ACCT 2301  Principles of Financial Accounting (52.0301.51 04)  3.3.1
This course is an introduction to the fundamental concepts of financial accounting as prescribed by U.S. generally accepted accounting principles (GAAP) as applied to transactions and events that affect business organizations. Students will examine the procedures and systems to accumulate, analyze, measure, and record financial transactions. Students will use recorded financial information to prepare a balance sheet, income statement, statement of cash flows, and statement of shareholders’ equity to communicate the business entity's results of operations and financial position to users of financial information who are external to the company. Students will study the nature of assets, liabilities, and owners’ equity while learning to use reported financial information for purposes of making decisions about the company. Students will be exposed to International Financial Reporting Standards (IFRS). Prerequisite: Meet TSI college-readiness standard for Mathematics; or equivalent. Recommended co-requisite: MATH 1324 Mathematics for Business & Social Science. Fee charged.

ACCT 2302  Principles of Managerial Accounting (52.0301.51 04)  3.3.1
This course is an introduction to the fundamental concepts of managerial accounting appropriate for all organizations. Students will study information from the entity's accounting system relevant to decisions made by internal managers, as distinguished from information relevant to users who are external to the company. The emphasis is on the identification and assignment of product costs, operational budgeting and planning, cost control, and management decision making. Topics include product costing methodologies, cost behavior, operational and capital budgeting, and performance evaluation. Fee charged. Prerequisite: ACCT 2301.

ACNT 1303  Introduction to Accounting I  3.2.4
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. Fee Charged.

ACNT 1311  Introduction to Computerized Accounting  3.2.4
Utilize an application software to perform accounting tasks; maintain records and prepare and analyze reports for a business entity; complete a comprehensive project; and explain the components of general ledger software. Fee charged.

ACNT 1331  Federal Income Tax: Individual  3.2.4
A study of the federal tax law for preparation of individual income tax returns.

AGRI 1131  The Agricultural Industry (01.0103.52 01)  1.1.0
Overview of agriculture and the American agricultural system, including an examination of career opportunities and requirements.
AGRI 1309  Computers in Agriculture (01.0101.51 01)  3.2.2
Use of computers in agricultural applications. Introduction to programming languages, word processing, electronic spreadsheets and agricultural software.

AGRI 1311  Dairy Science (02.0206.51 01)  3.2.3
Survey of the dairy industry including dairy breeds, standards for selection and culling, herd replacements, feeding, management, physiology, and health maintenance. Food value for milk, tests for composition and quality, and use and processing of market milk and dairy products. Fee charged.

AGRI 1325  Marketing of Agricultural Products (01.0102.51 01)  3.3.0
Essential marketing functions in the movement of agricultural commodities and products from producer to consumer.

AGRI 1329  Principles of Food Science (01.1001.51 01)  3.3.0
Biological and scientific aspects of modern industrial food supply systems. Food classification, modern processing, and quality control.

AGRI 1407  Agronomy (02.0402.51 01)  4.3.3
Principles and practices in development, production and management of field crops; plant breeding; plant diseases; soils; and insect and weed control. Laboratory activities will reinforce the fundamental principles and practices in the development, production, and management of field crops including growth and development, climate, plant requirements, pest management, and production methods.

AGRI 1415  Horticulture (01.0601.51 01)  4.3.3
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. Laboratory activities will reinforce the 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. Fee charged.

AGRI 1419  Basic Animal Science (02.0201.51 01)  4.3.3
Scientific animal production and the importance of livestock and meat industries. Selection, reproduction, nutrition, management, and marketing of livestock. Laboratory activities will reinforce scientific animal production and the importance of livestock and meat industries. Selection, reproduction, nutrition, management, and marketing of livestock. Fee charged.

AGRI 2317  Introduction to Agriculture Economics (01.0103.51 01)  3.3.0
Fundamental economic principles and their application in the agricultural industry.

AGRI 2321  Livestock Evaluation (02.0201.52 01)  3.2.3
Evaluation and grading of market cattle, swine, sheep, and goats and their
carcasses and wholesale cuts. Emphasis will be placed on value determination. Selection and evaluation of breeding cattle, sheep, swine, and goats with emphasis on economically important traits. Fee charged.

**AGRI 2330**  **Wildlife Conservation & Management (03.0601.51 01)**  
Principles and practices used in the production and improvement of wildlife resources. Aesthetic, ecological and recreational uses of public and private lands.

**ARTS 1301**  **Art Appreciation (50.0703.51 26)**  
A general introduction to the visual arts designed to create an appreciation of the vocabulary, media, techniques, and purposes of the creative process. Students will critically interpret and evaluate works of art within formal, cultural, and historical contexts.

**ARTS 1303**  **Art History I (50.0703.52 26)**  
A chronological analysis of the historical and cultural contexts of the visual arts from prehistoric times to the 14th century.

**ARTS 1304**  **Art History II (50.0703.52 26)**  
A chronological analysis of the historical and cultural contexts of the visual arts from the 14th century to the present day.

**ARTS 1311**  **Design I (50.0401.53 26)**  
An introduction to the fundamental terminology, concepts, theory, and application of two dimensional design. Fee charged.

**ARTS 1312**  **Design II (50.0401.53 26)**  
An introduction to the fundamental terminology, concepts, theory, and application of three dimensional design. Fee charged.

**ARTS 1316**  **Drawing I (50.0705.52 26)**  
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. Fee charged.

**ARTS 1317**  **Drawing II (50.0705.52 26)**  
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. Fee charged. Prerequisite: ARTS 1316 or consent of instructor.

**ARTS 2289**  **Academic Cooperative (2 SCH version) (24.0103.52 12)**  
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 and/or art history.

ARTS 2311  Design III (50.0401.53  26)  3.2.4
Elements and principles of art using two- and three-dimensional concepts. Prerequisite: ARTS 1311.

ARTS 2316  Painting I (50.0708.52  26)  3.2.4
Exploration of ideas using painting media and techniques. Fee charged. Prerequisites: ARTS 1317, 2317 or consent of instructor.

ARTS 2317  Painting II (50.0708.52  26)  3.2.4
Exploration of ideas using painting media and techniques. Fee charged. Prerequisite: ARTS 2316 or consent of instructor.

ARTS 2323  Life Drawing I (50.0705.53  26)  3.2.4
Basic study of the human form. Fee charged. Prerequisite: ARTS 1316.

ARTS 2326  Sculpture I (50.0709.51  26)  3.2.4
Exploration of ideas using sculpture media and techniques. Fee charged. Prerequisite: ARTS 1312 or consent of instructor.

ARTS 2341  Arts Metals I (50.0713.51  26)  3.2.4
Exploration of ideas using basic techniques in jewelry and metal construction. Fee charged. Prerequisite: ARTS 1311 or consent of instructor.

ARTS 2346  Ceramics I (50.0711.51  26)  3.2.4
Exploration of ideas using basic ceramic processes. Fee charged.

ARTS 2347  Ceramics II (50.0711.51  26)  3.2.4
Exploration of ideas using basic ceramic processes. Fee charged. Prerequisite: ARTS 2346 or consent of instructor.

ARTS 2348  Digital Art I (50.0402.52  26)  3.1.2
Studio art courses that explore the potential of the computer hardware and software medium for their visual, conceptual, and practical uses in the visual arts. Prerequisite: ARTS 1316, ARTS 1311 or consent of the instructor. Fee charged.

ARTS 2356  Photography I (50.0605.51  26)  3.2.4
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. Fee charged.

ARTS 2357  Photography II (50.0605.52  26)  3.2.4
Extends the students' knowledge of technique and guides them in developing personal outlooks toward specific applications. Fee charged. Prerequisite: ARTS 2356 or its equivalent.
ARTS 2389  Academic Cooperative (3 SCH version) (24.0103.52 12)  3.2.4
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 and/or history.

BCIS 1305  Business Computer Applications (11.0202.54 04)  3.2.4
Students will study computer terminology, hardware, software, operating systems and information systems related to the business environment. The focus of this course is on business productivity software applications and professional behavior in computing, including word processing (as needed), spreadsheets, databases, presentation graphics, and business oriented utilization of the Internet.

BIOL 1322  Nutrition & Diet Therapy (19.0501.51 09)  3.3.0
This course introduces general nutritional concepts in health and disease and includes practical applications of that knowledge. Special emphasis is given to nutrients and nutritional processes including functions, food sources, digestion, absorption, and metabolism. Food safety, availability, and nutritional information including food labels, advertising, and nationally established guidelines are addressed.

BIOL 1406  Biology for Science Majors I (26.0101.51 03)  4.3.3
Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. Laboratory activities will reinforce these fundamental principles of living organisms.

BIOL 1407  Biology for Science Majors II (26.0101.51 03)  4.3.3
The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Prerequisite: BIOL 1406.

BIOL 1408  Biology for Non-Science Majors I (26.0101.51 03)  4.3.3
Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Fee charged.

BIOL 1409  Biology for Non-Science Majors II (26.0101.51 03)  4.3.3
This course will provide a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Fee charged.
BIOL 2306  Environmental Biology (03.0103.51 01)  3.3.1
Principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research. Fee charged. Prerequisite: two semesters of Biology or consent of instructor.

BIOL 2316  Genetics (26.0804.51 03)  3.3.0
Study of the principles of molecular and classical genetics and the function and transmission of hereditary material. May include population genetics and genetic engineering. Fee charged. Prerequisite: one year of Biology or the equivalent.

BIOL 2401  Anatomy & Physiology I (26.0707.51 03)  4.3.3
Anatomy and Physiology I is the first part of a two course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous and special senses. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Systems to be studied include integumentary, skeletal, muscular, nervous, and special senses. Fee charged.

BIOL 2402  Anatomy and Physiology II (26.0706.51 03)  4.3.3
Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Fee charged. Prerequisite: BIOL 2401.

BIOL 2420  Microbiology for Non-Science Majors (26.0503.51 03)  4.3.4
This course covers basic microbiology and immunology and is primarily directed at pre-nursing, pre-allied health, and non-science majors. It provides an introduction to historical concepts of the nature of microorganisms, microbial diversity, the importance of microorganisms and acellular agents in the biosphere, and their roles in human and animal diseases. Major topics include bacterial structure as well as growth, physiology, genetics, and biochemistry of microorganisms. Emphasis is on medical microbiology, infectious diseases, and public health. Lab activities cover basics of culture and identification of bacteria and microbial ecology. Fee charged. Prerequisite: eight hours of biology or chemistry, or consent of the instructor.
BMGT 1327  Principles of Management  3.3.1
Concepts, terminology, principles, theories, and issues in the field of management. The course will have students to explain and apply the various theories, processes, and functions of management; identify roles of leadership in organizations; and recognize elements of the communication process.

BMGT 1331  Production and Operations Management  3.2.2
Fundamentals of techniques used in the practice of production and operations management. Includes location, design, and resource allocation. Students will identify factors of plant location and design, resource allocation, and equipment selection and utilization; and demonstrate the ability to use planning, scheduling, inventory management, and quality control techniques.

BMGT 1341  Business Ethics  3.3.1
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. End-of-Course Outcomes: Define business ethics; identify and discuss the consequences of unethical business practices; describe reasoning for analyzing ethical dilemmas; describe different ethical views; explain how business, government, and society function interactively; explain corporate social responsibility; and discuss social and ethical threats emerging from rapid technological change.

BMGT 1368  Practicum - Business Administration & Management, General  3.0.21
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

BMGT 2310  Financial Management  3.3.1
Examination of accounting information to support managerial decision-making processes. Topics include managerial concepts and systems, various analyses for decision making, and planning and control. The student will examine how internal controls affect cost and budgeting; analyze profit and loss statements; identify and correct financial problems; and utilize formulas to determine organizational profitability.

BUSG 1301  Introduction to Business  3.3.0
Fundamental business principles including structure, functions, resources, and operational processes. The student will identify business functions of accounting, management, marketing, and economics; and describe the relationships of social responsibility, ethics, and law; and describe the scope of global business enterprise.

BUSG 1304  Financial Literacy  3.3.0
A study of the financial principles when managing financial affairs. Includes topics such as budgeting, retirement, property ownership, savings, and investment planning. The student will identify the concepts associated with the time value of money; identify the differences among various savings and investment programs and classes of securities; identify the options for insurance; describe
retirement and estate planning techniques; explain owning versus renting real
property; and describe consumer protection legislation.

BUSG 2309  Small Business Management/Entrepreneurship  3.3.0
Starting, operating, and growing a small business. Includes essential manage-
ment skills, how to prepare a business plan, accounting, financial needs, staff-
ing, marketing strategies, and legal issues. The student will identify manage-
ment skills for a small business; outline issues related to choosing a business,
obtaining a return on investment; and create a business plan.

BUSI 2301  Business Law (22.0101.51 24)  3.3.0
The course provides the student with foundational information about the U.S.
legal system and dispute resolution, and their impact on business. The major
content areas will include general principles of law, the relationship of business
and the U.S. Constitution, state and federal legal systems, the relationship
between law and ethics, contracts, sales, torts, agency law, intellectual property,
and business law in the global context. Prerequisite: High school coursework
in U.S. history and government, or equivalent.

CETT 1325  Digital Fundamentals  3.2.4
An entry level course in digital electronics to include numbering systems, logic
gates, Boolean algebra, and combinational logic. End-of-Course Outcomes:
Construct digital circuits such as combinational logic circuits, clocking and
timing circuits, and troubleshoot various digital circuits using schematic dia-
grams.

CETT 1329  Solid State Devices  3.2.4
A study of diodes, transistor characteristics and other semiconductor devices,
including analysis of static and dynamic characteristics, biasing techniques,
and thermal considerations.

CETT 1341  Solid State Circuits  3.2.4
A study of various semiconductor devices incorporated in circuits and their
applications. Emphasis on circuit construction, measurements, and analysis.

CETT 1345  Microprocessor  3.2.4
An introductory course in microprocessor software and hardware: architecture,
timing sequence, operation, and programming. Discussion of appropriate soft-
ware diagnostic language and tools.

CETT 1349  Digital Systems  3.2.4
A course in electronics covering digital systems. Emphasis on application and
troubleshooting digital systems. Prerequisite: Instructor approval. Fee charged.

CETT 1357  Linear Integrated Circuits  3.2.4
A study of the characteristics, operations, and testing of linear integrated cir-
cuits. Applications include instrumentation and active filtering.
CETT 1409  DC-AC Circuits  4.3.4
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: Instructor approval. Fee charged.

CETT 2335  Advanced Microprocessors  3.2.4
An advanced course utilizing the microprocessor in control systems and interfacing. Emphasis on microprocessor hardware and implementation of peripheral interfacing.

CETT 2349  Research and Project Design  3.2.4
Principles of electrical/electronic design, encompassing schematics wiring diagrams, materials lists, operating characteristics, completion schedules, and cost estimates.

CHEM 1405  Introductory Chemistry I (40.0501.51 03)  4.3.3
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. Fee charged.

