthesizer voices. Students are required to attend additional lab hours outside of class. Prerequisite: MUSC 2355; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2350 - Computer Music Notation II
Credits: 3 (1 lecture, 4 lab). Study and practices in music notation software at a professional level, including large score notation. Prerequisite: MUSC 1330; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2403 - Live Sound II
Credits: 4 (3 lecture, 3 lab). Overview of stage monitor systems. Includes monitor systems set-up and operation and stage management. Also covers interactivity between sound management, performance quality, and audience experience. Prerequisite: Must be placed into college-level reading, writing and math.
MUSC 2427 - Audio Engineering II
Credits: 4 (3 lecture, 2 lab). Major topics include the recording process, microphones and placement techniques, audio console operation, multitrack recording and signal processors. Audio software includes Pro Tools and Digital Performer, Spark and Peak audio editors, Toast and Jam CD editors, Acid looping software. Students learn basic tracking techniques, studio set up and break down and participate in 32 hours of recording sessions. Students are required to attend additional lab hours outside of class. Prerequisite: MUSC 1427 and MUSC 1331; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2433 - Scoring for Video and Film
Credits: 4 (3 lecture, 3 lab). Advanced concepts of technology to score and synchronize audio with video or film productions. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2447 - Audio Engineering III
Credits: 4 (3 lecture, 2 lab). Advanced practice of procedures and techniques in recording and manipulating audio. Includes digital audio editing, advanced recording techniques, and advanced engineering projects. Prerequisite: MUSC 1270, MUSC 2427, RTVB 1240 and MUSC 2355; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSC 2448 - Audio Engineering IV
Credits: 4 (3 lecture, 3 lab). Examination of the role of the producer including recording, mixing, arranging, analyzing projects, session planning, communications, budgeting, business aspects, technical consideration, and music markets. Students are required to attend additional lab hours outside of class. Prerequisite: Must be placed into college-level reading, writing and math.

MUSC 2457 - Audio Engineering V
Credits: 4 (3 lecture, 4 lab). Analysis and practice of the operation of a large format, computer-automated analog mixing console. Includes console's signal flow and operation as they pertain to tracking. Prerequisite: MUSC 2448, 2201, 2355; must be placed into college-level reading, writing and math.

MUSC 2458 - Audio Engineering VI
Credits: 4 (3 lecture, 4 lab). Analysis and practice in the operation of a large format, computer-automated analog mixing console. Includes console's signal flow and operation as they pertain to mixing. Prerequisite: MUSC 2457, 2201; must be placed into college-level reading, writing and math.

MUSI 1116 - Sight Singing & Ear Training I
Credits: 1 (3 lab). Corequisite: MUSI 1311 - 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. Required of majors.

MUSI 1117 - Sight Singing & Ear Training II
Credits: 1 (0 lecture, 3 lab). Singing tonal music in various clefs, continued aural study of the elements of music, and dictation of intermediate rhythm, melody and diatonic harmony. Required of majors. Corequisite: MUSI 1312

MUSI 1157 - Opera Workshop
Credits: 1 (3 lab). A study of the synthesis of singing and acting through the performance of opera.

MUSI 1160 - Italian Diction
Credits: 1 (1 lecture, 1 lab). Study of Italian phonetic sounds to promote ability to sing the language. Open to all vocal students. May be repeated.

MUSI 1161 - International Phonetic Alphabet (IPA) for Singers
Credits: 1 (1 lecture, 1 lab). A study of the International Phonetic Alphabet (IPA) and its application to singing in English, Italian, German, and French.

MUSI 1166 - Instrument Class: Woodwind
Credits: 1 (0 lecture, 3 lab). Class instruction in woodwind instruments. A skills course. May be repeated. Open to all students.

MUSI 1168 - Instrument Class: Brass
Credits: 1 (0 lecture, 3 lab). Class instruction in brass instruments. A skills course. May be repeated. Open to all students.

MUSI 1181 - Piano Class I
Credits: 1 (0 lecture, 3 lab). Class instruction in the fundamentals of keyboard technique for beginning piano students only. A skills course. May be repeated. Required of majors. Open to non-majors. Prerequisite: MUSI 1101 or Department Approval
MUSI 1182 - Piano Class II
Credits: 1 (0 lecture, 3 lab). Continuation of MUSI 1181. May be repeated. Required of majors. Open to non-majors.

MUSI 1183 - Voice Class I
Credits: 1 (0 lecture, 3 lab). Class instruction in fundamentals of singing: tone production, breath production, diction and standard music repertoire. Designed for students with little or no previous vocal training.

MUSI 1184 - Voice Class II
Credits: 1 (0 lecture, 3 lab). Continuation of MUSI 1183.

MUSI 1188 - Percussion Class I
Credits: 1 (0 lecture, 3 lab). Class instruction in percussion instruments. A skills course. May be repeated. Open to all students.

MUSI 1190 - Instrument Class : Strings
Credits: 1 (0 lecture, 3 lab). Class instruction in strings. A skills course. May be repeated. Open to all students.

MUSI 1192 - Guitar Class
Credits: 1 (0 lecture, 3 lab). This class is designed to provide students the fundamentals of guitar, aiding them as they learn or improve their reading of music. Consult with instructor concerning instrument availability. A knowledge of music is not required, but helpful. Open to all students.

MUSI 1211 - Music Theory I
Credits: 2 (2 lecture, 1 lab). Basic music theory with emphasis on part writing of figured bass and melody harmonization requiring all diatonic triads, dominant and supertonic seventh chords, and non-harmonic tones. Keyboard study of harmonic progressions and melodic harmonizations requiring diatonic triads. Required of majors. Prerequisite: MUSI 1301 or Department Approval; must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing. Corequisite: MUSI 1216

MUSI 1212 - Music Theory II
Credits: 2 (2 lecture, 1 lab). A continuation of MUSI 1211. Required of majors. Prerequisite: MUSI 1211 or Department Approval; must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing. Corequisite: MUSI 1217

MUSI 1216 - Sight Singing/Ear Training I
Credits: 2 (2 lecture, 1 lab). Singing tonal music in treble, bass, alto and tenor clefs. Aural study (including dictation) of rhythm, melody and diatonic harmony. Prerequisite: MUSI 1171 or Department Approval; must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

MUSI 1217 - Sight Singing/Ear Training II
Credits: 2 (2 lecture, 1 lab). Singing tonal music in treble, bass, alto and tenor clefs. Aural study (including dictation) of rhythm, melody and diatonic harmony. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

MUSI 1223 - Studio Orchestra I
Credits: 2 (1 lecture, 3 lab). Major ensemble performing contemporary styles. Open to all students with consent of director. Performances required.

MUSI 1227 - Community College Band
Credits: 2 (1 lecture, 2 lab). This class is designed for full or part-time students who desire to improve their performance levels on band instruments, observe rehearsal methods and techniques, and learn band organizational strategies. Performance required.

MUSI 1229 - Harp Ensemble
Credits: 2 (1 lecture, 2 lab). This class is designed for full or part-time students who desired to improve their harp ensemble performance levels, observe rehearsal methods and techniques, and learn harp ensemble organizational strategies. Performances required.

MUSI 1254 - Chamber Vocal Ensemble
Credits: 2 (1 lecture, 2 lab). Madrigal or other small vocal ensemble. Open to non-majors. Performances required.

MUSI 1301 - Fundamentals of Music I
Credits: 3 (3 lecture). An introduction to the elements of music, including study of clefs, staff, key signatures, notation, meter, and rhythm, sight singing, major and minor chords, ear training, basic keyboard harmony. Open to all students. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.
MUSI 1306 - Music Appreciation
Credits: 3 (3 lecture). A foundation course in understanding and enjoyment of music through the use of recorded music and song literature. Elements of music and analysis of music form and how they relate to compositional technique are explored. Open to all students. This course satisfies the Creative Arts or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

MUSI 1307 - Music Literature
Credits: 3 (3 lecture). 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. This course satisfies the Creative Arts or Component Area Option of the HCC Core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

MUSI 1310 - American Music
Credits: 3 (3 lecture). General survey of various styles of music in America. Topics may include jazz, ragtime, folk, rock, and contemporary art music. This course satisfies the Creative Arts or Component Area Option of the HCC Core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

MUSI 1311 - Music Theory I
Credits: 3 (3 lecture). 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. Required of majors. Corequisite: MUSI 1116

MUSI 1312 - Music Theory II
Credits: 3 (3 lecture). 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. Required of majors. Corequisite: MUSI 1117

MUSI 1316 - Sight Singing & Ear Training III
Credits: 1 (3 lab). Singing more difficult tonal music in various clefs, aural study including dictation of more complex rhythm, melody, chromatic harmony, and extended tertian structures. Required of majors. Corequisite: MUSI 2311

MUSI 1317 - Sight Singing & Ear Training IV
Credits: 1 (3 lab). Singing advanced tonal music and introduction of modal and post-tonal melodies. Aural study including dictation of advanced rhythm, melody, and harmony. Required of majors. Corequisite: MUSI 2312

MUSI 2139 - Chamber Music II
Credits: 1 (0 lecture, 3 lab). Small ensemble concentrating on chamber music. May be repeated for credit. Prerequisite: Prerequisite: MUSI 1139 or Department Approval

MUSI 2160 - German Diction
Credits: 1 (1 lecture, 1 lab). Study of phonetic sounds of German to promote ability to sing the language. Open to all vocal students. May be repeated.

MUSI 2161 - French Diction
Credits: 1 (1 lecture, 1 lab). Study of phonetic sounds of French to promote ability to sing the language. Open to all vocal students. May be repeated.

MUSI 2162 - Piano Class III
Credits: 1 (0 lecture, 3 lab). Continuation of MUSI 1182. May be repeated. Required of majors. Open to non-majors.

MUSI 2163 - Piano Class IV
Credits: 1 (0 lecture, 3 lab). Continuation of MUSI 2181. May be repeated. Required of majors. Open to non-majors.

MUSI 2211 - Music Theory III
Credits: 3 (2 lecture, 1 lab). Emphasis on part-writing, figured bass, and melody harmonization and compositional techniques using all diatonic chords, modulations, instrumental and choral styles, two- and three-part forms. Keyboard study of harmonic progressions, melody harmonizations and modulations to closely related keys. Required of majors. Prerequisite: MUSI 1212 or Department Approval Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing. Corequisite: Corequisite: MUSI 2216
MUSI 2212 - Music Theory IV  
Credits: 3 (2 lecture, 1 lab). Continuation of MUSI 2211. Required of majors. Prerequisite: MUSI 2211 or Department Approval. Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing. Corequisite: MUSI 2217

MUSI 2216 - Sight Singing/Ear Training III  
Credits: 1 (2 lecture, 1 lab). Singing more difficult tonal music, including modal, ethnic and 20th century materials. Drills in sight-singing and ear training. Aural study (including dictation) of more complex rhythm, melody, chromatic harmony and extended tertian structures. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

MUSI 2217 - Sight Singing/Ear Training IV  
Credits: 1 (2 lecture, 1 lab). Singing more difficult tonal music, including modal, ethnic and 20th century materials. Drills in sight-singing and ear training. Aural study (including dictation) of more complex rhythm, melody, chromatic harmony and extended tertian structures. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and be placed into MATH 0308 (or higher) and be placed into ENGL 0310/0349 (or higher) in writing.

MUSI 2258 - Opera Workshop  
Credits: 2 (1 lecture, 2 lab). Designed to provide young singers practical operatic experience in the entire operas or operatic excerpts. May fulfill ensemble requirement for degree. May be repeated. Performance required. Prerequisite: Audition or Department Approval.

MUSI 2311 - Music Theory III  
Credits: 3 (3 lecture). Advanced harmony voice leading, score analysis and writing of more advanced tonal harmony including chromaticism and extended-tertian structures. Required of majors. Corequisite: MUSI 2116

MUSI 2312 - Music Theory IV  
Credits: 3 (3 lecture). Continuation of advanced chromaticism and survey of analytical and compositional procedures in post-tonal music. Required of majors. Corequisite: MUSI 2117

MUSP 1201 - Applied Commercial Music: Arranging and Composition  
Credits: 2 (1 lecture, 4 lab). Private instruction in arranging and composition with goals related to jazz or commercial music. The student will demonstrate proficiency in commercial music repertoire and technique; develop a professional, disciplined approach to performance skills; and present a juried performance for faculty. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 1203 - Applied Commercial Music: Acoustic Bass  
Credits: 2 (1 lecture, 4 lab). Private instruction in acoustic bass with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 1204 - Applied Commercial Music: Bass Guitar  
Credits: 2 (1 lecture, 4 lab). Private instruction in bass guitar with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 1205 - Applied Commercial Music: Commercial Guitar  
Credits: 2 (1 lecture, 4 lab). Private instruction in commercial guitar with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 1206 - Applied Commercial Music: Dobro Guitar  
Credits: 2 (1 lecture, 4 lab). Private instruction in Dobro guitar with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 1207 - Applied Commercial Music: Electric Guitar  
Credits: 2 (1 lecture, 4 lab). Private instruction in electric guitar with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 1210 - Applied Commercial Music: Piano  
Credits: 2 (1 lecture, 4 lab). Private instruction in piano with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

MUSP 1211 - Applied Commercial Music : Fiddle
Credits: 2 (1 lecture, 4 lab). Private instruction in fiddle with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1215 - Applied Commercial Music : Mandolin
Credits: 2 (1 lecture, 4 lab). Private instruction in mandolin with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1217 - Applied Commercial Music : Percussion
Credits: 2 (1 lecture, 4 lab). Private instruction in percussion with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1221 - Applied Commercial Music : Steel Guitar
Credits: 2 (1 lecture, 4 lab). Private instruction in steel guitar with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

MUSP 1223 - Applied Commercial Music : Synthesizer
Credits: 2 (1 lecture, 4 lab). Private instruction in the synthesizer with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1225 - Applied Commercial Music : Trumpet
Credits: 2 (1 lecture, 4 lab). Private instruction in the trumpet with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1227 - Applied Commercial Music : Voice
Credits: 2 (1 lecture, 4 lab). Private instruction in voice with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1240 - Large Commercial Music Ensemble : Band
Credits: 2 (1 lecture, 2 lab). Participation in a large band concentrating on commercial music performance styles. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1241 - Large Commercial Music Ensemble : Symphony Orchestra
Credits: 2 (1 lecture, 2 lab). Participation in a large symphony orchestra concentrating on commercial music performance styles. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1242 - Small Commercial Music Ensemble
Credits: 2 (1 lecture, 2 lab). Participation in a small commercial music ensemble concentrating on commercial music performance styles. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1250 - Small Commercial Music Ensemble : Jazz
Credits: 2 (1 lecture, 2 lab). Participation in a jazz ensemble concentrating on commercial music performance styles. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 1255 - Small Commercial Music Ensemble : Studio Orchestra
Credits: 2 (1 lecture, 2 lab). Participation in a studio orchestra concentrating on commercial music performance styles. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 1292 - Special Topics in Music - Piano and Organ Performance
Credits: 2 (1 lecture, 2 lab). 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. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 1293 - Special Topics in Music - Voice and Choral I /Opera Performance
Credits: 2 (1 lecture, 2 lab). 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. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.
Description of Courses

MUSP 1308 - Music Theater I
Credits: 3 (1 lecture, 8 lab). Presentation of literature from the musical theater including operetta, revues, and musical comedy with emphasis on vocal and movement skills. Prerequisite: Department Approval; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

MUSP 2203 - Commercial Class Piano
Credits: 2 (2 lecture, 1 lab). Development of keyboard skills for commercial music majors including blues progressions and scales, model harmony, and extensive use of the ii-V7-I progression with appropriate keyboard voicing. Prerequisite: college-level piano skills Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 2206 - Commercial Vocal Ensemble : General
Credits: 2 (1 lecture, 2 lab). Participation in a vocal ensemble concentrating on commercial vocal music performance styles. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 2207 - Commercial Vocal Ensemble : Jazz
Credits: 2 (1 lecture, 2 lab). Participation in a vocal ensemble concentrating on commercial vocal jazz performance styles. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 2231 - Applied Commercial Music : Arranging and Composition
Credits: 2 (1 lecture, 4 lab). Private instruction in arranging and composition with goals related to jazz or commercial music. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 2304 - Piano Studio I
Credits: 3 (3 lecture, 1 lab). Presentation of keyboard, theoretical, and aural instructional strategies. Survey of beginning methods; series, solo, and technique books; basic techniques of improvisation, and professional affiliations. Prerequisite: college-level piano performance Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 2308 - Opera Workshop I
Credits: 3 (1 lecture, 8 lab). Skill development in staged performances of operatic literature for singers. Prerequisite: MUSP 1227; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 2338 - Music Theater II
Credits: 3 (1 lecture, 8 lab). Advanced presentation of literature from the musical theater including operetta, revues, and/or musical comedy with emphasis on high level vocal and movement skills and an advanced leadership role in a production. Prerequisite: MUSP 1308; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 2339 - Opera Workshop II
Credits: 3 (1 lecture, 8 lab). Advanced skill development in staged performances of operatic literature for singers including the leadership role. Prerequisite: MUSC 2308; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

MUSP 2344 - Piano Studio II
Credits: 3 (3 lecture, 1 lab). A course in advanced keyboard, theoretical, and aural instructional strategies. Survey of intermediate to advanced methods; series, solo and technique books; techniques of improvisation; professional affiliations; and piano studio operations. Emphasis on style and performance. Prerequisite: MUSC 2304; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

NDTE 1305 - Introduction to Ultrasonics
Credits: 3 (2 lecture, 4 lab). Basic theory and applications of the ultrasonic techniques of materials testing covering the theoretical material from the certification test for Ultrasonic Level I American Society of Non-Destructive Testing. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 1310 in writing and MATH 0312 in math.

