

Accounting

ACC 105 - Office Accounting (3 cr)

Presents practical accounting. Covers the accounting cycle—journals, ledgers, working papers, closing of books—payrolls, financial statements, accounting forms and practical procedures. Lecture 3 hours per week.

ACC 211 - Principles of Accounting I (3 - 4 cr)

Presents accounting principles/applications to various businesses. Covers the accounting cycle, income determination and financial reporting. A laboratory co-requisite (ACC 213) may be required as identified by the college. Prerequisite: MTE 1-5. Lecture 3-4 hours per week.

ACC 212 - Principles of Accounting II (3-4 cr)

Emphasizes partnerships, corporations and the study of financial analysis. Includes and introduces cost/ managerial accounting concepts. Co-requisite (ACC 214) may be required. Prerequisite: ACC 211. Lecture 3-4 hours per week.

ACC 215 - Computerized Accounting (3-4 cr)

Introduces the computer in solving accounting problems. Focuses on operation of computers. Presents the accounting cycle and financial statement preparation in a computerized system and other applications for financial and managerial accounting. Prerequisite or co-requisite ACC 211 or equivalent. Lecture 3-4 hours per week.

Administration of Justice

ADJ 100 - Survey of Criminal Justice (3 cr)

Presents an overview of the United States criminal justice system; introduces the major system components—law enforcement, judiciary and corrections. Lecture 3 hours per week.

ADJ 105 - The Juvenile Justice System (3 cr)

Presents the evolution, philosophy, structures and processes of the American juvenile delinquency system; surveys the rights of juveniles, dispositional alternatives, retention methods and current trends. Prerequisites: ENF 1 or ENF 2. Lecture 3 hours per week.

ADJ 128 - Patrol Administration and Operations (3 cr)

Studies the goals, methods and techniques of police patrol with focus on the norms which govern work behavior in a police career. Examines the responsibilities of administrators and field supervisors of patrol in the local and state law enforcement agencies. Lecture 3 hours per week.

ADJ 134 - Collection and Preservation of Physical Evidence (3 cr)

Surveys fundamental evidence collection procedures, including recognition, selection, handling, packaging and marking. Examines ways to prevent alteration, contamination, damage and tampering. Emphasizes legal requirements for a continuous chain of possession. Lecture 3 hours per week.

ADJ 139 - Private Detectives/Investigators (4 cr)

Instructs the student in investigative techniques, criminal law and procedure, rules of evidence, the techniques and mechanics of arrest. Meets state certification requirements for private investigators licensing. Must be 18 years of age to enroll. Lecture 4 hours per week.

ADJ 152 - Unarmed Security Officer - Duties and Responsibilities (1 cr)

Surveys the theory and practice of un-armed private security personnel duties and responsibilities; prepares student for licensing and professionalism. Must be 18 years of age to enroll. Lecture 1 hour per week

ADJ 153 - Armed Security Officer - Duties and Responsibilities (1 cr)

Surveys the theory and practice of armed private security personnel duties and responsibilities; prepares student for licensing and professionalism. Must be 18 years of age to enroll. Lecture 1 hour per week.

ADJ 171 - Forensic Science I (3-4 cr)

Introduces student to crime scene technology, procedures for sketching, diagramming and using casting materials. Surveys the concepts of forensic chemistry, fingerprint classification/ identification and latent techniques, drug identification, hair and fiber evidence, death investigation techniques, thin-layer chromatographic methods, and arson materials examination. Lecture 3-4 hours per week. Laboratory 0-3 hours per week. Total 3-6 hours per week.

ADJ 173 - Forensic Photography I (3 cr)

Surveys fundamental photographic skills-exposure, composition, film, filters, darkroom materials and procedures. Emphasizes use of photography for law enforcement purposes and for courtroom presentation. Considers current status and trends in photographic law. Lecture 3 hours per week.

ADJ 190 - Coordinated Internship (1-3 cr)

Allows the student to be placed in a criminal justice agency (police, courts, corrections) for a practical exposure and experience with a working department. Usually requires 12 credit hours of ADJ prior to placement. See the ADJ advisor.

ADJ 195 - Special Topics in Criminal Justice (3 cr)

Considers contemporary issues, problems and controversies in modern law enforcement. Prerequisites: ENF 1 or ENF 2. Lecture 3 hours per week.

ADJ 201 - Criminology (3 cr)

Studies current and historical data pertaining to criminal and other deviant behavior. Examines theories that explain crime and criminal behavior in human society. Prerequisites: ENF 1 or ENF 2. Lecture 3 hours per week.

ADJ 211-212 - Criminal Law, Evidence and Procedures I-II (3 cr) (3 cr)

Teaches the elements of proof for major and common crimes and the legal classification of offenses. Studies the kinds, degrees and admissibility of evidence and its presentation in criminal proceedings with emphasis on legal guidelines for methods and techniques of evidence acquisition. Surveys the procedural requirements from arrest to final disposition in the various U.S. court systems with focus on the Virginia jurisdiction. Prerequisites: ENF 1. Lecture 3 hours per week.

ADJ228 - Narcotics and Dangerous Drugs (3 cr)

Surveys the historical and current usage of narcotics and dangerous drugs. Teaches the identification and classification of such drugs and emphasizes the symptoms and effects on their users. Examines investigative methods and procedures utilized in law enforcement efforts against illicit drug usage. Prerequisites: ENF 1. Lecture 3 hours per week.

ADJ 236 - Principles of Criminal Investigation (3 cr)

Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling and preserving of evidence. Prerequisites: ENF 1. Lecture 3 hours per week.

ADJ 237 - Advanced Criminal Investigation (3 cr)

Introduces specialized tools and scientific aids used in criminal instruction. Applies investigative techniques to specific situations and preparation of trial evidence. Prerequisite: ADJ 236, ENF 1, and/or permission of instructor. Lecture 3 hours per week.

ADJ 240 - Techniques of Interviewing (3 cr)

This course will provide the student with essential skills and techniques necessary to obtain quality information from victims, witnesses and suspects, regarding criminal activity. Emphasis will be placed upon locations and settings for interviews, kinesics, proxemics and paralinguistic of both the interviewer and interviewee.

ADJ 247 - Criminal Behavior (3 cr)

Introduces and evaluates the concepts of normal and abnormal behavior. Focuses on the psychological and sociological aspects of criminal and other deviant behavior patterns. Prerequisites: ENF 1 or ENF 2. Lecture 3 hours per week.

Air Conditioning & Refrigeration

AIR 121 - Air Conditioning and Refrigeration I (3-4 cr)

Studies refrigeration theory, characteristics of refrigerants, temperature, and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Presents charging and evaluation of systems and leak detection. Explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. Part I of II. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

AIR 122 - Air Conditioning and Refrigeration II - (3-4 cr)

Studies refrigeration theory, characteristics of refrigerants, temperature, and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Presents charging and evaluation of systems and leak detection. Explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. Part II of II. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

AIR 134 - Circuits and Controls I (3-4 cr)

Presents circuit diagrams for air conditioning units, reading and drawing of circuit diagrams, types of electrical controls. Includes analysis of air conditioning circuits, components, analysis and characteristics of circuits and controls, testing and servicing. Introduces electricity for air conditioning which includes circuit elements, direct current circuits and motors, single and three-phase circuits and motors, power distribution systems, and protective devices. Studies the electron and its behavior in passive and active circuits and components. Demonstrates electronic components and circuits as applied to air conditioning system. Part I of II. Lecture 2-3 hours. Laboratory 2-6 hours. Total 4-9 hours per week.

AIR 154 - Heating Systems I (3-4 cr)

Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance and servicing. Part I of II. Lecture 2-3 hours. Laboratory 2-6 hours. Total 4-8 hours per week.

AIR 281 - Energy Management I (2-3 cr)

Introduces methodology for residential audits covering heat flow analysis, construction methods and materials. Discusses effects of life styles on energy consumption, conservation and practices, renewable energy sources, calculating cost and savings, interviewing and education techniques. Introduces commercial and industrial energy audits, methodology for the performance of audits covering heat flow analysis, construction methods and materials. Part I of II. Lecture 1-2 hours. Laboratory 2-4 hours. Total 3-6 hours per week.

American Sign Language***ASL 101 - American Sign Language I (3-4 cr)***

Introduces the fundamentals of American Sign Language (ASL) used by the Deaf Community, including basic vocabulary, syntax, fingerspelling, and grammatical non-manual signals. Focuses on communicative competence, Develops gestural skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf Community. Part I of II. Lecture 3-4 hours per week; laboratory 0-2 hours per week. Total 3-5 hours per week

ASL 102 - American Sign Language II (3-4 cr)

Introduces the fundamentals of American Sign Language (ASL) used by the Deaf Community, including basic vocabulary, syntax, fingerspelling, and grammatical non-manual signals. Focuses on communicative competence, Develops gestural skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf Community. Part II of II. Lecture 3-4 hours per week; laboratory 0-2 hours per week. Total 3-5 hours per week.

Administrative Support Technology***AST 101 - Keyboarding I (2-4 cr)***

Teaches the alpha/numeric keyboard with emphasis on correct techniques, speed, and accuracy. Teaches formatting of basic personal and business correspondence, reports and tabulation. A laboratory co-requisite (AST 103) may be required. Lecture 2-4 hours per week.

AST 107 - Editing/Proofreading Skills (3 cr)

Develops skills essential to creating and editing business documents. Covers grammar, spelling, diction, punctuation, capitalization and other usage problems. Prerequisite: ENF 1. Lecture 3 hours per week.

AST 137 - Records Management (3 cr)

Teaches filing and records management procedures for hard copy, electronic and micrographic systems. Identifies equipment, supplies and solutions to records management problems. Prerequisite: ITE 115. Lecture 3 hours per week.

AST 141 - Word Processing (Microsoft) - (3 cr)

Teaches creating and editing documents, including line and page layouts, columns, fonts, search/replace, cut/ paste, spell/thesaurus, and advanced editing and formatting features of word processing software. Prerequisite: AST 101 or prior keyboarding skills required. May require instructor approval. Lecture 3 hours per week.

AST 206 - Professional Development (3 cr)

Develops professional awareness in handling business and social situations. Emphasizes goal setting, critical thinking, decision making and employment skills. Lecture 3 hours per week.

AST 232 - Microcomputer Office Applications (2 -4 cr)

Teaches production of business documents using word processing, databases, and spreadsheets. Emphasizes document production to meet business and industry standards. Prerequisite: AST 101
Lecture 2-4 credits

AST 233 - Microcomputer Office Applications Laboratory (1 cr)

Provides supplemental instruction in AST 232. Should be taken concurrently with AST 232, in appropriate curricula, as identified by the college. Laboratory 2 hours per week. 1 credit

AST 243 - Office Administration I (3 cr)

Develops an understanding of the administrative support role and the skills necessary to provide oral and technical support in a contemporary office setting. Emphasizes the development of critical-thinking, problem solving and job performance skills in a business office environment. Prerequisite: AST 101. Lecture 3 hours per week.

AST 253 - Advanced Desktop Publishing (Microsoft) (3 cr)

Introduces specific desktop publishing software. Teaches document layout and design, fonts, type styles, style sheets and graphics. Prerequisite: AST 101 or experience in using a word processing package. Lecture 3 hours per week.

AST 290 - Coordinated Internship in AST (variable 1-3 cr)

Supervised on-the-job training without pay in selected business, industry or service organizations coordinated by the College. Permission of the instructor is required. Prerequisite: AST 107, AST 137, ITE 115. 180 hours total for the term.

AST 297 - Cooperative Education in AST (variable 1-3 cr)

Supervised on-the-job training with pay in selected business, industry or service organizations coordinated by the College. Permission of the instructor is required. Prerequisite: AST 107, AST 137, ITE 115. 225 hours total for the term.

Art

ART 121-122 Drawing I-II (3-4 cr) (3-4 cr)

Develops basic drawing skills and understanding of visual language through studio instruction/lecture. Introduces concepts such as proportion, space, perspective, tone and composition as applied to still life,

landscape and the figure. Uses drawing media such as pencil, charcoal, ink wash and color media. Includes field trips and gallery assignments as appropriate.

Lecture 1-2 hours per week. Studio instruction 4 hours per week.

ART 201 202 - History of Art I-II (3 cr) (3 cr)

Studies the historical conflict of the art of the ancient, medieval, renaissance and modern worlds. Includes research project. Prerequisite: ENG 112. Lecture 3 hours per week.

ART 211 - History of American Art I (3 cr)

Surveys the history of American art from the 1600's to the present. Emphasizes architecture, sculpture, and painting. Includes crafts, decorative arts, and photography. Part I of II. Prerequisite: ENG 112. Lecture 3 hours per week.