CHEM 1406  Introductory Chemistry I (allied health emphasis) (40.0501.51 03)  4.3.3
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. Fee charged.

CHEM 1407  Introductory Chemistry II (40.0501.51 03)  4.3.3
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. Fee charged.

CHEM 1411  General Chemistry I (40.0501.52 03)  4.3.3
Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. Basic laboratory experiments supporting theoretical principles presented in the course; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. Fee charged. Prerequisite: MATH 1314 or equivalent academic preparation.

CHEM 1412  General Chemistry II (40.0501.55 03)  4.3.3
Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry. Basic laboratory experiments supporting theoretical principles presented in the course, in-
cluding introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports. Fee charged. Prerequisite: CHEM 1411.

CHEM 2423 Organic Chemistry I (40.0504.52 03) 4.3.4
Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Laboratory activities will reinforce fundamental principles of organic chemistry, as previously listed. Methods for the purification and identification of organic compounds will be examined. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. Fee charged. Prerequisite: CHEM 1412 or 1407 with consent of instructor.

CHEM 2425 Organic Chemistry II (40.0504.52 03) 4.3.4
Advanced principles of organic chemistry will be studied, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Laboratory activities reinforce advanced principles of organic chemistry, as previously listed. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. Fee charged. Prerequisite: CHEM 2423.

CJSA 1393 Special Topics in Criminal Justice Studies 3.2.4
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.

CJSA 2364 Practicum - Criminal Justice/Safety Studies 3.0.21
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: Consent of Instructor.

CNBT 1309 Basic Construction Management 3.2.4
Provides an integrated look at the practice of construction management on the job site.

CNBT 2310 Commercial/Industrial Blueprint Reading 3.2.4
Blueprint reading for commercial/industrial construction.
COMM 1307 Introduction to Mass Communications (09.0102.51 06)  
Survey of basic content and structural elements of mass media and their functions and influences on society. For journalism majors and non-majors.

COMM 2305 Editing and Layout (09.0401.51 06)  
Editing and layout processes, with emphasis on accuracy and fairness, including the principles and techniques of design.

COMM 2311 Media Writing (09.0401.57 06)  
Fundamentals of writing for the mass media. Includes instruction in professional methods and techniques for gathering, processing, and delivering content.

COMM 2315 News Reporting (09.0401.58 06)  
This course focuses on advanced news-gathering and writing skills. It concentrates on the three-part process of producing news stories: discovering the news, reporting the news, and writing the news in different formats. Prerequisite: COMM 2311.

COMM 2327 Introduction to Advertising (09.0903.51 06)  
Fundamentals of advertising including marketing theory and strategy, copywriting, design, and selection of media.

COMM 2332 Radio/Television News (09.0402.52 06)  
Preparation and analysis of news styles for the electronic media.

COSC 1301 Introduction to Computing (11.0101.51 07)  
Overview of computer systems-hardware, operating systems, and microcomputer application software, including the Internet, word processing, spreadsheets, presentation graphics, and databases. Current issues such as the effect of computers on society, and the history and use of computers in business, educational, and other modern settings are also studied. This course is not intended to count toward a student's major field of study in business or computer science.

COSC 1336 Programming Fundamentals I (11.0201.55 07)  
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. Prerequisite: Math 1314 or instructor permission.

COSC 1337 Programming Fundamentals II (11.0201.56 07)  
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 1336.

**COSC 1430**  Computer Programming (11.0201.52 07)  4.3.3
Introduction to computer programming in various programming languages. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes coverage of language syntax, data and file structures, input/output devices, and disks/files. Prerequisite: Math 1314.

**CRIJ 1301**  Introduction to Criminal Justice (43.0104.51 24)  3.3.0
This course provides a historical and philosophical overview of the American criminal justice system, including the nature, extent, and impact of crime; criminal law; and justice agencies and processes.

**CRIJ 1306**  Court Systems & Practices (22.0101.54 24)  3.3.0
This course is a study of the court system as it applies to the structures, procedures, practices and sources of law in American courts, using federal and Texas statutes and case law.

**CRIJ 1307**  Crime in America (45.0401.52 25)  3.3.0
American crime problems in historical perspective, social and public policy factors affecting crime, impact and crime trends, social characteristics of specific crimes, and prevention of crime.

**CRIJ 1310**  Fundamentals of Criminal Law (22.0101.53 24)  3.3.0
This course is the study of criminal law including application of definitions, statutory elements, defenses and penalties using Texas statutes, the Model Penal Code, and case law. The course also analyzes the philosophical and historical development of criminal law and criminal culpability.

**CRIJ 1313**  Juvenile Justice System (43.0104.52 24)  3.3.0
A study of the juvenile justice process to include specialized juvenile law, role of the juvenile law, role of the juvenile courts, role of police agencies, role of correctional agencies, and theories concerning delinquency.

**CRIJ 2301**  Community Resources in Corrections (43.0104.53 24)  3.3.0
An introductory study of the role of the community in corrections; community programs for adults and juveniles; administration of community programs; legal issues; future trends in community treatment.

**CRIJ 2313**  Correctional Systems & Practices (43.0104.54 24)  3.3.0
This course is the study of criminal law including application of definitions, statutory elements, defenses and penalties using Texas statutes, the Model Penal Code, and case law. The course also analyzes the philosophical and historical development of criminal law and criminal culpability.
CRIJ 2314  Criminal Investigation (43.0104.55 24)  3.2.3
Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation.

CRIJ 2323  Legal Aspects of Law Enforcement (43.0104.56 24)  3.3.0
Police authority; responsibilities; constitutional constraints; laws of arrest, search, and seizure; police liability.

CRIJ 2328  Police Systems & Practices (43.0104.57 24)  3.3.0
Police authority; responsibilities; constitutional constraints; laws of arrest, search, and seizure; police liability.

CSME 1291  Special Topics in Cosmetology  2.1.4
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.

CSME 1310  Introduction to Haircutting & Related Theory  3.1.8
Introduction to the theory and practice of hairdressing. Topics include terminology, implements, sectioning and finishing techniques.

CSME 1330  Orientation to Nail Technology  3.1.8
An overview of the fundamental skills and knowledge necessary for the field of cosmetology.

CSME 1401  Orientation to Cosmetology  4.2.8
An overview of the skills and knowledge necessary for the field of cosmetology. Kit fee. Insurance fee.

CSME 1405  Fundamentals of Cosmetology  4.2.8
A course in the basic fundamentals of cosmetology. Topics include safety and sanitation, service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, and comb out.

CSME 1434  Cosmetology Instructor I  4.2.8
The fundamentals of instruction of cosmetology students.

CSME 1435  Orientation to the Instruction of Cosmetology  4.2.8
An overview of the skills and knowledge necessary for the instruction of cosmetology students.

CSME 1443  Manicuring and Related Theory  4.2.8
Presentation of the theory and practice of nail services. Topics include terminology, application and workplace competencies related to nail services.

CSME 1447  Principles of Skin Care/Facials and Related Theory  4.2.8
In-depth coverage of the theory and practice of skin care, facials, and cosmetics.
End-of-Course Outcomes: Define terminology related to the skin, products, and treatments; demonstrate applications related to skin care and cosmetics; practice safety and sanitation according to the laws and rules of the state licensing agency; and exhibit workplace competencies in skin care and cosmetics.

**CSME 1451 Artistry of Hair, Theory and Practice** 4.2.8
Instruction in the artistry of hair design. Topics include theory, techniques, and application of hair design.

**CSME 1531 Principles of Nail Technology I** 5.3.8
A course in the principles of nail technology. Topics include anatomy, physiology, theory, and skills related to nail technology. End-of-Course Outcomes: Explain the basic anatomy and physiology of the hands, arms, and feet. Practice the related skills of manicuring and pedicuring; and identify nail enhancement.

**CSME 1541 Principles of Nail Technology II** 5.3.8
A continuation of the concepts and principles of nail technology. Topics include professional ethics, salon management, client relations, and related skills of nail technology. End-of-Course Outcomes: Perform nail enhancements; practice professional ethics; and demonstrate safety and sanitation practices according to state licensing agency.

**CSME 2310 Advanced Haircutting and Related Theory** 3.1.8
Advanced concepts and practice of haircutting. Topics include utilizing scissors, razors and/or clippers.

**CSME 2401 The Principles of Hair Coloring and Related Theory** 4.2.8
Presentation of the theory, practice, and chemistry of hair color. Topics include terminology, application, and workplace competencies related to hair color.

**CSME 2414 Cosmetology Instructor II** 4.2.8
A continuation of the fundamentals of instructing cosmetology students.

**CSME 2430 Nail Enhancement** 4.2.8
A course in the theory, application, and related technology of nail enhancements.

**CSME 2439 Advanced Hair Design** 4.2.8
Advanced concepts in the theory and practice of hair design.

**CSME 2445 Instructional Theory and Clinic Operation** 4.2.8
An overview of the objectives required by the Texas Department of Licensing and Regulation Instructor Examination.

**DFTG 1305 Technical Drafting** 3.2.4
Introduction to the principles of drafting to include terminology and fundamentals, including size and shape descriptions, projection methods, geometric construction, sections, and auxiliary views. Fee Charged.
DFTG 1309  **Basic Computer-Aided Drafting** 3.2.4
An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinate systems, and plot/print to scale. Fee Charged.

DFTG 1317  **Architectural Drafting - Residential** 3.2.4

DFTG 1325  **Blueprint Reading and Sketching** 3.2.4
An introduction to reading and interpreting working drawings for fabrication processes and associated trades. Use of sketching techniques to create pictorial and multiple-view drawings. Fee Charged. Prerequisite: Instructor approval.

DFTG 1345  **Parametric Modeling and Design** 3.2.4
Parametric-based design software for 3D design and drafting. Fee Charged. Prerequisite: Instructor approval.

DFTG 1358  **Electrical/Electronics/Drawing** 3.2.4
 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. Fee charged.

DFTG 1381  **Cooperative Education - Drafting & Design Technology/ Technician, General** 3.1.20
Career-related activities encountered in the student’s area of specialization offered through an individual 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: Instructor approval. Fee Charged.

DFTG 1391  **Special Topics In Drafting and Design Technology/ Technician, General** 3.2.4
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. Fee Charged.

DFTG 2302  **Machine Drafting** 3.2.4
Production of detail and assembly drawings of machines, threads, gears, utilizing tolerances, limit dimensioning, and surface finishes. Fee Charged.

DFTG 2312  **Technical Illustration and Presentation** 3.2.4
Study of pictorial drawings including isometrics, obliques, perspectives, charts, and graphs. Emphasis on rendering and using different media. Fee Charged.
DFTG 2317  Descriptive Geometry  3.2.4  
Graphical solutions to problems involving points, lines, and planes in space. Fee Charged.

DFTG 2319  Intermediate Computer-Aided Drafting  3.2.4  
A continuation of practices and techniques used in basic computer-aided drafting including the development and use of prototype drawings, construction of pictorial drawings, extracting data, and basics of 3D. Fee Charged.

DFTG 2321  Topographical Drafting  3.2.4  
Plotting of surveyor’s field notes. Includes drawing elevations, contour lines, plan and profiles, and laying out traverses. Fee Charged.

DFTG 2323  Pipe Drafting  3.2.4  
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. Fee Charged.

DFTG 2328  Architectural Drafting - Commercial  3.2.4  
Architectural drafting procedures, practices, governing codes, terms and symbols, including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods. Fee Charged. Prerequisite: Instructor approval.

DFTG 2331  Advanced Technologies in Architectural Design and Drafting  3.2.4  
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. Fee Charged.

DFTG 2332  Advanced Computer-Aided Drafting  3.2.4  
Application of advanced CAD techniques. Use a customized CAD system to create documents and/or solid models; and use OLE with external software. Fee Charged. Prerequisite: Instructor approval.

DFTG 2338  Final Project - Advanced Drafting  3.2.4  
A drafting course in which students participate in a comprehensive project from conception to conclusion. Fee Charged. Prerequisite: Instructor approval.

DFTG 2340  Solid Modeling/Design  3.2.4  
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. Fee Charged. Prerequisite: Instructor approval.

DRAM 1120  Theater Practicum I (50.0506.53 26)  1.0.5  
Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. First semester of four-semester sequence.
DRAM 1121  Theater Practicum II (50.0506.53 26)  1.0.5
Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Second of a four-semester sequence.

DRAM 1310  Introduction to Theater (50.0501.51 26)  3.2.4
Survey of theater including its history, dramatic works, stage techniques, production procedures, and relation to other art forms. Participation in productions may be required.

DRAM 1322  Stage Movement (50.0506.54 26)  3.2.4
Principles, practices and exercises in body techniques and stage movement; emphasis on character movement and body control.

DRAM 1330  Stagecraft I (50.0502.51 26)  3.2.4
Study and application of the methods and components of theatrical production which may include one or more of the following: theater facilities, scenery construction and painting, properties, lighting, costume, makeup, sound, and theatrical management. Fee charged.

DRAM 1341  Theatrical Make-Up (50.0502.52 26)  3.2.4
Design and execution of makeup for the purpose of developing believable characters. Includes discussion of basic makeup principles and practical experience of makeup application. Fee charged.

DRAM 1342  Introduction to Costume (50.0502.53 26)  3.2.4
Principles and techniques of costume design and construction for theatrical productions. Fee charged.

DRAM 1351  Acting I (50.0506.51 26)  3.2.4
An introduction to the fundamental principles and tools of acting as used in auditions, rehearsals, and performances. This may include ensemble performing, character and script analysis, and basic theater terminology. This exploration will emphasize the development of the actor’s instrument: voice, body and imagination.

DRAM 1352  Acting II (50.0506.51 26)  3.2.4
Exploration and further training within the basic principles and tools of acting, including an emphasis on critical analysis of oneself and others. The tools include ensemble performing, character and script analysis, and basic theater terminology. This will continue the exploration of the development of the actor’s instrument: voice, body and imagination.

DRAM 2120  Theater Practicum III (50.0506.53 26)  1.0.5
Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Third semester of a four-semester sequence.
DRAM 2121  **Theater Practicum IV (50.0506.53  26)**  
Practicum in theater open to all students with emphasis on technique and procedures with experience gained in play productions. Fourth semester of a four-semester sequence.

DRAM 2331  **Stagecraft II (50.0502.51  26)**  
Continued study and application of the methods and components of theatrical production which may include one or more of the following: theater facilities, scenery construction and painting, properties, lighting, costume, makeup, sound and theatrical management. Fee charged. Prerequisite: DRAM 1330.

DRAM 2336  **Voice for the Theater (50.0506.52  26)**  
Application of the performer’s use of the voice as a creative instrument of effective communication. Encourages an awareness of the need for vocal proficiency and employs techniques designed to improve the performer’s speaking abilities.

DRAM 2366  **Introduction to Cinema (50.0602.51  26)**  
Survey and analyze cinema including history, film techniques, production procedures, selected motion pictures, and cinema’s impact on and reflection of society. Fee charged.