NMTT 1166 - Practicum (or Field Experience) - Nuclear Medicine Technology/Technologist
Credits: 2 (10 lab). Practical general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: Department Approval; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 1211 - Nuclear Medicine Patient Care
Credits: 2 (1 lecture, 4 lab). Introduction to medical terminology, health care ethics and legal issues, communication and patient interaction skills, patient assessment, and procedures involving transport, infection control, emergency, safety, phlebotomy and injections. Prerequisite: Admission to program; must be placed into college-level reading, college-level writing and MATH 1314 in math.
Description of Courses

NMTT 1267 - Practicum (or Field Experience) - Nuclear Medicine Technology/Technologist
Credits: 2 (14 lab). Practical general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: NMTT 1266; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 1301 - Introduction to Nuclear Medicine
Credits: 3 (2 lecture, 4 lab). Introduction to the field of nuclear medicine with emphasis on the principles of radiation safety, health physics, ethics, and the various studies performed in a nuclear medicine area. Prerequisite: Admission to program; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 1409 - Nuclear Medicine Instrumentation
Credits: 4 (3 lecture, 4 lab). Application of instrumentation used in the measurement and analysis of ionizing radiation with emphasis on gamma spectrometry and quality assurance. Prerequisite: SCIT 1420, Admission to program; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 2167 - Practicum (or Field Experience) - Nuclear Medicine Technology/Technologist
Credits: 3 (10 lab). Practical general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: NMTT 1267; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 2201 - Radiochemistry and Radiopharmacy
Credits: 2 (1 lecture, 4 lab). Basic concepts of radiochemistry and radiopharmacy including the atomic structure, radioactive decay, and production of various radionuclides. Emphasis on radiopharmaceuticals and their ideal characteristics, biodistribution, and clinical applications; the various dosage forms in which they may be dispensed; quality control tests; and their formation and dispensing. Prerequisite: CHEM 1405, NMTT 1409; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 2266 - Practicum (or Field Experience) - Nuclear Medicine Technology/Technologist
Credits: 2 (20 lab). Practical general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: NMTT 2167; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 2309 - Nuclear Medicine Methodology I
Credits: 3 (2 lecture, 4 lab). Principles and practices involved in nuclear medicine regarding cardiovascular, gastrointestinal, respiratory systems, and miscellaneous procedures. Emphasizes patient care, anatomy, physiology, radiopharmaceuticals, instrumentation, data processing and analysis, and diagnostic value. Prerequisite: NMTT 1409, BIOL 2401, BIOL 2402; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 2333 - Advanced Positron Emission Tomography (PET) and Fusion Technology
Credits: 3 (3 lecture). Advance study in the field of positron emission tomography and fusion technology. Prerequisite: NMTT 1409; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 2335 - Nuclear Medicine Technology Seminar
Credits: 3 (2 lecture, 2 lab). A capstone course focusing on the synthesis of professional knowledge, skills and attitudes in preparation for professional employment and lifelong learning. Prerequisite: All NMTT courses; must be placed into college-level reading, college-level writing and MATH 1314 in math. Corequisite: Corequisite: NMTT 2267

NMTT 2367 - Practicum (or Field Experience) V - Nuclear Medical Technology/Technologist
Credits: 2 (20 lab). Practical general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: NMTT 2266; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NMTT 2413 - Nuclear Medicine Methodology II
Credits: 4 (2 lecture, 6 lab). Principles and practices involved in nuclear medicine regarding gastrointestinal, central nervous system, skeletal system, tumor and inflammation processes and miscellaneous procedures. Emphasizes patient care, anatomy, pathology, radiopharmaceuticals, instrumentation, data processing and analysis, and diagnostic values. Prerequisite: NMTT 1409, BIOL 2401, BIOL 2402; must be placed into college-level reading, college-level writing and MATH 1314 in math.

NUPC 1320 - Patient Care Technician/Assistant
Credits: 3 (3 lecture, 3 lab). A course designed to provide the student with the necessary training, skills, and knowledge needed to gain employment as a Patient Care Technician in a hospital setting. Prerequisite: Must be placed into college-level reading, writing and math.
OSHT 1301 - Introduction to Safety and Health
Credits: 3 (2 lecture). An introduction to the basic concepts of safety and health. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

OTHA 1161 - Clinical - Occupational Therapist Assistant
Credits: 1 (3 lab). 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. Prerequisite: All first semester OTHA courses; must be placed into college-level reading, college-level writing and MATH 0312.

OTHA 1201 - Introduction to Occupational Therapy
Credits: 2 (2 lecture, 2 lab). Introduction to the historical development and philosophy of the profession of occupational therapy. Emphasis on the roles and functions of the occupational therapy assistant in current health care environments including moral, legal, and ethical issues. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 1241 - Occupational Performance from Birth through Adolescence
Credits: 2 (2 lecture, 3 lab). Occupational performance of newborns through adolescents. Includes frames of reference, evaluation tools and techniques, and intervention strategies.

OTHA 1253 - Occupational Performance for Elders

OTHA 1305 - Principles of Occupational Therapy
Credits: 3 (2 lecture, 4 lab). Introduction to occupational therapy including the historical development and philosophy. Emphasis on the roles of the occupational therapy assistant. Topics include occupation in daily life; education and functions; occupational therapy personnel; current health care environment; and moral, legal and ethical issues. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 1309 - Human Structure and Function in Occupational Therapy
Credits: 3 (2 lecture, 4 lab). Study of biomechanics of human motion. Emphasis on the musculoskeletal system including skeletal structure, muscles and nerves, and biomechanical assessment procedures. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 1311 - Occupational Performance Throughout the Lifespan
Credits: 3 (3 lecture, 1 lab). General principles of occupational performance throughout the lifespan. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 1315 - Therapeutic Use of Occupations or Activities I
Credits: 3 (2 lecture, 4 lab). Various occupations or activities used as therapeutic interventions in occupational therapy. Emphasis on awareness of activity demands, contexts, adapting, grading, and safe implementation of occupations or activities. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 1319 - Therapeutic Interventions I
Credits: 3 (2 lecture, 4 lab). Concepts, techniques, and assessments leading to proficiency in skills and activities used as treatment interventions in occupational therapy (OT). Emphasizes the Occupational Therapy Assistant’s role in the OT process. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 2209 - Mental Health in Occupational Therapy
Credits: 2 (2 lecture, 3 lab). Promotion of mental health through occupational therapy. Emphasis on theory and intervention strategies to enhance occupational performance. Prerequisite: OTHA 1311, OTHA 1315, OTHA 1319; must be placed into college-level reading, college-level writing and MATH 0312 in math.
Description of Courses

OTHA 2266 - Practicum (or Field Experience) -- Occupational Therapy Assistant
Credits: 2 (20 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: All OTHA first and second semester courses; must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 2267 Practicum (or Field Experience) -- Occupational Therapy Assistant
Credits: 2 (20 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: All OTHA first and second semester courses; must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 2301 - Pathophysiology in Occupational Therapy
Credits: 3 (3 lecture, 1 lab). Pathology and general health management of diseases and injuries across the lifespan encountered in occupational therapy treatment settings. Includes etiology, symptoms, and the client’s physical and psychological reactions to disease and injury. Prerequisite: OTHA 1305, OTHA 1309, OTHA 1315, OTHA 1319; must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 2302 - Therapeutic Use of Occupations or Activities II
Credits: 3 (2 lecture, 4 lab). Continuation of OTHA 1315/1415: Therapeutic Use of Occupations or Activities I. Emphasis on advanced techniques and applications used in traditional and non-traditional practice settings. Prerequisite: All first semester OTHA courses; must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 2305 - Therapeutic Interventions II
Credits: 3 (2 lecture, 4 lab). Continuation of Therapeutic Interventions I. Emphasis on current rehabilitative interventions. Prerequisite: All first semester OTHA courses; must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 2311 - Abnormal Psychology in Occupational Therapy
Credits: 3 (3 lecture, 1 lab). Fundamental principles and techniques of psychological diagnosis with emphasis on mental health issues including theories, etiology, and treatment intervention. Prerequisite: OTHA 1311, OTHA 1315, OTHA 1319; must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 2330 - Workplace Skills for the Occupational Therapy Assistant
Credits: 3 (3 lecture). Seminar-based course designed to complement Level II fieldwork by creating a discussion forum addressing events, skills, knowledge, and/or behaviors related to the practice environment. Application of didactic coursework to the clinic and test-taking strategies for certification exams. Prerequisite: All OTHA courses - simultaneous with Clinical II courses; must be placed into college-level reading, college-level writing and MATH 0312 in math.

OTHA 2331 - Physical Function in Occupational Therapy
Credits: 3 (2 lecture, 4 lab). Physical function to promote occupational performance. Includes frames of reference, assessment/evaluation tools and techniques, patient/client education, and intervention strategies. Prerequisite: OTHA 1305, OTHA 1309, OTHA 1315, OTHA 1319; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PHIL 1301 - Introduction to Philosophy
Credits: 3 (3 lecture). This course is a theoretically diverse introduction to the study of ideas, including arguments and investigations about abstract and real phenomena, particularly in the areas of knowledge, ethics, and religion. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: ENGL 1301 or Department Approval

PHIL 1304 - Introduction to World Religions
Credits: 3 (3 lecture). This course is a diverse survey of world traditions and religions, including African traditions, Native American traditions, Hinduism, Buddhism, Islam, Tao and Chinese Philosophy, Christianity and Judaism. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: ENGL 1301 or Department Approval

PHIL 2289 - Academic Cooperative in Philosophy
Credits: 2 (2 lecture). An instructional program designed to integrate on-campus study with practical hands-on work experience. In conjunction with class seminars, the student will set specific goals and objectives in the study of philosophy. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).
PHIL 2303 - Introduction to Formal Logic
Credits: 3 (3 lecture). An introduction to symbolic logic, focusing on both propositional and predicate logic, emphasizing the rules of translating language into symbols, the rules of inference and replacement, and the mechanism of reasoning used by computers. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

PHIL 2306 - Introduction to Ethics
Credits: 3 (3 lecture). A philosophical reflection of the basic principles of the moral life, including traditional and contemporary views concerning the nature of goodness, happiness, duty, and freedom as they apply to individual right, business, medicine, and community well-being. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: ENGL 1302 or Department Approval

PHIL 2307 - Introduction to Social and Political Philosophy
Credits: 3 (3 lecture). This course is a critical analysis of political theories and social issues. Consideration will be given to historically significant and contemporary systems, problems, and thinkers. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: ENGL 1301 or Department Approval

PHIL 2316 - Classical Philosophy
Credits: 3 (3 lecture). An historic survey of critical and reflective thinking as applied to the basic problems of existence and the meaning of human life and institutions; begins with the Greek and Roman philosophers, continues through the Middle Ages, and ends with the Renaissance; a study of the nature of philosophy as applied to the development of the scientific method, the existence of God, and the political structures of society. This course satisfies the Language, Philosophy and Culture or Component Area Option of the HCC core. Prerequisite: ENGL 1302 or Department Approval

PHIL 2321 - Philosophy of Religion
Credits: 3 (3 lecture). A critical investigation of major religious ideas, experiences, and questions that form the basis for a philosophy of religion. Prerequisite: ENGL 1301 or Department Approval

PHIL 2389 - Academic Cooperative in Philosophy
Credits: 3 (3 lecture). An instructional program designed to integrate on-campus study with practical hands-on work experience. In conjunction with class seminars, the student will set specific goals and objectives in the study of philosophy. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

PHRA 1243 - Pharmacy Technician Certification Review
Credits: 2 (2 lecture). A review of major topics covered on the National Pharmacy Technician Certification examination (PTCE). Prerequisite: Successful completion of all 1st & 2nd semester PHRA courses.

PHRA 1247 - Pharmaceutical Mathematics II
Credits: 2 (2 lec, 1 lab). Advanced concepts of Pharmaceutical Mathematics. Prerequisite: Successful completion of all 1st semester PHRA courses.

PHRA 1260 - Clinical - Pharmacy Technician / Assistant
Credits: 2 (10 lab). 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. Prerequisite: HPRS 1201, PHRA 1309, PHRA 1413

PHRA 1261 - Clinical - Pharmacy Technician / Assistant
Credits: 2 (8 external lab). 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. Prerequisite: PHRA 1102, PHRA 1205, PHRA 1309, and PHRA 1313 (with a minimum grade of C or better); Admission to the Pharmacy Technician Program; must be placed into college-level reading, college-level writing and MATH 0308 in math.

PHRA 1272 - Professional Practices for Pharmacy Technicians
Credits: 2 (2 lec, 1 lab). Development of the necessary interpersonal and professional skills and abilities needed to become a successful entry-level pharmacy technician. Prerequisite: HPRS 1201; PHRA 1301; Admission to the Pharmacy Technician Program
Description of Courses

PHRA 1291 - Professional Practices for Pharmacy Technicians
Credits: 2 (2 lecture, 1 lab). Development of the necessary interpersonal and professional skills and abilities needed to become a successful entry-level pharmacy technician. Prerequisite: HPRS 1201; PHRA 1301; Admission to the Pharmacy Technician Program

PHRA 1301 - Introduction to Pharmacy
Credits: 3 (3 lecture). An overview of the qualifications, operational guidelines, and job duties of a pharmacy technician.

PHRA 1304 - Pharmacotherapy and Disease Process
Credits: 3 (3 lecture). A study of the disease state and therapeutic properties of drugs used in pharmaceutical therapy. Prerequisite: Successful completion of all 1st semester PHRA courses.

PHRA 1305 - Drug Classification
Credits: 3 (3 lecture). A study of pharmaceutical drugs, abbreviations, classifications, dosages, side effects, and routes of administration. Prerequisite: HPRS 1201; PHRA 1301; Admission to the Pharmacy Technician Program; must be placed into college-level reading, college-level writing and MATH 0308 in math.

PHRA 1309 - Pharmaceutical Mathematics I
Credits: 3 (3 lecture). Solving pharmaceutical calculation problems encountered in the preparation and distribution of drugs. Prerequisite: HPRS 1201, PHRA 1301; Admission to the Pharmacy Technician Program; must be placed into college-level reading, college-level writing and MATH 0308 in math.

PHRA 1413 - Community Pharmacy Practice
Credits: 4 (2 lecture, 4 lab). Introduction to the skills necessary to process, prepare, label, and maintain records of prescriptions in a community pharmacy to include customer service, count and pour techniques, prescription calculations, drug selection and preparation, over-the-counter drugs, inventory management and legal parameters. Prerequisite: HPRS 1201, PHRA 1301; Admission to the Pharmacy Technician Program; must be placed into college-level reading, college-level writing and MATH 0308 in math.

PHRA 1445 - Compounding Sterile Preparations
Credits: 4 (2 lecture, 6 lab). The process of compounding sterile preparations and aseptic technique within legal and regulatory guidelines specified by USP <797> standards. Prerequisite: Successful completion of all 1st semester PHRA courses.

PHRA 1449 - Institutional Pharmacy Practice
Credits: 4 (2 lecture, 6 lab). Fundamentals of the diverse roles and practice of pharmacy technicians in an institutional pharmacy setting. In-depth coverage of hospital pharmacy organization, work flow and personnel, safety techniques, data entry, packaging and labeling operations, inpatient drug distribution systems including investigational drugs, continuous quality improvement and inventory control. Prerequisite: Successful completion of all 1st semester PHRA courses.

PHRA 2260 - Clinical - Pharmacy Technician / Assistant
Credits: 2 (8 external lab). 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. Prerequisite: Successful completion of all 1st and 2nd semester PHRA courses.

PHRA 2261 - Clinical - Pharmacy Technician / Assistant
Credits: 2 (10 external lab). 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. Prerequisite: Successful completion of all 1st and 2nd semester PHRA courses.

PHTC 1311 - Fundamentals of Photography
Credits: 3 (2 lecture, 4 lab). An introduction to camera operation and image production, composition, supplemental lighting, and use of exposure meters and filters. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PHTC 1343 - Expressive Photography
Credits: 3 (2 lecture, 4 lab). A study of formal, professional, and individual uses of photography by applying photographic technology to personalized needs. Emphasis on creative visual thinking and problem solving and the exploration of personal vision. Prerequisite: PHTC 1311

PHTC 1345 - Illustrative Photography I
Credits: 3 (2 lecture, 4 lab). Instruction in the technical aspects involved in commercial photography. Topics include lighting equipment, techniques of production photography, reproduction principles, illustrative techniques, and advertising. Prerequisite: PHTC 1311; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

PHTC 1351 - Photojournalism I
Credits: 3 (2 lecture, 4 lab). Presentation of photographic techniques used by photojournalists in newspapers, magazines, and trade publications including news, feature, sports, editorial portraits, and photo essays. Includes a study of layout design and the freelance market. Prerequisite: PHTC 1311; must be placed into GUST 0341 in reading and MATH 0306 in math.