ART 212 - History of American Art II (3 cr)

Surveys the history of American art from the 1600's to the present. Emphasizes architecture, sculpture, and painting. Includes crafts, decorative arts, and photography. Part II of II. Prerequisite: ENG 112. Lecture 3 hours per week.

Biology

BIO 20 - Introduction to Human Systems (3 cr)

Presents basic principles of human anatomy and physiology. Discusses cells, tissues, and selected human systems. Prerequisites: ENF 1. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

BIO 101 - General Biology I (4 cr)

Explores fundamental characteristics of living matter from the molar level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms and their structure, function and evolution. Prerequisites: Readiness to enroll in ENG 111 and MTE 1-3. Lecture 3 hours per week; recitation and laboratory 3 hours per week.

BIO 102 - General Biology II (4 cr)

Explores fundamental characteristics of living matter from the molar level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms and their structure, function and evolution. Prerequisites: BIO 101. Lecture 3 hours per week; recitation and laboratory 3 hours per week.

BIO 141 - Human Anatomy and Physiology I (4 cr)

Integrates anatomy and physiology of cells, tissues organs and systems of the human body. Integrates concepts of chemistry, physics and pathology. Prerequisites: Readiness to enroll in ENG 111 and MTE 1-4. Lecture 3 hours per week; laboratory 2-3 hours per week.

BIO 142 - Human Anatomy and Physiology II (4 cr)

Integrates anatomy and physiology of cells, tissues organs and systems of the human body. Integrates concepts of chemistry, physics and pathology. Prerequisite: BIO 141. Lecture 3 hours per week; laboratory 2-3 hours per week.

BIO 150 - Introductory Microbiology (4 cr)

Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. Prerequisites: ENF 1, MTE 1-4, NAS 05. Lecture 3 hours per week; recitation and laboratory 3 hours per week.

Building

BLD 110 - Introduction to Construction (3 cr)

Covers basic knowledge and requirements needed in the construction trades. Introduces use of tools and equipment, with emphasis on construction safety, including personal and tool safety. Provides a working introduction to basic blueprint reading and fundamentals of construction mathematics. Lecture 3 hours per week.

BLD 147 - Principles of Block and Bricklaying (3 cr) (Dual Enrollment)

Presents fundamentals of masonry practices. Includes foundations, block laying skills, mortar mixing, measuring, and introduction to bricklaying techniques. Emphasizes hands-on applications of block and brick techniques. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Business

BUS 100 - Introduction to Business (3 cr)

Presents a broad introduction to the functioning of business enterprise within the U.S. economic framework. Introduces economic systems, essential elements of business organization, production, human resource management, marketing, finance and risk management. Develops business vocabulary. Lecture 3 hours per week.

BUS 111 - Principles of Supervision I (3-4 cr)

Teaches the fundamentals of supervision, including the primary responsibilities of the supervisor. Introduces factors relating to the work of supervisor and subordinates. Covers aspects of leadership, job management, work improvement, training and orientation, performance evaluation and effective employee/supervisor relationships. Lecture 3-4 hours per week.

BUS 116 - Entrepreneurship (3 cr)

Presents the various steps considered necessary when going into business. Includes areas such as product-service analysis, market research evaluation, setting up books, ways to finance startup, operations of the business, development of business plans, buyouts versus starting from scratch and franchising. Uses problems and cases to demonstrate implementation of these techniques. Lecture 3 hours per week.

BUS 117 - Leadership Development (3 cr)

Covers interpersonal relations in hierarchical structures. Examines the dynamics of teamwork, motivation, handling change and conflict and how to achieve positive results through others. Lecture 3 hours per week.

BUS 121 - Business Mathematics I (3 cr)

Applies mathematical operations to business and problems. Reviews operations, equations, percents, sales and property taxes, insurance, checkbook and cash records, wage and payroll computations, depreciation, overhead, inventory turnover and valuation, financial statements, ratio analysis, commercial discounts, markup and markdown. Prerequisites: MTE 1-2. Lecture 3 hours per week.

BUS 122 - Business Mathematics II (3 cr)

Applies mathematical operations to business processes and problems. Reviews basic statistics, distribution of profit and loss in partnerships, distribution of corporate dividends, simple interest, present value, bank discount notes, multiple payment plans, compound interest, annuities, sinking funds and amortization. Prerequisite: BUS 121. Lecture 3 hours per week.

BUS 165 - Small Business Management (3 cr)

Identifies management concerns unique to small businesses. Introduces the requirements necessary to initiate a small business, and identifies the elements comprising a business plan. Presents information establishing financial and administrative controls, developing a marketing strategy, managing business operations, and the legal and government relationships specific to small businesses. Lecture 3 hours per week.

BUS 190 - Coordinated Internship (4 cr)

Supervised training and experience in an arts-based setting.

BUS 195 - Topics in Event Planning and Management (3 cr)

The course offers an overview of the field of event management, which is a hybrid of marketing, promotion, entertainment, and the creative arts. Students will be introduced to the strategies, skills, and challenges involved in planning, promoting, and managing events, receptions, meetings and other related activities. (Prerequisite recommendation: MKT 100 and BUS 193 – Financial Management for the Arts)

BUS 195 - Topics in Financial Management for the Arts (3 cr)

This course presents principles of developing a budget, as well as reading and interpreting financial statements, such as income statements, cash flow statements and balance sheets. Students will discuss and apply ways of developing and sustaining fiscal responsibility throughout an organization, including the understanding of roles and responsibilities of the board of directors, and management and staff. Provides general overview of legal topics, such as contract terms with vendors.

BUS 195 - Topics in Fundraising and Development (3 cr)

Explores raising funds and development for nonprofit arts organizations including the cultivation of donors, researching prospects for future contact, conducting campaigns, and holding special events.

BUS 195 - Topics in Volunteer Management (3 cr)

Presents the fundamentals of managing volunteers in an organization, including the philosophy of volunteerism and recruiting, orienting, training, engaging and recognizing the individuals who volunteer.

BUS 200 - Principles of Management (3 cr)

Teaches management and the management functions of planning organizing, leading and controlling. Focuses on application of management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Lecture 3 hours per week.

BUS 201 - Organizational Behavior (3 cr)

Presents a behaviorally oriented course combining the functions of management with the psychology of leading and managing people. Focuses on the effective use of human resources through understanding human motivation and behavioral patterns, conflict management and resolution, group functioning and process, the psychology of decision making and the importance of recognizing and managing change. Prerequisites: ENF 1 or ENF 2 Lecture 3 hours per week.

BUS 209 - Continuous Quality Improvement (3 cr)

Presents the different philosophies in quality control. Introduces students to process improvement, team development, consensus building and problem solving strategies. Identifies methods for process improvement in manufacturing and service organizations, which includes statistical process control when used in the quality control function of business and industry. Lecture 3 hours per week.

BUS 221 - Business Statistics I (3 cr)

Focuses on statistical methodology in the collection organization, presentation and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T distribution and hypotheses for means and proportions. Prerequisite: MTH 163: Pre-Calculus I or equivalent, or Instructor approval (Credit will not be awarded for more than one of MTH 157, MTH 240 or BUS 221.) Lecture 3 hours per week.

BUS 222 - Business Statistics II (3 cr)

Continues study of inferential statistics and application of statistical techniques and methodology in business. Includes analysis of variance, regression and correlation measurement of business and economic activity through the use of index numbers, trend, cyclical and seasonal effects and the Chi-Square distribution and other non-parametric techniques. Prerequisite: BUS 221 or Instructor approval. Lecture 3 hours per week.

BUS 236 - Communication in Management 3 cr)

Introduces the functions of communication in management with emphasis on gathering organizing and transmitting facts and ideas. Teaches the basic techniques of effective oral and written communication. Lecture 3 hours per week. Prerequisites: Readiness to enroll in ENG 111.

BUS 241 - Business Law I (3 cr)

Develops a basic understanding of the US business legal environment. Introduces property and contract law, agency and partnership liability, and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships, and other business transactions. Lecture 3 hours per week.

Chemistry

CHM 100 - Introduction to Chemistry (3 cr)

Introduces chemical concepts to students not intending to specialize in a chemistry field. Emphasizes basic inorganic principles. Lecture 2 hours per week; laboratory 2 hours per week.

CHM 101-102 - General Chemistry I-II (4 cr) (4 cr)

Emphasizes experimental and theoretical aspects of inorganic, organic, and biological chemistry. Discusses general chemistry concepts as they apply to issues within our society and environment. Designed for the non-science major. Lecture 3 hours per week; laboratory 3 hours per week.

CHM 111 - College Chemistry I (4 cr)

Explores the fundamental laws, theories and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Prerequisites: Readiness to enroll in ENG 111. MTE 1-9. Lecture 3 hours per week; laboratory 3 hours per week.

CHM 112 - College Chemistry II (4 cr)

Explores the fundamental laws, theories and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Prerequisites: CHM 111. Lecture 3 hours per week; laboratory 3 hours per week.

CHM 241-242 - Organic Chemistry I-II (3 cr) (3 cr)

Introduces fundamental chemistry of carbon compounds, including structure, physical properties, syntheses and typical reactions. Emphasizes reaction mechanisms. Prerequisite: CHM 112 or Instructor approval. Co-requisites: CHM 243-244. Lecture 3 hours per week.

CHM 243-244 - Organic Chemistry Laboratory I-II (1 cr) (1 cr)

Is taken concurrently with CHM 241 and CHM 242. Prerequisites: CHM 112 or Instructor approval. Laboratory 3 hours per week.

Communication Studies and Theatre

CST 110 - Introduction to Speech Communication (3 cr)

Examines the elements affecting speech communication at the individual, small group and public communication levels with emphasis on practice of communication at each level. Lecture 3 hours per week.

CST 151-152 - Film Appreciation I-II (3 cr) (3 cr)

Aims to increase the student's knowledge and enjoyment of film and film criticism through discussion and viewing movies. Lecture 3 hours per week.

CST 250 - Art of the Film (3 cr)

Introduces the art of the film through a survey of film history; viewing, discussion, and analysis of selected films. Studies film techniques such as composition, shot sequence, lighting, visual symbolism, sound effects, and editing. Lecture 3 hours per week.

Drafting

DRF 166 - Welding Blueprint Reading (2 cr)

Teaches welding procedures and applications. Stresses structural steel, design, and layout. Explains industrial symbols. Prerequisite: MTE 1-2. Lecture 1 hour per week; laboratory 3 hours per week.

DRF 200 - Survey of Computer Aided Drafting (3 cr)

Surveys computer-aided drafting equipment and concepts. Develops general understanding of components, operations and use of a typical CAD system. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

DRF 201 - Computer Aided Drafting and Design I (3-4 cr)

Teaches computer-aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. Lecture 2-3 hours. Laboratory 2-3 hours.

DRF 202- -Computer Aided Drafting and Design II (3-4 cr)

Teaches production drawings and advanced operations in computer aided drafting. Lecture 2-3 hours. Laboratory 2-3 hours.

Economics

ECO 201 - Principles of Economics I: Macroeconomics (3 cr)

Introduces macroeconomics including the study of Keynesian, classical, monetarist principles and theories, the study of national economic growth, inflation, recession, unemployment, financial markets, money and banking, the role of government spending and taxation, along with international trade and instruments. Prerequisites: MTE 1-5. Lecture 3 hours per week.

ECO 202 - Principles of Economics II: Microeconomics (3 cr)

Introduces the basic concepts of microeconomics. Explores the free market concepts with coverage of economic models and graphs, scarcity and choices, supply and demand, elasticities, marginal benefits and costs, profits and production and distribution. Prerequisites: MTE 1-5. Lecture 3 hours per week.

Education

EDU 200 - Introduction to Teaching as a Profession (3 cr)

Provides an orientation to the teaching profession in Virginia, including historical perspectives, current issues, and future trends in education on the national and state levels. Emphasizes information about teacher licensure examinations, steps to certification, teacher preparation and induction programs, and attention to critical shortage areas in Virginia. Includes supervised field placement (recommended: 40 clock hours) in a K-12 school. Prerequisites: Successful completion of 24 credits of transfer courses, College Composition I, and SDV 101, or Instructor approval. Lecture 2 hours per week; laboratory 2 hours per week.

Electrical Technology

ELE 115 - Basic Electricity (3 cr) (Dual Enrollment)

Covers basic circuits and theory of fundamental concepts of electricity. Presents a practical approach to discussion of components and devices. Prerequisite: MTE 1 - 3. Lecture 3 hours per week.