DRAM 2389  **Academic Cooperative (24.0103.52  12)**  
An instructional program designed to integrate on-campus study with practical hands-on work experience. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of drama.

ECON 2301  **Principles of Macroeconomics (45.0601.51  25)**  
An introduction to the U.S. economy’s organization and operation. Emphasis is placed on national income determination, monetary and fiscal policies, money and banking, business cycles, and economic growth.

ECON 2302  **Principles of Microeconomics (45.0601.51  25)**  
An introduction to the market economy. Emphasis is placed on the price mechanism, supply and demand analysis, degrees of competition, and income distribution.

EDUC 1300  **Learning Framework (42.2701.51  25)**  
A study of the research and theory in the psychology of learning, cognition, and motivation; factors that impact learning, and application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of college-level student academic strategies. Students use assessment instruments (e.g., learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. (Cross-listed as PSYC 1300)
EDUC 1301  Introduction to the Teaching Profession (13.0101.51 09)  3.3.0
An enriched, integrated pre-service course and content experience that provides active recruitment and institutional support of students interested in a teaching career, especially in high need fields. The course provides students with opportunities to participate in early field observations at all levels of P-12 schools with varied and diverse student populations and provides students with support from college and school faculty, preferably in small cohort groups, for the purpose of introduction to and analysis of the culture of schooling and classrooms. Course content should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards. Course must include a minimum of 16 contact hours of field experience in P-12 classrooms.

EDUC 2301  Introduction to Special Populations (13.1001.51 09)  3.3.0
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.

ELMT 1380  Cooperative Education - Electromechanical Technology/ Electromechanical Engineering Technology  3.1.19
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. Note: Qualified employment is not provided by Paris Junior College and is the responsibility of the student.

ELMT 1391  Special Topics in Electromechanical Technology/Technician  3.2.4
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.

ELMT 2333  Industrial Electronics  3.2.4
Devices, circuits, and systems primarily used in automated manufacturing and/or process control including computer controls and interfacing between mechanical, electrical, electronic, and computer equipment. Includes presentation of programming schemes.

ELMT 2337  Electronic Troubleshooting, Service and Repair  3.2.4
In-depth coverage of electronic systems, maintenance, troubleshooting, and
repair. Topics include symptom identification, proper repair procedures, repair checkout, preventive maintenance. Emphasis on safety and use of test equipment. May be offered as a capstone course.

**ELMT 2380** Cooperative Education - Electromechanical Technology
Electromechanical Engineering Technology
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. A continuation of ELMT 1380.

**ELMT 2381** Cooperative Education - Electromechanical Technology
Electromechanical Engineering Technology
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. A continuation of ELMT 2380.

**ELPT 1221** Introduction to Electrical Safety and Tools
Safety rules and regulations. Includes the selection, inspection, use, and maintenance of common tools for electricians. Prerequisite: Instructor approval. Fee charged.

**ELPT 1225** National Electrical Code I
An introductory study of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring design, protection, methods, and materials; equipment for general use; and basic calculations.

**ELPT 1311** Basic Electrical Theory
Basic theory and practice of electrical circuits. Includes calculations as applied to alternating and direct current.

**ELPT 1329** Residential Wiring
Wiring methods for single family and multi-family dwellings. Includes load calculations, service entrance sizing, proper grounding techniques, and associated safety procedures.

**ELPT 1345** Commercial Wiring
Commercial wiring methods. Includes overcurrent protection, raceway panel board installation, proper grounding techniques, and associated safety procedures.

**ELPT 1351** Electrical Machines
Direct current (DC) motors, single-phase and polyphase alternating current (AC) motors, generators, and alternators. Emphasis on construction, characteristics, efficiencies, starting, and speed control.
ELPT 1357  Industrial Wiring  3.2.4
Wiring methods used for industrial installations. Includes motor circuits, raceway and busway installations, proper grounding techniques, and associated safety procedures.

ELPT 2305  Motors and Transformers  3.2.4
Operation of single- and three-phase motors and transformers. Includes transformer banking, power factor correction, and protective devices.

ELPT 2319  Programmable Logic Controllers I  3.2.4
Fundamental concepts of programmable logic controllers, principles of operation, and numbering systems as applied to electronic controls.

ELPT 2355  Programmable Logic Controllers II  3.2.4
Advanced concepts in programmable logic controllers and their applications and interfacing to industrial controls.

EMSP 1160  Clinical - Emergency Medical Technology/Technician  1.0.6
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

EMSP 1161  Clinical - Emergency Medical Technology/Technician (EMT Paramedic)  1.0.5
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.

EMSP 1162  Clinical - Emergency Medical Technology/Technician (EMT Paramedic)  1.0.6
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

EMSP 1305  Emergency Care Attendant  3.2.4
Preparation for certification as an Emergency Care Attendant (ECA) / Medical Responder (EMR).

EMSP 1355  Trauma Management  3.2.3
Knowledge and skills in the assessment and management of patients with traumatic injuries.

EMSP 1356  Patient Assessment and Airway Management  3.2.2
Knowledge and skills required to perform patient assessment, airway management, and artificial ventilation.

EMSP 1438  Introduction to Advanced Practice  4.3.2
Fundamental elements associated with emergency medical services to include preparatory practices, pathophysiology, medication administration, and related topics.
EMSP 1501  Emergency Medical Technician (EMT)  5.4.4
Preparation for certification as an Emergency Medical Technician (EMT).

EMSP 2160  Clinical - Emergency Medical Technology/Technician (EMT Paramedic)  1.0.6
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

EMSP 2243  Assessment Based Management  2.1.2
A summarative experience covering comprehensive, assessment-based patient care management for the paramedic level.

EMSP 2266  Practicum - Emergency Medical Technology/Technician (EMT Paramedic)  2.0.14
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

EMSP 2305  EMS Operations  3.3.0
Knowledge and skills to safely manage multi-casualty incidents and rescue situations; utilize air medical resources; identify hazardous materials and other specialized incidents.

EMSP 2306  Emergency Pharmacology  3.2.3
A study of drug classifications, actions, therapeutic uses, adverse effects, routes of administration, and calculation of dosages.

EMSP 2330  Special Populations  3.3.1
Knowledge and skills necessary to assess and manage ill or injured patients in diverse populations to include neonatology, pediatrics, geriatrics, and other related topics.

EMSP 2434  Medical Emergencies  4.3.4
Knowledge and skills in the assessment and management of patients with medical emergencies, including medical overview, neurology, gastroenterology, immunology, pulmonology, urology, hematology, endocrinology, toxicology, and other related topics.

EMSP 2444  Cardiology  4.3.4
Assessment and management of patients with cardiac emergencies. Includes single and multi-lead ECG interpretation.

ENGL 1301  Composition I  23.1301.51  12  3.3.1
Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus on writing the academic essay as a vehicle for learning, communicating, and critical analysis.

ENGL 1302  Composition II  23.1301.51  12  3.3.1
Intensive study of and practice in the strategies and techniques for develop-
ing research-based expository and persuasive texts. Emphasis on effective and ethical rhetorical inquiry, including primary and secondary research methods; critical reading of verbal, visual, and multimedia texts; systematic evaluation, synthesis, and documentation of information sources; and critical thinking about evidence and conclusions. Prerequisite: ENGL 1301.

ENGL 2311  **Technical and Business Writing (23.1303.51 12)**  
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, email messages, letters, and descriptions of products and services. Practice individual and collaborative processes involved in the creation of ethical and efficient documents.

ENGL 2322  **British Literature I (23.1404.51 12)**  
A survey of the development of British literature from the Anglo-Saxon period to the Eighteenth Century. Students will study works of prose, poetry, drama, and fiction in relation to their historical linguistic, and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301.

ENGL 2323  **British Literature II (23.1404.51 12)**  
A survey of the development of British literature from the Romantic period to the present. Students will study work of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301.

ENGL 2327  **American Literature I (23.1402.51 12)**  
A survey of American literature from the period of exploration and settlement through the Civil War. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Prerequisite: ENGL 1301.

ENGL 2328  **American Literature II (23.1402.51 12)**  
A survey of American literature from the Civil War to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Prerequisite: ENGL 1301.

ENGR 2301  **Engineering Mechanics - Statics (14.1101.52 10)**  
Basic theory of engineering mechanics, using calculus, involving the description of forces, moments, and couples acting on stationary engineering structures; equilibrium in two and three dimensions; free-body diagrams; friction; centroids; centers of gravity; and moments of inertia. Prerequisite: PHYS 2425.

Basic theory of engineering mechanics, using calculus, involving the motion...
of particles, rigid bodies, and systems of particles; Newton's Laws; work and energy relationships; principles of impulse and momentum; application of kinetics and kinematics to the solution of engineering problems. Prerequisite: ENGR 2301. Co-requisite: MATH 2415.

**ENTC 1349**  **Reliability and Maintainability**  
Equipment reliability and maintainability. Includes development and assessment of maintenance programs.

**GEOG 1303**  **World Regional Geography (45.0701.53 25)**  
This course is an introduction to the world’s major regions seen through their defining physical, social, cultural, political, and economic features. These regions are examined in terms of their physical and human characteristics and their interactions. The course emphasizes relations among regions on issues such as trade, economic development, conflict, and the role of regions in the globalization process.

**GEOL 1403**  **Physical Geology (40.0601.54 03)**  
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. Fee charged.

**GEOL 1404**  **Historical Geology (40.0601.54 03)**  
A comprehensive survey of the history of life and major events in the physical development of Earth as interpreted from rocks and fossils. Laboratory activities will introduce methods used by scientists to interpret the history of life and major events in the physical development of Earth from rocks and fossils. Fee charged. Prerequisite: GEOL 1403.

**GOVT 2305**  **Federal Government (Federal constitution & topics) (45.1002.51 25)**  
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. Note: It is recommended that students take both semesters of government at the same institution.

**GOVT 2306**  **Texas Government (Texas constitution & topics) (45.1002.51 25)**  
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. Note: It is recommended that students take both semesters of government at the same institution.

**HAMG 1313**  **Front Office Management**  
Functions of front office operations as they relate to customer service. Includes a study of front office interactions with other departments in the lodging operation. End-of-Course Outcomes: Identify the various service levels and mar-
ket segments in the lodging industry as they pertain to the front office area of
the hospitality operation; and identify front office responsibilities, accounting
procedures, revenue management, checkout and settlement procedures, and
night audit functions and verification.

HAMG 1321 Introduction to Hospitality Industry 3.3.1
An exploration of the elements and career opportunities within the multiple
segments of the hospitality industry. End-of-Course Outcomes: Identify the
segments and career opportunities in the hospitality industry; describe the cur-
rent issues facing the hospitality industry; and explain the impact of the his-
tory, growth and trends in the hospitality industry.

HAMG 1366 Practicum - Hospitality Administration/Management, General 3.0.21
Practical, general workplace training supported by an individualized learning
plan developed by the employer, college, and student.

HAMG 2332 Hospitality Financial Management 3.3.0
Methods and application of financial management within the hospitality in-
dustry. Primary emphasis on sales accountability, internal controls, and report
analysis. End-of-Course Outcomes: Calculate cost percentages and ratios; in-
terpret managerial reports; and assess internal controls as they relate to cost
and budgeting.

HART 1301 Basic Electricity for HVAC 3.2.4
Principles of electricity as required by HVAC, including proper use of test
equipment, electrical circuits, and component theory and operation. Fee
charged. Prerequisite: instructor approval.

HART 1303 Air Conditioning Control Principles 3.2.4
A basic study of HVAC and refrigeration controls; troubleshootig of control
components; emphasis on use of wiring diagrams to analyze high and low volt-
age circuits; a review of Ohm’s law as applied to air conditioning controls and
circuits. Fee charged.

HART 1307 Refrigeration Principles 3.2.4
An introduction to the refrigeration cycle, heat transfer theory, temperature/
pressure relationship, refrigerant handling, refrigeration components, and
safety. Fee charged.

HART 1310 HVAC Shop Practices and Tools 3.2.4
Tools and instruments used in the HVAC industry. Includes proper applica-
tion, use and care of these tools, and tubing and piping practices. Fee charged.

HART 1341 Residential Air Conditioning & Refrigeration 3.2.4
A study of components, applications and installation of mechanical air con-
ditioning systems including operating conditions, troubleshooting, repair and
charging of air conditioning systems. Fee charged.
HART 1345  Gas and Electric Heating  
Study of the procedures and principles used in servicing heating systems including gas fired furnaces and electric heating systems. Fee charged.

HART 1351  Energy Management  
Study of basic heat transfer theory; sensible and latent heat loads; building envelope construction; insulation, lighting, and fenestration types; and conduct energy audit procedures. The course also develops energy audit recommendations based on local utility rates, building use, and construction. Laboratory activities include developing energy audit reports, installing energy saving devices, and measuring energy consumption. Fee charged.

HART 1356  EPA Recovery Certification Preparation  
Certification training for HVAC refrigerant recovery, recycle, and reclaim. 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. Fee charged.

HART 1391  Special Topics in Heating, Air Conditioning & Refrigeration  
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. Fee charged.

HART 2331  Advanced Electricity for HVAC  
Advanced electrical instruction and skill building in installation and servicing of air conditioning and refrigeration equipment including detailed instruction in motors and power distribution motors, motor controls, and application of solid state devices. Fee charged.

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

HART 2336  Air Conditioning Troubleshooting  
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. Fee charged.

HART 2338  Air Conditioning Installation & Service  
A study of air conditioning system installation, refrigerant piping, condensate disposal, and air cleaning equipment with emphasis on startup and performance testing. Fee charged.

HART 2341  Commercial Air Conditioning  
A study of components, applications, and installation of air conditioning systems with capacities of 25 tons or less. Fee charged.
HART 2342  **Commercial Refrigeration**  3.2.4
Theory and practical application in the maintenance of commercial refrigeration; medium, and low temperature applications and ice machines. Fee charged.

HART 2343  **Industrial Air Conditioning**  3.2.4
A study of components, accessories, applications, and installation of air conditioning systems above 25 tons capacity. Includes direct digital controls, energy management.

HART 2345  **Residential Air Conditioning Systems Design**  3.2.4
Study of the properties of air and results of cooling, heating, humidifying or dehumidifying; heat gain and heat loss calculations including equipment selection and balancing the air system. Fee charged.

HART 2349  **Heat Pumps**  3.2.4
A study of heat pumps, heat pump control circuits, defrost controls, auxiliary heat, air flow and other topics related to heat pump systems. Fee charged.

HART 2380  **Cooperative Education - Heating, Air Conditioning and Refrigeration Technology/Technician**  3.1.19
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.

HART 2381  **Cooperative Education - Heating, Air Conditioning and Refrigeration Technology/Technician**  3.1.19
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.

HART 2450  **HVAC Zone Controls**  4.3.4
Theory and application of HVAC residential Zone control devices, electromechanical controls, and/or pneumatic controls. Fee charged.