PHTC 1353 - Portraiture I
Credits: 3 (2 lecture, 4 lab). Photographic principles applied to portrait lighting, posing, and subject rapport. Prerequisite: PHTC 1311; must be placed into GUST 0341 in reading and MATH 0306 in math.

PHTC 1371 - Adobe Photoshop Lightroom CC
Credits: 3 (2 lecture, 4 lab). Introductory concepts in the use of the computer software for photographic manipulation, batch processing, printing and output.

PHTC 2340 - Photographic Studio Management
Credits: 3 (3 lecture). Photography business management, pricing, market analysis, promotion, networking, job acquisition, and photographic equipment analysis. Prerequisite: Must be placed into GUST 0341 in reading and MATH 0306 in math.

PHTC 2343 - Portfolio Development
Credits: 3 (2 lecture, 4 lab). A culmination experience for the evaluation of the student's photographic competencies. Includes association with a professional photographic organization, skills in resume creation, completion of portfolio, professional self-presentation, comprehensive exam, and seminars in areas of photographic interest. Prerequisite: All PHTC courses; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PHTC 2349 - Photo Digital Imaging II
Credits: 3 (2 lecture, 4 lab). Advanced concepts in the use of the computer and software for photographic manipulation and output.

PHTC 2451 - Photojournalism II
Credits: 3 (2 lecture, 4 lab). Advanced concepts of photojournalism. May include documentary, corporate, and annual report photography.

PHYS 1305 - Elementary Physics I (Lecture)
Credits: 3 (3 lecture). General introduction to basic and fundamental principles in physics (with minimal or no computations) including: motion, gravity, momentum, energy, relativity, structures of matter, thermal energy, waves and sound. This course is intended as a non-lab-based preparatory course for students wishing to take PHYS 1401 and PHYS 1402, and also for those students wishing to take PHYS 2325 who have no prior knowledge of physics. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

PHYS 1307 - Elementary Physics Laboratory II
Credits: 3 (3 lecture). A non-lab-based further introduction to the basic principles in physics (with minimal or no computations) which include: light, electricity, electromagnetism, quantum concepts, sub-atomic world, elementary particles and frontiers. Prerequisite: Must be placed in GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing. PHYS 1307 can be taken without taking PHYS 1305.

PHYS 1401 - College Physics I (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Non-calculus based course for medical related majors, architecture majors, technology majors, and other non-engineering and non-science majors. Topics include motion and forces, work and energy, momentum and collision, and the thermal properties of matter. Laboratory exercises include selected related experiments on these topics. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: MATH 1314, 1316; must also be placed into GUST 0341 (or higher) in reading.
Description of Courses

PHYS 1402 - College Physics II (Lecture & Lab)
Credits: 4 (3 lecture, 3 lab). Continuation of non-Calculus based physics for medical related majors, architecture majors, technology majors and other non-engineering and non-science majors. Topics include wave motion, electricity, magnetism, electromagnetic waves, optics, and topics in modern physics. Laboratory exercises include selected related experiments on these topics. This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: PHYS 2326; must be placed into GUST 0341 (or higher) in reading.

PHYS 2125 - University Physics I (Lab)
Credits: 1 (3 lab). Selected laboratory experiments related to topics in PHYS 2325 (University Physics I) for science and engineering majors. Core Curriculum Course. Prerequisite: Must be placed into GUST 0341 (or higher) in reading and be placed into MATH 2414 (or higher) in math.

PHYS 2126 - University Physics I (Lab)
Credits: 1 (3 lab). Selected laboratory experiments related to topics in PHYS 2326 (University Physics II) for science and engineering majors. Core Curriculum Course. Prerequisite: Prerequisite/Corequisite: PHYS 2326; must be placed into GUST 0341 (or higher) in reading and be placed into MATH 2415 (or higher).

PHYS 2325 - University Physics I (Lecture)
Credits: 3 (3 lecture, 1 lab). A calculus-based physics course designed specifically for chemistry, physics, and engineering majors. Topics include principles of mechanics, sound, wave phenomena, kinetic theory, fluid flow, and thermal physics. (formerly PHYS 2425) This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: Must placed into GUST 0341 (or higher) in reading and MATH 2414 (or higher) in math.

PHYS 2326 - University Physics II (Lecture)
Credits: 3 (3 lecture, 1 lab). Continuation of calculus based physics. Course designed specifically for chemistry, physics, and engineering majors. Includes principles of electricity and magnetism, optics, electromagnetic waves, relativity, kinetic theory, introduction to quantum theory, thermal physics, and other physics topics. (formerly PHYS 2426) This course satisfies the Life and Physical Sciences or Component Area Option of the HCC core. Prerequisite: PHYS 2425 or 2325; must be placed into GUST 0341 (or higher) in reading and MATH 2415 (or higher) in math.

PHYS 2389 - Academic Cooperative in Physics
Credits: 3 (3 lecture). An instructional program designed to integrate on-campus study with practical hands-on work experience in the physical sciences. In conjunction with class seminars, the individual students will set specific goals and objectives in the scientific study of inanimate objects, processes of matter and energy, and associated phenomena.

PLAB 1173 - Phlebotomy
Credits: 1 (1 lecture, 4 lab). Skill development in the performance of a variety of blood collection methods using proper techniques and universal precautions. Includes vacuum collection devices, syringes, capillary skin puncture, butterfly needles and blood culture, and specimen collection on adults, children, and infants. Emphasis on infection prevention, proper patient identification, labeling of specimens and quality assurance, specimen handling, processing, and accessioning. Topics include professionalism, ethics, and medical terminology. Prerequisite: Must be placed into college-level reading, writing and math.

PLAB 1260 - Clinical - Phlebotomy/Phlebotomist
Credits: 2. Work based experience that helps students gain practical experience in the discipline of phlebotomy. Direct supervision is provided by the clinical professional within the hospital or clinic.

PLAB 1323 - Phlebotomy
Credits: 3 (2 lecture, 3 lab). Skill development in the performance of a variety of blood collection methods using proper techniques and standard precautions. Includes vacuum collection devices, syringes, capillary skin puncture, butterfly needles and blood culture, and specimen collection on adults, children, and infants. Emphasis on infection prevention, patient identification, specimen labeling, quality assurance, specimen handling, processing, accessioning, professionalism, ethics, and medical terminology. Prerequisite: Must be placed into college-level reading, writing and math.

PLTC 1001 - Introduction to Plastic
Credits: 3 (2 lecture, 3 lab). A survey course designed to introduce the student to the field of plastics. An overview of thermoplastic and thermoset materials and the major processing methods utilized by industry. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.
POFI 1104 - Computer Fundamentals
Credits: 1 (1 lecture, 1 lab). Computer applications specific to business-related software. Emphasizes the concurrent development of office skills and computer knowledge. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFI 1301 - Computer Applications I
Credits: 3 (2 lecture, 3 lab). Overview of computer office applications including current terminology and technology. Introduction to computer hardware, software applications, and procedures. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFI 1341 - Computer Applications II
Credits: 3 (2 lecture, 3 lab). Continued study of current computer terminology and technology. Advanced skill development in computer hardware, software applications, and procedures. The student will demonstrate proficiency in commonly used software applications and identify and explain the concepts involved in producing documents using advanced features of software applications. Emphasis is on developing end-user proficiency skills for office environments. Prerequisite: POFI 1301; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFI 1349 - Spreadsheets
Credits: 3 (2 lecture, 3 lab). Spreadsheet software for business applications. Prerequisite: POFI 1301; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFI 1380 - Cooperative Education – Business / Office Automation / Technology / Data Entry
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: POFI 1380; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFL 1305 - Legal Terminology
Credits: 3 (3 lecture). An introduction to legal terminology including spelling, pronunciation, and definition of legal terms and an overview of the law and the professions. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFL 1359 - Legal Transcription
Credits: 3 (2 lecture, 3 lab). Skill development in comprehensive vocabulary, listening, organizing, and transcribing client-quality documents used in a legal office. Prerequisite: POFL 1305; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFL 1380 - Cooperative Education - Information Processing / Data Entry Technician
Credits: Credit 3 (1 lecture, 20 lab). 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. Prerequisite: POFL 1380; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFL 2305 - Introduction to Legal Research
Credits: 3 (3 lecture). Exploration of legal issues utilizing current and emerging research techniques. Prerequisite: POFL 1305; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFM 1300 - Basic Medical Coding
Credits: 3 (2 lecture, 3 lab). Presentation and application of basic coding rules, principles, guidelines, and conventions utilizing various coding systems. Prerequisite: MDCA 1313; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
POFM 2333 - Medical Document Production
Credits: 3 (2 lecture, 3 lab). Study of advanced concepts of medical office activities, practices, and procedures. Topics include advanced medical reports, transcription, coding, billing, insurance activities, and records management. This course is designed to provide practical applications of the linkage of the CPT-4 coding system. Medical references will be used for research and verification. MEDISOFT software applicable. Prerequisite: Prerequisite: POFM 1300; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFT 1319 - Records and Information Management I
Credits: 3 (3 lecture). Introduction to basic records and information management. Includes the life cycle of a record, manual and electronic records management, and basic filing procedures and rules. The student will identify the stages in the life cycle of a record; file and retrieve records using alphabetic, numeric, geographic, and subject filing systems, input, index, code, and cross-reference records; use tickler file, requisition, and charge-out procedures; and differentiate between manual and electronic filing. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFT 1325 - Business Math Using Technology
Credits: 3 (3 lecture). Skill development in the use of electronic calculators and business mathematical functions. Emphasis on business problem-solving skills using spreadsheet software and/or electronic calculator/keyboard. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFT 1329 - Beginning Keyboarding
Credits: 3 (2 lecture, 3 lab). Skill development in the operation of the keyboard by touch, applying proper keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFT 1345 - Shorthand / Notetaking I
Credits: 3 (2 lecture, 3 lab). An introduction to shorthand/notetaking principles. Mastery of accurate reading and writing of notes to produce mailable documents from dictation. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFT 1370 - Introduction to Office Technology
Credits: 3 (2 lecture, 3 lab). An introduction to present and future resources used to facilitate handling of office information. Study will be made of equipment applications and procedures, terminology and environmental factors affecting productivity and career paths. Prerequisite: Prerequisites: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFT 1380 - Cooperative Education - Administrative Assistant and Secretarial Services, General
Credits: 3 (1 lecture/seminar and 20 hours a week employment). Career related activities encountered in the student’s area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. This course may be repeated if topics and learning outcomes vary. Prerequisite: Prerequisite: Completion of 12 semester hours and Department Approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFT 2301 - Intermediate Keyboarding
Credits: Credit 3 (2 lecture, 3 lab). A continuation of keyboarding skills in document formatting, speed, and accuracy. Emphasis on proofreading, editing, following instructions, and keying documents from various copy. Prerequisite: Prerequisite: POFT 1329; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

POFT 2331 - Administrative Project Solutions
Credits: 3 (2 lecture, 3 lab). Experience in project management and office procedures utilizing integration of previously learned skills. Prerequisite: Prerequisite: POFT 1329 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.
Description of Courses

POFT 2380 - Cooperative Education - Administrative Assistant and Secretarial Science, General
Credits: 3 (1 lecture/seminar and 20 hours a week employment). An experience external to the college for an advanced student in a specialized field involving a written agreement between the educational institution and a business or industry. Mentored and supervised by a workplace employee, the student achieves objectives that are developed and documented by the college and that are directly related to specific occupational outcomes. This may be a paid or unpaid experience. This course may be repeated if topics and learning outcomes vary. Prerequisite: POFT 1380 and Department Approval; must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PREM 0100 - Test Prep - Math
Credits: 1. Gives students a head start in basic skill building in mathematics by providing a targeted review of basic skill, test preparation, and utilization of learning resources. Students will retake a TSI test after this intervention to determine proper placement in developmental education.

PREM 0200 - Test Prep - Math
Credits: 2. Gives students a head start in basic skill building in mathematics by providing a targeted review of basic skill, test preparation, and utilization of learning resources. Students will retake a TSI test after this intervention to determine proper placement in developmental education.

PREP 0100 - Test Prep and Skill Building
Credits: 1 (16 lab). Gives students a head start in basic skill building in reading, writing, and mathematics by providing a targeted review of basic skill, test preparation, and utilization of learning resources. Students will retake a TSI test after this intervention to determine proper placement in developmental education.

PREP 0200 - Test Prep and Skill Building
Credits: 1 (16 lab). Gives students a head start in basic skill building in reading, writing, and mathematics by providing a targeted review of basic skills, test preparation, and utilization of learning resources. Students will retake a TSI test after this intervention to determine proper placement in developmental education.

PREP 0300 - Test Prep and Skill Building
Credits: 1 (16 lab). To provide students information and skills in preparation for college, including orientation, test preparation, and completion of the HCC application.

PSTR 1301 - Fundamentals of Baking
Credits: 3 (2 lecture, 4 lab). Fundamentals of baking including dough, quick breads, pies, cakes, cookies, tarts, and doughnuts. Instruction in flours, fillings, and ingredients. Topics include baking terminology, tool and equipment use, formula conversions, functions of ingredients, and the evaluation of baked products. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 1305 - Breads and Rolls
Credits: 3 (2 lecture, 4 lab). Concentration on fundamentals of chemically- and yeast-raised breads and rolls. Instruction on commercial preparation of a wide variety of products. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 1306 - Cake Decorating I
Credits: 3 (2 lecture, 3 lab). A course in decoration of specialized and seasonal products. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 1310 - Pies, Tarts, Teacakes and Cookies
Credits: 3 (2 lecture, 4 lab). Focus on preparation of American- and European-style pie and tart fillings and dough, cookies, teacakes, custard and batters. Instruction in finishing and presentation techniques. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 1312 - Laminated Dough, Pate a Choux and Donuts
Credits: 3 (2 lecture, 4 lab). Focus on preparation of laminated doughs to include puff pastry, croissant, and Danish and a variety of pate a choux (eclair paste) products and donuts. Fillings and finishing techniques included. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 1340 - Plated Desserts
Credits: 3 (2 lecture, 4 lab). Preparation and service of hot and cold desserts with a focus on individual desserts, a la minute preparations, and numerous components within one preparation. Emphasis on station organization, timing, and service coordination for restaurant dessert production. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 1343 - Bakery Operations and Management
Credits: 3. Introduction to management, marketing, supervision, and sanitation principles required in retail
bakery operations. Emphasis on cost control, pricing, computer usage, and personnel issues.

PSTR 1381 - Cooperative Education - Baking and Pastry Arts / Baker / Pastry Chef
Credits: 3 (1 lecture, 20 lab). 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. Prerequisite: Department Approval; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 1391 - Special Topics in Baker / Pastry Chef : Healthy and Special Needs Baking
Credits: 3 (2 lecture, 4 lab). In this course the students will study and prepare baked goods that are specifically formulated to address a variety of dietary conditions. The course will include baking for people with wheat-gluten sensitivities, diabetic baking, fiber rich and low fat baking, allergies free sensitive baking and more. The course will focus on how to modify formulas and use alternative ingredients and substitutes. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 1471 - Baking for Special Dietary Needs
Credits: 4. Focus on baking methods and principles from a nutritional and chemical/physical point of view. Topics to be covered include: diets such as vegan, diabetic, low carbohydrate and gluten-free, nutritional analyses, and preparation of items for persons with special dietary needs. Topics include baking terminology, tool and equipment use, formula conversions, functions of ingredients, and the evaluation of baked products.

PSTR 2301 - Chocolates and Confections
Credits: 3 (2 lecture, 4 lab). Production and decoration of traditional truffles, marzipan, molded and hand-dipped chocolate, caramels, nougats, and pate de fruit. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 2307 - Cake Decorating II
Credits: 3 (2 lecture, 3 lab). A course in decoration of specialized and seasonal products. Prerequisite: PSTR 1306; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 2311 - Advanced Pastry Shop
Credits: 3 (2 lecture, 4 lab). A study of classical desserts, French and international pastries, hot and cold desserts, ice creams and ices, chocolate work, and decorations. Emphasis on advanced techniques. Prerequisite: PSTR 1301, PSTR 1310; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 2350 - Wedding Cakes
Credits: 3 (2 lecture, 4 lab). Skills, concepts, and techniques for preparing wedding cakes. Includes marzipan, plastic chocolate-rolled fondant, chocolate garnish, flower making, and royal icing piping work. Prerequisite: PSTR 1306; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

PSTR 2370 - Supervised Study: Capstone Study in Baking & Pastry Arts
Credits: 3. Assigns problems for independent study incorporating previous instruction and supervised by the instructor. Provides the student and instructor an opportunity to work together to identify the critical areas of need in the student’s repertoire. An individualized plan will be developed to address the student’s weaknesses and to lead progressively to a group demonstration of critical skills. Individual assessment constitutes the majority of this course. Lab, lecture, research, and out-of-class projects will be utilized.

PSYC 2301 - General Psychology
Credits: 3 (3 lecture). A survey of the basic principles underlying human behavior and mental processes. Emphasis will be placed on major areas of study in the field of psychology, such as motivation, development, thought processes, and personality. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: Must qualify to take college-level reading and writing or take INRW 0420 (or ESOL 0360) as a co-requisite.
PSYC 2306 - Human Sexuality
Credits: 3 (3 lecture). This course is designed to provide an understanding of human sexuality, identity, orientation, and behavior, and the variations in these dimensions of this important aspect of human experience. It includes information on physical, cognitive, and psychosocial changes associated with sexuality. Theory, research methods, and applications of research to the facilitation of gender identity development and understanding of the human sexual response are covered. The course also provides information on the treatment of sexual dysfunction, and the prevention of sexually transmitted diseases and irresponsible sexual behavior. Prerequisite: Must be placed into college level reading.