ELE 134 - Practical Electricity II (3 cr)

Teaches the fundamentals of electricity, terminology, symbols, and diagrams. Includes the principles essential to the understanding of general practices, safety and the practical aspects of residential and non-residential wiring and electrical installation, including fundamentals of motors and controls. Pre/Corequisite MTH 02 or equivalent. Part II of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 138 - National Electrical Code Review I (2-3 cr)

Covers purpose and interpretation of the National Electrical Code as well as various charts, code rulings and wiring methods. Prepares the student to take the journeyman-level exam. Lecture 2-3 hours per week.

ELE 140 - Basic Electricity and Machinery (4 cr)

Studies direct and alternating current principles, resistors, magnetism, capacitors, protection systems, switches, controls and power distribution for industrial machine shops. Emphasizes test procedures and safety. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

ELE 147 - Electrical Power and Control Systems (2-3 cr)

Reviews basic DC and AC circuits. Covers single-phase and three-phase AC power distribution systems, and protection devices, including types of AC motors. Presents analyzing and troubleshooting electrical control systems and motor protection devices. Prerequisite: ELE 134 or equivalent. Lecture 2-3 hours. Lab 0-2 hours. Total 2-4 hours per week.

ELE 149 - Wiring Methods in Industry (3-4 cr)

Studies the fundamentals of industrial power distribution, circuits, switches, enclosures, panels, fuses, circuit breakers, transformers, and wiring methods, using various charts and tables of the National Electrical Code. Prerequisite: ETR 113. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

ELE 150 - A.C. and D.C. Circuit Fundamentals (3- 4 cr)

Provides an intensive study of the fundamentals of direct and alternating current, resistance, magnetism, inductance and capacitance, with emphasis on practical applications. Focuses on electrical/machines applications. Lecture 2-3 hours. Laboratory 2 hours. Total 4-5 hours per week.

ELE 156 - Electrical Control Systems (3 cr)

Includes troubleshooting and servicing electrical controls, electric motors, motor controls, motor starters, relays, overloads, instruments and control circuits. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 175 - Industrial Solid State Devices and Circuits (2-3 cr)

Covers theory, symbols, properties, and applications of solid state devices in industry. Prerequisite: ETR 113. Lecture 1-2 hour. Laboratory 3 hours. Total 4-5 hours per week.

ELE 176 - Introduction to Alternative Energy Including Hybrid Systems (2-3 cr)

Introduces Alternative Energy with an emphasis on solar photovoltaic systems, small wind turbines technology, the theory of PV technology, PV applications, solar energy terminology, system components, site analysis, PV system integration and PV system connections and small wind turbine technology site analysis. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

ELE 239 - Programmable Controllers (2-3 cr)

Deals with installation, programming, interfacing and concepts of troubleshooting programmable controllers. Prerequisite: ETR 113. Lecture 1-2 hours per week; laboratory 2 hours per week. Total 3-4 hours per week.

Electronics

ETR 113 - D.C. and A.C. Fundamentals I (3-4 cr)

Studies D.C. and A.C. circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze and measure electrical quantities. Part I of II. Lecture 2-3 hours. Laboratory 3 hours. Total 5-6 hours per week.

Emergency Medical Services

EMS 100 - CPR for Healthcare Providers (1cr)

Provides instruction in Cardiopulmonary Resuscitation that meets current Emergency Cardiac Care (ECC) guidelines for Cardiopulmonary Resuscitation education for Healthcare Providers. Equivalent to HLT 105. Lecture 1 hours per week.

EMS 112 - Emergency Medical Technician-Basic I (3 cr)

Prepares student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 113 - Emergency Medical Technician-Basic II (3 cr)

Continues preparation of student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 120 - Emergency Medical Technician - Basic Clinical (1 cr)

Observes in a program approved clinical/field setting. Includes topics for both EMS 111 and EMS 113, dependent upon the program in which the student is participating and is a co-requisite to both EMS 111 and EMS 113. Lecture 1 hour per week.

EMS 151 - Introduction to Advanced Life Support (4 cr)

Prepares the student for Virginia Enhanced certification eligibility and begins the sequence for National Registry Intermediate and/or Paramedic certification. Includes the theory and application of the following: foundations, human systems, pharmacology, overview of shock, venous access, airway management, patient assessment, respiratory emergencies, allergic reaction, and assessment based management. Conforms at a minimum to the Virginia Office of Emergency Medical Services curriculum. Co-requisite: EMS 170. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 153 - Basic ECG Recognition (2 cr)

Focuses on the interpretation of basic electrocardiograms (ECG) and their significance. Includes an overview of anatomy and physiology of the cardiovascular system including structure, function and electrical conduction in the heart. Covers advanced concepts that build on the knowledge and skills of basic dysrhythmia determination and introduction of 12 lead ECG. Lecture 2 hours per week.

EMS 155 - ALS - Medical Care (4 cr)

Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Includes ALS pharmacology, drug and fluid administration with emphasis on patient assessment, differential diagnosis and management of multiple medical complaints. Includes, but are not limited to conditions relating to cardiac, diabetic, neurological, non-traumatic abdominal pain, environmental, behavioral, gynecology, and toxicological disease conditions. Prerequisites: Current EMT-B certification, EMS 151 and EMS 153. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 157 - ALS - Trauma Care (3 cr)

Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Prerequisites: Current EMT-B certification and EMS 151. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 159 - ALS - Special Populations (2 cr)

Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of specialty patients including obstetrical, neonates, pediatric, and geriatrics. Prerequisites: EMS 151 and EMS 153. Pre or co-requisite: EMS 155. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EMS 163- Prehospital Trauma Life Support (PHTLS) (1 cr)

Prepares for certification as a Prehospital Trauma Life Support provider as defined by the American College of Surgeons. Prerequisites: EMS 111 or equivalent. Lecture 1 hour per week.

EMS 164- Advanced Medical Life Support (AMLS) (1 cr)

Covers current topics of care for adult patients suffering extensive medical conditions and emergencies, and offers certification as an Advanced Medical Life Support (AMLS) as defined by the National Association of Emergency Medical Technicians (NAEMT). Lecture 1 hour per week.

EMS 165- Advanced Cardiac Life Support (ACLS) (1 cr)

Prepares for certification as an Advanced Cardiac Life provider. Follows course as defined by the American Heart Association. Prerequisites: EMS 100, 153 or equivalent. Lecture 1 hour per week.

EMS 167 Emergency Pediatrics Course (EPC) (1 cr)

Provides a unique approach to pediatric medical care, offering assessment techniques that can help EMS practitioners rapidly and accurately assess pediatric patients to determine which situations may be life threatening and require immediate intervention. Offers certification as defined by the National Association of Emergency Medical Technicians (NAEMT). Lecture 1 hour per week.

EMS 169- Pediatric Advanced Life Support (PALS) (1 cr)

Prepares the student for certification as a pediatric advanced life support provider as defined by the American Heart Association. Covers primary assessment and emergency care of infants and children. Lecture 1 hour per week.

EMS 170 - ALS Internship I (1 - 2 cr)

Begins the first in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room, Trauma centers and various advanced life support units. Laboratory 3-6 hours per week.

EMS 172 - ALS Clinical Internship II (1-2 cr)

Continues with the second in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes, but not limited to, patient care units such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room and Trauma Centers. Co-requisite: EMS 151. Laboratory 3-6 hours per week.

EMS 173 - ALS Field Internship II (1 cr)

Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Prerequisite: Current EMT-E certification; Co-requisite: EMS 155. Laboratory 3 hours per week.

Energy

ENE 100 - Conventional and Alternate Energy Applications (4 cr)

Provides an overview of hydroelectric, coal, and nuclear energy production methods and renewable solar, geothermal, wind, and fuel cell technology. A complete system breakdown of conventional power production methods, efficiency, and sustainability when compared with solar. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. Prerequisite: ELE 176 or instructor approval.

ENE 101 - Principles of Wind Energy (3 cr)

Introduces the wind energy industry and the role of the technician. Provides exposure to business strategies and methodologies used by owner/operators of wind farms, and the manufacturers of wind turbines. Lecture 3 hours per week. Laboratory 0 hours per week. Total 3 hours per week

ENE 107 - Supervisory Control and Data Acquisition (SCADA) and Networking (3 cr)

Covers Supervisory Control and Data Acquisition (SCADA) systems, Industrial Ethernet communications systems as they apply to the wind energy industry. Provides hands-on experience through laboratory and field experience. Lecture 2 hours per week. Laboratory 2 hours per week. Total 4 hours per week.

ENE 112 - Wind Safety (3 cr)

Covers identification and correction of safety hazards on a wind farm. Builds the foundation for a safe work environment in the wind energy industry. Provides hands-on experience through laboratory and field experience. Lecture 2 hours per week. Laboratory 2 hours per week. Total 4 hours per week.

ENE 120 - Solar Power – Photovoltaic and Thermal (3 cr)

Studies the production and conversion of electrical energy from modular to grid power systems. Covers the storage of energy, thermal solar capture, and storage for residential and commercial applications. Covers energy conversion and storage equipment based on size and efficiency. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. 4 credits (for Business Interests as requested.)

ENE 122 - Wind Turbine Materials and Electro-Mechanical Equipment (3 cr)

Provides identification and analysis of the components and systems within a wind turbine. Emphasizes development of the knowledge and hand skills needed when installing, repairing and replacing turbine components using common tools and equipment. Pre-requisite: ENE 101 Lecture 1 hour per week. Laboratory 4 hours per week. Provides hands-on experience through laboratory and field experience. Total 5 hours per week.

ENE 125 - Wind Power Delivery Systems (3 cr)

Reviews the components and process of the electrical power generation and delivery systems for wind energy and sub-station. Includes inspection of electrical control system components, low voltage power distribution/transformers. Applies manufacturer documentation and software, schematics and wiring diagrams, and flow charts to field scenarios. Provides hands-on experience through laboratory and field experience. Pre-requisites: ENE 101 Lecture 1 hour per week. Laboratory 4 hours per week. Total 5 hours per week.

ENE 130 - Wind Turbine Troubleshooting and Repair (3 cr)

Includes installation, operation, maintenance, troubleshooting, and repair of wind turbine electro-mechanical systems. Emphasizes skills essential to routine maintenance and repair of wind turbine electrical and mechanical systems. Provides hands-on experience through laboratory and field experience. Pre-requisite: ENE 125 Lecture 1 hour per week. Laboratory 4 hours per week. Total 5 hours per week.

ENE 190- - Wind Coordinated Internship for Wind Service Technology (3 cr)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Prerequisite: Division approval. Variable hours. 1-5 credits.

English

BSK 41 - Language Arts, Level 1

Introduces basic reading and writing skills in preparation for subsequent courses by focusing on vocabulary development (simple phonics, dictionary skills), conventions of Standard English (basic grammar, punctuation, sentence structure), reading comprehension (reading process, topics), study skills (time management, textbook format), and critical thinking skills (fact and opinion).

ENF 1 - Preparing for College English I

Provides integrated reading and writing instruction for students who require extensive preparation to succeed in college-level English courses. Students will place into this course based on placement test score. Upon successful completion and faculty recommendation, students will move into Preparing for College English III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Lecture 8 hours per week.

ENF 2 - Preparing for College English II

Provides integrated reading and writing instruction for students who require intermediate preparation to succeed in college-level English courses. Students will place into this course based on placement test score. Upon successful completion and faculty recommendation, students will move into Preparing for College Level III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation.

ENF 3 - Preparing for College English III

Provides integrated reading and writing instruction for students who require minimal preparation for college-level English but still need some preparation to succeed. Students in this course will be co-enrolled in college-level English. Students will place into this course based on placement test score. Credit is not applicable toward graduation.

ENG 50 - Reading & Writing for Teacher Entrance Exams (1-2 cr)

Provides students with review and practice for the reading and writing portions of the licensure examination required of all beginning teachers in Virginia. Emphasizes critical thinking, reading for comprehension, the writing process, and test-taking. Lecture 1-2 hours per week.

ENG 100 - Basic Occupational Communication (3 cr)

Develops ability to communicate in occupational situations. Involves writing, reading, speaking, and listening. Builds practical skills such as handling customer complaints, writing various types of letters, and preparing for a job interview. (Intended for certificate and diploma students.) Lecture 3 hours per week.

ENG 101 - Practical Writing I (3 cr)

Develops writing ability for study, work, and other areas of life with emphasis on occupational correspondence and reports. Guides students in learning writing as a process: understanding audience and purpose, exploring ideas and information, composing, revising, and editing. Supports writing by integrating experiences in thinking, reading, listening, and speaking. Part I of II. Lecture 3 hours per week.