HIST 1301  **United States History I (54.0102.51 25)**  3.3.0
A survey of the social, political, economic, cultural, and intellectual history of the United States from the pre-Columbian era to the Civil War/Reconstruction period. United States History I includes the study of pre-Columbian, colonial, revolutionary, early national, slavery and sectionalism, and the Civil War/Reconstruction eras. Themes that may be addressed in United States History I include: American settlement and diversity, American culture, religion, civil and human rights, technological change, economic change, immigration and migration, and creation of the federal government.
HIST 1302 United States History II (54.0102.51 25) 3.3.0
A survey of the social, political, economic, cultural, and intellectual history of the United States from the Civil War/Reconstruction era to the present. United States History II examines industrialization, immigration, world wars, the Great Depression, Cold War and post-Cold War eras. Themes that may be addressed in United States History II include: American culture, religion, civil and human rights, technological change, economic change, immigration and migration, urbanization and suburbanization, the expansion of the federal government, and the study of U.S. foreign policy.

HIST 2301 Texas History (54.0102.52 25) 3.3.0
A survey of the political, social, economic, cultural, and intellectual history of Texas from the pre-Columbian era to the present. Themes that may be addressed in Texas History include: Spanish colonization and Spanish Texas; Mexican Texas; the Republic of Texas; statehood and secession; oil, industrialization, and urbanization; civil rights; and modern Texas.

HIST 2311 Western Civilization I (54.0101.54 25) 3.3.0
A survey of the social, political, economic, cultural, religious, and intellectual history of Europe and the Mediterranean world from human origins to the 17th century. Themes that should be addressed in Western Civilization I include the cultural legacies of Mesopotamia, Egypt, Greece, Rome, Byzantium, Islamic civilizations, and Europe through the Middle Ages, Renaissance, and Reformation.

HIST 2312 Western Civilization II (54.0101.54 25) 3.3.0
A survey of the social, political, economic, cultural, religious, and intellectual history of Europe and the Mediterranean world from the 17th century to the modern era. Themes that should be addressed in Western Civilization II include absolutism and constitutionalism, growth of nation states, the Enlightenment, revolutions, classical liberalism, industrialization, imperialism, global conflict, the Cold War, and globalism.

HIST 2321 World Civilizations I (54.0101.53 25) 3.3.0
A survey of the social, political, economic, cultural, religious, and intellectual history of the world from the emergence of human cultures through the 15th century. The course examines major cultural regions of the world in Africa, the Americas, Asia, Europe, and Oceania and their global interactions over time. Themes include the emergence of early societies, the rise of civilizations, the development of political and legal systems, religion and philosophy, economic systems and trans-regional networks of exchange. The course emphasizes the development, interaction and impact of global exchange.

HIST 2322 World Civilizations II (54.0101.53 25) 3.3.0
A survey of the social, political, economic, cultural, religious, and intellectual history of the world from the 15th century to the present. The course examines major cultural regions of the world in Africa, the Americas, Asia, Europe,
and Oceania and their global interactions over time. Themes include maritime exploration and transoceanic empires, nation/state formation and industrialization, imperialism, global conflicts and resolutions, and global economic integration. The course emphasizes the development, interaction and impact of global exchange.

**HITT 1266  Practicum - Health Information/Medical Records Technology/Technician  2.0.14**
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and the student. Pre-requisite: Completion of all previous course work listed on the Medical Records Coding degree plan with a grade of “C” or better. This course requires concurrent enrollment or completion of HITT 2335.

**HITT 1301  Health Data Content and Structure  3.3.1**
Introduction to systems and processes for collecting, maintaining, and disseminating primary and secondary health related information including content of health record, documentation requirements, registries, indices, licensing, regulatory agencies, forms, and screens. This course requires completion of HITT 1305, ITSC 1309, MDCA 1309, HPRS 2301, HPRS 2300. Prerequisite: Acceptance into the Medical Records Coding Program.

**HITT 1305  Medical Terminology I  3.2.3**
Study of medical terms through word origin and structure. Introduction to abbreviations and symbols, surgical and diagnostic procedures, and medical specialties. Fee charged.

**HITT 1345  Health Care Delivery Systems  3.3.0**
Examination of delivery systems including organization, financing, accreditation, licensure, and regulatory agencies. Prerequisite: Completion of all previous course work listed on the Medical Records Coding degree plan with a grade of “C” or better.

**HITT 1441  Coding and Classification Systems  4.3.3**
Fundamentals of coding rules, conventions, and guidelines using clinical classification systems. Pre-requisite: Completion of all previous course work listed on the Medical Records Coding degree plan with a grade of “C” or better. This course requires concurrent enrollment in HITT 1442.

**HITT 1442  Ambulatory Coding  4.3.3**
Fundamentals of ambulatory coding rules, conventions, and guidelines. Pre-requisite: Completion of all previous course work listed on the Medical Records Coding degree plan with a grade of “C” or better. This course requires concurrent enrollment in HITT 1441.

**HITT 2335  Coding and Reimbursement Methodologies  3.3.0**
Advanced coding techniques with emphasis on case studies, health records, and federal regulations regarding prospective payment systems and methods of reimbursement. Prerequisite: Completion of all previous course work listed on
the Medical Records Coding degree plan with a grade of “C” or better.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HITT 2340</td>
<td>Advanced Medical Billing and Reimbursement</td>
<td>3.2.3</td>
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<tr>
<td></td>
<td>Skill development in coding to prepare reimbursement forms in various health care settings for submission to payors. End-of-Course Outcomes: Coding of health records using various classification systems; execute reimbursement forms; and apply revenue cycle management procedures. Fee charged.</td>
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<tr>
<td>HPRS 1102</td>
<td>Wellness and Health Promotion</td>
<td>1.1.0</td>
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<tr>
<td></td>
<td>An overview of wellness theory and its application throughout the life span. Focus is on attitude development, impact of cultural beliefs, and communication of wellness.</td>
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<tr>
<td>HPRS 1201</td>
<td>Introduction to Health Professions</td>
<td>2.2.0</td>
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<tr>
<td></td>
<td>An overview of roles of various members of the health care system, educational requirements, and issues affecting the delivery of health care.</td>
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<tr>
<td>HPRS 1204</td>
<td>Basic Health Profession Skills</td>
<td>2.1.2</td>
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<tr>
<td></td>
<td>A study of the concepts that serve as the foundation for health profession courses, including client care and safety issues, basic client monitoring and health documentation methods.</td>
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<tr>
<td>HPRS 2300</td>
<td>Pharmacology for Health Professions</td>
<td>3.3.0</td>
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<td></td>
<td>A study of drug classifications, actions, therapeutic uses, adverse effects, methods of administration, and calculation of dosages.</td>
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<tr>
<td>HPRS 2301</td>
<td>Pathophysiology</td>
<td>3.3.0</td>
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<td></td>
<td>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 reactions to diseases and injuries.</td>
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<tr>
<td>HRGY 1301</td>
<td>Jewelry Techniques I</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Introduction to the basic techniques of jewelry repair including layout, sawing, filing and emery. Emphasis on industry standards. Fee charged.</td>
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<tr>
<td>HRGY 1302</td>
<td>Jewelry Techniques II</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Continuation of Jewelry Techniques I with emphasis on polishing. Fee charged.</td>
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<tr>
<td>HRGY 1303</td>
<td>Jewelry Techniques III</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Continuation of Jewelry Techniques II including advanced skills in layout, sawing, filing, emery, polishing, and soldering with limited fabrication. Fee charged.</td>
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<tr>
<td>HRGY 1304</td>
<td>Jewelry Techniques IV</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Continuation of Jewelry Techniques III including advanced skills in layout, sawing, filing, emery, polishing, and soldering with limited fabrication. Fee charged.</td>
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<td>Course Code</td>
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<td>HRGY 1309</td>
<td>Casting I</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Emphasis on lost wax casting, both centrifugal</td>
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<td></td>
<td>and vacuum processes. Includes introduction to</td>
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<td></td>
<td>wax carving. Fee charged</td>
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<tr>
<td>HRGY 1313</td>
<td>Fundamentals of Gemology I (Diamonds)</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Development of skills in gem stone identification.</td>
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<td>Emphasis on diamonds including diamond simulant</td>
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<td>s, diamond grading, and the proper use and care</td>
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<td>of laboratory instruments. Fee charged.</td>
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<tr>
<td>HRGY 1314</td>
<td>Fundamentals of Gemology II (Colored Stones)</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Development of skills in gem stone identification.</td>
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<td></td>
<td>Emphasis on colored stones including synthetics,</td>
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<td>enhancement and treatments, and the proper use</td>
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<td>and care of laboratory instruments. Fee charged.</td>
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<tr>
<td>HRGY 1319</td>
<td>Basic Horology I</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Introduction to disassembly, cleaning, and</td>
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<td></td>
<td>reassembly of the basic watch using time proven</td>
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<td>methods. Emphasis on nomenclature. Prerequisite:</td>
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<td>None. Fee charged.</td>
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<tr>
<td>HRGY 1320</td>
<td>Basic Horology II</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Continuations of Basic Horology I with emphasis</td>
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<td>on identification and functions of parts common</td>
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<td>to all mechanical watches. Fee charged.</td>
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<tr>
<td>HRGY 1321</td>
<td>Basic Horology III</td>
<td>3.1.8</td>
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<td></td>
<td>Continuation of Basic Horology II. Emphasis on</td>
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<td></td>
<td>replacement of case parts as well as hairspring</td>
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<td>manipulation. Fee charged.</td>
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<tr>
<td>HRGY 1322</td>
<td>Basic Horology IV</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>A continuation of Basic Horology III. Emphasis</td>
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<td>on replacement and repair of damaged parts in</td>
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<td>mechanical watches. Fee charged.</td>
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<td>HRGY 1341</td>
<td>Stone Setting I</td>
<td>3.1.8</td>
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<td></td>
<td>Focus on bead setting and bright cutting</td>
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<td>techniques. Fee charged.</td>
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<td>HRGY 1342</td>
<td>Stone Setting II</td>
<td>3.1.8</td>
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<td>Continuation of Stone Setting I. Focus on</td>
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<td>prong setting, repronging, retipping, and rehed-</td>
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<td>ing. Fee charged.</td>
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<td>HRGY 1343</td>
<td>Stone Setting III</td>
<td>3.1.8</td>
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<td>A continuation of Stone Setting II including</td>
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<td>fancy bright cuts, bezel sets, and gypsy sets.</td>
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<td>Fee charged.</td>
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<tr>
<td>HRGY 1344</td>
<td>Stone Setting IV</td>
<td>3.1.8</td>
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<td>A continuation of Stone Setting III including</td>
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<td>fancy bright cuts, bezel sets, and gypsy sets,</td>
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<td>and the setting of multiple stones such as</td>
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<td>channel-setting, cluster-setting, and fishtail-</td>
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<td>setting. Fee charged.</td>
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<td>HRGY 1348</td>
<td>Jewelry Repair/Fabrication I</td>
<td>3.1.8</td>
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<tr>
<td></td>
<td>Emphasis on techniques, fabrication, and repair</td>
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<td>of jewelry. Introduction to</td>
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equipment and techniques of jewelry manufacturing including assembly of findings. Fee charged.

**HRGY 1349 Jewelry Repair/Fabrication II**  
Continuation of Jewelry Repair/Fabrication I with emphasis on techniques, fabrication, and repair of jewelry. Introduction to equipment and techniques of jewelry manufacturing including chain repair and electroplating. Fee charged.

**HRGY 1350 Intermediate Gemology**  
Study of the formation, recovery, lore/superstition, merchandising, advertising, display, and buying and selling of precious gems. Fee charged.

**HRGY 1371 Introduction to Computer Aided Jewelry Design**  
Study of the programs, operations, characteristics, modeling, and machining techniques of Computer Aided Design (CAD), Computer Aided Manufacturing (CAM) are explored in this course. Applications in visualization, rendering, animation, 2D design, 2 ½ D design and solid modeling, 3D design and solid modeling. Prerequisite: Basic computer skills and applications or consent of instructor. Fee charged

**HRGY 1372 Technical Illustration for Jewelry Design**  
Topics include pictorial drawing including isometrics, obliques, perspectives, charts, and graphs; shading and transfer lettering; and use of different media. Fee charged.

**HRGY 1373 Basic Computer Aided Drafting for Jewelry Design**  
An introduction to computer-aided drafting. Emphasis is placed on drawing setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinating systems; as well as input and output devices. Fee charged.

**HRGY 1374 Solid Modeling Design for Jewelry**  
A computer-aided modeling course, contents covers the development of three-dimensional drawings and models from sketches and orthographic drawings and utilization of three-dimensional models in design work. Fee charged.

**HRGY 1375 Computer Integrated Manufacturing for Jewelry**  
Concepts of CIM are introduced. Emphasis is placed on using computers to automate a total manufacturing system. Hands-on experiences integrating CAD/CAM, robotics, fluid power, CNC machines, vision systems, and recognition equipment. Fee charged.

**HRGY 1391 Special Topics in Watchmaking and Jewelry**  
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 efficiency. Fee charged.
HRGY 2301  Intermediate Horology I  3.1.8
Introduction to the theory and repair of watch escapements. End-of-Course Outcomes: Demonstrate repair and replacement of roller jewels, guard fingers, pallet jewels, pallet arbors; and perform escapement adjustment on basic mechanical watches. Fee charged.

HRGY 2302  Intermediate Horology II  3.1.8
Continuation of Intermediate Horology I with emphasis on advanced hairspring manipulation and friction jewelling. Fee charged.

HRGY 2303  Intermediate Horology III  3.1.8
Continuation of Intermediate Horology II with emphasis on complicated watch movements. Fee charged.

HRGY 2304  Intermediate Horology IV  3.1.8
A continuation of Intermediate Horology III with emphasis on complicated watch movements including disassembly, cleaning, and repair. Fee charged.

HRGY 2305  Intermediate Horology V  3.1.8
A continuation of Intermediate Horology IV with emphasis on speed. Focus on adjustment of escapements and hairsprings, precision timing, regulation of mechanical movements, and disassembly, cleaning, and repair of both calendar and self-winding watches. Fee charged.

HRGY 2306  Intermediate Horology VI  3.1.8
Continuation of Intermediate Horology V with further emphasis on speed to meet industry standards. Focus on adjustment of escapements and hairsprings, precision timing, regulation of mechanical movements, and disassembly, cleaning, and repair of both calendar and self-winding watches. Fee charged.

HRGY 2307  Intermediate Horology VII  3.1.8
Continuation of Intermediate Horology VI with emphasis on speed. Focus on disassembly, cleaning, and repair of automatic winding watches; and on precision timing including nomenclature, parts interchangeability, proper lubrication, and casing. Fee charged.

HRGY 2308  Intermediate Horology VIII  3.1.8
A continuation of Intermediate Horology VII with emphasis on speed. Focus on disassembly, cleaning, and repair of calendar watches; and on precision timing including nomenclature, parts interchangeability, proper lubrication, and casing. Fee charged.

HRGY 2331  Advanced Gemological Practice  3.1.8
Study of the use and care of lab equipment and selection of and familiarity with vendors. Fee charged.