PSYC 2307 - Adolescent Psychology
Credits: 3 (3 lecture). Psychology of adolescence is a study of the relationships among the physical, emotional, social and psychological factors that influence growth and development from puberty to early adulthood (ages 12-18).

PSYC 2308 - Child Psychology
Credits: 3 (3 lecture). A study of normal physiological, intellectual, and emotional development and functioning of the child from conception through adolescence. Emphasis on normal child development, the family, parent-child interaction, and the psychological and cultural forces affecting them.

PSYC 2314 - Lifespan Growth & Development
Credits: 3 (3 lecture). A developmental psychology course designed to provide an understanding of human behavior and characteristics from conception through death. This course includes information on physical, cognitive, and psychosocial changes throughout the lifespan. Theory, research, and applications are covered. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: PSYC 2301 or Department Approval; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

PSYC 2315 - Psychology of Adjustment
Credits: 3 (3 lecture). A study of human behavior, applying psychological theory to the development of the well-adjusted individual. Techniques for managing stress, reducing anxiety, coping with anger, increasing assertiveness, and achieving self-control are considered. Prerequisite: PSYC 2301; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

PSYC 2316 - Psychology of Personality
Credits: 3 (3 lecture). This course covers personality theories that apply to both normal personality and abnormal behavior. Some of the theories covered are psychoanalytic, cognitive, learning, and sociocultural. Current research on the biological foundations of mental health and illness is covered in detail. These theories are related to mental disorders such as major depression, phobias, obsessive-compulsive disorder, bipolar disorder and schizophrenia. Case studies of individuals enhance comprehension of mental disorders. Treatment by psychotherapy and drugs is discussed as well as ethical, legal and social issues relating to the mentally ill. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: PSYC 2301; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing Corequisite: (or take ENGL 0310/0349 as a co-requisite).

PSYC 2317 - Statistical Methods in Psychology
Credits: 3 (3 lecture). An introduction to the use of scientific methods in psychology and to the statistical analysis of data. Attention is given to descriptive and inferential statistical methodology including t-tests, analysis of variance, correlation and regression. Core Curriculum Course. Prerequisite: MATH 0312(Or Higher) Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing Corequisite: (or take ENGL 0310/0349 as a co-requisite) and be placed into MATH 0312 (or higher).

PSYC 2319 - Social Psychology
Credits: 3 (3 lecture). A study of social cognition, social behavior, interpersonal relations, and group membership. Emphasis on theories, research, and applications. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: PSYC 2301; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing Corequisite: (or take ENGL 0310/0349 as a co-requisite).
PTAC 1302 - Introduction To Process Technology
Credits: 3 (3 lecture). Introduction to chemical and refinery plant operations. Topics include process technician duties, responsibilities and expectations, plant organizations, plant process and utility systems, and the physical and mental requirements of the process technician. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

PTAC 1308 - Safety, Health, and Environment I
Credits: 3 (3 lecture). Development of knowledge and skills to reinforce the attitudes and behaviors required for safe and environmentally sound work habits. Emphasis on safety, health, and environmental issues in the performance of all job tasks and regulatory compliance issues. Prerequisite: Prerequisite or Corequisite: PTAC 1302 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

PTAC 1332 - Process Instrumentation I
Credits: 3 (2 lecture, 2 lab). Study of the instruments and instrument systems used in the process industry including terminology, primary variables, symbology, control loops, and basic troubleshooting. Prerequisite: PTAC 1308, PTAC 1302 and MATH 1314 or Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0312 in math.

PTAC 1350 - Industrial Economics
Credits: 3 (3 lecture). Examination of the profitability factors of plant operations including personnel and business strategies. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0308 in math.

PTAC 1354 - Industrial Processes
Credits: 3 (3 lecture). Study of the processes employed in process plant operations. Prerequisite: PTAC 1302 and PTAC 1308; must be placed into GUST 0342 in reading, college-level writing and MATH 0308 in math.

PTAC 1410 - Process Technology I - Equipment
Credits: 4 (3 lecture, 3 lab). Instruction in the use of common process equipment. Prerequisite: Prerequisite: PTAC 1302 PTAC 1308 or Department Approval; must be placed into GUST 0342 in reading, college-level writing and math.

PTAC 2314 - Principles of Quality
Credits: 3 (3 lecture). Study of the background and application of quality concepts. Topics include team skills, quality tools, and economics and continuous improvement. Prerequisite: PTAC 1302 and MATH 1314; must be placed into college-level reading, writing and math.

PTAC 2386 - Internship Process Technology/Technician
Credits: 3 (1 lecture, 17 lab). 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.

PTAC 2420 - Process Technology II - Systems
Credits: 4 (3 lecture, 3 lab). Study of the interrelation of process equipment and process systems including related scientific principles. Prerequisite: Prerequisite: PTAC 1410 PTAC 1332, SCIT 1414, SCIT 1418 or Department Approval; must be placed into college-level reading, writing and math.

PTAC 2438 - Process Technology III - Operations
Credits: 4 (3 lecture, 3 lab). This course combines systems into operational processes with emphasis on operations under various conditions. Prerequisite: Prerequisite: PTAC 2420; must be placed into college-level reading, writing and math.

PTAC 2446 - Process Troubleshooting
Credits: 4 (3 lecture, 3 lab). Instruction in the different types of troubleshooting techniques, procedures, and methods used to solve process problems. Topics include application of data collection and analysis, cause effect relationships, and reasoning. Prerequisite: Prerequisite: PTAC 2420 or Department Approval; must be placed into college-level reading, writing and math.

PTHA 1229 - Applied Physical Principles
Credits: 2 (1 lecture, 2 lab). The application of physical principles to selected interventions in physical therapy. Prerequisite: Admission to the Program; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTHA 1266 - Practicum (or Field Experience) - Physical Therapist Assistant
Credits: 2 (14 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: PTHA 2205, PTHA 2509; must be placed into college-level reading, college-level writing and MATH 0312 in math.
PTHA 1267 - Practicum (or Field Experience) - Physical Therapist Assistant
Credits: 2 (14 lab). Practical general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: PTHA 1266, PTHA 2435, PTHA 2431; must be placed into college-level reading, college-level writing and MATH 0312 in math. Corequisite: PTHA 2239 and PTHA 2250

PTHA 1301 - The Profession of Physical Therapy
Credits: 3 (2 lecture, 2 lab). Introduction to the profession of physical therapy and the role of the physical therapist assistant. Prerequisite: Admission to the Program; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTHA 1321 - Pathophysiology for the PTA
Credits: 3 (3 lecture, 1 lab). Study of the pathophysiology of diseases/conditions encountered in physical therapy. Prerequisite: Prerequisite: PTHA 1413, PTHA 1301, HPRS 1106; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTHA 1391 - Special Topics in Physical Therapy Assistant: PTA Learning Strategies
Credits: 3 (3 lecture). This course is specifically tailored to meet the student's needs with regard to success in the PTA program. The class will emphasize time management, study skills and strategies, reading skills, and critical thinking. Learning outcomes: 1. The student will show competency with all anatomy section exams with a 75% minimum. 2. The student will show improvement in test taking strategies and critical thinking skills as reflected in the student's improved work by the end of the course. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTHA 1405 - Basic Patient Care Skills
Credits: 4 (3 lecture, 4 lab). Introduction to the theory and application of basic patient handling, functional skills, assessment techniques, and measurement techniques. The student will distinguish and examine the theory, principles, and techniques of patient handling and functional skills; perform basic patient handling, functional skills, assessment techniques, and measurement techniques; and utilize relevant communication techniques. Prerequisite: Admission to program; must be placed into college-level reading, college-level writing and MATH 0312 in math. Prerequisites: PTHA 1321, PTHA 1413, PTHA 1229, PTHA 1201

PTHA 1413 - Functional Anatomy
Credits: 4 (3 lecture, 4 lab). The relationship of the musculoskeletal and neuromuscular systems to normal and abnormal movement. Prerequisite: Admission to the Program; must be placed into college-level reading, college-level writing and MATH 0312 in math. Corequisite: Corequisite: BIOL 2401

PTHA 1431 - Physical Agents
Credits: 4 (2 lecture, 6 lab). Biophysical principles, physiological effects, efficacy, and application of physical agents. Prerequisite: PTHA 1413, PTHA 1229, PTHA 1301, PTHA 1305, HPRS 1106; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTHA 2205 - Neurology
Credits: 2 (2 lecture, 1 lab). Study of neuroanatomy and neurophysiology as it relates to commonly encountered neurological conditions. Prerequisite: PTHA 1321; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTHA 2250 - Current Concepts in Physical Therapy
Credits: 2 (1 lecture, 4 lab). Current concepts, skills, and knowledge in the provision of physical therapy services. Includes enhancement of professional development. Prerequisite: PTHA 2435, PTHA 2431; must be placed into college-level reading, college-level writing and MATH 0312 in math. Corequisite: PTHA 1267, PTHA 2239, PTHA 2266

PTHA 2266 - Practicum (or Field Experience) - Physical Therapist Assistant
Credits: 2 (14 lab). Practical general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: PTHA 2435, PTHA 2431, PTHA 1267; must be placed into college-level reading, college-level writing and MATH 0312 in math. Corequisite: PTHA 2239 and PTHA 2250

PTHA 2267 - Practicum IV - Physical Therapist Assistant
Credits: 2 (14 lab). Practical general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: PTHA 1267, PTHA 2266, PTHA 2250; must be placed into college-level reading, college-level writing and MATH 0312 in math.
PTHA 2301 - Essentials of Data Collection
Credits: 3 (2 lecture, 4 lab). Data collection techniques used to assist in patient/client management. Prerequisite: PTHA 1305, PTHA 1321, PTHA 1413, PTHA 1229, PTHA 1301, HPRS 1106; must be placed into college-level reading, college-level writing and MATH 0312 in math. Corequisite: PTHA 1431, HPRS 2332

PTHA 2339 - Professional Issues
Credits: 2 (2 lecture, 1 lab). Discussion of professional issues and behaviors related to clinical practice; preparation for transition into the workforce. Prerequisite: PTHA 2431, PTHA 2435; must be placed into college-level reading, college-level writing and MATH 0312 in math. Corequisite: PTHA 1267, PTHA 2266, PTHA 2250

PTHA 2431 - Management of Neurological Disorders
Credits: 4 (2 lecture, 6 lab). Advanced course integrating previously learned and new skills/techniques into the comprehensive rehabilitation of selected neurological disorders. Prerequisite: PTHA 2205, PTHA 2509; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTHA 2435 - Rehabilitation Techniques
Credits: 4 (2 lecture, 6 lab). Advanced course integrating previously learned and new skills/techniques into the comprehensive rehabilitation of selected musculoskeletal, neuromuscular, cardiopulmonary, and integumentary disorders. Prerequisite: PTHA 2205, PTHA 2509; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTHA 2509 - Therapeutic Exercise
Credits: 5 (3 lecture, 6 lab). Concepts, principles, and application of techniques related to therapeutic exercise and functional training. Prerequisite: PTHA 1321, PTHA 1431, PTHA 2301, HPRS 2332; must be placed into college-level reading, college-level writing and MATH 0312 in math.

PTRT 1301 - Introduction to Petroleum Industry
Credits: 3 (3 lecture). An introduction to the various aspects of petroleum industry including equipment, systems, instrumentation, operations, and the various scientific principles. Addresses a variety of petroleum technologies: exploration, drilling, production, transportation, marketing, and chemical processing industries.

PTRT 1313 - Industrial Safety
Credits: 3 (3 lecture). An overview for petroleum and manufacturing workers of state/federal regulations and guidelines which require industrial safety training. Topics include the 29 C.F.R 1910, 1926 standards.

PTRT 1370 - Petroleum Geology
Credits: 3 (3 lecture). Principles of geological patterns, rock shapes and structures, and reservoir formations associated with petroleum operations. Prerequisite: PTRT 1301, MATH 1314

PTRT 1470 - Petroleum Data Management I - Exploration
Credits: 4 (2 lecture, 4 lab). Overview of computer applications in exploration; covers the History, Civilization, fundamentals, terminology and software for exploration; introduction to the principles of geology, geophysics and petro-physics. Prerequisite: PTRT 1301, PTAC 1308, MATH 1314 OR Departmental Approval

PTRT 1471 - Exploration and Production I
Credits: 4 (2 lecture, 4 lab). Overview of various aspects of deepwater operations deepwater exploration, drilling and completing wells, development of production systems. Prerequisite: PTRT 1301

PTRT 1472 - Petroleum Data Management II-Drilling and Production
Credits: 4 (2 lecture, 4 lab). Overview of computer applications in drilling and production. Covers the History, Civilization, fundamentals, terminology and software for drilling and production. Introduction to the principles of drilling, production and reservoir. Prerequisite: PTRT 1470

PTRT 1473 - Exploration and Production II
Credits: 4 (2 lecture, 4 lab). Continue with exploration and production principles including drilling rigs, giant oil and gas fields, beam pumpers, and geological classifications. Prerequisite: PTRT 1470

PTRT 2323 - Natural Gas Production
Credits: 4 (2 lecture, 4 lab). An overview of the aspects of natural gas and oil production including various aspects of hydrocarbon production, processing equipment, and gas compression/transportation systems. Prerequisite: PTRT 2331

PTRT 2331 - Well Completions
Credits: 3 (3 lecture). Drilling and wellbore analysis data to develop a well completion plan. Prerequisite: PTRT 1473, MATH 1325
Description of Courses

PTRT 2370 - Petroleum Operations
Credits: 3 (3 lecture). Course covers the principles and fundamentals of onshore and offshore operations implemented in oil recovery. Prerequisite: PTRT 1470

PTRT 2371 - Principles of Reservoir Engineering
Credits: 3 (3 lecture). An overview of reservoir engineering techniques and calculations employed in the proper operation and management of underground oil reservoirs. Prerequisite: PTRT 1370, PTRT 1470

PTRT 2372 - Internship - Petroleum Technology / Technician
Credits: 3 (18 lab). 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. Prerequisite: PTRT 2331, Department Approval

PTRT 2373 - Principles of Enhanced Oil and Gas Recovery and Hydraulic Fracturing
Credits: 3 (3 lecture). Introduction in the development, basic operations, enhancement, optimization, and monitoring of fundamental and commonly implemented enhanced oil and gas recovery best practices. Prerequisite: PTRT 1470

PTRT 2380 - Cooperative Education - Petroleum Technology / Technician
Credits: 3 (1 lecture, 19 lab). 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. Prerequisite: PTRT 2331, Department Approval

PTRT 2470 - Petroleum Data Management III - Facilities and Performance
Credits: 4 (2 lecture, 4 lab). Overview of computer applications in surface facilities and automation. Covers the History, Civilization, fundamentals, terminology and software for surface facilities and automation. Prerequisite: PTRT 2331

RADR 1160 - Clinical - Radiologic Technology / Science - Radiographer
Credits: 1 (5 lab). 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. Prerequisite: Admission to the program; must be placed into college-level reading, writing and math.

RADR 1266 - Practicum (or Field Experience) – Radiologic Technology / Science - Radiographer
Credits: 2 (16 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: RADR 1160, RADR 1303, RADR 1411; must be placed into college-level reading, writing and math.

RADR 1303 - Patient Care
Credits: (3 lecture). An introduction in patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, and basic pharmacology. Prerequisite: Admission to the program; must be placed into college-level reading, writing and math.

RADR 1313 - Principles of Radiographic Imaging I
Credits: 3 (3 lecture, 1 lab). Radiographic image quality and the effects of exposure variables. Prerequisite: Admission to the program; must be placed into college-level reading, writing and math.

RADR 1411 - Basic Radiographic Procedures
Credits: 4 (2 lecture, 4 lab). An introduction to radiographic positioning terminology, the proper manipulation of equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of basic anatomy. Prerequisite: Admission to the program; must be placed into college-level reading, writing and math.

RADR 2167 - Practicum (or Field Experience) - Radiologic Technology/Science - Radiographer
Credits: 1 (10 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: RADR 2213, RADR 2217, RADR 2367; must be placed into college-level reading, writing and math.
Description of Courses

RADR 2213 - Radiation Biology and Protection
Credits: 2 (2 lecture). Effects of radiation exposure on biological systems. Includes typical medical exposure levels, methods for measuring and monitoring radiation, and methods for protecting personnel and patients from excessive exposure. Prerequisite: RADR 2309; must be placed into college-level reading, writing and math.

RADR 2217 - Radiographic Pathology
Credits: 2 (2 lecture). Disease processes and their appearance on radiographic images. Prerequisite: RADR 2331; must be placed into college-level reading, writing and math.

RADR 2260 - Clinical - Radiologic Technology / Science - Radiographer
Credits: 2 (8 lab). 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. Prerequisite: RADR 2309, RADR 2401, RADR 1266; must be placed into college-level reading, writing and math.

RADR 2309 - Radiographic Imaging Equipment
Credits: 3 (3 lecture). A study of the equipment and physics of x-ray production, basic x-ray circuits and relationship of equipment components to the imaging process. Prerequisite: RADR 2305, RADR 2331; must be placed into college-level reading, writing and math.