ENG 111 - College Composition I (3 cr)

Introduces students to the writing process and the fundamentals of the academic essay. Teaches students to refine topics; develop and support ideas; investigate, evaluate and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences and purposes. May include writing activities such as personal essays, arguments, summaries and paraphrases, documented essays and electronic communication. Prerequisite: Readiness to enroll. Lecture 3 hours per week.

ENG 112 - College Composition II (3 cr)

Continues to develop college writing, increasing the emphasis on argumentative and critical essays and on scholarly research papers that demonstrate appropriate location and evaluation of sources and are edited for effective style and usage. Requires students to read and write about the human experience in a variety of genres and media that may include fiction, poetry, drama, expository essays, creative nonfiction, hypertext and multimedia. Prerequisite: ENG 111. Lecture 3 hours per week.

ENG 115 - Technical Writing (3 cr)

Develops ability in technical writing through extensive practice in composing technical reports and other documents. Guides students in achieving voice, tone, style and content in formatting, editing and graphics. Introduces students to technical discourse through selected reading. Prerequisites: ENG 111. Lecture 3 hours per week.

ENG 135 - Applied Grammar (3 cr)

Develops ability to edit and proofread correspondence and other documents typically produced in business and industry. Instructs the student in applying conventions of grammar, usage, punctuation, spelling and mechanics. Prerequisites: ENG 111. Lecture 3 hours per week.

ENG 210 - Advanced Composition (3 cr)

Helps students refine skills in writing nonfiction prose. Guides development of individual voice and style. Introduces procedures for publication. Prerequisite: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 211-212 - Creative Writing I-II (3 cr) (3 cr)

Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama and essays. Prerequisite: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 215-216 - Introduction to Fiction I-II (3 cr) (3 cr)

Introduces the fundamentals and techniques of writing short and long fiction. Prerequisites: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 217-218 - Creative Writing-Poetry I-II (3 cr) (3 cr)

Introduces the fundamentals and techniques of writing poetry. Prerequisites: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 219 - Creative Writing-Drama (3 cr)

Introduces the fundamentals and techniques of writing plays. Prerequisites: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 241-242 - Survey of American Literature I-II (3 cr) (3 cr)

Examines American literary works from Colonial times to the present, emphasizing the ideas and characters of our national literature. Involves critical reading and writing. Prerequisite: ENG 112. Lecture 3 hours per week.

ENG 243-244 - Survey of English Literature I-II (3 cr) (3 cr)

Studies major English works from the Anglo-Saxon period to the present, emphasizing ideas and characters of the British literary tradition. Involves critical reading and writing. Prerequisite: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 250 - Children's Literature (3 cr)

Surveys the history, development and genres of children's literature, focusing on analysis of texts for literary qualities and in terms of audience. Prerequisite: ENG 112 or ENG 125 or divisional approval. Lecture 3 hours per week.

ENG 253 - Survey of African-American Literature I (3 cr)

Examines selected works by Black American writers from the colonial period to the present. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Part I of II Lecture 3 hours per week.

ENG 254 - Survey of African-American Literature II (3 cr)

Examines selected works by Black American writers from the colonial period to the present. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Part II of II Lecture 3 hours per week.

ENG 261-262 - Advanced Creative Writing I-II (3 cr) (3 cr)

Guides the student in imaginative writing in selected genres on advanced level. Prerequisites: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 273-274 - Women in Literature I-II (3 cr) (3 cr)

Examines literature by and about women. Involves critical reading and writing. Prerequisite: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 276 - Southern Literature (3 cr)

Examines the themes and techniques of selected writers dealing with the American South as a distinctive cultural entity. Involves critical reading and writing. Prerequisite: ENG 112 or Instructor approval. Lecture 3 hours per week.

ENG 278 - Appalachian Literature (3 cr)

Examines selected works of outstanding authors of the Appalachian region. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 279 - Film and Literature (3 cr)

Examines the translation of literature into film viewing and writing. Prerequisite ENG 112 or divisional approval. Lecture 3 hours per week.

Finance

FIN 215 - Financial Management (3 cr)

Introduces basic financial management topics including statement analysis, working capital, capital budgeting and long-term financing. Focuses on Net Present Value and Internal Rate of Return

techniques, lease vs. buy analysis and Cost of Capital computations. Uses problems and cases to enhance skills in financial planning decision making. Prerequisite: BUS 122 or instructor approval. Lecture 3 hours per week.

Forestry

FOR 102 - Forest Protection (3 cr)

Emphasizes fire control, smoke management, timber theft, major forest pests and diseases, exotic and invasive species, and other threats to forest health. Includes optional test for red or green card certification and a non-commercial pesticide applicator's license. Local prerequisites: FOR 115. Lecture 1 hour per week; laboratory 4 hours per week. Total 5 hours per week.

FOR 105 - Forest and Wildlife Ecology (4 cr)

Studies the interrelationships of organisms and the natural and cultural environments with emphasis on human influences, ecological structures, and survey of populations, communities and ecosystems. Prerequisites: ENF 1. Lecture 3 hours per week; laboratory 3 hours per week.

FOR 115 - Dendrology (4 cr)

Studies classification, identification and silvical characteristics of trees and shrubs botanically and commercially important to the forests of eastern United States. Emphasizes field characteristics of trees and common shrubs of the eastern United States. Prerequisites: ENF 1. Co-requisite FOR 105. Lecture 2 hours per week; laboratory 4 hours per week.

FOR 135 - Wildlife and Fisheries Management (4 cr)

Introduces the principles of wildlife and fisheries management. Emphasizes practices in the eastern United States. Lecture 3 hours per week; laboratory 3 hours per week.

FOR 190 - Coordinated Internship in Forest Management (2 cr)

Supervises on-the-job training in selected business, industry or service firms coordinated by the College. Credit/practice ration not to exceed 1:5 hours. May be repeated for credit. Prerequisites: FOR 115 and 201. Variable hours per week.

FOR 197 - Cooperative Internship (1-5 cr)

Supervises on-the-job in selected business, industrial or service firms coordinated by the college. Credit/ practice ratio not to exceed 1:5 hours. May be repeated for credit. Prerequisites: FOR 115 and 201. Variable hours.

FOR 201 - Forest Mensuration I (4 cr)

Teaches principles of forest measurements including basic elements of property boundary, location, forest mapping, techniques of tree measurement and saw log and pulp wood scaling. Prerequisites: ENF 1, FOR 115 and MTH 115 or equivalent. Lecture 2 hours per week; laboratory 4 hours per week.

FOR 202 - Forest Mensuration II (4 cr)

Teaches principles of timber cruising, including both fixed and variable size plot techniques. Utilizes aerial photographs and global positioning system (GPS) to locate land features, cruise tracts, timber types and plot sample locations. Prerequisite: FOR 201. Lecture 2 hours per week; laboratory 4 hours per week.

FOR 205 - Forest Mapping (3 cr)

Introduces GPS and GIS applications for forest management, remote sensing, acquisition and processing of the primary data derived from various sensors; identification and interpretation; area determination; scale; height measurement; type mapping; road location; bearings and distance. Lecture 2 hour; Laboratory 2 hours. Prerequisite: FOR 201. Total 4 hours per week.

FOR 213 - Studies in Forest Management (3 cr)

Emphasizes multiple use of forest lands, public conflict and participation in planning processes, timber appraisal, contracts, forest management principles, principles of ecosystems (landscape) based management, regional forest management regulations, sustainable forest management concepts/certification, record keeping and basic accounting. Practice development of forest management plans for a landowner meeting specific multiple use objectives. Prerequisite: FOR 102, FOR 202, and FOR 215. Lecture 1 hour; Laboratory 4 hours. Total 5 hours per week.

FOR 215 - Applied Silviculture (4 cr)

Focuses on theory and practices involved in controlling the forest establishment, composition and growth. Laboratory emphasizes observation and application of various silviculture procedures, including site preparation, regeneration and intermediate treatments. Prerequisites: FOR 201, FOR 115. Lecture 3 hours per week; laboratory 3 hours per week.

FOR 227 - Timber Harvesting (4 cr)

Teaches harvesting methods, including physical layout, economics, contracts, water management, protection consideration, equipment operation and maintenance and woods safety. Prerequisite: FOR 201. Lecture 2 hours per week; laboratory 6 hours per week.

FOR 229 - Sawmilling (4 cr)

Studies arrangement, installation and safe operation of a sawmill. Introduces the basic principles of hardwood lumber and log grades. Prerequisite: FOR 227. Lecture 2 hours per week; laboratory 4 hours per week.

FOR 245 - Forest Products I (2 cr)

Introduces forest products. Teaches tree growth, structure and composition of wood for use in wood products. Emphasizes the relationship between wood and water. Prerequisite: FOR 202 and FOR 227. Lecture 2 hours per week.

FOR 265 - Urban Forestry (4 cr)

Examines the care, maintenance, establishment and management of trees and related plants in an urban environment. Emphasizes non-commodity values of trees in an urban environment. Lecture 3 hours per week; laboratory 3 hours per week. Total 6 hours per week.

FOR 290 - Coordinated Internship in Forestry (3 cr)

Supervised on-the-job training without pay in selected business, industry or service organizations coordinated by the College. Permission of the instructor is required. Prerequisite: FOR 201, FOR 125. Laboratory 40 hours per week. 180 hours total for the term.

FOR 297 - Cooperative Education in Forestry (3 cr)

Supervised on-the-job training with pay in selected business, industry or service organizations coordinated by the College. Permission of the instructor is required. Prerequisite: FOR 201, FOR 125. Laboratory 40 hours per week. 225 hours total for the term.

French

FRE 101 Beginning French I (4 cr)

Introduces understanding, speaking, reading and writing skills and emphasizes basic French sentence structure. Prerequisites: ENG 01, ENG 04. Co-requisites: ENG 05. Lecture 4 hours per week. May include one additional hour of oral practice per week.

FRE 102 Beginning French II (4 cr)

Introduces understanding, speaking, reading and writing skills and emphasizes basic French sentence structure. Prerequisites: FRE 101. Co-requisites: ENG 05. Lecture 4 hours per week. May include one additional hour of oral practice per week.

FRE 201-202 Intermediate French I-II (4 cr)(4 cr)

Continues to develop understanding, speaking, reading and writing skills. French is used in the classroom. Prerequisite: French 102 or equivalent. Lecture 4 hours per week. May include one additional hour of oral practice per week.

Geographic Information System

GIS 101 - Introduction to Geospatial Technology I (3 cr)

Provides an introduction to the concepts of Geographic Information Systems (GIS), Global Positioning Systems, (GPS) and remote sensing components of Geospatial Technology. Teaches the introductory concepts of geographic location and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology. Part I of II. Prerequisite: ITE 115. Lecture 3 hours per week.

GIS 200 - Geographical Information Systems I (4 cr)

Provides hand-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Prerequisite: ITE 115 or instructor approval. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Health

HLT 100 - First Aid and Cardiopulmonary Resuscitation (2 cr)

Focuses on the principles and techniques of safety, first aid, and cardiopulmonary resuscitation. Lecture 2 hours per week.

HLT 105 - Cardiopulmonary Resuscitation (CPR) (1 cr)

Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression, choking, life-threatening emergencies, and sudden illness. Equivalent to EMS 100. Lecture 1 hour per week.

HLT 109 - CPR Recertification (1 cr)

Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression, choking, life-threatening emergencies and sudden illness. Lecture 1 hour per week.

HLT 110 - Concepts of Personal and Community Health (3 cr)

Studies the concepts related to the maintenance of health, safety and the prevention of illness at the personal and community level. Lecture 2 hours per week.

HLT 116 - Introduction to Personal Wellness Concepts (2-3 cr)

Introduces students to the dimensions of wellness including the physical, emotional, environmental, spiritual, occupational, and social components. Lecture 2-3 hours per week.

HLT 121 - Drug Use and Abuse (3 cr)

Explores the use and abuse of drugs in contemporary society with emphasis upon sociological, physiological and psychological effects of drugs. Lecture 3 hours per week.

HLT 130 - Nutrition and Diet Therapy (1 cr)

Studies nutrients, sources, functions and requirements. Introduces diet therapy. Lecture 1 hour; Laboratory 0 hours; Total 1 hour per week.

HLT 141 - Introduction to Medical Terminology (2 cr)

Focuses on medical terminology for students preparing for careers in the health professions. Lecture 1-2 hours per week.

HLT 143-144 - Medical Terminology I-II (3 cr) (3 cr)

Provides an understanding of medical abbreviations and terms. Includes the study of prefixes, suffixes, word stems and technical terms with emphasis on proper spelling, pronunciation and usage. Emphasizes more complex skills and techniques in understanding medical terminology. Prerequisite: ENF 1. Lecture 3 hours per week.