HRGY 2333  Casting II  3.1.8
Continuation of Casting I. Includes instruction in mold making and vibratory
finishing. Fee charged.

**HRGY 2335 Precious Metals I** 3.1.8
Emphasis on layout, bright cuts, baguettes, marquise, pear, cushion, and emerald cut stones. Focus on utilization of commercial shop guidelines. Fee charged.

**HRGY 2336 Precious Metals II** 3.1.8
A continuation of Precious Metals I. Focus on layout, bright cuts, baguettes, marquise, pear, cushion, and emerald cut stones as well as pave in precious metals. Includes utilization of commercial shop guidelines. Emphasis on speed. Fee charged.

**HRGY 2337 Precious Metals III** 3.1.8
Continuation of Precious Metals II with emphasis on techniques and refinement of commercial shop practices including lost wax process of casting in precious metals and assembly of die-struck and cast findings. General review of bench techniques. Fee charged.

**HRGY 2338 Precious Metals IV** 3.1.8
Continuation of Precious Metals III with emphasis on techniques and refinement of commercial shop practices including lost wax process of casting in precious metals and assembly of die-struck and cast findings. General review of bench techniques from fabrication of a platinum pendant to soldering die-struck heads on mountings. Emphasis on speed. Students take the “Jewelers of America” certification exam for bench jewelers. Fee charged.

**HRGY 2341 Advanced Horology Systems I** 3.1.8
A practical hands on training of disassembly, cleaning, repair and adjustment of timers and simple chronographs. Fee charged.

**HRGY 2342 Advanced Horology Systems II** 3.1.8
A continuation of Advanced Horology I with emphasis on speed. Includes the study of disassembly, cleaning, repair, and adjustment of timers, alarms, and other more complicated mechanical movements. Fee charged.

**HRGY 2343 Advanced Horology Systems III** 3.1.8
A continuation of Advanced Horology Systems II with emphasis on electronic theory related to quartz analog watches. Fee charged.

**HRGY 2344 Advanced Horology Systems IV** 3.1.8
Continuation of Advanced Horology Systems III including the repair of quartz analog and quartz digital timepieces. Fee charged.

**HRPO 2301 Human Resources Management** 3.3.0
Behavioral and legal approaches to the management of human resources in organizations. End-of-Course Outcomes: Describe and explain the development of human resources management; evaluate current methods of job analysis, recruitment, selection, training/development, performance management, pro-
motion, and separation; discuss management’s ethical, social, and legal responsibilities; assess methods of compensation and benefits planning; and analyze the role of strategic human resource planning in support of organizational mission and objectives.

**HYDR 1345  Hydraulics and Pneumatics  
3.2.4**
Discussion of the fundamentals of hydraulics and pneumatics, components of each system, and the operations, maintenance, and analysis of each system. Fee charged.

**IMED 1316  Web Design I  
3.2.3**
Instruction in web page design and related graphic design issues including mark-up languages, web sites, and browsers. End-of-Course Outcomes: Identify how the Internet functions with specific attention to the World Wide Web and file transfer; apply design techniques in the creation and optimization of graphics and other embedded elements; demonstrate the use of World Wide Web Consortium (W3C) formatting and layout standards; design, create, test and maintain a web site.

**INMT 2345  Industrial Troubleshooting  
3.2.4**
An advanced study of the techniques used in troubleshooting various types of industrial equipment to include mechanical, hydraulic, and pneumatic systems and their control devices. Emphasis will be placed on the use of schematics and diagrams in conjunction with proper troubleshooting procedures.

**INTC 1341  Principles of Automatic Control  
3.2.4**
Basic measurements, automatic control systems and design, closed loop systems, controllers, feedback, control modes, and control configurations. Prerequisite: Instructor approval. Fee charged.

**IRWS 0302  Integrated Reading and Writing (IRW) (32.0108.59 12)  
3.3.1**
Integration of critical reading and academic writing skills. Successful completion of this intervention fulfills TSI requirements for reading and/or writing. Students are placed into the course by test scores. The course may not be used to fulfill degree requirements.

**ITCC 1314  CCNA 1: Introduction to Networks  
3.2.4**
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. The student will build simple LANs; perform basic configuration on routers and switches; and implement IP addressing schemes.

**ITCC 1340  CCNA 2: Routing and Switching Essentials  
3.2.4**
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. The student will configure
and maintain routers and switches; resolve common issues with routing protocols, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.

**ITCC 2312**  
**CCNA 3: Scaling Networks**  
3.2.4  
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. The student will configure advanced routing and switching; resolve common issues with OSPF, EIGRP, and STP in IP networks; and implement a WLAN in a small-to-medium network.

**ITCC 2313**  
**CCNA 4: Connecting Networks**  
3.2.4  
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. The student will configure and troubleshoot network devices; resolve common issues with data link protocols; resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks; implement virtual private network (VPN) operations in a complex network; and implement security best practices.

**ITNW 1325**  
**Fundamentals of Networking Technologies**  
3.2.4  
Instruction in networking technologies and their implementation. Topics include the OSI reference model, network protocols, transmission media, and networking hardware and software. End-of-Course Outcomes: Identify and use network transmission media; explain the OSI model; identify the characteristics of network topologies and protocols; identify the functions of a network operating system and distinguish between centralized, client/server, and peer-to-peer systems; and distinguish between Local Area Networks (LANs) and Wide Area Networks (WANs) and identify the components used to expand a LAN into a WAN.

**ITNW 1337**  
**Introduction to the Internet**  
3.2.4  
Introduction to the Internet with emphasis on using the World Wide Web to locate, transfer, and publish information. Survey of emerging technologies on the Internet. Fee charged.

**ITNW 1351**  
**Fundamentals of Wireless LANs**  
3.2.4  
Design, plan, implement, operate, and troubleshoot Wireless Local Area Networks (WLANs). Includes WLAN design, installation, and configuration; and WLAN security issues and vendor interoperability strategies. End-of-Course Outcomes: Explain wireless technologies, topographies, and standards; design, install, configure, monitor, maintain, and troubleshoot wireless networks; and implement wireless security using encryption, MAC filtering, Authentication, Authorization, and 802.1x technologies.

**ITNW 1354**  
**Implementing and Supporting Servers**  
3.2.4  
Implement, administer, and troubleshoot information systems that incorporate servers in a networked computing environment. End-of-Course Out-
comes: Configure peripherals and devices; set up servers; configure directory replication; manage licensing; create and manage system policies and profiles; administer remote servers and disk resources; create and share resources; implement fault-tolerance; configure servers for interoperability; install and configure Remote Access Service (RAS); and identify and monitor performance bottlenecks and resolve configuration problems.

**ITNW 2305  **Network Administration  
Topics include network components, user accounts and groups, network file systems, file system security, and network printing. End-of-Course Outcomes: Describe the components of a local area network and their relationship; create and administer user accounts and groups; plan and set up network file systems; create effective file system security; and implement and administer network printing.

**ITNW 2313  **Networking Hardware  
Exploration of hardware devices including cables, servers, and workstations, network connectivity devices and uninterruptible power supplies. End-of-Course Outcomes: Build network cables; identify and implement connectivity devices; select appropriate network power management devices; and determine the necessary computer hardware requirements for workstations and servers.

**ITSC 1301  **Introduction to Computers  
Overview of computer information systems. Introduces computer hardware, software, procedures, and human resources. End-of-Course Outcomes: Identify the components of a computer system; use common applications; explain the impact of computers on society; identify computer careers; identify fundamental programming structures; identify ethical use of computers; and use basic operating system functions. Suggested Prerequisite: Keyboarding proficiency.

**ITSC 1305  **Introduction to PC Operating Systems  
Introduction to personal computer operating systems including installation, configuration, file management, memory and storage management, control of peripheral devices, and use of utilities. End-of-Course Outcomes: Install, configure, and maintain the operating system; perform basic file management operations; organize and allocate primary and secondary storage; access and control peripheral devices; and run utilities.

**ITSC 1309  **Integrated Software Applications I  
Introduction to business productivity software suites using word processing, spreadsheets, databases, and/or presentation software. End-of-Course Outcomes: Use word processing, spreadsheet, database, and/or presentation software; and integrate applications to produce documents. Prerequisite: Keyboarding proficiency.
ITSC 1321  **Intermediate PC Operating Systems**  3.2.4
Custom operating system installation, configuration and troubleshooting, management of file systems, memory, storage, and peripheral devices.

ITSC 1325  **Personal Computer Hardware**  3.2.4
Current personal computer hardware including assembly, upgrading, setup, configuration, and troubleshooting. End-of-Course Outcomes: Assemble/setup and upgrade personal computer systems; diagnose and isolate faulty components; optimize system performance; and install/connect peripherals.

ITSC 1364  **Practicum - Computer and Information Sciences, General**  3.0.21
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. End-of-Course Outcomes: 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. Instructor permission required.

ITSC 2321  **Integrated Software Applications II**  3.2.4
Intermediate 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. End-of-Course Outcomes: Use intermediate word processing, spreadsheet, database, and/or presentation software techniques; and apply integration techniques to produce documents. Prerequisite: ITSC 1309 or COSC 1301.

ITSC 2335  **Application Software Problem Solving**  3.2.4
Utilization of appropriate application software to solve advanced problems and generate customized solutions.

ITSC 2339  **Personal Computer Help Desk Support**  3.2.3
Diagnosis and solution of user hardware and software related problems with on-the-job and/or simulated projects. End-of-Course Outcomes: Demonstrate rapport with users in problem-solving situations; analyze user problems and lead them through solutions; maintain problem logs; and formulate problem-solving methodologies.

ITSW 1304  **Introduction to Spreadsheets**  3.2.4
Instruction in the concepts, procedures, and application of electronic spreadsheets. End-of-Course Outcomes: Define spreadsheet terminology and concepts; create formulas and functions; use formatting features; and generate charts, graphs, and reports.
ITSW 1307  Introduction to Database  3.2.3
Introduction to database theory and the practical applications of a database. End-of-Course Outcomes: Identify database terminology and concepts; plan, define, and design a database; design and generate tables, forms, and reports; and devise and process queries.

ITSW 1310  Introduction to Presentation Graphics Software  3.2.4
Instruction in the utilization of presentation software to produce multimedia presentations. Graphics, text, sound, animation and/or video may be used in presentation development. End-of-Course Outcomes: Identify presentation media terminology and concepts; create presentations using text, visual and/or sound elements; use effective compositions and style; prepare presentations for distribution on computers or other media; and modify sequence and slide master.

ITSW 2334  Advanced Spreadsheets  3.2.4
Advanced techniques for developing and modifying spreadsheets. Includes macros and data analysis functions.

ITSY 1342  Information Technology Security  3.2.4
Instruction in security for network hardware, software, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses. End-of-Course Outcomes: National Institute of Standards and Technology (NIST) Guidelines and other best practices; develop backup procedures to provide for data security; use network operating system features to implement network security; identify computer and network threats and vulnerabilities and methods to prevent their effects; use tools to enhance network security; and use encryption techniques to protect network data.

LTCA 1312  Resident Care in the Long Term Facility  3.3.0
A study of the delivery of services to residents of long term care facilities including ethical considerations and quality of life issues.

MATH 0300  Elementary Algebra (32.0104.51 19)  3.3.0
Topics covered normally include real numbers, linear equations and inequalities, application of linear equations, ratio and proportion, multiplication and division of polynomials, and factoring. This course is not for college-level credit and may not be used to satisfy degree requirements.

MATH 0400  Foundations of Mathematical Reasoning (32.0104.51 19)  4.3.2
This course surveys a variety of mathematical topics needed to prepare students for college level statistics or quantitative reasoning. Topics include: numeracy with an emphasis on estimation and fluency with large numbers; evaluating expressions and formulas; rates, ratios, and proportions; percentages; solving equations; linear models; data interpretations including graphs and tables; verbal, algebraic and graphical representations of functions; exponential models. This course is not for college-level credit and may not be used to satisfy degree requirements.
requirements.

MATH 0401 Foundations of Algebraic Reasoning (32.0104.51 19) 4.3.2
Topics in mathematics including study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. Recommended for STEM-majors who are not college ready in mathematics. Prerequisite: Satisfactory placement test score. This course is not for college-level credit and may not be used to satisfy degree requirements.

MATH 1314 College Algebra (27.0101.54 19) 3.3.0
In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included.

MATH 1316 Plane Trigonometry (27.0101.53 19) 3.3.0
In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. Prerequisite: MATH 1314 or concurrent enrollment in MATH 1314.

MATH 1324 Mathematics for Business & Social Sciences (27.0301.52 19) 3.3.0
The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. Prerequisite: meet TSI college-readiness standard for Mathematics; or equivalent.

MATH 1325 Calculus for Business & Social Sciences (27.0301.53 19) 3.3.0
This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions, with emphasis on applications in business, economics, and social sciences. This course is not a substitute for MATH 2413, Calculus I. Prerequisite: MATH 1314 or 1324.

MATH 1332 Contemporary Mathematics (Quantitative Reasoning) (27.0101.51 19) 3.3.0
Intended for Non STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology, and communication should be embedded throughout the course. Additional topics may be covered.

MATH 1342 Elementary Statistical Methods (27.0501.51 19) 3.3.0
Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended.
MATH 1350  Mathematics for Teachers I (Fundamentals of Mathematics I)  (27.0101.56  19)  3.3.0
This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the conceptual development of the following: sets, functions, numeration systems, number theory, and properties of the various number systems with an emphasis on problem solving and critical thinking. Prerequisite: MATH 1314 or the equivalent.

MATH 1351  Mathematics for Teachers II (Fundamentals of Mathematics II)  (27.0101.57  19)  3.3.0
This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the concepts of geometry, measurement, probability, and statistics with an emphasis on problem solving and critical thinking. Prerequisite: MATH 1314 or the equivalent.

MATH 2312  Pre-Calculus Math  (27.0101.58  19)  3.3.0
In-depth combined study of algebra, trigonometry, and other topics for calculus readiness. Prerequisite: MATH 1314 with a “C” or better or by placement test score.

MATH 2320  Differential Equations  (27.0101.64  19)  3.3.0
Ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions, series solutions, singular points, transform methods, and boundary value problems; application of differential equations to real-world problems. Prerequisite: MATH 2414.

MATH 2413  Calculus I  (27.0101.59  19)  4.3.3
Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing or minimizing a function; the chain rule, mean value theorem, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with an application to calculation of areas. Prerequisite: MATH 1314 and 1316 or 2312.

MATH 2414  Calculus II  (27.0101.60  19)  4.3.3
Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. Prerequisite: MATH 2413.

MATH 2415  Calculus III  (27.0101.61  19)  4.3.3
Advanced topics in calculus, including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, and Jacobians; application of the line integral, including Green’s Theorem, the Divergence Theorem, and Stokes’ Theorem. Prerequisite: MATH 2414.