RADR 2331 - Advanced Radiographic Procedures
Credits: 3 (2 lecture, 2 lab). Continuation of positioning; alignment of the anatomical structure and equipment, evaluation of images for proper demonstration of anatomy and related pathology. Prerequisite: RADR 1313, RADR 2401; must be placed into college-level reading, writing and math.

RADR 2333 - Advanced Medical Imaging
Credits: 3 (3 lecture). Specialized imaging modalities. Includes concepts and theories of equipment operations and their integration for medical diagnosis. Prerequisite: RADR 1313, RADR 2401; must be placed into college-level reading, writing and math.

RADR 2335 - Radiologic Technology Seminar
Credits: 3 (3 lecture, 1 lab). A capstone course focusing on the synthesis of professional knowledge, skills and attitudes in preparation for professional employment and lifelong learning. Prerequisite: All RADR courses or by Department Approval; must be placed into college-level reading, writing and math.

RADR 2340 - Sectional Anatomy for Medical Imaging
Credits: 3 (3 lecture). Anatomic relationships that are present under various sectional orientations as depicted by computed tomography or magnetic resonance imaging. Prerequisite: RADR 2333; must be placed into college-level reading, writing and math.

RADR 2366 - Practicum (or Field Experience) – Radiologic Technology / Science - Radiographer
Credits: 3 (24 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: RADR 1267, RADR 2233; must be placed into college-level reading, writing and math.

RADR 2367 - Practicum (or Field Experience) – Radiologic Technology / Science - Radiographer
Credits: 3 (24 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: RADR 2333, RADR 2366; must be placed into college-level reading, writing and math.

RADR 2401 - Intermediate Radiographic Procedures
Credits: 4 (3 lecture, 4 lab). A continuation of the study of the proper manipulation of radiographic equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of anatomy. Prerequisite: RADR 1303, RADR 1411; must be placed into college-level reading, writing and math.

RBTC 1301 - Programmable Logic Controllers
Credits: 3 (2 lecture, 4 lab). A study in programmable logic controllers (PLC). Topics include processor units, numbering systems, memory organization, relay type devices, timers, counters, data manipulators, and programming. Emphasis will be placed on converting ladder diagrams into programs; explaining digital/analog devices used with programmable logic controllers; and executing and evaluating control system operation. Prerequisite: CETT 1425 or INTC 1441 or Department Approval, Must be placed into college-level reading, writing and math.

RBPT 1305 - Residential Lighting, Appliances, and Plug Loads
Credits: 3 (3 lecture, 1 lab). A study of the use of appliances, lighting, plug loads, and techniques to lower energy and water consumption in the home. Includes basic electrical concepts, calculation of energy and water usage, and selection of water- and energy-efficient appliances and lighting. Also covers the impact of human behavior on energy and water consumption. Investigation of future trends will be explored.
Description of Courses

RBPT 1310 - Residential Mechanical Systems
Credits: 3 (3 lecture, 1 lab). Identification and operation of space heating and cooling, ventilation, water heating, and swimming pool/spa systems. Includes comparisons of mechanical systems based on fuel type and efficiency. Also explores the impact of human behavior on energy usage. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

RBPT 2315 - Green Rating Systems for Homes
Credits: 3 (3 lecture, 1 lab). Use of computer software and rating criteria to evaluate and score homes using residential green rating systems. Emphasizes gathering data from building plans, manufacturers' specifications, and on site testing. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RBPT 2320 - Residential Energy Conservation Codes
Credits: 3 (3 lecture, 1 lab). Use of computer software and code documents to determine compliance with residential energy conservation codes. Emphasizes gathering data from building plans and manufacturers' specifications. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RBPT 2325 - Energy Rating Systems for Homes
Credits: 3 (3 lecture, 1 lab). Use of computer software and rating criteria to evaluate and score homes using residential energy rating systems. Emphasizes gathering data from building plans, manufacturers' specifications, and on site testing. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RBPT 2330 - Advanced Residential Building Science and Systems
Credits: 3 (3 lecture, 1 lab). A study of advanced energy efficient and environmentally responsible residential building methodologies and technologies. Includes exploration of alternate residential building systems and climate applicability. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RBPT 2340 - Advanced Residential Mechanical Systems
Credits: 3 (3 lecture, 1 lab). A study in matching the size of a mechanical system with a specific heating and/or cooling load to optimize energy efficiency. Ventilation and humidity requirements will be determined. Includes air distribution fundamentals and an exploration of efficiency testing and verification. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RBPT 2355 - Sustainable Neighborhood Development
Credits: 3 (3 lecture, 1 lab). A study of neighborhood-sustained design strategies and applications that integrate the principles of green building and smart growth. Emphasizes basic neighborhood planning, utility infrastructure, land-use patterns, general zoning, subdivision practices, and quantitative methods to evaluate neighborhood development. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RCCR 0323 - Reading College & Career Readiness
Credits: 3. Is designed to prepare students that possess a secondary education credential, have a TSIA test placement score of 316-335 in Reading or a score of "2" on the TSIA writing sample & wish to enter an academic or career training or education program course of study.

RCCR 0310 - Reading College and Career Readiness
Credits: 3. Is designed to prepare students that possess a secondary education credential, have a TSIA test placement score below 315 in Reading or a score of "1", "0", or "no score" on the TSIA writing sample and wish to enter an academic program course of study.

RELE 1191 - Special Topics in Real Estate
Credits: 1. This course contains instruction on good study habits and an overview to better prepare the student to take their State Examination to obtain a Texas Real Estate License. Topic covered include principles of real estate, real estate law, landlord tenant relationships, ownership and transfer of real property, legal descriptions, taxes, closing disclosures and procedures, fair housing, real estate appraisal, financing, and general overview of both State and Federal laws regarding the real estate industry. Students will be given a review of
Description of Courses

both the Texas Real Estate License Act and The Rules and Regulations of the Texas Real Estate Commission.

RELE 1200 - Contract Forms and Addenda
Credits: 2 (2 lecture). Promulgated Contract Forms, which shall include but is not limited to unauthorized practice of law, broker-lawyer committee, current promulgated forms, commission rules governing use forms and case studies involving use of forms. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1201 - Principles of Real Estate I
Credits: 2 (2 lecture). A beginning overview of licensing as a real estate broker or salesperson. Includes ethics of practice as a license holder, titles to and conveyance of real estate, legal descriptions, deeds, encumbrances and liens, distinctions between personal and real property, appraisal, finance and regulations, closing procedures, and real estate mathematics. Covers at least three hours of classroom instruction on federal, state, and local laws relating to housing discrimination, housing credit discrimination, and community reinvestment. Fulfills at least 30 of 60 hours of required instruction for salesperson license. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1211 - Law of Contracts
Credits: 2 (2 lecture). Elements of a contract, offer and acceptance, statute of frauds, specific performance and remedies for breach, unauthorized practice of law, commission rules relating to use of adopted forms, and owner disclosure requirements. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1219 - Real Estate Finance
Credits: 2 (2 lecture). Monetary systems, primary and secondary money markets, sources of mortgage loans, federal government programs, loan applications, processes and procedures, closing costs, alternative financial instruments, equal credit opportunity laws affecting mortgage lending, Community Reinvestment Act, and the state housing agency. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1238 - Principles of Real Estate II
Credits: 2 (2 lecture). Overview of licensing as a broker or salesperson. Includes ethics of practice as a license holder, titles to and conveyance of real estate, legal descriptions, deeds, encumbrances and liens, distinctions between personal and real property, appraisal, finance and regulations, closing procedures, and real estate mathematics. Covers at least three hours of classroom instruction on federal, state, and local laws relating to housing, discrimination, housing credit discrimination, and community reinvestment. Fulfills at least 30 of 60 hours of required instruction for salesperson license. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1291 - Special Topics in Real Estate
Credits: 3 (3 lecture). Commercial Real Estate is an overview of the commercial real estate industry which includes: commercial real estate culture, real estate professionalism and ethics, types of properties, investors, end users, leasing, developing, marketing psychology, advertising, time management, negotiating and closing, financing and characteristics of a successful salesperson. Prerequisite: Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1303 - Real Estate Appraisal
Credits: 3 (3 lecture). A study of the central purposes and functions of an appraisal, social and economic determinants of value, appraisal case studies, cost, market data and income approaches to value estimates, final correlations, and reporting. Accredited: Texas Appraiser Licensing and Certification Board. (Formerly REAL 2301) Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.
Description of Courses

RELE 1307 - Real Estate Investments
Credits: 3 (3 lecture). Characteristics of real estate investments. Includes techniques of investment analysis, time-valued money, discounted and non-discounted investment criteria, leverage, tax shelters, depreciation, and applications to property tax. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1309 - Real Estate Law
Credits: 3 (3 lecture). A study of a legal concepts of real estate, land description, real property rights, estates in land, contracts, conveyances, encumbrances, foreclosures, recording procedures, and evidence of title. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1315 - Property Management
Credits: 3 (3 lecture). A study of the role of the property manager, landlord policies, operating guidelines, leases, lease negotiations, tenant relations, maintenance, reports, habitability laws, and the Fair Housing Act. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1321 - Real Estate Marketing
Credits: 3 (3 lecture). A study of real estate professionalism and ethics; characteristics of successful salespersons; time management; psychology of marketing; listing procedures; advertising; negotiating and closing financing; and the Deceptive Trade Practice Act. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1323 - Real Estate Computer Applications
Credits: 3 (3 lecture). A study of the availability of technology, current software, and its ability to help a real estate agent become more productive. Includes database, mapping, mortgage interest, contact management, presentation and real estate related software application packages. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1324 - Loan Origination and Quality Control
Credits: 3 (3 lecture). An introduction to the mortgage loan application process. Topics include regulatory compliance and documentation; real estate contracts; the mortgage application process, interview techniques; credit, income and property qualification, quality controls and procedures. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1325 - Real Estate Mathematics
Credits: 3 (3 lecture). Basic arithmetic skills. Includes mathematical logic, percentages, interest, time value of money, depreciation, amortization, proration, and estimation of closing statements. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1327 - Real Estate Marketing - Special Topics
Credits: 3 (3 lecture). A study of real estate professionalism and ethics; characteristics of successful salespersons; time management; psychology of marketing; listing procedures; advertising; negotiating and closing financing; and the Deceptive Trade Practice Act. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1329 - Fundamentals of Environmental Issues
Credits: 3 (3 lecture). A study of environmental issues affecting the real estate industry including hazardous substances, underground storage tanks, wetlands, radon, asbestos, lead, endangered species protection, sick building syndrome and electromagnetic fields. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1335 - Real Estate Construction
Credits: 3 (3 lecture). A study of the basic principles of design and construction of real estate properties. This course meets part of the educational requirements, as determined by The Texas Real Estate Commission, to become a licensed inspector. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

RELE 1337 - Loan Processing
Credits: 3 (3 lecture). A study of the theoretical and practical framework necessary to understand the complex field of mortgage lending with emphasis on loan application, qualifications, and processing. Also includes the role of lenders, residential loan appraisals, closing, and funding the loan. This course emphasizes workforce training in the areas of loan processing and originating procedures as determined by the needs of industry. Accredited: Texas Savings and Loan Department. Prerequisite: Prerequisite: Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1381 - Cooperative Education - Real Estate
Credits: 3 (1 lecture, 20 lab). Career related activities encountered in the student’s area of specialization are offered through an individualized agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines, classroom learning with work experience. Includes a lecture component. Prerequisite: Prerequisite: Department Approval and RELE 2301; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 1391 - Special Topics in Real Estate
Description of Courses

Credits: 3. 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.

RELE 2201 - Law of Agency
Credits: 2 (2 lecture). A study of Law of agency including principal-agent and master-servant relationships, the authority of an agent, the termination of an agent’s authority, the fiduciary and other duties of an agent, employment law, deceptive trade practices, listing or buying representation procedures, and the disclosure of an agency. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 2305 - Real Estate Inspections
Credits: 3 (3 lecture). A study of the different types of building systems and materials used in the design and construction of real property. Covers residential construction and commercial building systems and materials. Includes different structural building systems with emphasis on wood-related products, concrete and masonry, brick, stone, and steel units. This course meets part of the educational requirements, as determined by The Texas Real Estate Commission, to become a licensed inspector. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 2307 - Real Estate Title and Settlement
Credits: 3 (3 lecture). Examines the procedural aspects required to research land titles, establish and administer title closings, escrow, determination of settlement requirements, and filing. In addition, the lender’s closing instructions, document review, funding procedures, post closing audit and file set up will be presented. This course emphasizes workforce training in the area of closing and funding procedures as determined by the needs of industry. Accredited: Texas Savings and Loan Department. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 2311 - Fundamentals of Mortgage Lending
Credits: 3 (3 lecture). A study of the theoretical and practical framework necessary to understand the complex field of mortgage lending with emphasis on loan application, qualifications, and underwriting. Also includes the role of lenders, security instruments, residential loan appraisals, and closing and funding the loan. This course emphasizes workforce training in the areas of loan processing and underwriting procedures as determined by the needs of industry. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 2331 - Real Estate Brokerage
Credits: 3 (3 lecture). A study of law of agency, planning and organization, operational policies and procedures, recruiting, selection and training of personnel, records and control, and real estate firm analysis and expansion criteria. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RELE 2381 - Cooperative Education-Real Estate
Credits: 3 (1 lecture, 20 lab). Career related activities encountered in the student’s area of specialization are offered through a cooperative agreement between the college, employer, and student. Under supervision of the college and the employer, the student combines classroom learning with work experience. Directly related to a technical discipline, specific learning objectives guide the student through the paid work experience. This course may be repeated if topics and learning outcomes vary. The student is required to work a minimum of 20 hours a week and attend a weekly seminar. An approved project and final report is required. Prerequisite: Prerequisite: Department Approval and RELE 1381; must be placed into GUST 0341 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RNSG 1105 - Nursing Skills I
Credits: 1 (3 Lab). Study of concepts and principles essential for demonstrating competence in the performance of nursing procedures. Topics include knowledge, judgment, skills, and professional values within a legal/ethical framework. Prerequisite: Admission to the A.D.N program. Corequisite: RNSG 1413, RNSG 1360
**Description of Courses**

RNSG 1144 - Nursing Skills II  
Credits: 1 (3 Lab). Study of concepts and principles necessary to perform intermediate or advanced nursing skills; and demonstrate competence in the performance of nursing procedures. Topics include knowledge, judgment, skills and professional values within a legal/ethical framework. Prerequisite: RNSG 1251, RNSG 2213 Corequisite: RNSG 1343, RNSG 2221, RNSG 2130, RNSG 2361

RNSG 1160 - Clinical - Registered Nursing/Registered Nurse  
Credits: 1. 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.

RNSG 1161 - Clinical - Registered Nursing/Registered Nurse  
Credits: 1. 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.

RNSG 1163 - Clinical - Registered Nursing/Registered Nurse  
Credits: 1 (3 clinical). 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. Prerequisite: Prerequisite: Admission to the ADN transition program; must be placed into college-level reading, college-level writing and MATH 0312 in math. Corequisite: Corequisite: RNSG 1163

RNSG 1201 - Pharmacology  
Credits: 2 (2 lecture). Introduction to the science of pharmacology with emphasis on the actions, interactions, adverse effects, and nursing implications of drug classifications. Content includes the roles and responsibilities of the nurse in safe administration of medications within a legal/ethical framework.

RNSG 1215 - Health Assessment  
Credits: 2. Development of skills and techniques required for a comprehensive nursing health assessment within a legal/ethical framework. This course lends itself to a blocked approach.