HLT 145 - Ethics for Health Care Personnel (2 cr)

Focuses on ethical concepts of health care. Emphasizes confidentiality, maintaining patient records, personal appearance, professionalism with patients/clients, associates, and an awareness of health care facilities Prerequisites: ENF 1. Lecture 2 hours per week.

HLT 170 - Introduction to Massage (1 cr)

Introduces the student to the field of massage therapy. Student practices basic Swedish massage strokes, aromatherapy, effleurage, petressage and friction, as well as indications and contraindication for massage. Prerequisite: Students must be at least 18 years of age to enroll in this course. Laboratory 3 hours per week.

HLT 180 - Therapeutic Massage I (3 cr)

Introduces the student to the history and requirements for massage therapy. Covers the terms and practice of massage with introduction to equipment, safety and ethics as well as massage movements and techniques. Includes information about the benefits of massage, contraindications, client interviews, client-therapist relationship, draping, good body mechanics and anatomical landmarks. Basic massage techniques are blended into a relaxing, health enhancing full-body session preparing the student for their student clinic experience. Prerequisite: HLT 170 and students must be at least 18 years of age to enroll in this course. Lecture 1 hour per week; laboratory 6 hours per week.

HLT 206 - Exercise Science (Dual Enrollment) (3 cr)

Surveys scientific principles, methodologies, and research as applied to exercise and physical fitness. Emphasizes physiological responses and adaptations to exercise. Addresses basic elements of kinesiology, biomechanics, and motor learning. Presents an introduction to the physical fitness industry. Lecture 2 hours per week. Lab 2 hours per week. Total 4 hours per week.

HLT 208 - Fitness and Exercise Training (Dual Enrollment) (3 cr)

Introduces techniques for conducting physical fitness assessments and includes an introduction to electrocardiography. Emphasizes tests of Cardio respiratory fitness, muscular strength and endurance, joint flexibility, body composition, and pulmonary capacity. Emphasizes the safety guidelines and precautions used in testing. Covers equipment use and maintenance. Prerequisite: HLT 100. Lecture 2 hours. Laboratory 2-3 hours. Total 4-5 hours per week.

HLT 230 - Principles of Nutrition and Human Development (3 cr)

Teaches the relationship between nutrition and human development. Emphasizes nutrients, balanced diet, weight control and the nutritional needs of an individual. Lecture 3 hours per week.

HLT 280 - Therapeutic Massage II (3 cr)

Relates human anatomy and physiology to massage and bodywork. Training continues with various joint movements that may be integrated into a massage session and with an introduction to sports massage. Hands-on skills include a system of body mobilization techniques, as well as various stretching techniques.

Sports massage is taught as an application for physically active clients and includes principles of health related fitness, core exercises, pre-and post-event massage and hydrotherapy. Students must be at least 18 years of age to enroll in this course. Prerequisite: HLT 180 and PTH 151. Lecture 1 hour per week; laboratory 6 hours per week.

HLT 281 - Therapeutic Massage III (3 cr)

Introduces the concept of consultation, client management, session design and integration of specific therapeutic approaches into a full-body session. Students learn to give specific therapeutic attention to the regions of the back, neck and torso. Using knowledge of muscle anatomy, students perform more advance massage techniques to address hypertonicity, chronic ischemia, trigger points, fibrotic tissue, adhesions and scar tissue. Myofascial technique forms of deep-tissue massage are added to the students' skill base. Includes common clinical applications in the body regions covered and the integration of specific techniques into a full-body session. Students must be at least 18 years of age to enroll in this course. Prerequisites: HLT 280 and PTH 151. Lecture 1 hour per week; laboratory 6 hours per week.

HLT 295 - Eastern-Asian Bodywork (3 cr)

Provides an overview and practice of Eastern-Asian bodywork therapy with a focus on the concept of organ networks. Compares and contrasts the Western modalities with the Eastern-Asian. Includes preparation for National Certification for Massage and Bodywork Examination. Lecture 2 hours per week. Lab 2 hours per week. Total 4 hours per week.

Health Care Technology

HCT 100 - Introduction to Health Care Occupations (2-3 cr) (Dual Enrollment)

Explores various career opportunities in the health care field and the relationships between various health-related occupations. Encourages career planning and decision making. Lecture 2-3 hours per week.

HCT 101 - Health Care Technician I (3 cr)

Teaches basic care skills with emphasis on physical, social, emotional, and spiritual needs of patients. Covers procedures, communications and interpersonal relations; observation, charting and reporting; care planning, safety and infection control; anatomy and physiology, nutrition and patient feeding; ethics, death and dying. Prepares multi-skilled health care workers to care for patients of various ages with special emphasis on geriatric nursing, home health, long and short term care facilities. Lecture 3 hours per week. Co-requisite: HCT 102.

HCT 102 - Health Care Technician II (3 cr)

Applies theory through laboratory experience for health care technicians to work in home health, long and short term facilities. Lecture 1 hour. Laboratory 6 hours. Prerequisite: Background Check. All students are required to submit to a background check through Certified Background, Inc. prior to attending the clinical sessions associated with HCT 102.

The cost of this screening is the responsibility of the student. Additional information is available in the Nursing Office or by calling 540-863-2838. Co-requisite: HCT 101

HCT 110 - Therapeutic Communication in the Health Care Setting (3 cr)

Develops therapeutic relationship, communication and culture, problem solving electronic communication, techniques in therapeutic communication and blocks to therapeutic communication. Addresses assertiveness, anger, and managing team conflict. Lecture 3 hours per week.

History

HIS 101 - History of Western Civilization I (3 cr)

Examines the development of western civilization from ancient times to the present. Part I of II. Lecture 3 hours per week.

HIS 102 - History of Western Civilization II (3 cr)

Examines the development of western civilization from ancient times to the present. Part II of II. Lecture 3 hours per week.

HIS 111 - History of World Civilization I (covers prehistory to Enlightenment) (3 cr)

Surveys Asian, African, Latin American and European civilizations from the ancient period to the present. Prerequisites: ENF 1. Lecture 3 hours per week.

HIS 112 - History of World Civilization II (Enlightenment to the present) (3 cr)

Surveys Asian, African, Latin American and European civilizations from the ancient period to the present. Prerequisites: ENF 1. Lecture 3 hours per week.

HIS 121 - United States History I (beginning through Civil War) (3 cr)

Surveys United States history from its beginning to the Civil War. Prerequisites: ENF 1. Lecture 3 hours per week.

HIS 122 - United States History II (Reconstruction to the present) (3 cr)

Surveys United States history from Reconstruction to the present. Part II of II. Prerequisites: ENF 1. Lecture 3 hours per week.

HIS 269 - Civil War and Reconstruction (3 cr)

Studies factors that led to the division between the States. Examines the war, the home fronts, and the era of Reconstruction. Prerequisite: ENF 1. Lecture 3 hours per week.

Horticulture

HRT 22 - Turfgrass Management I (3 cr) (Dual Enrollment)

Applies scientific principles for the establishment and maintenance of intensely managed turfgrass. Topics covered include cultivar selection, seeding, sprigging and sodding techniques, fertilization, watering, weed identification and control, insect identification and control, fungus identification and control, soil structure, drainage, topdressing, and mowing frequency and height. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 100 - Introduction to Horticulture (3 cr)

Introduces commercial horticulture industry with emphasis on career opportunities. Examines equipment, facilities, and physical arrangements of production, wholesale and retail establishments. Surveys individual areas within horticulture industry. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 121 - Greenhouse Crop Production I (3 cr)

Covers commercial practices related to production of floriculture crops. Considers production requirements, environmental control and management, and cultural techniques. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 122 - Greenhouse Crop Production II (3 cr)

Continues commercial practices related to production of floriculture crops. Considers production requirements, environmental control and management, and cultural techniques. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 126 - Home Landscaping (3 cr)

Studies current approaches to improving home landscapes. Emphasizes planning, proper implementation, and landscape maintenance. Lecture 3 hours per week.

HRT 195 - Topics in High-Value Agriculture (3 cr)

Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit.

HRT 195 - Topics in Agricultural Technology and Machinery (3 cr)

Provides an opportunity for students to gain an overview of basic technology and machinery used in agriculture. Includes the basics of mechanics, electricity, carpentry, pumps, plumbing, small engines, and sources of renewable energy.

HRT 195 - Topic in Food Production and Safety (3 cr)

Provides an opportunity to cover areas of interest needed by students such as those related to the safe production of food. Reviews Good Agricultural Practices (GAP) set by the U. S. Department of Agriculture (USDA) and requirements to earn GAP certification. Overview of appropriate application of pesticides and industry certification requirements.

HRT 205 - Soils (3 cr)

Teaches theoretical and practical aspects of soils and other growing media. Examines media components, chemical and physical properties, and soil organisms. Discusses management and conservation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Hotel-Restaurant-Institutional Management

HRI 106 - Principles of Culinary Arts I (3 cr)

Introduces the fundamental principles of food preparation and basic culinary procedures. Stresses the use of proper culinary procedures combined with food science, proper sanitation, standards of quality for food items that are made, and proper use and care of kitchen equipment. Co-requisite HRI 158. Part I of II. Lecture 2-3 hours. Laboratory 1-3 hours. Total 3-5 hours per week.

HRI 119 - Applied Nutrition for Food Service (3 cr)

Studies food composition, nutrition science, and application of nutrition principles by the food service professional. Provides the student with a basic understanding of human nutrition and application of nutrition in the service of commercially prepared meals. Lecture 3 hours per week.

HRI 128 - Principles of Baking (3 cr)

Instructs the student in the preparation of breads, pastries, baked desserts, candies, frozen confections, and sugar work. Applies scientific principles and techniques of baking. Promotes the knowledge/skills required to prepare baked items, pastries and confections. Prerequisite: MTE 1-3. Co-requisite: HRI 158. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 140 - Fundamentals of Quality for the Hospitality Industry (3 cr)

Teaches quality in the hospitality industry, including material on the total quality management movement. Emphasizes quality from the customer's perspective. Lecture 3 hours per week.

HRI 145 - Garde Manger (3 cr)

Studies garde manger, the art of decorative cold food preparation and presentation. Provides a detailed practical study of cold food preparation and artistic combination and display of cold foods. Prerequisites: HRI 207 and HRI 219. Co-requisite: HRI 206. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 154 - Principles of Hospitality Management (3 cr)

Presents basic understanding of the hospitality industry by tracing the industry's growth and development, reviewing the organization and management of lodging, food, and beverage operations, and focusing on industry opportunities and future trends. Lecture 3 hours per week.

HRI 158 - Sanitation and Safety (3 cr)

Covers the moral and legal responsibilities of management to insure a sanitary and safe environment in a food service operation. Emphasizes the causes and prevention of foodborne illnesses in conformity with federal, state and local guidelines. Focuses on OSHA standards in assuring safe working conditions. Lecture 3 hours per week.

HRI 190 - Coordinated Internship (1-5 cr)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

HRI 206 - International Cuisine (3 cr)

Introduces the concepts of cultural differences and similarities and the preparation of the food specialties of the major geographical areas of the world. Focuses on emerging cuisines as they become popular. Prerequisites: HRI 107, HRI 219, HRI 207, HRI 220. Co-requisite: HRI 145. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 207 - American Regional Cuisine (3 cr)

Studies the distinct regional cooking styles of America and its neighbors. Emphasizes the indigenous ingredients as well as the cultural aspect of each region's cooking style. Includes the preparation of the various regional foods. Prerequisites: HRI 107 and HRI 219. Co-requisite: HRI 220. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 215 - Food Purchasing (3 cr)

Presents the method and procedures for purchasing food for hotels, restaurants and institutions. Deals with markets, federal and trade grades, governmental regulations, packaging, comparative versions price buying, yields and quality control. Lecture 3 hours per week.

HRI 218 - Fruit, Vegetable, and Starch Preparation (3 cr)

Instructs the student in the preparation of fruits, vegetables, grains, cereals, legumes and farinaceous products. Promotes the knowledge/skills necessary to prepare menu items from fruits, vegetables, and their byproducts, and to select appropriate uses as meal components. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 219 - Stock, Soup, and Sauce Preparation (3 cr)

Instructs the student in the preparation of stocks, soups, and sauces. Promotes the knowledge/skills to prepare stocks, soups, and sauces, and to select appropriate uses as meal components. Prerequisite: HRI 158. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 220 - Meat, Seafood and Poultry Preparation (3 cr)

Provides the study and preparation of meat, poultry, shellfish, fish, and game. Promotes the knowledge/skills required to select appropriate use of these foods as meal components. Prerequisites: HRI 158 and HRI 219. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 225 - Menu Planning and Dining Room Service (3 cr)

Covers fundamentals of menu writing, types of menus, layout, design and food merchandising, and interpreting a profit and loss statement as it relates to menu pricing. Analyzes menus for effectiveness. Instructs on proper dining room service, customer seating, and dining room management. Emphasizes use of computer in management of food service operations. Prerequisites: HRI 106, HRI 107, HRI 158, and HRI 219. Lecture 3 hours per week.