MDCA 1309  Anatomy and Physiology for Medical Assistants  3.3.0
Emphasis on structure and function of human cells, tissues, organs, and sys-
tems with overview of common pathophysiology. End-of-Course Outcomes: Identify and correlate cells, tissues, organs, and systems of the human body; differentiate normal from abnormal structure and function; and differentiate all body systems, their organs, and relevant pathophysiology.

MDCA 1343  Medical Insurance  3.2.4
Emphasizes medical office coding for payment and reimbursement by patient or third party payers for ambulatory care settings. Prerequisite: HITT 1305.

MRKG 1311  Principles of Marketing  3.3.0
Introduction to the marketing mix functions and process. Includes identification of consumer and organizational needs and explanation of environmental issues. End-of-Course Outcomes: Identify the marketing mix components in relation to market segmentation; explain the environmental factors which influence consumer and organizational decision-making processes; and outline a marketing plan.

MRMT 1307  Medical Transcription I  3.2.3
Fundamentals of medical transcription with hands-on experience in transcribing actual physician dictation including basic reports such as history and physicals, discharge summaries, consultations, operative reports, and other medical reports. Utilizes technology compatible with industry standards. Designed to develop speed and accuracy. Fee charged. Prerequisites: HITT 1305 and typing skills of 40 wpm.

MRMT 2333  Medical Transcription II  3.2.3
Transcription of medical reports with increasing speed and accuracy including history and physicals, consultations, discharge summaries, operative reports, and other medical reports. Fee charged. Prerequisites: HITT 1305 and MRMT 1307 and typing skills of 50 wpm.

MUAP 1101  Strings (50.0903.54 26)  1.0.2
Individual Instruction. One lesson of thirty minutes per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

MUAP 1117  Woodwind (50.0903.54 26)  1.0.2
Individual Instruction. One lesson of thirty minutes per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

MUAP 1137  Brass (50.0903.54 26)  1.0.2
Individual Instruction. One lesson of thirty minutes per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

MUAP 1157  Percussion (50.0903.54 26)  1.0.2
Individual Instruction. One lesson of thirty minutes per week. Intended for music majors and approved non-music majors. May be repeated for credit.
Fee charged.

**MUAP 1161 Guitar (50.0903.54 26)**
Individual Instruction. One lesson of thirty minutes per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1169 Keyboard (50.0903.54 26)**
Individual Instruction. One lesson of thirty minutes per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1181 Voice (50.0903.54 26)**
Individual Instruction. One lesson of thirty minutes per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1202 Strings (50.0903.54 26)**
Individual Instruction. One lesson of one hour per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1217 Woodwind (50.0903.54 26)**
Individual Instruction. One lesson of one hour per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1237 Brass (50.0903.54 26)**
Individual Instruction. One lesson of one hour per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1257 Percussion (50.0903.54 26)**
Individual Instruction. One lesson of one hour per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1261 Guitar (50.0903.54 26)**
Individual Instruction. One lesson of one hour per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1269 Keyboard (50.0903.54 26)**
Individual Instruction. One lesson of one hour per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.

**MUAP 1281 Voice (50.0903.54 26)**
Individual Instruction. One lesson of one hour per week. Intended for music majors and approved non-music majors. May be repeated for credit. Fee charged.
challenged.

MUEN 1141 Chorale (50.0903.57  26)  
Rehearsal of choral literature with one major performance each semester. Additional performances upon consent of director. Open to all students. May be repeated for credit.

MUEN 1142 Show Choir (50.0903.57  26)  
Ensemble rehearsal and performance of light classics, popular songs, and music of the Broadway stage. Extensive performance opportunities include song and dance combinations. Enrollment upon consent of instructor.

MUEN 1154 Chamber Singers (50.0903.58  26)  
Small ensemble rehearsal and performance, including Renaissance and Baroque through contemporary musical styles. Enrollment upon consent of instructor.

MUEN 1227 Instrumental Ensemble (50.0903.55  26)  
Study of instrumental music through rehearsal and performance of brass, woodwind, jazz/rock, and wind ensembles. Open to all students upon consent of instructor.

MUEN 1237 Jazz Workshop (50.0903.56  26)  
Study of jazz improvisation with emphasis on “blues” style. Rehearsal and performance of small combos, including styles in Dixieland, bop, rock, and avant-garde. Enrollment upon consent of instructor.

MUEN 1255 Vocal Ensemble (Minor) (50.0903.58  26)  
Study of gospel music through rehearsal, study of technique and performance. Open to all students, this course may be repeated for credit.

MUSI 1116 Sightsinging/Ear Training I (50.0904.56  26)  
Singing tonal music in treble, bass, alto, and tenor clefs. Aural study, including dictation, of rhythm, melody, and diatonic harmony. Must enroll concurrently in MUSI 1311. Prerequisite: MUSI 1301 with a minimum grade of “C” or recommendation of music faculty as determined by placement test.

MUSI 1117 Sightsinging/Ear Training II (50.0904.56  26)  
Continuation of MUSI 1116. Singing tonal music in treble, bass, alto, and tenor clefs. Aural study, including dictation, of rhythm, melody, and diatonic harmony. Must enroll concurrently in MUSI 1312. Prerequisite: MUSI 1116 with a minimum grade of “C.”

MUSI 1157 Opera Workshop I (50.0908.52  26)  
Performance of portions of or complete operas and the study of the integration of music, acting, and staging of an opera.

MUSI 1160 Italian Diction (50.0908.53  26)  
A study of the International Phonetic Alphabet (IPA) and its application to singing in Italian.
MUSI 1161  International Phonetic Alphabet (IPA) for Singers (50.0908.53 26)  1.1.1
A study of the International Phonetic Alphabet (IPA) and its application to
singing in English, Italian, German, and French.

MUSI 1181  Piano Class I (50.0907.51 26)  1.1.2
Class instruction in the fundamentals of keyboard technique for beginning
piano students. Fee charged.

MUSI 1182  Piano Class II (50.0907.51 26)  1.1.2
Advanced beginning class instruction in the fundamentals of keyboard tech-
nique. Fee charged.

MUSI 1183  Voice Class  (50.0908.51 26)  1.1.2
Class instruction in the fundamentals of singing including breathing, tone pro-
duction, and diction. Designed for students with little or no previous voice
training. Does not apply to a music major degree. Fee charged.

MUSI 1301  Fundamentals of Music (50.0904.55 26)  3.3.2
Introduction to the basic elements of music theory for non-music majors:
scales, intervals, keys, triads, elementary ear training, keyboard harmony, not-
ation, meter, and rhythm.

MUSI 1306  Music Appreciation (50.0902.51  26)  3.3.0
Understanding music through the study of cultural periods, major composers,
and musical elements. Illustrated with audio recordings and live performances.

MUSI 1311  Music Theory I (50.0904.51 26)  3.3.0
Analysis and writing of tonal melody and diatonic harmony up to and includ-
ing the chords. Analysis and writing of small compositional forms. Correlated
study at the keyboard. Fee charged.

MUSI 2116  Sight Singing & Ear Training III (50.0904.57 26)  1.0.4
Singing more difficult tonal music including modal, ethnic, and 20th century
materials. Aural study, including dictation, of more complex rhythm, melody,
chromatic harmony, and extended tertian structures.

MUSI 2117  Sight Singing & Ear Training IV (50.0904.57 26)  1.0.4
Singing advanced tonal music and introduction of modal and post-tonal melo-
dies. Aural study including dictation of advanced rhythm, melody, and har-
mony.

MUSI 2311  Music Theory III (50.0904.52 26)  3.3.0
Advanced harmony part writing and keyboard analysis and writing of more
advanced tonal harmony including chromaticism and extended tertian struc-
tures. Introduction to 20th century compositional procedures and survey of
the traditional large forms of composition. Correlated study at the keyboard.
Fee charged.
MUSI 2312  Music Theory IV (50.0904.51  26)  3.3.0
Continuation of advanced chromaticism and survey of analytical and compositional procedures in post-tonal music. Optional correlated study at the keyboard. Fee charged.

NCBI 0004  Integrated Reading/Writing I (32.0108.60 12)
Integration of critical reading and academic writing skills. Successful completion of this intervention if taught at the upper (exit) level fulfills TSI requirements for reading and/or writing and is for students who are near the successful TSI scores for reading and/or writing. Graded Pass/Fail. May not be used to fulfill degree requirements. (4 contact hour intervention)

NCBM 0004  Developmental Mathematics I (32.0104.54 19)
Topics in mathematics may include arithmetic operations, basic algebraic concepts and notation, geometry, real and complex number systems, study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. May be taken by students who are near the successful TSI scores for math. Graded Pass/Fail. May not be used to fulfill degree requirements. (4 contact hour intervention)

NCBM 0116  Developmental Mathematics II (32.0104.54 19)
Topics in mathematics may include arithmetic operations, basic algebraic concepts and notation, geometry, real and complex number systems, study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. May be taken by students who are near the successful TSI scores for math. Graded Pass/Fail. May not be used to fulfill degree requirements. (16 contact hour intervention)

NURA 1260  Clinical - Nursing Assistant/Aide & Patient Care Assistant/Aide  2.0.8
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

NURA 1301  Nurse Aide for Health Care  3.3.0
Knowledge, skills, and abilities essential to provide basic care to residents of long-term care facilities. Topics include resident’s rights, communication, safety, observation, reporting and assisting residents in maintaining basic comfort and safety. Emphasis on effective interaction with members of the health care team.

OSHT 1305  OSHA Regulations – Construction Industry  3.3.1
A study of Occupational Safety and Health Administration (OSHA) regulations pertinent to the construction industry.

PFPB 1247  Backflow Prevention  2.1.4
Principles, practices, and regulations of backflow. Includes backpressure, pub-
lic health, laws and responsibilities, mechanics and use of backflow devices, and equipment testing used in backflow devices.

**PFPB 1321**  
**Plumbing Maintenance and Repair**  
Instruction in the practices and procedures employed by a plumber including public relations.

**PFPB 1323**  
**Plumbing Codes I**  
State and local plumbing codes and the application of potable water, waste water, and gas systems relating to residential and light commercial settings.

**PFPB 2308**  
**Piping Standards and Materials**  
Identification, description, and application of piping standards and specifications. Includes identification and use of various metallic and non-metallic piping materials, identification and installation of valves, and material take-offs.

**PFPB 2309**  
**Residential Construction Plumbing I**  
Skill development in the procedures and techniques employed by a plumber in the rough-in and top-out stages of a new home or the remodeling of an older home.

**PFPB 2336**  
**Commercial Construction and Fixture Setting**  
Practices and procedures employed by a plumber in the common construction in a commercial building including drain, waste, and vent systems, water systems, and fixture installations.

**PFPB 2343**  
**Advanced Pipe Practices**  
Identification, installation, and testing of steam traps and steam trap station components; valve identification, application, and maintenance; identification, storage, and handling of in-line specialties; hydrostatic testing of process piping.

**PFPB 2349**  
**Field Measuring, Sketching, and Layout**  
Field dimensioning, measuring, sketching, and layout of future process piping and the use, care, and setup of transit and level.

**PHED 1101**  
**Aerobics I (36.0108.51 23)**  
Activity class.

**PHED 1102**  
**Aerobics II (36.0108.51 23)**  
Activity class.

**PHED 1107**  
**Backpacking I (36.0108.51 23)**  
Activity class.

**PHED 1108**  
**Backpacking II (36.0108.51 23)**  
Activity class.

**PHED 1113**  
**Basketball I (36.0108.51 23)**  
Activity class.
PHED 1114  Basketball II (36.0108.51  23)  
Activity class.

PHED 1115  Bowling I (36.0108.51  23)  
Activity class.

PHED 1116  Bowling II (36.0108.51  23)  
Activity class.

PHED 1117  Camping I (36.0108.51  23)  
Activity class.

PHED 1118  Camping II (36.0108.51  23)  
Activity class.

PHED 1121  Cheerleading I (36.0108.51  23)  
Activity class.

PHED 1122  Cheerleading II (36.0108.51  23)  
Activity class.

PHED 1125  Dance I (36.0108.51  23)  
Activity class.

PHED 1126  Dance II (36.0108.51  23)  
Activity class.

PHED 1127  Dance III (36.0108.51  23)  
Activity class.

PHED 1129  Golf I (36.0108.51  23)  
Activity class.

PHED 1130  Golf II (36.0108.51  23)  
Activity class.

PHED 1132  Swimming I (36.0108.51  23)  
The student is instructed in the basic swimming strokes including freestyle, breaststroke and backstroke. An emphasis is placed on safety and learning to be comfortable in the water.

PHED 1133  Swimming II (36.0108.51  23)  
Builds on skills taught in beginning swimming. A higher level of technical instruction.

PHED 1134  Introduction to Wellness (36.0108.51  23)  
Activity class.

PHED 1137  Swim Conditioning (36.0108.51  23)  
The course emphasizes the use of swimming for physical fitness enhancement and enjoyment. Each student needs a working knowledge of freestyle and backstroke and the endurance to swim 200 yards of each continuously.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHED 1138</td>
<td>Maintenance of Wellness (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1139</td>
<td>Aqua Aerobics I (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Water aerobics fitness, a program of water exercise designed to develop cardiovascular fitness. A variety of water exercises for all ages and swimming levels. Non-swimmers can participate.</td>
</tr>
<tr>
<td>PHED 1140</td>
<td>Aqua Aerobics II (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Water aerobics fitness, a program of water exercise designed to develop cardiovascular fitness, increases stamina and endurance. A variety of water exercises for all ages and swimming levels. Non-swimmers can participate.</td>
</tr>
<tr>
<td>PHED 1144</td>
<td>Varsity Softball I (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1145</td>
<td>Varsity Softball II (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1147</td>
<td>Step Aerobics I (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1148</td>
<td>Step Aerobics II (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1151</td>
<td>Tennis I (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1152</td>
<td>Tennis II (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1153</td>
<td>Varsity Volleyball I (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1154</td>
<td>Varsity Volleyball II (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1156</td>
<td>Weight Training I (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1157</td>
<td>Weight Training II (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1170</td>
<td>Varsity Baseball I (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1171</td>
<td>Varsity Baseball II (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
<tr>
<td>PHED 1172</td>
<td>Varsity (Men) Basketball I (36.0108.51 23)</td>
<td>1.0.3</td>
<td>Activity class.</td>
</tr>
</tbody>
</table>
PHED 1173  Varsity (Men) Basketball II (36.0108.51 23)  1.0.3
Activity class.

PHED 1174  Varsity (Women) Basketball I (36.0108.51 23)  1.0.3
Activity class.

PHED 1175  Varsity (Women) Basketball II (36.0108.51 23)  1.0.3
Activity class.

PHED 1176  Varsity Golf I (36.0108.51 23)  1.0.3
Activity class.

PHED 1177  Varsity Golf II (36.0108.51 23)  1.0.3
Activity class.

PHED 1301  Foundations of Kinesiology (31.0501.52 23)  3.3.0
The purpose of this course is to provide students with an introduction to human movement that includes the historical development of physical education, exercise science, and sport. This course offers the student both an introduction to the knowledge base, as well as, information on expanding career opportunities.