RNSG 1251 - Care of the Childbearing Family  
Credits: 2 (2 lecture). Study of the concepts related to the provision of nursing care for childbearing families; application of systematic problem-solving processes and critical thinking skills, including a focus on the childbearing family from birth to adolescence; and competency in knowledge, judgment, skill, and professional values within a legal/ethical framework. Prerequisite: RNSG 1413, RNSG 1360, RNSG 2201, RNSG 1341, RNSG 2360 Corequisite: RNSG 2213

RNSG 1327 - Transition to Professional Nursing  
Credits: 3 (3 lecture). Topics include health promotion, expanded assessment, analysis of data, nursing process, pharmacology, multidisciplinary teamwork, communication, and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework throughout the life span. Prerequisite: Admission to the ADN transition program; must be placed into college-level reading, college-level writing and MATH 0312 in math. Corequisite: Corequisite: RNSG 1163

RNSG 1341 - Common Concepts of Adult Health  
Credits: 3 (3 lecture). Basic integration of the role of the professional nurse as a provider of patient-centered care, patient safety advocate, 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. Prerequisite: RNSG 1360, RNSG 1413 Corequisite: RNSG 2360, RNSG 2201, RNSG 2261

RNSG 1343 - Complex Concepts of Adult Health  
Credits: 3 (3 lecture). 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. Prerequisite: RNSG 2213, RNSG 1251 Corequisite: RNSG 2361, RNSG 1144
Description of Courses

RNSG 1360 - Clinical - Registered Nursing/Registered Nurse - RNT Foundations
Credits: 3 (9 Clinical). 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. Prerequisite: Admission to the ADN program. Corequisite: RNSG 1115, RNSG 1360

RNSG 1413 - Foundations for Nursing Practice
Credits: 4 (3 lecture, 2 lab). Introduction to the role of the professional nurse as provider of care, coordinator of care, and member of the profession. Topics include but are not limited to the fundamental concepts of nursing practice, History, Civilization, of professional nursing, a systematic framework for decision-making, mechanisms of disease, the needs and problems that nurses help patients manage, and basic psychomotor skills. Emphasis on knowledge, judgment, skills and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Prerequisite: Admission to the ADN program. Corequisite: RNSG 1115, RNSG 1360, BIOL 2402, PSYC 2314

RNSG 2130 - Professional Nursing Review and Licensure Preparation
Credits: 1 (1 lecture). Review of concepts required for licensure examination and entry into the practice of professional nursing. Includes application of National Council Licensure Examination for Registered Nurses (NCLEX-RN) test plan, assessment of knowledge deficits, and remediation. This course lends itself to either a blocked or integrated approach. Prerequisite: RNSG 2213, RNSG 1251 Corequisite: RNSG 1343 or Department Approval

RNSG 2261 - Professional Nursing Review and Licensure Preparation
Credits: 2 (6 clinical). Study of the concepts related to the provision of nursing care for children and families. Direct supervision is provided by the clinical professional. Prerequisite: RNSG 2201, RNSG 1413, RNSG 1360 Corequisite: RNSG 2213, RNSG 1251

RNSG 2221 - Professional Nursing: Leadership and Management
Credits: 2 (2 lecture). Exploration of leadership and management principles applicable to the roles of the professional nurse. Includes application of knowledge, judgment, skills, and professional values within a legal/ethical framework. Prerequisite: RNSG 1251, RNSG 2213

RNSG 2261 - Clinical - Registered Nursing/Registered Nurse
Credits: 2 (6 clinical). Study of the concepts related to the provision of nursing care for children and families. Direct supervision is provided by the clinical professional. Prerequisite: Admission to the ADN program. Corequisite: RNSG 1115, RNSG 1360, BIOL 2402, PSYC 2314

RNSG 2314 - Integrated Care of the Patient with Complex Health Care Needs
Credits: 3. Application of a systematic problem-solving process, critical thinking skills and concepts to provide comprehensive nursing care to patients and families across the lifespan with complex health care needs including, but not limited to, complex childhood/adolescent diseases, complicated perinatal care, acute mental illness, complex perioperative care, serious adult health problems and health issues related to aging. Emphasis on tertiary disease prevention, health maintenance/restoration and collaboration with members of the interdisciplinary health care team. Content includes the roles of the professional nurse and applicable competencies in knowledge, judgment, skill, and professional values within a legal/ethical framework. This course lends itself to an integrated approach. Prerequisite: Integrated Care of the Patient with Common Health Care Needs: 2404, 2504

RNSG 2360 - Clinical - Registered Nursing/Registered Nurse
Credits: 3 (9 clinical). 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. Prerequisite: RNSG 2360, RNSG 1360 Corequisite: RNSG 1341

RNSG 2213 - Mental Health Nursing
Credits: 2 (2 lecture). Principles and concepts of mental health, psychopathology, and treatment modalities related to the nursing care of clients and their families. Prerequisite: RNSG 2201, RNSG 1341 Corequisite: RNSG 1251, RNSG 2160

RNSG 2213 - Mental Health Nursing
Credits: 2 (2 lecture). Principles and concepts of mental health, psychopathology, and treatment modalities related to the nursing care of clients and their families. Prerequisite: RNSG 2201, RNSG 1341 Corequisite: RNSG 1251, RNSG 2160
RNSG 2361 - Clinical Registered Nursing/Registered Nurse
Credits: 3 (9 clinical). 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. Prerequisite: RNSG 1251, RNSG 2213 Corequisite: RNSG 1144, RNSG 1343

RSPT 1201 - Introduction to Respiratory Care
Credits: 2 (2 lecture). An introduction to the field of respiratory care. Topics include the History, Civilization, of respiratory care, hospital organization, medical malpractice, ethics, vital signs, body mechanics, basic cardiopulmonary assessment, infection control, and cardiopulmonary resuscitation (CPR). Prerequisite: Must be placed into college-level reading, writing and math.

RSPT 1213 - Basic Respiratory Care Pharmacology
Credits: 2 (2 lecture). A study of basic pharmacological principles/practices of respiratory care drugs. Emphasis on classification, routes of administration, dosages/calculations, and physiological interaction. Prerequisite: RSPT 1201; must be placed into college-level reading, writing and math. Corequisite: RSPT 1225

RSPT 1225 - Respiratory Care Sciences
Credits: 2 (2 lecture, 1 lab). Physics, mathematics, and chemistry as related to respiratory care. Prerequisite: RSPT 1201; must be placed into college-level reading, writing and math. Corequisite: Corequisite: RSPT 1213

RSPT 1240 - Advanced Cardiopulmonary Anatomy and Physiology
Credits: 2 (2 lecture). Provides an advanced presentation of anatomy and physiology of the cardiovascular and pulmonary system. Prerequisite: BIOL 2301 BIOL 2101, BIOL 2302, BIOL 2102; must be placed into college-level reading, writing and math.

RSPT 1262 - Clinical Respiratory Care Therapy/Therapist
Credits: 2 (8 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: RSPT 1361, RSPT 1225; must be placed into college-level reading, writing and math. Corequisite: Corequisite: RSPT 2314

RSPT 1310 - Respiratory Care Procedures I
Credits: 3 (2 lecture, 3 lab). Essential knowledge of the equipment and techniques used in the treatment of cardiopulmonary disease. Content areas include: oxygen therapy, humidity and aerosol therapy, lung expansion therapy, bronchial hygiene therapy, pulse oximetry, arterial blood gas sampling and interpretation. Prerequisite: RSPT 1201; must be placed into college-level reading, writing and math. Corequisite: Corequisite: RSPT 1361

RSPT 1311 - Respiratory Care Procedures II
Credits: 3 (2 lecture, 3 lab). Provides essential knowledge of airway care and mechanical ventilation. Airway care includes indications, techniques, equipment, and hazards and complications. Mechanical ventilation includes indications, initiation, modes, clinical application, management, complications, and weaning. Prerequisite: RSPT 1361, RSPT 1310; must be placed into college-level reading, writing and math. Corequisite: Corequisite: RSPT 1362

RSPT 1360 - Clinical Respiratory Care Therapy/Therapist
Credits: 3 (16 lab). 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. Prerequisite: RSPT 1201 Corequisite: Corequisite: RSPT 1310

RSPT 1361 - Clinical Respiratory Care Therapy/Therapist
Credits: 3 (16 lab). 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. Prerequisite: Must be placed into college-level reading, writing and math. Corequisite: RSPT 1310

RSPT 2210 - Cardiopulmonary Disease
Credits: 2 (2 lecture). A discussion of pathogenesis, pathology, diagnosis, History, Civilization, , prognosis, manifestation, treatment, and detection of cardiopulmonary diseases. Prerequisite: RSPT 1240; RSPT 2361; must be placed into college-level reading, writing and math.

RSPT 2230 - Respiratory Care Examination Preparation
Credits: 2 (1 lecture, 4 lab). Theory and History, Civilization, of clinical simulation examinations. Includes construction types, scoring, and mechanics of taking the computerized simulation examination respiratory care. Prerequisite: RSPT 2325 Corequisite: RSPT 2262
RSPT 2239 - Advanced Cardiac Life Support
Credits: 2 (1 lecture, 2 lab). Advanced Cardiac Life Support (ACLS) with an emphasis on airway management. Designed to develop skills for resuscitation of the adult. Includes strategies for managing and stabilizing the cardiopulmonary arrested patient. May include certification. Prerequisite: RSPT 2317, RSPT 2325, RSPT 2255, RSPT 2258; must be placed into college-level reading, writing and math.

RSPT 2255 - Critical Care Monitoring
Credits: 2 (2 lecture). Advanced monitoring techniques used to assess a patient in the critical care setting. Prerequisite: RSPT 2260; must be placed into college-level reading, writing and math. Corequisite: Corequisite: RSPT 2266

RSPT 2258 - Respiratory Care Patient Assessment
Credits: 2 (2 lecture). Integration of patient examination techniques, including patient History, Civilization, and physical exam, lab studies, x-ray, pulmonary function, arterial blood gases, and invasive and noninvasive hemodynamics. Prerequisite: RSPT 1201; must be placed into college-level reading, writing and math.

RSPT 2262 - Clinical - Respiratory Care Therapy/Therapist
Credits: 3 (16 lab). 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. Prerequisite: RSPT 1262 Corequisite: Corequisite: RSPT 2255

RSPT 2314 - Mechanical Ventilation
Credits: 3 (3 lecture, 1 lab). The study of mechanical ventilation with emphasis on ventilator classification, methods, principles, and operational characteristics. Includes indications, complications, and physiologic effects/principles of mechanical ventilation. Emphasizes initiation, management, and weaning of ventilatory support. Prerequisite: RSPT 1213 Corequisite: Corequisite: RSPT 1262

RSPT 2325 - Cardiopulmonary Diagnostics
Credits: 3 (3 lecture). A study of physical, radiological, hemodynamic, laboratory, nutritional, and cardiopulmonary diagnostic assessment of the pulmonary patient. Prerequisite: RSPT 2255, RSPT 2310; must be placed into college-level reading, writing and math. Corequisite: Corequisite: RSPT 2233

RSPT 2353 - Neonatal/Pediatric Cardiopulmonary Care
Credits: 3 (3 lecture). A study of acute care, monitoring, and management as applied to the neonatal and pediatric patient. Prerequisite: Must be placed into college-level reading, writing and math. Corequisite: Corequisite: RSPT 2267

RSPT 2361 - Clinical - Respiratory Care Therapy/Therapist
Credits: 3 (16 lab). 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. Prerequisite: RSPT 1262 Corequisite: Corequisite: RSPT 2255

RSTO 1301 - Beverage Management
Credits: 3. A study of the beverage service of the hospitality industry including spirits, wines, beers, and non-alcoholic beverages. Topics include purchasing, resource control, legislation, marketing, physical plant requirements, staffing, service, and the selection of wines to enhance foods.

RSTO 1325 - Purchasing for Hospitality Operations
Credits: 3. Study of purchasing and inventory management of foods and other supplies to include development of purchase specifications, determination of order quantities, formal and informal price comparisons, proper receiving procedures, storage management, and issue procedures. Emphasis on product cost analysis, yields, pricing formulas, controls, and record keeping at each stage of the purchasing cycle.

RSTO 1351 - Principles of Food Preparation for Hospitality
Credits: 3 (2 lecture, 4 lab). A study in the fundamentals of food preparation to introduce hospitality administration students to basic culinary skills. Topics include kitchen professionalism, proper station set up, basic knife skills, basic cooking technique, proper handling and storage of food items and appropriate portion and plating techniques.
RSTO 1491 - Special Topics in Food and Beverage / Restaurant Operations Manager
Credits: 4 (3 lecture, 3 lab). This course addresses the general principles of food preparation including the safe use of kitchen tools and equipment and a general survey of basic food preparation. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

RSTO 2301 - Principles of Food and Beverage Controls
Credits: 3 (3 lecture). A study of financial principle and controls of food service operation including review of operation policies and procedures. Topics include financial budgeting and cost analysis emphasizing food and beverage labor costs, operational analysis, and internal and regulatory reporting procedures. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

RTVB 1240 - Audio/Radio Production Practices
Credits: 2 (1 lecture, 3 lab). Introduces through practical hands-on experience the equipment and procedures used in multitrack recording. Includes basic tracking, simple overdubs and operation of specific recording equipment commonly found in audio facilities, mixing, and equalization. Prerequisite: MUSC 1427, MUSC 1331; must be placed into GUST 0342, ENGL 0310 or 0349 and MATH 0308 in math. Corequisite: MUSC 2427

RTVB 1309 - Audio/Radio Production I
Credits: 3 (2 lecture, 4 lab). Concepts and techniques of sound production including basic recording, mixing, and editing techniques. Prerequisite: Must be placed into college-level reading, writing and math.

RTVB 1317 - Convergence of Electronic Media
Credits: 3 (3 lecture). History, Civilization, and future of electronic media. Includes radio, television, Internet, and convergent technologies. Recognizes regulatory and economic issues. Explores career opportunities in electronic media. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

RTVB 1321 - TV/Video Field Production
Credits: 3 (2 lecture, 4 lab). Video field camera set up and operation for broadcast and digital media. Incorporates basic editing and field audio techniques. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

RTVB 1325 - TV Studio Production
Credits: 3 (2 lecture, 4 lab). Basic television production. Includes studio program content, studio camera operation, and television audio. Prerequisite: RTVB 1317; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

RTVB 1329 - Scriptwriting
Credits: 3 (2 lecture, 4 lab). Writing scripts for film and electronic media. Emphasizes format and style for commercials, public service announcements, promos, news, and documentaries. Prerequisite: Prerequisite: ENGL 1301

RTVB 1355 - Radio and Television Announcing
Credits: 3 (2 lecture, 4 lab). Radio and television announcing skills such as voice quality, articulation, enunciation and pronunciation. Preparation for opportunities in announcing employment in news, sports, commercial, voice talent and disk jockey, and radio and TV. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

RTVB 1390 - Broadcast News Writing
Credits: 4 (3 lecture, 2 lab). Instruction in the writing of news copy according to standard broadcast formats. Prerequisite: ENGL 1301; must be placed into college-level reading, writing and math.

RTVB 1401 - Broadcast News Writing
Credits: 4 (3 lecture, 2 lab). Audio production theories regarding multitrack recording, studio live production and equipment operation. Prerequisite: RTVB 1409; must be placed into college-level reading, writing and math.

RTVB 2164 - Practicum (or Field Experience) - Radio and Television
Credits: 1 (10 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: FLMC 1304, FLMC 2333, FLMC 2344

RTVB 2232 - Audio/Radio Production Practices II
Credits: 2 (1 lecture, 3 lab). Topics include special effects, automated overdubbing, operation of specific recording equipment commonly found in large format multi-track audio facilities, mixing, and equalization. Complete one recording project using the lab time and facilities. Prerequisite: MUSC 2427, MUSC 2355; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math. Corequisite: Corequisite: MUSC 2447
Description of Courses

RTVB 2282 - Cooperative Education - Radio and Television Broadcasting Technology/Technician
Credits: 2 (1 lecture, 10 lab). 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. Prerequisite: MUSC 2447; must be placed into college-level reading, writing and math.

RTVB 2330 - Film and Video Editing
Credits: 3 (2 lecture, 4 lab). Film and broadcast editing for the preparation and completion of shorts, trailers, documentaries, and features. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

RTVB 2335 - TV/Video Production
Credits: 3 (2 lecture, 4 lab). Pre-production, production, and post-production process involved in multiple-camera studios. Includes advanced instruction in camera operation, lighting, audio, and television directing. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

RTVB 2337 - TV/Video Production Workshop I
Credits: 3 (2 lecture, 4 lab). Application and design of video productions in location or studio shoots with real deadlines and quality control restrictions. Prerequisite: Must be placed into college-level reading, writing and math.

RTVB 2343 - Commercial Recording Techniques
Credits: 3 (2 lecture, 4 lab). Student will operate audio production and editing equipment, coordinate and direct music production projects from booking to post-production, and characterize the music industry and surrounding labor market. This class provides a capstone experience during which the student will use all of the skills acquired throughout this program. Students are required to attend additional lab hours outside of class. Prerequisite: MUSC 2447; must be placed into college-level reading, writing and math.

RTVB 2386 - Internship - Radio and Television Broadcasting
Credits: 3 (18 lab). 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. Prerequisite: RTVB 1317 and Department Approval; must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

RUSS 1411 - Beginning Russian I
Credits: 4 (3 lecture, 2 lab). Introduction to Russian language and culture. Development of basic skills in listening comprehension, speaking, reading, writing, and cultural awareness. Course includes vocabulary building, conversation and grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

RUSS 1412 - Beginning Russian II
Credits: 4 (3 lecture, 2 lab). Further development of listening comprehension, speaking, reading, and writing skills, and cultural awareness. More advanced grammar. Transfers as foreign language credit. Core Curriculum Course. Continuation of RUSS 1411 Prerequisite: RUSS 1411 or satisfactory score on an advanced placement examination or at least 2 years of high school Russian within the last two years. Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

RUSS 2311 - Intermediate Russian I
Credits: 3 (3 lecture). Further development of listening, speaking, reading and writing skills and cultural awareness acquired in Beginning Russian. Study of more complex language structures. Oral and written practice based on readings and dialogues. Directed composition. Class conducted largely in Russian. Core Curriculum Course. Prerequisite: RUSS 1412 or equivalent; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

RUSS 2312 - Intermediate Russian II
Credits: 3 (3 lecture). Continuation of RUSS 2311. Oral practice and compositions based on readings. Class conducted mainly in Russian. Core Curriculum Course. Prerequisite: RUSS 2311 or equivalent; must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

SCIT 1320 - Physics for Allied Health
Credits: 2 (2 lecture, 2 lab). An introduction to physics with emphasis on applications to health related fields of study. Topics include forces, motion, work and energy, fluids, heat, electricity and magnetism, wave motion, sound, electromagnetic radiation, and nuclear radiation. Prerequisite: Must be placed into college-level reading, writing and math.