HRI 228 - Food Production Operations (3 cr)

Teaches management principles as applied to a food production setting. Integrates skills areas including planning, organizing, coordinating, checking, insuring, training, establishing standards, assisting and controlling. Promotes the knowledge/ skills required to manage food production operations in a commercial and/or institutional kitchen. Lecture 3 hours per week.

HRI 235 - Marketing of Hospitality Services (3 cr)

Studies principles and practices of marketing the services of the hotel and restaurant industry. Emphasizes the marketing concept with applications leading to customer satisfaction. Reviews methods of external and internal stimulation of sales. May include a practical sales/marketing exercise and computer applications. Lecture 3 hours per week.

HRI 237 – Current Issues & Environmental Responsibilities in the Hospitality Industry (2-3 cr)

Studies novel aspects of the evolving hospitality industry, including the collective impact of environmental stewardship and sustainability, local sourcing of products and ingredients, greening of hospitality businesses, cost-benefit analyses of sustainability decisions, and ethical questions related to these topics. Lecture 2-3 hours per week.

HRI 251 - Food and Beverage Cost Control I (3 cr)

Presents methods of pre-cost and pre-control as applied to the menu, purchasing, receiving, storing, issuing, production, sales and service which result in achievement of an operation's profit potential. Emphasizes both manual and computerized approaches. Part I of II. Lecture 3 hours per week.

HRI 280 - Principles of Advanced Baking and Pastry (3 cr)

Reviews foundation principles of classical and modern baking/pastry methods. Prerequisite: HRI 128 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 281 - Artisan Breads (3 cr)

Provides an integrated study of both classical and modern baking methods. Focuses on craft baking using simple ingredients to create superior products. Prerequisite: HRI 280. Co-requisites: HRI 128 and HRI 158. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 282 - European Tortes and Cakes (3 cr)

Provides an integrated study of European tortes and cakes. Prerequisites: HRI 280, HRI 128 and HRI 158. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 283 - Custards and Cremes (3 cr)

Provides an integrated study of classical and contemporary custards and cremes as menu items and recipe ingredients. Prerequisite: HRI 280, HRI 128, and HRI 158. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 284 - Specialty, Spa and Plated Desserts (3 cr)

Provides an integrated study of specialty, spa and plated desserts, which possess enhanced value through artistic presentation. Prerequisites: HRI 280, HRI 128, and HRI 158. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 290 - Coordinated Internship (1-5cr)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours. Requires division approval.

Humanities

HUM 100 - Survey of the Humanities (3 cr)

Introduces the humanities through the art, literature, music, and philosophy of various cultures and historical periods. Lecture 3 hours per week.

HUM 201 - Survey of Western Culture I (3 cr)

Studies thought, values and arts of Western culture, integrating major developments in art, architecture, literature, music and philosophy. Covers the following periods: Ancient and Classical, Early Christian and Byzantine, Medieval and Early Renaissance. Lecture 3 hours per week.

HUM 202 - Survey of Western Culture II (3 cr)

Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music and philosophy. Covers the following periods: Renaissance, Baroque, Enlightenment, Romantic and Modern. Lecture 3 hours per week.

HUM 241-242 - Interdisciplinary Principles of the Humanities I-II (3 cr) (3 cr)

Integrates unifying principles of the humanities and related fields of study. Emphasizes the expansion of student's intellectual perspective and development of concepts enabling the integration of knowledge from diverse fields into a unified whole. Lecture 3 hours per week.

HUM 260 - Survey of Twentieth-Century Culture (3 cr)

Explores literature, visual arts, philosophy, music and history of our time from an interdisciplinary perspective. Lecture 3 hours per week.

Industrial Engineering Technology

IND 106 - Industrial Engineering Technology (3 cr)

Introduces basic skills required for a career in industrial engineering technology. Includes basic statistics for engineering technicians, the SI system, graphic analysis, and careers as an industrial engineering technician. Lecture 3 hours per week.

IND 108 - Technical Computer Applications (3 cr)

Develops data entry proficiency for technical application and word processing as applied to technology. Presents an introduction to computer operating systems as related to technical applications. Includes demonstrations of selected technical topics such as CAD, CNC, Graphic illustration I/O's involving PLC's, telecommunications (modems), and process control. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

IND 113 - Materials and Processes in Manufacturing I (2-3 cr)

Studies materials and processes for the manufacture of products. Investigates the nature of various materials. Examines the manufacturing processes of industry and their effects on materials. Part I of II. Lecture 2-3 hours per week.

IND 121 - Industrial Supervision I (3 cr)

Introduces the concept of the Supervisor as a Leader. Discusses the role of the Industrial Supervisor in the face of technology advances. Discusses the role of the Industrial Supervisor in leading organizational change and helping employees through transitions. Defines Leadership styles and the selection of the appropriate style. Introduces the Industrial Supervisor as a motivator in terms of job satisfaction, morale, job design competition, communication and promotions. Presents ethical behavior and dilemmas in organizations. Lecture 3 hours per week.

IND 137 - Team Concepts & Problem Solving (3 cr)

Studies team concepts and problem solving techniques to assist project teams in improving quality and productivity. Provides knowledge of how to work as a team, plan and conduct good meetings, manage logistics and details, gather useful data, communicate the results and implement changes. Lecture 3 hours per week.

IND 235 - Statistical Quality Control (3 cr)

Gives overview of the quality control function within industry. May include the organization, cost, and techniques of quality control. Emphasizes essentials and applications of statistics in the quality control function. Lecture 2-3 hours. Laboratory 1-2 hours. Total 3-4 hours per week.

IND 243 - Principles and Applications of Mechatronics (3 cr)

Introduces terminology and principles related to Mechatronic system design and application. Integrates concepts of electrical/electronic, mechanical and computer technologies in the development, setup, operation and troubleshooting of automated products and systems. Covers breakdown of various automated manufacturing operations with emphasis on system planning, development and

troubleshooting processes. Prerequisite: Divisional Approval. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Information Technology Design and Database

ITD 110 - Web Page Design I (3-4 cr)

Stresses a working knowledge of web site designs, construction, and management using HTML or XHTML. Course content includes headings, lists, links, images, image maps, tables, forms and frames. Co-requisite: ITE 115. Lecture 3-4 hours per week.

ITD 210 - Web Page Design II (3-4 cr)

Incorporates advanced techniques in web site planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editor software. Prerequisite: ITD 110. Lecture 3-4 hours per week.

ITD 212 - Interactive Web Design (3-4 cr)

Provides techniques in interactive design concepts to create cross-platform, low-bandwidth animations utilizing a vector based application. This course emphasizes the importance of usability, accessibility, optimization and performance. Prerequisite: ITD 110. Lecture 3-4 hours per week.

Information Technology Essentials

ITE 100 Introduction to Information Systems (3-4 cr)

Covers the fundamentals of computers and computing and topics which include impact of computers on society, ethical issues and terminology. Provides discussion about available hardware and software as well as their application. Lecture 3-4 hours per week.

ITE 101 - Introduction to Microcomputers (1-2 cr)

Examines concepts and terminology related to micro-computers and introduces specific uses of microcomputers. Lecture 1-2 hours per week.

ITE 102 - Computers & Information Systems (1-2 cr)

Introduces terminology, concepts and methods of using computers in information systems. This course teaches computer literacy, not intended for Information Technology majors. Lecture 1-2 hours per week.

ITE 115 - Introduction to Computer Applications and Concepts (3-4 cr)

Covers computer concepts and internet skills and use a software suite which includes word processing, spreadsheet, database, and presentation software to demonstrate skills required for computer literacy. Recommended prerequisite keyboarding skills. Lecture 3-4 hours per week.

ITE 119 Information Literacy (3 cr)

Presents the information literacy core competencies focusing on the use of information technology skills. Skills and knowledge will be developed in database searching, computer applications, information security and privacy, and intellectual property issues. Lecture 3 hours per week.

ITE 127 - Microcomputer Software: Beginning Windows (1-2 cr)

Imparts first-time users with sufficient information to make practical use of the Windows software package. This course also presents the basics of the features and applications included in the Windows operating system package. Lecture 1-2 hours per week.

ITE 140 - Spreadsheet Software (3-4 cr)

Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics include type and edit text in a cell, enter data on multiple worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data. Lecture 3-4 hours per week.

ITE 150 - Desktop Database Software (3-4 cr)

Incorporates instruction in planning, defining, and using a database; performing queries; producing reports; working with multiple files; and concepts of database programming. Course topics include database concepts, principles of table design and table relationships, entering data, creating and using forms, using data from different sources, filtering, creating mailing labels. This course covers MOS Access certification objectives. Prerequisites: ITE 115. Lecture 3-4 hours per week.

ITE 151 - Microcomputer Software: Database Management (1-2 cr)

Presents first-time users with sufficient information to make practical use of database management software using the basics of building databases. This course covers specific business applications. Prerequisite: ITE 115. Lecture 3-4 hours per week.

Information Technology Networking

ITN 101 - Introduction to Network Concepts (3-4 cr)

Provides instruction in networking media, physical and logical topologies, common networking standards and popular networking protocols. Course content emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Course content also includes selected topics in network implementation, support and LAN/WAN connectivity. Lecture 3 hours per week.

ITN 106 - Microcomputer Operating Systems (3-4 cr)

Teaches use of operating system utilities and multiple-level directory structures, creation of batch files, and configuration of microcomputer environments. May include a study of graphical user interfaces. Maps to A+ Software. Lecture 3-4 hours per week.

ITN 107 - Personal Computer Hardware and Troubleshooting (3-4 cr)

Includes specially designed instruction to give a student a basic knowledge of hardware and software configurations. Includes the installation of various peripheral devices as well as basic system hardware components. Maps to A+ Hardware Certification. Lecture 3-4 hours per week.

ITN 110 - Client Operating System (3-4 cr)

Introduces an overview of instruction in installation, configuration, administration, and troubleshooting of Client Operating System (version to be specified) in a networked data communications environment. Lecture 3-4 hours per week.

ITN 111 - Server Administration (3-4 cr)

Covers basic instruction in various network protocols, name resolution services, remote access, security, and print installation, configuration, administration, monitoring, and troubleshooting of Server Administration software (version to be specified) in an Active Directory domain environment. Prerequisite: ITE 115 and ITN 101. Lecture 3-4 hours per week.

ITN 112 - Network Infrastructure (3-4 cr)

Provides extensive instruction for the technical knowledge required for installation, configuration, administration, monitoring, and troubleshooting of Network Infrastructure services (version to be specified) such as NDS, DHCP, WINS, RRAS, NAT, and Certificate Authority to support the network infrastructure. Prerequisite: ITN 111 Lecture 3-4 hours per week.

ITN 120 - Wireless - Network Administration (WNA) (3-4 cr)

Provides instruction in fundamentals of wireless information systems. Course content includes terms, standards, components, and operating requirements in the design and implementation of wireless networks. Prerequisites: ITE 115, ITN 101. Lecture 3-4 hours per week.

ITN 154 - Networking Fundamentals-Cisco (3-4 cr)

Provides introduction to networking using the OSI reference model. Course content includes data encapsulation, TCP/IP suite, routing, IP addressing, and structured cabling design and implementation. Lecture 3-4 hours per week.

ITN 155 - Intro to Routing-Cisco (3-4 cr)

Features an introduction to basic router configuration using Cisco IOS software. Course content includes system components, interface configuration, ip network design, troubleshooting techniques, configuration and verification of IP addresses, and router protocols. CISCO Semester 2 and maps to CCNA. Prerequisite: ITN 154. Lecture 3-4 hours per week.

ITN 156 - Basic Switching and Routing (3-4 cr)

Centers instruction in LAN segmentation using bridges, routers, and switches. Includes fast Ethernet, access lists, routing protocols, spanning tree protocol, virtual LANS and network management. Prerequisite: ITN 155. Lecture 3-4 hours per week.

ITN 157 - WAN Technologies-Cisco (3-4 cr)

Concentrates on an introduction to Wide Area Networking (WANs). Course content includes WAN design, LAPB, Frame Relay, ISDN, HDLC, and PPP. CISCO Semester 4 and maps to CCNA. Prerequisite: ITN 156. Lecture 3-4 hours per week.