PHED 1304  Personal/Community Health (51.0304.51 16)  3.3.0
This course provides an introduction to the fundamentals, concepts, strategies, applications, and contemporary trends related to understanding personal and/or community health issues. This course also focuses on empowering various populations with the ability to practice healthy living, promote healthy lifestyles, and enhance individual well-being.

PHED 1306  First Aid (51.1504.53 16)  3.3.0
Instruction and practice for emergency care. Designed to enable students to recognize and avoid hazards within their environment, to render intelligent assistance in case of accident or sudden illness, and to develop skills necessary for the immediate and temporary care of the victim. Successful completion of the course may enable the student to receive a certificate from a nationally recognized agency.

PHED 1308  Sports Officiating (12.0204.51 09)  3.3.1
The purpose of the course is to study officiating requirements for sports and games with an emphasis on mechanics, rule interpretation, and enforcement.

PHED 1338  Concepts of Physical Fitness (31.0501.51 23)  3.3.0
This course is designed to familiarize students with knowledge, understanding and values of health related fitness and its influence on the quality of life emphasizing the development and implementation of fitness programs.

PHED 1346  Drug Use and Abuse (51.0301.52 16)  3.3.0
Study of the use, misuse and abuse of drugs and other harmful substances in today's society. Physiological, sociological, pharmacological and psychological factors will be emphasized.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHED 2356</td>
<td>Care and Prevention of Athletic Injuries</td>
<td>3.3.0</td>
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<td></td>
<td>(51.0913.52 16) Prevention and care of athletic injuries with emphasis on qualities of a good athletic trainer, avoiding accidents and injuries, recognizing signs and symptoms of specific sports injuries and conditions, immediate and long-term care of injuries, and administration procedures in athletic training.</td>
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<tr>
<td>PHYS 1303</td>
<td>Stars and Galaxies</td>
<td>3.3.1</td>
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<td></td>
<td>(40.0201.51 03) Study of stars, galaxies, and the universe outside our solar system. Fee charged. No Prerequisite.</td>
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<tr>
<td>PHYS 1304</td>
<td>Solar System</td>
<td>3.3.1</td>
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<td></td>
<td>(40.0201.52 03) Study of the sun and its solar system, including its origin. Fee charged. No Prerequisite; may be taken prior to PHYS 1303.</td>
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<tr>
<td>PHYS 1401</td>
<td>College Physics I</td>
<td>4.3.3</td>
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<td></td>
<td>(40.0801.53 03) Fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; with emphasis on problem solving. Laboratory activities will reinforce fundamental principles of physics, as listed previously. Prerequisite: MATH 1314 and 1316 or MATH 2312.</td>
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<tr>
<td>PHYS 1402</td>
<td>College Physics II</td>
<td>4.3.3</td>
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<td></td>
<td>(40.0801.53 03) Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. Laboratory activities will reinforce fundamental principles of physics, as listed previously. Prerequisite: PHYS 1401.</td>
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<tr>
<td>PHYS 2425</td>
<td>University Physics I</td>
<td>4.3.4</td>
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<td></td>
<td>(40.0101.52 03) Fundamental principles of physics, using calculus, for science, computer science, and engineering majors; the principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics; and emphasis on problem solving. Basic laboratory experiments supporting theoretical principles involving the principles and applications of classical mechanics, including harmonic motion and physical systems; experimental design, data collection and analysis, and preparation of laboratory reports. Fee charged. Prerequisite: MATH 2413.</td>
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<tr>
<td>PHYS 2426</td>
<td>University Physics II</td>
<td>4.3.4</td>
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<td>(40.0101.55 03) Principles of physics for science, computer science, and engineering majors, using calculus, involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics. Laboratory experiments supporting theoretical principles involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and</td>
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</table>
PLAB 1223  **Phlebotomy**  2.2.1
Skill development in the performance of a variety of blood collection methods using proper techniques and standards 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.

PLAB 1260  **Clinical - Phlebotomy/Phlebotomist**  2.0.8
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

POFL 1303  **Legal Office Procedures I**  3.2.3
Fundamental administrative duties of the legal administrative assistant. Fee charged. Prerequisites: POFT 1329 and POFL 1305.

POFL 1305  **Legal Terminology**  3.2.3
This course presents an overview of legal terminology and how these terms are used in legal documents. Fee charged.

POFL 2301  **Legal Document Processing**  3.2.3
Develop skills for the production of legal documents. Fee charged. Prerequisite: POFL 1305.

POFM 1300  **Basic Medical Coding**  3.3.0
Presentation and application of basic coding rules, principles, guidelines, and conventions utilizing various coding systems. Prerequisite: HITT 1305.

POFM 1302  **Medical Software Applications**  3.2.4
Medical software applications for the management and operation of health care information systems. End-of-course outcomes: Utilize medical software applications; manage patient database; process billing; maintain schedules; and generate reports.

POFT 1127  **Introduction to Keyboarding**  1.0.2
Skill development in keyboarding techniques. Emphasis on the development of speed and accuracy.

POFT 1309  **Administrative Office Procedures I**  3.2.3
Study of current office procedures, duties, and responsibilities applicable to an office environment.

POFT 1319  **Records and Information Management I**  3.2.3
Introduction to basic records information management systems including manual and electronic filing.
POFT 1321  Business Math  
Fundamentals of business mathematics including analytical and critical thinking skills.

POFT 1329  Beginning Keyboarding  
Skill development in keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents.

POFT 1364  Practicum - Administrative Assistant & Secretarial Science, General  
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. This course may be repeated if topics and learning outcomes vary. Three credit hours.

POFT 2301  Intermediate Keyboarding  
A continuation of keyboarding skills emphasizing acceptable speed and accuracy levels and formatting documents. Fee charged. Prerequisite: POFT 1329 or equivalent.

POFT 2312  Business Correspondence & Communication  
Development of writing and presentation skills to produce effective business documents.

PSYC 1300  Learning Framework (42.2701.51 25)  
A study of the 1) research and theory in the psychology of learning, cognition, and motivation, 2) factors that impact learning, and 3) application of learning strategies. Theoretical models of strategic learning, cognition, and motivation serve as the conceptual basis for the introduction of college-level student academic strategies. Students use assessment instruments (e.g., learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. (Cross-listed as EDUC 1300)

PSYC 2301  General Psychology (42.0101.51 25)  
General Psychology is a survey of the major psychological topics, theories and approaches to the scientific study of behavior and mental processes.

PSYC 2314  Lifespan Growth and Development (42.2703.51 25)  
Life-Span Growth and Development is a study of social, emotional, cognitive and physical factors and influences of a developing human from conception to death.

PSYC 2315  Psychology of Adjustment (42.0101.56 25)  
Study of the processes involved in adjustment of individuals to their personal and social environments.
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>RADR 1201</td>
<td>Introduction to Radiography</td>
<td>2.2.0</td>
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<td></td>
<td>An overview of the historical development of radiography, basic radiation protection, an introduction to medical terminology, ethical and legal issues for health care professionals, and an orientation to the profession and the health care system.</td>
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<tr>
<td>RADR 1213</td>
<td>Principles of Radiographic Imaging I</td>
<td>2.1.4</td>
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<td></td>
<td>Radiographic image quality and the effects of exposure variables.</td>
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<tr>
<td>RADR 1266</td>
<td>Practicum - Radiologic Technology/Science - Radiographer</td>
<td>2.0.16</td>
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<td>Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.</td>
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<tr>
<td>RADR 1267</td>
<td>Practicum - Radiologic Technology/Science - Radiographer</td>
<td>2.0.16</td>
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<td>Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.</td>
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<tr>
<td>RADR 1303</td>
<td>Patient Care</td>
<td>3.2.4</td>
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<td></td>
<td>An introduction in patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, and basic pharmacology.</td>
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<tr>
<td>RADR 1311</td>
<td>Basic Radiographic Procedures</td>
<td>3.2.4</td>
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<td></td>
<td>An introduction to radiographic positioning terminology, manipulation of equipment, positioning and alignment of the anatomic structure and equipment, and evaluation of images for demonstration of basic anatomy.</td>
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<tr>
<td>RADR 2205</td>
<td>Principles of Radiographic Imaging II</td>
<td>2.1.4</td>
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<td></td>
<td>Radiographic image quality and the effects of exposure variables, and the synthesis of all variables in image production.</td>
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<tr>
<td>RADR 2213</td>
<td>Radiation Biology and Protection</td>
<td>2.1.3</td>
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<td>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.</td>
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<tr>
<td>RADR 2233</td>
<td>Advanced Medical Imaging</td>
<td>2.1.4</td>
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<td>An exploration of specialized imaging modalities.</td>
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<td>RADR 2235</td>
<td>Radiologic Technology Seminar (Capstone)</td>
<td>2.2.0</td>
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<td>A capstone course focusing on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning.</td>
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<tr>
<td>RADR 2266</td>
<td>Practicum - Radiologic Technology/Science - Radiographer</td>
<td>2.0.16</td>
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<td>Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.</td>
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<tr>
<td>RADR 2267</td>
<td>Practicum - Radiologic Technology/Science - Radiographer</td>
<td>2.0.16</td>
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<td>Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.</td>
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</table>
RADR 2301  Intermediate Radiographic Procedures  3.2.4
A continuation of the study of the manipulation of radiographic equipment, positioning and alignment of the anatomic structure and equipment, and evaluation of images for demonstration of anatomy.

RADR 2209  Radiographic Imaging Equipment  2.2.1
Equipment and physics of x-ray production. Includes basic x-ray circuits. Also examines the relationship of conventional and digital equipment components to the imaging process.

RADR 2331  Advanced Radiographic Procedures  3.2.4
Positioning and alignment of anatomic structures and equipment, evaluation of images for demonstration of anatomy and related pathology.

RADR 2366  Practicum - Radiologic Technology/Science - Radiographer  3.0.24
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

RADR 2367  Practicum - Radiologic Technology/Science - Radiographer  3.0.24
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

RBTC 1301  Programmable Logic Controllers  3.2.4
A study in programmable logic controllers (PLC). Topics include processor units, numbering systems, memory organization, relay type devices, timers, counters, data manipulators, and programming. Fee charged.

RBTC 1351  Robotic Mechanisms  3.2.4
The application of principles and the calculation of practical problems involving four bar linkages, cams, gears, and gear trains. Topics include vector quantities, angular displacement, motion concepts, velocities, and motions.

RNSG 1227  Transition to Professional Nursing  2.2.0
Content includes health promotion, expanded assessment, analysis of data, critical thinking skills and systematic problem solving process, pharmacology, interdisciplinary teamwork, communication, and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework throughout the lifespan. This course must be taken as a co-requisite to RNSG 1262. RNSG 1262 and RNSG 1227 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admissions will require enrolling in both courses within the same semester. Prerequisites: Vocational Nurse License, BIOL 1322; BIOL 2401; BIOL 2402; ENGL 1301; PSYC 2301; PSYC 2314. Co-requisite: RNSG 1262.

RNSG 1262  Clinical - Registered Nursing/Registered Nurse  2.0.6
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision
is provided by the clinical professional. This course must be taken as a co-requisite to RNSG 1227. RNSG 1262 and RNSG 1227 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admission will require enrolling in both courses within the same semester. Pre-requisites: Vocational Nurse License, BIOL 1322, BIOL 2401, BIOL 2402, ENGL 1301, PSYC 2301, and PSYC 2314. Co-requisite: RNSG 1227.

RNSG 2514 Integrated Care of the Client with Complex Healthcare Needs 5.5.0
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, skills, and professional values within a legal/ethical framework. This course lends itself to an integrated approach. This course must be taken as a co-requisite to RNSG 2560. RNSG 2514 and RNSG 2560 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admission will require enrolling in both courses within the same semester. Prerequisites: RNSG 1227 and RNSG 1262. Co-requisite: RNSG 2560.

RNSG 2535 Integrated Patient Care Management 5.5.0
Application of independent nursing interventions to care for patients and families throughout the lifespan whose health care needs may be difficult to predict. Emphasis on collaborative clinical reasoning, nursing leadership skills, and patient management. Content includes the significance of professional development, trends in nursing and health care, and applicable knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to an integrated approach. This course must be taken as a co-requisite to RNSG 1261. RNSG 2535 and RNSG 2561 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admission will require enrolling in both courses within the same semester. Prerequisites: RNSG 2514, RNSG 2560, BIOL 2420, SOCI 1301. Co-requisite: RNSG 2561.

RNSG 2560 Clinical - Registered Nursing/Registered Nurse 5.0.16
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course must be taken as a co-requisite to RNSG 2514. RNSG 2560 and RNSG 2514 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admission will require enrolling in both courses within the
same semester. (16 clinical hours/week) Prerequisites: RNSG 1227 and RNSG 1262. Co-requisite: RNSG 2514.

RNSG 2561 Clinical - Registered Nursing/Registered Nurse 5.0.16
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course must be taken as a co-requisite to RNSG 2535. RNSG 2561 and RNSG 2535 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admission will require enrolling in both courses within the same semester. (16 clinical hours/week) Prerequisite: RNSG 2514, RNSG 2560, BIOL 2420, SOIC 1301. Co-requisite: RNSG 2535.

SOCI 1301 Introductory Sociology (45.1101.51 25) 3.3.0
The scientific study of human society, including ways in which groups, social institutions, and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts, and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity, and deviance.

SOCI 1306 Social Problems (45.1101.52 25) 3.3.0
Application of sociological principles and theoretical perspectives to major social problems in contemporary society such as inequality, crime and violence, substance abuse, environmental issues, deviance, or family problems.

SOCI 2301 Marriage & the Family (45.1101.54 25) 3.3.0
Sociological and theoretical analysis of the structures and functions of the family, the varied cultural patterns of the American family, and the relationships that exist among the individuals within the family, as well as the relationships that exist between the family and other institutions in society.

SOCI 2336 Criminology (45.0401.51 25) 3.3.0
The course surveys various theories of crime, with an emphasis on understanding the social causes of criminal behavior. The techniques for measuring crime as a social phenomenon and the characteristics of criminals are examined. This course addresses crime types (such as consensual or white-collar crimes), the criminal justice system, and other social responses to crime.

SPAN 1411 Beginning Spanish I (16.0905.51 13) 4.3.4
Basic Spanish language skills in listening, speaking, reading, and writing within a cultural framework. Students will acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the beginner level.

SPAN 1412 Beginning Spanish II (16.0905.51 13) 4.3.4
Continued development of basic Spanish language skills in listening, speaking, reading, and writing within a cultural framework. Students acquire the vocab-
ulary and grammatical structures necessary to communicate and comprehend at the high beginner to low intermediate level.

SPAN 2311  **Intermediate Spanish I (16.0905.52 13)**  
The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis on comprehension, appreciation, and interpretation of the cultures of the Spanish-speaking world. Fee charged. Prerequisites: two years of high school Spanish or SPAN 1412.