RTVB 2311 - Intermediate Russian I
Credits: 4 (3 lecture, 2 lab). Further development of listening comprehension, speaking, reading, writing, and cultural awareness. Course includes vocabulary building, conversation and grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)

RUSS 1411 - Beginning Russian I
Credits: 4 (3 lecture, 2 lab). Introduction to Russian language and culture. Development of basic skills in listening comprehension, speaking, reading, writing, and cultural awareness. Course includes vocabulary building, conversation and grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college level writing (or take ENGL 0310/0349 as a co-requisite)
Description of Courses

SCIT 1407 - Applied Human Anatomy and Physiology I
Credits: 4 (4 lecture, 1 lab). An applied systematic study of the structure and function of the human body designed for students considering a career in the health field. Includes anatomical terminology, cells, tissues, and the following systems: integumentary, skeletal, muscular, nervous, and endocrine. Emphasis on homeostasis. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

SCIT 1408 - Applied Human Anatomy and Physiology II
Credits: 4 (4 lecture, 1 lab). A continuation of Applied Human Anatomy and Physiology I designed for students considering a career in the health field. The following body systems are included: digestive, respiratory, cardiovascular, lymphatic/immune, renal/excretory, and reproductive. Emphasis is on homeostasis. Prerequisite: SCIT 1407; must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

SCIT 1414 - Applied General Chemistry I
Credits: 4 (3 lecture, 3 lab). Applications of general chemistry emphasizing industry-related laboratory skills and competencies including laboratory safety and report writing. Addresses supporting chemical theories including atomic and molecular structure, nomenclature, chemical reactivity, gas laws, acids and bases, and solutions. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

SCIT 1415 - Applied General Chemistry II
Credits: 4 (3 lecture, 3 lab). Applications of general chemistry emphasizing industry-related laboratory skills and competencies including laboratory safety and report writing. Addresses supporting chemical theories including covalent bonding, thermodynamics, equilibrium, reaction rates, electrochemistry, nuclear chemistry, and organic compounds. Prerequisite: SCIT 1414 or Department Approval; must be placed into college-level reading, writing and math.

SCIT 1418 - Applied Physics
Credits: 4 (3 lecture, 3 lab). Introduction to physics for industrial applications including vectors, motion, mechanics, simple machines, matter, heat, and thermodynamics. Prerequisite: MATH 1314 or Department Approval; must be placed into college-level reading, writing and math.

SCIT 1543 - Applied Analytical Chemistry
Credits: 5 (4 lecture, 2 lab). Principles of quantitative analysis as related to industrial applications. Includes gravimetric and titrimetric analysis of practical samples by classical and standard methods. Prerequisite: SCIT 1414 and MATH 1314 or CHEM 1411 and MATH 1314 or Department Approval; must be placed into college-level reading, writing and math.

SCIT 2401 - Applied Organic Chemistry I
Credits: 4 (2 lecture, 4 lab). Applications of the chemistry of carbon emphasizing industry-related laboratory skills and competencies. Includes reaction mechanisms, spectroscopy, and synthetic methods. Prerequisite: SCIT 2401; must be placed into college-level reading, college-level writing and MATH 0312 in math.

SCIT 2402 - Applied Organic Chemistry II
Credits: 4 (2 lecture, 4 lab). Continuation of the applications of the chemistry of carbon compounds emphasizing industry-related laboratory skills and competencies. Includes reaction mechanisms, spectroscopy, and synthetic methods. Prerequisite: SCIT 2401; must be placed into college-level reading, college-level writing and MATH 0312 in math.

SCWK 1321 - Orientation to Social Services
Credits: 3 (3 lecture). Introduction to the basic concepts, information, and practices within the field of social services. Topics include a survey of the historical development of social services; social, legal, and clinical definitions; and review of current information regarding indications for and methods of treatment and/or services. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

SGNL 1401 - Beginning American Sign Language I
Credits: 4 (3 lecture, 2 lab). An introduction to the basic skills in production and comprehension of American Sign Language (ASL). Includes the manual alphabet and numbers. Develops conversational ability, culturally appropriate behaviors, and exposes students to ASL grammar. Student must complete the course with a B- or better. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.
Description of Courses

SGNL 1402 - Beginning American Sign Language II
Credits: 4 (3 lecture, 2 lab). Develops receptive and expressive ability and allows recognition and demonstration of more sophisticated grammatical features of American Sign Language (ASL). Increases fluency and accuracy in fingerspelling and numbers. Provides opportunities for interaction within the deaf community. Student must complete the course with a B or better. Prerequisite: SGNL 1401, must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0306 in math.

SGNL 2301 - Intermediate American Sign Language I
Credits: 3 (2 lecture, 2 lab). Integrates and refines expressive and receptive skills in American Sign Language (ASL), including recognition of sociolinguistic variation. A practice oriented approach to language acquisition. Student must complete the course with a B or better. Prerequisite: SLNG 1311, SGNL 1401, SGNL 1402; must be placed into college-level reading, college-level writing and MATH 0312 in math.

SGNL 2302 - Intermediate American Sign Language II (4th semester ASL)
Credits: 3 (2 lecture, 2 lab). An integration of expressive and receptive skills in American Sign Language (ASL) with emphasis on grammar, linguistics, literature, and discourse styles at an intermediate level. Provides students with information on linguistic and cultural variations. Prerequisite: SGNL 1401, SGNL 1402, SGNL 2301, SGNL 1311; must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 1248 - Vocabulary Development for Interpreters
Credits: 2 (1 lecture, 3 lab). A course in vocabulary building in English and American Sign Language for interpreters. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 1307 - Intra-lingual Skills Development for Interpreters
Credits: 2 (2 lecture, 1 lab). Concentration on the development of intra-lingual (English to English) skills necessary for future development of inter-lingual (English to American Sign Language [ASL]/ASL to English) skills. Focus on linguistic and cognitive skills development in areas of paraphrasing, summarizing, main idea identification, comprehension, memory, delayed repetition, multi-tasking, vocabulary, and cultural literacy. Prerequisite: SGNL 1401, 1402, 2301, 2302; Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 1311 - Fingerspelling and Numbers
Credits: 2 (2 lecture, 1 lab). Development of expressive and receptive skills in fingerspelling and numbers. Receptive skills focus on whole word phrase recognition and fingerspelling/number comprehension in context. Expressive skills focus on the development of speed, clarity, and fluency. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 1317 - Introduction to the Deaf Community
Credits: 3 (3 lecture). An overview of the physical, educational, social, and cultural implications within the context of a deaf or hard-of-hearing individual's personal life, family, and community in today's multicultural world. Emphasis on current educational and vocational programs, legislation, technology, oppression, and other issues. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 1321 - Introduction to the Interpreting Profession
Credits: 3 (3 lecture). An overview of the field of sign language interpretation. Provides a historical framework for the principles, ethics, roles, responsibilities, and standard practices of the interpreting profession. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 1347 - Deaf Culture
Credits: 3 (3 lecture). Provides a historical and contemporary perspective of American deaf culture using a sociocultural model. Includes cultural identity and awareness, values, group norms, communication, language, and significant contributions made by deaf people to the world. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 1350 - Sign-To-Voice
Credits: 3 (2 lecture, 2 lab). Skill development in interpreting and transliterating from American Sign Language and other modes of communication to English and analysis of increasingly complex tasks utilizing simulated interpreting experiences including skills analysis and peer evaluation.
Description of Courses

SLNG 1391 - Special Topics in Sign Language Interpreting Interpreting
Credits: 3 (2 lecture, 2 lab). 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. Prerequisite: Prerequisite: SLNG 1307, SLNG 1311, SLNG 2401, SLNG 2402, SGNL 1401, SGNL 1402, SGNL 2301, Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 2266 - Practicum (or Field Experience) - Sign Language Interpretation and Translation Credits: 2. Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

SLNG 2301 - Interpreting I
Credits: 3 (2 lecture, 4 lab). An overview of the interpreting process and models of interpretation. Introduces the skills necessary to achieve dynamic message equivalence in interpreting American Sign Language (ASL) to English and English to ASL. Prerequisite: SGNL 1401, SGNL 1402, SGNL 2301, SGNL 2302, SLNG 1307, SLNG 1311, Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 2302 - Interpreting II
Credits: 3 (2 lecture, 4 lab). Continued development of discourse analysis and interpreting skills for increasingly complex tasks. Utilization of consecutive and simultaneous interpreting scenarios including monologues and dialogues. Emphasizes skill development, self-analysis, and peer evaluation. Prerequisite: SGNL 1401, SGNL 1402, SGNL 2301, SGNL 2302, SLNG 1307, SLNG 1311, SLNG 1321, SLNG 2401; Department Approval. Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 2315 - Interpreting in Educational Settings
Credits: 3 (2 lecture, 2 lab). Overview of education programs (K-12 and post secondary), focusing on the roles and skills of the interpreter as a member of the educational team. Includes current practices, communication methods, legislation, trends, and ethical issues. Introduces resources for content-specific vocabulary. Prerequisite: Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 2331 - Interpreting III
Credits: 3 (2 Lecture, 4 lab). A practice-oriented course to strengthen skills in the integration and application of interpreting using complex source materials. Continued exposure to simulated interpreting/transliterating experiences. Prerequisite: SGNL 1401, SGNL 1402, SGNL 2301, SGNL 2302, SLNG 1307, 1311, SLNG 1321, SLNG 2401, SLNG 2402; Department Approval; must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 2371 - Specialized Signs
Credits: 3 (2 lecture, 2 lab). This course focuses on specialized sign language interpreting settings from source language into a target language of American Sign Language and vice versa, presenting linguistic, cultural, and subject-related issues affecting meaning transfer from one language to another. Prerequisite: SGNL 1401, SGNL 1402, SGNL 2301, SGNL 2302, SLNG 2301.

Must be placed into college-level reading, college-level writing and MATH 0312 in math.

SLNG 2380 - Cooperative Education - Sign Language Interpretation and Translation
Credits: (1 lecture, 240 contact hours). Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisite: Departmental Approval

SLNG 2586 - Internship
Credits: 3. 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. Prerequisite: SLNG 1307, SLNG 1311, SLNG 1321, SLNG 1317, SGNL 1401, SGNL 1402, SGNL 2301, SGNL 2302, SLNG 1248, SLNG 1317, SLNG 1321, SLNG 1347, SLNG 1391, SLNG 2315, SLNG 2401, SLNG 2402, SLNG 2431

SOCI 1301 - Introduction to Sociology
Credits: 3 (3 lecture). A survey course which focuses on the nature of human groups in American and world societies, their social and cultural adaptations, and the impact which various social processes may have on their social organization and social change. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).
Description of Courses

SOCI 1306 - Social Problems
Credits: 3 (3 lecture). An inquiry into selected current social problems with specific reference to their original development, and suggested solutions. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SOCI 2301 - Marriage & the Family
Credits: 3 (3 lecture). This course is a sociological analysis of marriage and family relations based on fundamental principles in the discipline. Both theory and current research findings are covered. Areas explored include family dynamics, interpersonal relations, demographic trends, and conflict management. Current and classical research is reviewed and applied. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SOCI 2319 - Minority Studies
Credits: 3 (3 lecture). An in-depth theoretical and practical Sociological analysis that examines historical and contemporary minority issues, including race and ethnicity, using historical and modern demographic data such as life span, birth rates, marriage patterns, business ownership, educational attainment, migration data, and assimilation/pluralism patterns as well as the impact of economic and social globalization on minorities in the United States and the world. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SOCI 2336 - Criminology
Credits: 3 (3 lecture). An analysis of the social dimensions of crime as a form of deviant behavior; the nature and extent of crime; classic and modern theories; the role of the police and the courts, group and community oriented programs, with an evaluation of prevention, control, and treatment programs. This course satisfies the Social and Behavioral Sciences or Component Area Option of the HCC core. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SOCI 2340 - Drug Use & Abuse
Credits: 3 (3 lecture). Study of the use and abuse of drugs in today’s society. Emphasizes the physiological, sociological, and psychological factors. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SOCI 2374 - Global Issues and Social Change
Credits: 3 (3 lecture). A macro level analysis of the dynamic processes of change affecting the increasingly global community, with emphasis on the role of technology. The course will focus on current trends in the broad topics of human ecology, human rights, the environment, culture and the social institutions. Special attention will be devoted to the conflict and security, international governmental and nongovernmental entities, social movements, and the role of the global citizen. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SPAN 1300 - Beginning Spanish Conversation
Credits: 3 (3 lecture). An introductory Spanish course which emphasizes listening comprehension and speaking skills. Reading and writing may be done as reinforcement to oral communication skills. The course is slower-paced and less comprehensive than Spanish 1411. It is highly recommended for students without previous experience in the Spanish language. This course is not open to students whose first language is Spanish. Generally, does not transfer as foreign language credit, but may transfer as elective credit.

SPAN 1310 - Beginning Spanish Conversation II
Credits: 3 (3 lecture). Continuation of SPAN 1300. Emphasizes oral communication skills. Generally, does not transfer as foreign language credit, but may transfer as elective credit. Students who continue the study of Spanish following this course must take SPAN 1411. Prerequisite: Prerequisite: SPAN 1300 or equivalent

SPAN 1411 - Beginning Spanish I
Credits: 4 (3 lecture, 2 lab). Introduction to the Spanish language and Hispanic culture. Development of basic skills in listening comprehension, speaking, reading, writing, and cultural awareness. Course includes vocabulary building, conversation and grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.
Description of Courses

SPAN 1412 - Beginning Spanish II
Credits: 4 (3 lecture, 2 lab). Continuation of SPAN 1411. Further development of listening comprehension, speaking, reading, and writing skills, and cultural awareness. More advanced grammar. Transfers as foreign language credit. Core Curriculum Course. Prerequisite: Prerequisite: SPAN 1411 or satisfactory score on an advanced placement examination or at least 2 years of high school Spanish within the last two years; must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

SPAN 2311 - Intermediate Spanish I
Credits: 3 (3 lecture). Further development of listening, speaking, reading and writing skills and cultural awareness acquired in Beginning Spanish. Presentation of more complex language structures. Oral and written practice based on selected readings. Class conducted mainly in Spanish. Prerequisite: Prerequisite: SPAN 1412 or equivalent; must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

SPAN 2312 - Intermediate Spanish II
Credits: 3 (3 lecture). Continuation of SPAN 2311. Special emphasis on written communication. Readings, discussions and compositions. Class conducted mainly in Spanish. Prerequisite: Prerequisite: SPAN 2311 or equivalent; must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

SPAN 2313 - Spanish for Native/Heritage Speakers I
Credits: 3 (3 lecture). Designed for Hispanic-American and other students from a Spanish speaking background. Emphasis on basic skills in reading, spelling, and composition. Credit will not be given for both SPAN 2313 and SPAN 2315. Prerequisite: Prerequisite: test placement; must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

SPAN 2315 - Spanish for Native/Heritage Speakers II
Credits: 3 (3 lecture). Continuation of SPAN 2313. Continued development of reading and writing skills and control of universal Spanish style. Prerequisite: Prerequisite: SPAN 2313; must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

SPAN 2316 - Career-Oriented Conversational Spanish
Credits: 3 (3 lecture). A course emphasizing the development of listening and speaking skills at the intermediate level. The course will use vocabulary, structures, conversational situations and cultural information appropriate for a designated activity or topic such as business, music, travel or other specialized areas. Each time the course is offered, the particular focus will be specified. May be repeated for credit with permission of the Dean. Prerequisite: Prerequisite: SPAN 2311

SPAN 2321 - Readings in Spanish Literature
Credits: 3 (3 lecture). An introduction to Spanish literature through representative selections by major Spanish authors. Conducted in Spanish. Prerequisite: Prerequisite: SPAN 2312

SPCH 1311 - Introduction to Speech Communication
Credits: 3 (3 lecture). A survey course in the basic principles of oral communication. Includes the study of the use of the body and voice, the speaker-listener relationship, and preparation and delivery of platform speeches. Open to all students. Required for speech majors. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SPCH 1315 - Public Speaking
Credits: 3 (3 lecture). Designed to develop proficiency in public speaking situations; emphasis on content, organization, and delivery of speeches for various occasions. Open to all students. Required for speech majors. Core Curriculum Course. Prerequisite: SPCH 1311 or ENGL 1301 or Department Approval.

SPCH 1318 - Interpersonal Communication
Credits: 3 (3 lecture). A course designed to improve the student's effectiveness in small-group and one-to-one communication. Open to all students. Required for speech majors. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).
Description of Courses

SPCH 1321 - Business and Professional Communication
Credits: 3 (3 lecture). Applies the techniques of oral communication to situations most common to business and professional people. Covers discussion methods, conference techniques, committee reports, instructions, lectures, and public speeches. Open to all students. Required for speech majors. Core Curriculum Course. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SPCH 1342 - Voice and Diction
Credits: 3 (3 lecture). Training in the effective use of the voice and body. Includes study of the vocal mechanism and the phonetic alphabet; improvement of enunciation, pronunciation, and articulation. Recommended for non-native speakers. Open to all students. Required for speech majors. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SPCH 2333 - Discussion and Small Group Communication
Credits: 3 (3 lecture). Examines the dynamics of small group communication and discussion situations, including body language. Open to all students, required of majors. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SPCH 2335 - Argumentation and Debate
Credits: 3 (3 lecture). Study of principles of argumentation and debate. Practice in preparing written and spoken arguments. Open to all students. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SPCH 2341 - Oral Interpretation
Credits: 3 (3 lecture). Cultivation of the art of oral presentation of literary forms, analysis of thought, development of imagination, communication of emotional values, and individual projects in interpretive reading. Open to all students. Required for speech majors. Prerequisite: Must be placed into college-level reading (or take GUST 0342 as a co-requisite) and be placed into college-level writing (or take ENGL 0310/0349 as a co-requisite).