ITN 195 Topics in Cybersecurity (3cr)

Provides an overview of cybersecurity and the growing importance of ensuring secure systems for all users, including those in government, education, business and industry. Covers types of attacks and some measures used to strengthen security. Lecture 3 hours per week.

ITN 208 - Protocols and Communications TCP/IP (3 cr)

Centers on providing an understanding of the TCP/ IP suite and the details of its implementation. The details of implementation are treated by discussion, IP addressing, the structure of frames & protocol headers that enable communication between two computers. Discusses IP routing, tunneling, SNMP, and security. Lecture 3-4 hours per week.

ITN 260 - Network Security Basics (3- 4 cr)

Provides instruction in the basics of network security in depth. Includes security objectives, security architecture, security models and security layers; risk management, network security policy, and security training. Includes the give security keys, confidentiality integrity, availability, accountability and auditability. Lecture 3-4 hours per week.

ITN 261 - Network Attacks, Computer Crime and Hacking (3-4 cr)

Encompasses in-depth exploration of various methods for attacking and defending a network. Explores network security concepts from the viewpoint of hackers and their attack methodologies. Includes topics about hackers, attacks, Intrusion Detector Systems (IDS) malicious code, computer crime and industrial espionage. Lecture 3-4 hours per week.

Offers opportunities for career orientation and training without pay in selected businesses and industry. Supervised and coordinated by the College. Prerequisites: ITE 115, ITN 101, ITN 110, ITN 111. Credit/work ratio not to exceed 1:5 hours. Variable hours per week.

ITN 297 - Co-Op Education in Information Technology (Variable cr)

Provides on-the-job training for pay in approved business, industrial and service firms. Applies to all occupational-technical curricula at the discretion of the College. Prerequisites: ITE 115, ITN 101, ITN 110, ITN 111. Credit/work ratio not to exceed 1:5 hours. Variable hours per week.

Instrumentation

INS 190 - Coordinated Internship (1-5 cr)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

INS 220 - Introduction to Fluid Power (3 cr)

Introduces analysis and design of hydraulic and pneumatic control systems. Presents interpretation and application of fluid power systems, schematic diagrams, and symbols. Lecture 3 hours. Laboratory 2-3 hours. Total 4-5 hours per week.

INS 230 - Instrumentation I (3-4 cr)

Presents the fundamental scientific principles of process control including temperature, pressure, level, and flow measurements. Topics include transducers, thermometers, and gauges are introduced along with calibration. Lecture 2-3 hours. Laboratory 1-3 hours. Total 5-6 hours per week.

INS 231 - Instrumentation II (3-4 cr)

Continues INS 230. Covers common techniques for measuring the dynamic response of processes. Topics include transmitters and telemetering along with process control systems. Lecture 2-3 hours. Laboratory 1-3 hours. Total 5-6 hours per week.

INS 233 - Process Control Integration (4 cr)

Presents computer automation including PLCs, SCADA, and PC-based systems to control processes. Topics such as PLC control and computer data acquisition are introduced where students will use existing systems or build systems and control these systems with PLCs and computer data acquisition systems. Assesses students through test and project evaluations and the course will be assessed by graduate feedback. Prerequisite: INS 230, and ELE 233. Lecture 2-3 hours. Laboratory 3 hours. Total 5-6 hours per week.

INS 290 - Coordinated Internship (1-5 cr)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

Machine Technology

MAC 111-112 - Machine Trade Theory and Computation (3 cr) (3 cr)

Covers shop theory and mathematics dealing with fractional and precision measuring tools. Includes layout, bandsaws, drill presses, the twist drill, thread cutting, taper turning, vertical and horizontal milling machines, lathe tool bit geometry, the engine lathe and other lathe operations. Lecture 3 hours per week.

Marketing

MKT 100 - Principles of Marketing (3 cr)

Presents principles, methods and problems involved in the marketing to consumers and organizational buyers. Discusses problems and policies connected with distribution and sale of products, pricing, promotion and buyer motivation. Examines variations of the marketing research, legal, social, ethical e-commerce, and international considerations in marketing. Lecture 3 hours per week.

Mathematics

BSK 1 - Whole Numbers

Covers whole number principles and computations. Credits not applicable toward graduation. 1 credit.

MTE 1 - Operations with Positive Fractions

Includes operations and problem solving with proper fractions, improper fractions, and mixed numbers without the use of a calculator. Emphasizes applications and includes U. S. customary units of measure. Credit is not applicable toward graduation. Prerequisite: Qualifying placement score 1 credit.

MTE 2 - Operations with Positive Decimals and Percents

Includes operations and problem solving with positive decimals and percents. Emphasizes applications and includes U. S. customary and metric units of measure. Credit is not applicable toward graduation. Prerequisite: MTE 1 or qualifying placement score. 1 credit

MTE 3 - Algebra Basics

Includes basic operations with algebraic expressions and solving simple algebraic equations using signed numbers with emphasis on applications. Credit is not applicable toward graduation. Prerequisite: MTE 2 or qualifying placement score. 1 credit.

MTE 4 - First Degree Equations and Inequalities in One Variable

Includes solving first degree equations and inequalities containing one variable, and using them to solve application problems. Emphasizes applications and problem solving. Credit is not applicable toward graduation. Prerequisite: MTE 3 or qualifying placement score. 1 credit.

MTE 5 - Linear Equations, Inequalities and Systems of Linear Equations in Two Variables

Includes finding the equation of a line, graphing linear equations and inequalities in two variables and solving systems of two linear equations. Emphasizes writing and graphing equations using the slope of the line and points on the line, and applications. Credit is not applicable toward graduation. Prerequisite: MTE 4 or qualifying placement score. 1 credit.

MTE 6 - Exponents, Factoring and Polynomial Equations

The student will learn to perform operations on exponential expressions and polynomials. Students will also learn techniques to factor polynomials and use these techniques to solve polynomial equations. Emphasis should be on learning all the different factoring methods, and solving application problems using polynomial equations. Credit is not applicable toward graduation. Prerequisite: MTE 5 or qualifying placement score. 1 credit.

MTE 7 - Rational Expressions and Equations

Includes simplifying rational algebraic expressions, solving rational algebraic equations and solving applications that use rational algebraic equations. Credit is not applicable toward graduation. Prerequisite: MTE 6 or qualifying placement score. 1 credit.

MTE 8 - Rational Exponents and Radicals

Includes simplifying radical expressions, using rational exponents, solving radical equations and solving applications using radical equations. Credit is not applicable toward graduation. Prerequisite: MTE 7 or qualifying placement score. 1 credit.

MTE 9 - Functions, Quadratic Equations and Parabolas

Includes an introduction to functions in ordered pair, graph, and equation form. Also introduces quadratic functions, their properties and their graphs. Credit is not applicable toward graduation. Prerequisite: MTE 8 or qualifying placement score. 1 credit.

MTH 21 - Survey of Technical Mathematics I (2-5 cr)

Provides a foundation in mathematics with emphasis in arithmetic, algebra, geometry, and trigonometry. Presents applications directed to specialty options. Prerequisite: a placement recommendation for MTH 21. Lecture 2-5 hours per week.

MTH 50 - Mathematics for Teacher Entrance Exams (2 cr)

Provides participants with review and practice for the mathematics portion of the licensure examination required of all beginning teachers in Virginia. Test-taking strategies are emphasized

throughout. Prerequisite: Competency in Math Essentials MTE 1-3 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent, ENF 1 or ENF 2. Lecture 1-2 hours per week.

MTH 103 Applied Technical Mathematics I (3cr)

Presents a view of arithmetic, elements of algebra, geometry and trigonometry. Directs applications to specialty areas. Prerequisites: Competency in Math Essentials MTE 1-3 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Part I of II. Lecture 3 hours per week.

MTH 115 - Technical Mathematics I (3 cr)

Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry and complex numbers. Prerequisites: Competency in Math Essentials. MTE 1-6 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Part I of II. Lecture 3 hours per week. 3 credits.

MTH 120 - Introduction to Mathematics (3 cr)

Introduces number systems, logic, basic algebra and descriptive statistics. Prerequisites: Competency in Math Essentials MTE 1-3 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. (Intended for occupational/technical programs.) Lecture 3 hours per week.

MTH 150 - Topics in Geometry (3 cr)

Presents the fundamentals of plane and solid geometry and introduces non-Euclidean geometries and current topics. Prerequisites: Competency in Math Essentials MTE 1-5 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Lecture 3 hours per week. 3 credits.

MTH 151 - Mathematics for the Liberal Arts I (3 cr)

Presents topics in sets, logic, numeration systems, geometric systems and elementary computer concepts. Prerequisites: Competency in Math Essentials MTE 1-5 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Lecture 3 hours per week.

MTH 152 - Mathematics for the Liberal Arts II (3 cr)

Presents topics in functions, combinatorics, probability, statistics and algebraic systems. Prerequisites: Competency in Math Essentials MTE 1-5 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Lecture 3 hours per week.

MTH 154 – Quantitative Reasoning (3 cr)

Presents topics in proportional reasoning, modeling, financial literacy and validity studies (logic and set theory). Focuses on the process of taking a real-world situation, identifying the mathematical foundation needed to address the problem, solving the problem and applying what is learned to the original situation. Prerequisite: Competency in MTE 1-5 as demonstrated through placement or unit completion or equivalent. Lecture: 3 hours per week.

MTH 155 – Statistical Reasoning (3 cr)

Presents elementary statistical methods and concepts including visual data presentation, descriptive statistics, probability, estimation, hypothesis testing, correlation, and linear regression. Emphasis is placed on the development of statistical thinking, simulation, and the use of statistical software. Prerequisite: Competency in MTE 1-5 as demonstrated through placement or unit completion or equivalent. Lecture: 3 hours per week

MTH 157 - Elementary Statistics (3 cr)

Presents elementary statistical methods and concepts including descriptive statistics, estimation, hypothesis testing, linear regression and categorical data analysis. (Credit will not be awarded for both MTH 157 and MTH 240 or MTH 241.) Prerequisites: Competency in Math Essentials MTE 1-5 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Lecture 3 hours per week.

MTH 158 - College Algebra (3 cr)

Covers the structure of complex number systems, polynomials, rational expressions, graphing, systems of equations and inequalities and functions, quadratic and rational equations and inequalities. Lecture 3 hours per week.

MTH 163 - Pre-Calculus I (3 cr)

Presents college algebra, matrices and algebraic, exponential and logarithmic functions. Prerequisites: Competency in Math Essentials MTE 1-9 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. Lecture 3 hours per week.

MTH 164 - Pre-Calculus II (3 cr)

Presents trigonometry, analytic geometry and sequences and series. Prerequisite: MTH 163: Pre-Calculus I or equivalent. (Credit will not be awarded for both MTH 164 and MTH 168.) Lecture 3 hours per week.

MTH 166 - Pre-Calculus with Trigonometry (4-5 cr) (Dual Enrollment)

Presents college algebra, analytic geometry, trigonometry, and algebraic exponential, and logarithmic functions. Lecture 4-5 hours per week. 4-5 credits Prerequisite: Competency in Math Essentials MTE 1-9 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent. (Credit will not be awarded for both MTH 163 and MTH 166). 4-5 credits.

MTH 173 - Calculus with Analytic Geometry I (5 cr)

Presents analytic geometry and the calculus of algebraic and transcendental functions including the study of limits, derivatives, differentials, and introduction to integration along with their applications. Designed for mathematical, physical and engineering science programs. Prerequisites: a placement recommendation for MTH 173 and four units of high school mathematics including Algebra I, Algebra II, Geometry and Trigonometry or equivalent. (Credit will not be awarded for more than one of MTH 173, MTH 175, or MTH 273.) Lecture 5 hours per week.

MTH 174 - Calculus with Analytic Geometry II (5 cr)

Continues the study of analytic geometry and the calculus of algebraic and transcendental functions including rectangular, polar and parametric graphing, indefinite and definite integrals, methods of

integration and power series along with applications. Designed for mathematical, physical and engineering science programs. Prerequisite: MTH 173: Calculus with Analytic Geometry I or equivalent. (Credit will not be awarded for more than one of MTH 174, MTH 176 or MTH 274.) Lecture 5 hours per week.

MTH 175 - Calculus of One Variable I (3 cr)

Presents differential calculus of one variable including the theory of limits, derivatives, differentials, antiderivatives and applications to algebraic and transcendental functions. Designed for mathematical, physical, and engineering science programs. Prerequisites: a placement recommendation for MTH 175 and four units of high school mathematics including Algebra I, Algebra II, Geometry and Trigonometry or equivalent. (Credit will not be awarded for more than one of MTH 173, MTH 175 or MTH 273.) Lecture 3 hours per week.