SPAN 2312  **Intermediate Spanish II (16.0905.52 13)**  
The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis on comprehension, appreciation, and interpretation of the cultures of the Spanish-speaking world. Prerequisites: SPAN 2311 or consent of instructor.

SPCH 1311  **Introduction to Speech Communication (23.1304.51 12)**  
Introduces basic human communication principles and theories embedded in a variety of contexts including interpersonal, small group, and public speaking.

SPCH 1315  **Public Speaking (23.1304.53 12)**  
Application of communication theory and practice to the public speaking context, with emphasis on audience analysis, speaker delivery, ethics of communication, cultural diversity, and speech organizational techniques to develop students’ speaking abilities, as well as ability to effectively evaluate oral presentations.

SPCH 1318  **Interpersonal Communication (23.1304.54 12)**  
Application of communication theory to interpersonal relationship development, maintenance, and termination in relationship contexts including friendships, romantic partners, families, and relationships with co-workers and supervisors.

SPCH 1321  **Business & Professional Communication (23.1304.52 12)**  
Study and application of communication within the business and professional context. Special emphasis will be given to communication competencies in presentations, dyads, teams and technologically mediated formats.

SPCH 1342  **Voice & Diction (23.1304.58 12)**  
Physiology and mechanics of effective voice production with practice in articulation, pronunciation, and enunciation.

SPCH 2335  **Argumentation & Debate (23.1001.59 12)**  
Theories and practice in argumentation and debate including analysis, reasoning, organization, evidence, and refutation.

SPCH 2341  **Oral Interpretation (23.1304.57 12)**  
Theories and techniques in analyzing and interpreting literature. Preparation and presentation of various literary forms.
SPNL 1201 **Health Care Spanish**  2.2.1
Development of practical Spanish communication skills for the health care employee including medical terminology, greetings, common expressions, commands, and phrases normally used within a hospital or a physician’s office.

SRGT 1405 **Introduction to Surgical Technology**  4.3.2
Orientation to surgical technology theory, surgical pharmacology and anesthesia, technological sciences, and patient care concepts. Pre-requisite: Acceptance in the Surgical Technology Program and completion of all previous course work listed in the Surgical Technology certificate plan with a grade of “C” or better. This course requires concurrent enrollment in SRGT 1409, and both courses must be passed with a “C” or better within the same semester.

SRGT 1409 **Fundamentals of Perioperative Concepts and Techniques**  4.2.6
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: Acceptance in the Surgical Technology Program and completion of all previous course work listed in the Surgical Technology certificate plan with a grade of “C” or better. This course requires concurrent enrollment in SRGT 1305, and both courses must be passed with a “C” or better within the same semester.

SRGT 1441 **Surgical Procedures I**  4.3.2
Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the general, OB/GYN, genitourinary, otorhinolaryngology, and orthopedic surgical specialties incorporating instruments, equipment, and supplies required for safe patient care. Prerequisite: completion of all previous course work listed in the Surgical Technology certificate plan with a grade of “C” or better. This course requires concurrent enrollment in SRGT 2461, and both courses must be passed with a “C” or better within the same semester.

SRGT 1442 **Surgical Procedures II**  4.3.2
Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the cardiothoracic, peripheral vascular, plastic/reconstructive, ophthalmology, oral/maxillofacial, and neurological surgical specialties incorporating instruments, equipment, and supplies required for safe patient care. Prerequisite: Acceptance in the Surgical Technology Program and completion of all previous course work listed in the Surgical Technology certificate plan with a grade of “C” or better. This course requires concurrent enrollment in SRGT 2462, and both courses must be passed with a “C” or better within the same semester.

SRGT 2461 **Clinical - Surgical Technology/Technologist**  4.0.20
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Clinical education is an unpaid learning experience. Prerequisite: completion of all previous course work listed in the Surgical Technology certificate plan with a grade of “C” or better. This
course requires concurrent enrollment in SRGT 1441, and both courses must be passed with a “C” or better within the same semester.

**SRGT 2462  Clinical - Surgical Technology/Technologist  4.0.20**
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Clinical education is an unpaid learning experience. Pre-requisite: completion of all previous course work listed in the Surgical Technology certificate plan with a grade of “C” or better. This course requires concurrent enrollment in SRGT 1442, and both courses must be passed with a “C” or better within the same semester.

**VNSG 1160  Clinical - Licensed Practical/Vocational Nurse Training  1.0.6**
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course is a method of instruction that provides the application of general principles of growth and development, primary health care needs of the client across the life span and the application of basic therapeutic nursing interventions. On-site clinical instruction, supervision and evaluation, will provide education, training, work-based experience and direct patient care. Specific detailed clinical and skill objectives have been developed for this course by the faculty. This course must be taken as a co-requisite to VNSG 1400. VNSG 1160 and VNSG 1400 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admissions will require enrolling in both courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisite: VNSG 1400.

**VNSG 1204  Foundations of Nursing  2.2.1**
Introduction to the nursing profession including history, standards of practice, legal and ethical issues, and role of the vocational nurse. Topics include mental health, therapeutic communication, cultural and spiritual diversity, nursing process, and holistic awareness. This course must be taken as a co-requisite to VNSG 1323. VNSG 1204 and VNSG 1323 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admissions will require enrolling in both courses within the same semester. Prerequisites: PSYC 2301, BIOL 2401, and BIOL 2402. Co-requisite: VNSG 1323.

**VNSG 1230  Maternal – Neonatal Nursing  2.2.0**
A study of the biological, psychological, and sociological concepts applicable to basic needs of the family including childbearing and neonatal care. Utilization of the nursing process in the assessment and management of the childbearing family. Topics include physiological changes related to pregnancy, fetal development, and nursing care of the family during labor and delivery and the puerperium. This course must be taken as a co-requisite to VNSG 1263, VNSG 2410 and VNSG 2460. VNSG 1230, VNSG 1263, VNSG 2410 and VNSG
2460 must be completed and passed within the same semester. If the student does not successfully complete all courses, future admissions will require enrolling in all required nursing courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisite: VNSG 1263, VNSG 2410, and VNSG 2460.

VNSG 1263  **Clinical - Licensed Practical/Vocational Nurse Training**  2.0.8
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course is a method of instruction that provides the application of the nursing process in the assessment and management of the childbearing family including reproductive health disorders. On-site clinical instruction, supervision, and evaluation, will provide education, training, work-based experience and direct patient care. Specific detailed clinical and skill objectives have been developed for this course by the faculty. This course must be taken as a co-requisite to VNSG 1230, VNSG 2410 and VNSG 2460. VNSG 1263, VNSG 1230, VNSG 2410, and VNSG 2460 must be completed and passed within the same semester. If the student does not successfully complete all courses, future admissions will require enrolling in all required nursing courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisite: VNSG 1230, VNSG 2410 and VNSG 2460.

VNSG 1323  **Basic Nursing Skills**  3.1.6
Mastery of basic nursing skills and competencies for a variety of health care settings using the nursing process as the foundation for all nursing interventions. This course must be taken as a co-requisite to VNSG 1204. VNSG 1204 and VNSG 1323 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admissions will require enrolling in both courses within the same semester. Prerequisites: PSYC 2301, BIOL 2401, and BIOL 2402. Co-requisite: VNSG 1204.

VNSG 1400  **Nursing in Health and Illness I**  4.3.2
Introduction to general principles of growth and development, primary health care needs of the patient across the life span, and therapeutic nursing interventions. End-of-Course Outcomes: Describe the psychosocial, growth and development, and physiological needs of patients across the life span; identify primary health care needs of the patient; and identify the basic interventions to support the patient and family during life stages including death and dying. This course must be taken as a co-requisite to VNSG 1160. VNSG 1400 and VNSG 1160 must be completed and passed within the same semester. If the student does not successfully complete both courses, future admissions will require enrolling in both courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisites: VNSG 1160.
VNSG 1409  **Nursing in Health and Illness II**  
4.4.1  
Introduction to health problems requiring medical and surgical interventions. End-of-course Outcomes: Compare and contrast normal physiology of body systems to pathologic variations in the patient with medical-surgical health problems; evaluate and treat patients with medical-surgical health problems using the nursing process including nutrition, pharmacological therapy, and principles of safety. This course must be taken as a co-requisite to VNSG 1429 and VNSG 1460. VNSG 1409, 1429 and VNSG 1460 must be completed and passed within the same semester. If the student does not successfully complete all courses, future admissions will require enrolling in all required nursing courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisites: VNSG 1429 & VNSG 1460.

VNSG 1429  **Medical – Surgical Nursing I**  
4.4.1  
Application of the nursing process to the care of adult patients experiencing medical-surgical conditions along the health illness continuum in a variety of health care settings. This course must be taken as a co-requisite to VNSG 1409 and VNSG 1460. VNSG 1409, 1429, and 1460 must be completed and passed within the same semester. If the student does not successfully complete all courses, future admissions will require enrolling in all required nursing courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisites: VNSG 1409 & VNSG 1460.

VNSG 1460  **Clinical - Licensed Practical/Vocational Nurse Training**  
4.0.16  
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course is a method of instruction that provides the application of basic therapeutic nursing interventions to common medical surgical healthcare needs of the client. On-site clinical instruction, supervision, and evaluation, will provide education, training, work-based experience and direct patient care. Specific detailed clinical and skill objectives have been developed for this course by the faculty. This course must be taken as a co-requisite to VNSG 1409 and 1429. VNSG 1409, 1429, and 1460 must be completed and passed within the same semester. If the student does not successfully complete all courses, future admissions will require enrolling in all required nursing courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisites: VNSG 1409 & VNSG 1429.

VNSG 2410  **Nursing in Health and Illness III**  
4.4.1  
This course is a continuation of Nursing in Health and Illness II. Utilizing further application of the nursing process in caring for clients* experiencing common medical-surgical health disturbances of the endocrine, cardiovascular, hematopoietic and neurological systems. Pharmacological concepts and
dosage calculations are also integrated throughout this course. In addition, this course focuses on concepts of mental illness and incorporates knowledge necessary to make the transition from student to graduate vocational nurse (*Clients include adults and pediatrics). This course must be taken as a co-requisite to VNSG 2460, VNSG 1230 and VNSG 1263. VNSG 2410, VNSG 2460, VNSG 1230 and VNSG 1263 must be completed and passed within the same semester. If the student does not successfully complete all courses, future admissions will require enrolling in all required nursing courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisite: VNSG 2460, VNSG 1230 and VNSG 1263.

VNSG 2460  Medical Surgical Clinical – Practical Nurse  4.0.16
This course is a method of instruction that provides the application of therapeutic nursing interventions to common medical surgical health care needs of the client. On-site clinical instruction, supervision, and evaluation, will provide education, training, work-based experience and direct patient care. Specific detailed clinical and skill objectives have been developed for this course by the faculty. This course must be taken as a co-requisite to VNSG 2410, VNSG 1230 and VNSG 1263. VNSG 2460, VNSG 2410, VNSG 1230 and VNSG 1263 must be completed and passed within the same semester. If the student does not successfully complete all courses, future admissions will require enrolling in all required nursing courses within the same semester. Prerequisites: All previous course work listed on the degree plan for the vocational nursing certificate. Co-requisite: VNSG 2460, VNSG 1230 and VNSG 2410.

WLDG 1307  Introduction to Welding Using Multiple Processes  3.2.4
Basic welding techniques using some of the following processes: Oxy-fuel welding (OFW) and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), and gas tungsten arc welding (GTAW). Fee charged.

WLDG 1313  Introduction to Blueprint Reading for Welders  3.2.4
A study of industrial blueprints. Emphasis placed on terminology, symbols, graphic description, and welding processes. Includes systems of measurement and industry standards. Also includes interpretation of plans and drawings used by industry to facilitate field application and production. Fee charged.

WLDG 1327  Welding Codes and Standards  3.2.4
An in-depth study of welding codes and their development in accordance with structural standards, welding processes, destructive and nondestructive test methods. Fee charged.

WLDG 1417  Introduction to Layout and Fabrication  4.2.4
A fundamental course in layout and fabrication related to the welding industry. Major emphasis on structural shapes and use in construction. Fee Charged.
WLDG 1425  Introduction to Oxy-Fuel Welding & Cutting  4.2.4
An introduction to oxy-fuel welding and cutting, safety, setup and maintenance of oxy-fuel welding, and cutting equipment and supplies. Fee Charged.

WLDG 1428  Introduction to Shield Metal Arc Welding (SMAW)  4.2.4
An introduction to the shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs. Instruction provided in SMAW fillet welds in various positions. Fee Charged.

WLDG 1430  Introduction to Gas Metal Arc Welding (GMAW)  4.2.4
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. Fee Charged.

WLDG 1434  Introduction to Gas Tungsten Arc Welding (GTAW)  4.2.4
Principles of gas tungsten arc welding (GTAW), including setup, GTAW equipment. Instruction in various positions and joint designs. Fee Charged.

WLDG 1435  Introduction to Pipe Welding  4.2.4
An introduction to welding of pipe using the shielded metal arc welding process (SMAW), including electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 1G and 2G using various electrodes. Fee Charged.

WLDG 1453  Intermediate Layout and Fabrication  4.2.4
An intermediate course in layout and fabrication. Includes design and production of shop layout and fabrication. Emphasis placed on symbols, blueprints, and written specifications. Fee Charged.

WLDG 1457  Intermediate Shielded Metal Arc Welding (SMAW)  4.2.4
A study of the production of various fillets and groove welds. Preparation of specimens for testing in various positions. Fee Charged.

WLDG 1491  Special Topics in Welder/Welding Technologist  4.2.4
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. Fee Charged.

WLDG 2406  Intermediate Pipe Welding  4.2.4
A comprehensive course on the welding of pipe using the shielded metal arc welding (SMAW) process. Welds will be done using various positions. Topics covered include electrode selection, equipment setup, and safe shop practices. Fee Charged.

WLDG 2413  Intermediate Welding Using Multiple Processes  4.2.4
Instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes: oxy-fuel gas
cutting and welding, shield metal arc welding (SMAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW), or any other approved welding process. Fee Charged.

**WLDG 2435  Advanced Layout and Fabrication**  
An advanced course in layout and fabrication. Includes production and fabrication of layout, tools, and processes. Emphasis on application of fabrication and layout skills. Fee Charged.

**WLDG 2439  Advanced Oxy-Fuel Welding and Cutting**  
A study of all position welding on ferrous and nonferrous metals using oxy-fuel welding process, including welding and cutting, brazing, and soldering operations. Fee Charged.

**WLDG 2443  Advanced Shielded Metal Arc Welding (SMAW)**  
Advanced topics based on accepted welding codes. Training provided with various electrodes in shielded metal arc welding processes with open V-groove joints in all positions.

**WLDG 2451  Advanced Gas Tungsten Arc Welding (GTAW)**  
Advanced topics in GTAW welding, including welding in various positions and directions. Fee charged.

**WLDG 2453  Advanced Pipe Welding**  
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. Fee Charged.