SPNL 1291 - Special Topics in Spanish Language and Literature
Credits: 2 (2 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0342 (or higher) in reading and ENGL 0310/0349 (or higher) in writing.

SRGT 1361 - Clinical - Surgical Technology / Technologist
Credits: 3 (3 clinical). 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. Prerequisite: Department Approval; must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

SRGT 1371 - Sterile Processing
Credits: 3 (2 lecture, 2 lab). In-depth coverage of specialized surgical modalities in endoscopy, microsurgery, therapeutic surgical energies, and other integrated science technologies. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

SRGT 1372 - Comprehensive Anatomy and Physiology for the Surgical Technologist
Credits: 3 (3 lecture). Comprehensive study of the structure and function of human cells, tissues, and organ systems including integumentary, skeletal, muscular, and nervous system, endocrine, digestive, respiratory, cardiovascular, lymphatic/immune, renal/excretory, and reproductive. Fast-paced online course designed for the surgical technologist. Prerequisite: Department Approval; Admission to the program. Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

SRGT 1405 - Introduction to Surgical Technology
Credits: 4 (3 lecture, 3 lab). Orientation to surgical technology theory, surgical pharmacology and anesthesia, technological sciences, and patient care concepts. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.
SRGT 1409 - Fundamentals of Perioperative Concepts and Techniques
Credits: 4 (3 lecture, 3 lab). In-depth coverage of perioperative concepts such as aseptic principles and practices, infectious processes, wound healing, and creation and maintenance of the sterile field. Prerequisite: Must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

SRGT 1441 - Surgical Procedures I
Credits: 4 (3 lecture, 3 lab). Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the general, OB/GYN, genitourinary, and orthopedic surgical specialties incorporating instruments, equipment, and supplies required for safe patient care. Prerequisite: SRGT 1405, SRGT 1409; must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

SRGT 1442 - Surgical Procedures II
Credits: 4 (3 lecture, 3 lab). Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the thoracic, peripheral vascular, plastic/reconstructive, EENT, cardiac, and neurological surgical specialties incorporating instruments, equipment, and supplies required for safe patient care. Prerequisite: Prerequisite: SRGT 1441; must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

SRGT 1463 - Clinical - Surgical Technology / Technologist
Credits: 4 (17 clinical). 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. Prerequisite: Prerequisite: SRGT 1463; must be placed into GUST 0342 in reading, college-level writing and MATH 0312 in math.

SRVT 1301 - Introduction to Surveying
Credits: 3 (2 lecture, 4 lab). An overview of the surveying profession. The History, Civilization, of surveying and its impact on the world. Review of the mathematics used in surveying. Introduction to basic surveying equipment with emphasis on measurements. Instruction on surveying procedures and the limitation of errors. Calculation to determine precision and error of closure. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

SRVT 1341 - Land Surveying
Credits: 3 (2 lecture, 4 lab). A study of the measurement and determination of boundaries, areas, shapes, location through traversing techniques. Instruction in a variety of adjustment methods using programmed and non-programmed hand-held calculators and computers. Methods of traversing and adjustment of errors according to prevailing and applicable professional standards. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

SRVT 2348 - Plane Surveying
Credits: 3 (2 lecture, 4 lab). Surveying instruments, basic measuring procedures, vertical and horizontal control, and traverse closure. Prerequisite: Must be placed into GUST 0342 in reading, ENGL 0310 or 0349 in writing and MATH 0308 in math.

TECA 1303 - Families, School, & Community
Credits: 3 (3 lecture). A study of the child, family, community, and schools, including parent education and involvement, family and community lifestyles, child abuse, and current family life issues. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Association for the Education of Young Children position statement related to developmentally appropriate practices for children from birth through age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. The course includes a minimum of 16 hours of field experiences. Prerequisite: Must be placed into college-level reading and college-level writing.
TECA 1311 - Educating Young Children  
Credits: 3 (3 lecture). 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 Assessment of Educational Progress 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. Prerequisite: Must be placed into college-level reading and college-level writing.

TECA 1318 - Wellness of the Young Child  
Credits: 3 (2 lecture, 3 lab). A study of the factors that impact the well-being of the young child including healthy behavior, food, nutrition, fitness, and safety practices. Focuses on local and national standards and legal implications of relevant policies and regulations. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Assessment of Educational Progress position statement related to developmentally appropriate practices for children from birth to age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Course includes a minimum of 16 hours of field experiences. Prerequisite: Must be placed into college-level reading and college-level writing.

TECA 1354 - Child Growth and Development  
Credits: 3 (3 lecture). A study of the physical, emotional, social, language, and cognitive factors impacting growth and development of children through adolescence. (Cross-listed with PSYC 2308) Prerequisite: Must be placed into college-level reading and college-level writing.

TECM 1301 - Industrial Mathematics  
Credits: 3 (3 lecture). Math skills applicable to industrial occupations. Includes fraction and decimal manipulation, measurement, percentage, and problem solving techniques for equations and ratio/proportion applications. Prerequisite: Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

TECM 1303 - Technical Calculations  
Credits: 3. Specific mathematical calculations required by business, industry, and health occupations.

TRAI 1176 - Business Terminology for Translation and Interpretation  
Credits: 1 (1 lecture). This course provides an introduction to the concepts and terminology of international business and has a broad coverage of essential elements of international business. It also focuses on the language of contracts, including Incoterms, and builds foundation for translation and interpretation in commercial areas. Prerequisite: Must be placed into college-level reading and college-level writing.

TRAI 1271 - Technology for Translation & Interpretation  
Credits: 2 (1 lecture, 2 lab). This course is an introduction to the equipment and electronic tools used by professional translators and interpreters throughout their workflow. Prerequisite: Must be placed into college-level reading and college-level writing.

TRAI 1272 - Terminology Management and Research  
Credits: 2 (1 lecture, 2 lab). Basic terminology in the fields of medicine, law, computers, business, and technical fields will be covered. Students will learn how to ensure accuracy for highly specialized fields for which terminology may not yet be available. Different tools and techniques to find, store, and manage search results will be discussed. Prerequisite: TRAI 1371; Must be placed into college-level reading and college-level writing.

TRAI 1371 - Fundamentals of the Theory & Practice of Translation & Interpretation  
Credits: 3 (3 lecture). This course, taught in English, is an introduction to translation into English and target language. Its goal is to teach students the basic principles of the theory of translation, the linguistic and cultural aspects of language transfer, the main techniques and strategies for translating and interpreting as well as the differences between English and target language regarding grammar, syntax, punctuation, and style. Prerequisite: Must be placed into college-level reading and college-level writing.
TRAI 1372 - Writing, Editing & Revising for Translation
Credits: 3 (3 lecture). This course is designed for translators, editors and writers of business and other specialized and technical documents. Learning activities focus on requirements for the production of final English drafts of good quality. Prerequisite: Must be placed into college-level reading and college-level writing.

TRAI 1373 - Intercultural Communication
Credits: 3 (3 lecture). This course focuses on important issues of global, national, regional and gender identities seen through the prism of translation activity. It scrutinizes the linguistic and cultural resources employed by translators to assimilate, channel, exploit, and localize discourses and voices in their respective environments. The focus will be on such areas as business, medical and legal areas as well as technical environments. Prerequisite: Must be placed into college-level reading and college-level writing.

TRAI 2271 - Fundamentals of Specialized Written Translation (Sci-Tech)
Credits: 2 (1 lecture, 2 lab). This course focuses on translation of scientific and technical texts from source language (Spanish/Chinese/Russian/French) into the English language and vice versa, presenting linguistic and cultural issues affecting meaning transfer from one language to another. Prerequisite: Must be placed into college-level reading and college-level writing.

TRAI 2272 - Introduction to Interpreting II (Medical)
Credits: 2. This course focuses on interpretation of medical content, including sight translation, from English into a target language (Spanish/French/Chinese Mandarin/Russian/Arabic, etc) and vice versa, presenting linguistic, cultural, and subject-related issues affecting meaning transfer from one language to another.

TRAI 2273 - Introduction to Interpreting III (Simultaneous)
Credits: 2 (1 lecture, 2 lab). This course focuses on techniques and skills required for simultaneous interpretation including organizing and comprehending messages simultaneously, prediction skills, bilingual proficiency and multiculturalism, concentration, retention, and décalage. Students will practice this mode using scripts based on various scenarios. Prerequisite: Must be placed into college-level reading and college-level writing.

TRAI 2274 - Introduction to Interpreting (Consecutive and Sight)
Credits: 2 (1 lecture, 2 lab). This course is designed to teach students the specialized techniques of consecutive and sight interpreting to prepare them for the career in the field. Techniques for note taking are also included in the course. Prerequisite: Must be placed into college-level reading and college-level writing.

TRAI 2275 - Advanced Project in Translation
Credits: 2 (1 lecture, 3 lab). Students will conduct a translation project demonstrating their ability to apply all the skills and tools taught in the Program. Prerequisite: Must be placed into college-level reading and college-level writing.

TRAI 2277 - Fundamentals of Specialized Written Translation (Legal)
Credits: 2. This course focuses on translation of legal texts from English into a target language (Spanish/French/Chinese Mandarin/Russian, etc.) and vice versa, presenting linguistic, cultural, and subject-related issues affecting meaning transfer from one language to another.

TRAI 2278 - Fundamentals of Specialized Written Translation (Medical)
Credits: 2. This course focuses on translation of medical texts from English into a target language (Spanish/French/Chinese Mandarin/Russian, etc.) and vice versa, presenting linguistic, cultural, and subject-related issues affecting meaning transfer from one language to another.

TRAI 2279 - Introduction to Interpreting I (Legal)
Credits: 2. This course focuses on interpretation of legal content, including court interpreting, from English into a target language (Spanish/French/Chinese Mandarin/Russian/Arabic, etc.) and vice versa, presenting linguistic, cultural, and subject-related issues affecting meaning transfer from one language to another.

TRAI 2376 – Internship – Translation & Interpretation
Credits: 3 (3 lab). Practical, general workplace training supported by an individualized learning plan developed jointly by the internship site supervisor, college and student. This will serve as the capstone course for the award. Prerequisite: Must be placed into college-level reading and college-level writing.
Description of Courses

VNSG 1122 - Vocational Nursing Concepts
Credits: 1 (1 lecture). 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. Prerequisite: Admission to program; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

VNSG 1161 – Clinical - Licensed Practical / Vocational Nursing Training
Credits: 1 (6 lab). 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. Prerequisite: Admission to program; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1423

VNSG 1162 - Clinical - Licensed Practical / Vocational Nursing Training
Credits: 1 (4 lab). 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. Prerequisite: VNSG 1161; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1330

VNSG 1163 - Clinical - Licensed Practical / Vocational Nursing Training
Credits: 1 (4 lab). 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. Prerequisite: VNSG 1162; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1334

VNSG 1216 - Nutrition
Credits: 2 (2 lecture). Introduction to nutrients and the role of diet therapy in growth and development and in the maintenance of health. Prerequisite: Admission to program; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

VNSG 1219 - Leadership and Professional Development
Credits: 2 (2 lecture). 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. Prerequisite: VNSG 1122; Must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

VNSG 1227 - Essentials of Medication Administration
Credits: 2 (2 lecture, 1 lab). General principles of medication administration including determination of dosage, preparation, safe administration, and documentation of multiple forms of drugs. Instruction includes various systems of measurement. Prerequisite: Admission to program; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

VNSG 1238 - Mental Illness
Credits: 2 (2 lecture). Study of human behavior with emphasis on emotional and mental abnormalities and modes of treatment incorporating the nursing process. Prerequisite: VNSG 1400; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

VNSG 1266 – Practicum (or Field Experience) – Licensed Practical / Vocational Nurse Training
Credits: 2 (15 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: VNSG 1161; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1409 and VNSG 2331

VNSG 1267 - Practicum (or Field Experience) – Licensed Practical / Vocational Nurse Training
Credits: 2 (16 lab). Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: VNSG 1266; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1410

VNSG 1320 - Anatomy and Physiology for Allied Health
Credits: 3 (3 lecture). Introduction to the normal structure and function of the body including an understanding of the relationship of body systems in maintaining homeostasis. Prerequisite: Admission to program; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

VNSG 1330 - Maternal - Neonatal Nursing
Credits: 3 (3 lecture). Utilization of the nursing process in the assessment and management of the childbearing family. Emphasis on the bio-psycho-socio-cultural needs of the family during the phases of pregnancy, childbirth, and the neonatal period including abnormal conditions. Prerequisite: VNSG 1400; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1162
Description of Courses

VNSG 1334 - Pediatrics
Credits: 3 (3 lecture). Study of childhood diseases and childcare from infancy through adolescence. Focus on the care of the well and the ill child utilizing the nursing process. Prerequisite: Must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1163

VNSG 1400 - Nursing in Health and Illness I
Credits: 4 (4 lecture). Introduction to general principles of growth and development, primary health care needs of the client across the life span, and therapeutic nursing interventions. Prerequisite: Admission to program; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

VNSG 1409 - Nursing in Health and Illness II
Credits: 4 (4 lecture). Introduction to common health problems requiring medical and surgical interventions. Prerequisite: VNSG 1400; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1266

VNSG 1423 - Basic Nursing Skills
Credits: 4 (3 lecture, 4 lab). Mastery of entry level nursing skills and competencies for a variety of health care settings. Utilization of the nursing process as the foundation for all nursing interventions. Prerequisite: Admission to program; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1266

VNSG 2331 - Advanced Nursing Skills
Credits: 4 (2 lecture, 4 lab). Mastery of advanced level nursing skills and competencies in a variety of health care settings utilizing the nursing process as a problem-solving tool. Prerequisite: Must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1266

VNSG 2410 - Nursing in Health and Illness III
Credits: 4 (4 lecture). Continuation of Nursing in Health and Illness II. Further study of common medical-surgical health problems of the client including concepts of mental illness. Incorporates knowledge necessary to make the transition from student to graduate vocational nurse. Prerequisite: VNSG 1409; must be placed into college-level reading, ENGL 0300 or 0347 in writing and MATH 0306 in math. Corequisite: Corequisite: VNSG 1267

WLDG 1191 - Special Topics in Welder/Welding Technologist
Credits: 1 (1 lecture). Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisite: Must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

WLDG 1407 - Introduction to Welding Using Multiple Processes
Credits: 4 (2 lecture, 4 lab). Basic welding processes. Includes oxy-fuel welding (OFW) and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), and gas tungsten arc welding (GTAW). Prerequisite: Prerequisites/Corequisites: TECM 1301, WLDG 1313 Must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

WLDG 1413 - Introduction to Blueprint Reading for Welders
Credits: 3 (3 lecture). 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. Prerequisite: Prerequisites/Corequisites: TECM 1301; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

WLDG 1428 - Introduction to Shielded Metal Arc Welding (SMAW)
Credits: 4. An introduction to the shielded metal arc welding process. Emphasis placed on power sources, electrode selection, and various joint designs.
Description of Courses

WLDG 1430 - Introduction to Gas Metal Arc Welding (GMAW)
Credits: 4 (2 lecture, 4 lab). A study of the principles of gas metal arc welding, setup and use of Gas Metal Arc Welding (GMAW) equipment, and safe use of tools/equipment. Instruction in various joint designs. Prerequisite: TECM 1301, WLDG 1313, WLDG 1421 and 1407; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

WLDG 1434 - Introduction to Gas Tungsten Arc (GTAW) Welding
Credits: 4 (2 lecture, 4 lab). An introduction to the principles of gas tungsten arc welding (GTAW), setup/use of GTAW equipment, and safe use of tools and equipment. Welding instruction in various positions on joint designs. Prerequisite: TECM 1301, WLDG 1313, WLDG 1421 and 1407; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

WLDG 1435 - Introduction to Pipe Welding
Credits: 4 (2 lecture, 4 lab). Introduction to the welding of pipe using the shielded-metal arc welding process, including electrodes selection, equipment setup, and safe shop practices. Emphasis on weld position 1G and 2G using various electrodes. Prerequisite: TECM 1301, WLDG 1313, WLDG 1421 and 1407; must be placed into GUST 0339 in reading, ENGL 0300 or 0347 in writing and MATH 0306 in math.

WLDG 1457 - Intermediate Shielded Metal Arc Welding (SMAW)
Credits: 4. A study of the production of various fillets and groove welds. Preparation of specimens for testing in various positions.

WLDG 2447 - Advanced Gas Metal Arc Welding (GMAW)
Credits: 4 (2 lecture, 4 lab). Advanced topics in GMAW welding, including welding in various positions and directions. Prerequisite: WLDG 1430; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

WLDG 2451 - Advanced Gas Tungsten Arc Welding (GTAW)
Credits: 4 (2 lecture, 4 lab). Advanced topics in GTAW welding, including welding in various positions and directions. Prerequisite: WLDG 1434; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.

WLDG 2453 - Advanced Pipe Welding
Credits: 4 (2 lecture, 4 lab). Advanced topics involving welding of pipe using the shielded metal arc welding (SMAW) process. Topics include electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 5G and 6G using various electrodes. Prerequisite: WLDG 1435; must be placed into GUST 0341 in reading, ENGL 0300 or 0347 in writing and MATH 0308 in math.