MTH 176 - Calculus with One Variable II (3 cr) (Dual Enrollment)

Continues the study of integral calculus of one variable including indefinite integral, definite integral and methods of integration with applications to algebraic and transcendental functions. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 175 or equivalent. (Credit will not be awarded for more than one of MTH 174, MTH 176 or MTH 274.) Lecture 3 hours per week. 3 credits.

MTH 240 - Statistics (3 cr)

Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing and correlation and regression. Prerequisite: a placement recommendation for MTH 240, and successful of MTH 158, MTH 163, MTH 166 or equivalent. Lecture 3 hours per week.

MTH 277 - Vector Calculus (4 cr)

Presents vector valued functions, partial derivatives, multiple integrals, and topics from the calculus of vectors. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture 4 hours per week.

MTH 291 - Differential Equations (3 cr)

Introduces first order differential equations, linear differential equations, numerical methods, and applications. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture 3 hours per week.

Mechanical Engineering

MEC 161 - Basic Fluid Mechanics Hydraulics/Pneumatics (3-4 cr)

Introduces theory, operation and maintenance of hydraulic/ pneumatics devices and systems. Emphasizes the properties of fluids, fluid flow, fluid statics, and the application of Bernoulli's equation. Lecture 2-3 hours per week; laboratory 2-3 hours per week.

Music

MUS 221-222 - History of Music I-II (3 cr) (3 cr)

Presents the chronology of musical styles from antiquity to the present time. Relates the historical development of music to parallel movements in art, drama and literature. Develops techniques for listening analytically and critically to music. Prerequisites: ENF 1 or ENF 2. Lecture 3 hours per week.

Natural Science

NAS 05 - Sciences I (3 cr)

Focuses on the basic principles of chemistry, physics and biology. Prerequisites: ENF 1 or ENF 2, MTE 1-3. Lecture 2 hours per week; recitation and laboratory 2 hours per week.

NAS 171-172 - Human Anatomy and Physiology I and II (4 cr)

Presents the human organ systems and their functions as they relate to allied health science. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week.

Nursing

NSG 100 - Introduction to Nursing Concepts (4 cr)

Introduces concepts of nursing practice and conceptual learning. Focuses on basic nursing concepts with an emphasis on safe nursing practice and the development of the nursing process. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Prerequisite(s): BIO 141 or BIO 231 or NAS 161. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

NSG 106 - Competencies for Nursing Practice (2 cr)

Focuses on the application of concepts through clinical skill development. Emphasizes the use of clinical judgment in skill acquisition. Includes principles of safety, evidence-based practice, informatics and math computational skills. Prepares students to demonstrate competency in specific skills and drug dosage calculation including the integration of skills in the care of clients in simulated settings. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Prerequisite(s): MTE 1-5 and BIO 141 (or BIO 231 or NAS 161) Lecture 0-1 hour. Laboratory 3-6 hours. Total 4-6 hours per week.

NSG 130 - Professional Nursing Concepts (1 cr)

Introduces the role of the professional nurse and fundamental concepts in professional development. Focuses on professional identity, legal/ethical issues and contemporary trends in professional nursing. Prerequisite(s): BIO 141 or BIO 231 or NAS 161. Lecture 1 hour. Total 1 hour per week.

NSG 152 - Health Care Participant (3 cr)

Focuses on the health and wellness of diverse individuals, families, and the community throughout the lifespan. Covers concepts that focus on client attributes and preferences regarding healthcare. Emphasizes population-focused care. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or cooperating agencies, and/or simulated environments. Prerequisite(s): BIO 142 (or BIO 232 or NAS 162), NSG 100, NSG 106, NSG 130 and

NSG 200 Corequisite(s): BIO 150 or BIO 205. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

NSG 170 - Health/Illness Concepts (6 cr)

Focuses on the nursing care of individuals and/or families throughout the lifespan with an emphasis on health and illness concepts. Includes concepts of nursing care for the antepartum client and clients with common and predictable illnesses. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Prerequisite(s): BIO 142 (or BIO 232 or NAS 162), NSG 100, NSG 106, NSG 130 and NSG 200 Corequisite(s): BIO 150 or BIO 205. Lecture 4 hours, Laboratory 6 hours. Total 10 hours per week.

NSG 200 - Health Promotion and Assessment (3 cr)

Introduces assessment and health promotion for the individual and family. Includes assessment of infants, children, adults, geriatric clients and pregnant females. Emphasizes health history and the acquisition of physical assessment skills with underlying concepts of development, communication, and health promotion. Prepares students to demonstrate competency in the assessment of clients across the lifespan. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Prerequisite(s): BIO 141 (or BIO 231 or NAS 161). Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

NSG 210 - Health Care Concepts I (5 cr)

Focuses on care of clients across the lifespan in multiple settings including concepts related to physiological health alterations and reproduction. Emphasizes the nursing process in the development of clinical judgment for clients with multiple needs. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Part I of II. Prerequisite(s): BIO 150 (or BIO 205), NSG 152 and NSG 170. Lecture 3 hours, Laboratory 6 hours. Total 9 hours per week.

NSG 211 - Health Care Concepts II (5 cr)

Focuses on care of clients across the lifespan in multiple settings including concepts related to psychological and physiological health alterations. Emphasizes the nursing process in the development of clinical judgment for clients with multiple needs. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Part II of II. Prerequisite(s): BIO 150 (or BIO 205), NSG 152 and NSG 170. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

NSG 230 - Advanced Professional Nursing Concepts (2 cr)

Develops the role of the professional nurse in the healthcare environment in preparation for practice as a registered nurse. Introduces leadership and management concepts and focuses on the integration of professional behaviors in a variety of healthcare settings. Prerequisite(s): NSG 210 and NSG 211. Lecture 2 hours. Total 2 hours per week.

NSG 252 - Complex Health Care Concepts (4 cr)

Focuses on nursing care of diverse individuals and families integrating complex health concepts. Emphasizes clinical judgment, patient-centered care and collaboration. Prerequisite(s): NSG 210 and NSG 211. Lecture 4 hours. Total 4 hours per week.

NSG 270 - Nursing Capstone (4 cr)

Provides students with the opportunity to comprehensively apply and integrate learned concepts from previous nursing courses into a capstone experience. Emphasizes the mastery of patient-centered care, safety, nursing judgment, professional behaviors, informatics, quality improvement, and collaboration in the achievement of optimal outcomes of care. Provides supervised learning experiences in faculty and/or preceptor-guided college nursing laboratories, clinical/community settings, and/or simulated environments. Prerequisite(s): NSG 210 and NSG 211. Laboratory 12 hours. Total 12 hours per week.

NUR 105 - Nursing Skills (2 cr)

Develops nursing skills for the basic needs of individuals and introduces related theory. Includes assessment, personal care, activity/rest, sterile technique, wound care, ostomy care, catheterization, oxygen administration, infection control, suctioning and medication administration. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Prerequisites: ENF 1 or ENF 2, MTE 1-6. Co-requisite: NUR 108. Lecture 0-2 hours per week; Laboratory 2-9 hours per week.

NUR 108 - Nursing Principles and Concepts I (5 cr)

Introduces principles of nursing, health and wellness concepts, and the nursing process. Identifies nursing strategies to meet the multidimensional needs of individuals. Includes math computational skills, basic computer instruction related to the delivery of nursing care, introduction to the profession of nursing, nursing process, documentation; basic needs related to integumentary system, teaching/learning, stress, psychosocial, safety, nourishment, elimination, oxygenation, circulation, rest, comfort, sensory, fluid and electrolyte and mobility needs in adult clients. Also includes care of the pre/post-operative client. Provides supervised learning experience in college laboratories and/or cooperating agencies. Lecture 1-5 hours; laboratory 2-15 hours.

NUR 109 - Nursing Principles and Concepts II (6 cr)

Focuses on nursing care of individuals and/or families experiencing alterations in health. Includes math computational skills, basic computer instruction related to the delivery of nursing care; immunological, gastrointestinal, musculoskeletal, oncological and diabetic disorders and pre/post-operative care in adult and pediatric clients. Provides supervised learning experience in college nursing laboratories and/or cooperating agencies. Prerequisites: NUR 105, NUR 108, NUR 136. Lecture 1-5 hours; laboratory 2-15 hours.

NUR 115 - LPN Transition (4 cr)

Introduces the role of the Registered Nurse (RN) through concepts and skill development within the discipline of professional nursing. This course serves as a bridge course for Licensed Practical Nurses (LPNs). Computational math skills and basic computer instruction as related to the delivery of nursing care is included. Provides supervised learning experiences in cooperating agencies. Prerequisites: completion of all requirements for admission to the LPN to RN Transition Pathway, BIO 141, PSY 230, SDV 100. Lecture 3 hours; laboratory 1 hour.

NUR 135 - Drug Dosage Calculations (1-2cr)

Focuses on apothecary, metric, household conversion in medication dosage calculation for adult and pediatric clients. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates. Lecture 1-2 hours per week.

NUR 136 - Principles of Pharmacology I (2 cr)

Focuses on principles of medication administration which includes dosage calculations, major drug classifications, drug legislation, legal aspects of medication administration, drug action on specific body systems, and basic computer applications. Lecture 1-2 hours per week.

NUR 137 - Principles of Pharmacology II (2 cr)

Continues discussion on principles of medication administration which includes dosage calculations, major drug classifications, drug legislation, legal aspects of medication administration, drug action on specific body systems, and basic computer applications. Prerequisites: NUR 105, NUR 108, NUR 136. Lecture 1-2 hours per week.

NUR 201 - Psychiatric Nursing (4 cr)

Focuses on the care of individuals/families requiring clinical treatment. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills and basic computer instruction related to the delivery of nursing care: alterations in behavior, eating disorders, mood disorders, anxiety, chemical dependency and dementias. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Prerequisites: NUR 105, NUR 108, NUR 109, NUR 136, NUR 137, NUR 245, NUR 246. Lecture 1-3 hours; laboratory 2-9 hours.

NUR 202 - Medical/Surgical Nursing (4 cr)

Focuses on the care of individuals/families requiring complex or surgical treatments. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills and basic computer instruction related to the delivery of nursing care: cardiac, neurological, renal, burn disorders, and clients experiencing shock. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Prerequisites: NUR 105, NUR 108, NUR 109, NUR 136, NUR 137, NUR 245, NUR 246. Lecture 1-3 hours; laboratory 2-9 hours.

NUR 208 - Acute Medical Surgical Nursing (6 cr)

Focuses on the use of nursing process to provide care to individuals/families with acute medical or surgical problems or to prevent such problems. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in cooperating agencies. Prerequisites: NUR 105, NUR 108, NUR 109, NUR 136, NUR 137, NUR 201, NUR 202, NUR 226, NUR 245, NUR 246. Lecture 3 hours per week; laboratory 9 hours per week.

NUR 226 - Health Assessment (2-3 cr)

Introduces the systematic approach to obtaining a health history and performing a physical assessment. Prerequisites: NUR 105, NUR 108, NUR 109, NUR 136, NUR 137, NUR 245, NUR 246. Lecture 0-2 hours per week; laboratory 2-9 hours per week.

NUR 245 - Maternal/Newborn Nursing (3 cr)

Develops nursing skills in caring for families in the antepartum, intrapartum, and post-partum periods. Prerequisites: NUR 105, NUR 108, NUR 136. Lecture 1-3 hours per week; laboratory 0-9 hours per week.

NUR 246 - Parent/Child Nursing (3 cr)

Develops nursing skills in caring for both well and ill children in a variety of settings. Emphasizes theories of growth and development, and the family as a unit. Prerequisites: NUR 105, NUR 108, NUR 136. Lecture 1-3 hours per week; laboratory 0-9 hours per week.

NUR 254 - Dimensions of Professional Nursing (1-2 cr)

Explores the role of the professional nurse. Emphasizes nursing organizations, legal and ethical implications and addresses trends in management and organizational skills. Explores group dynamics, relationships, conflicts and leadership styles. Prerequisites: NUR 105, NUR 108, NUR 109, NUR 136, NUR 137, NUR 201, NUR 202, NUR 226, NUR 245, NUR 246. Lecture 1-2 hour per week.

NUR 265 - Electrocardiogram Interpretation (2 cr)

Provides basic knowledge for interpretation of electrocardiograms. Designed for nurses and other appropriate health care workers. Lecture 2-3 hours per week.

NUR 295 - Topics in Nursing – NCLEX Prep (2 cr)

Provides an opportunity for students to prepare for the NCLEX-RN Examination with the guidance and instruction of faculty. This is an elective course taken in the final semester prior to graduation.

Philosophy

PHI 101 - Introduction to Philosophy I (3 cr)

Introduces a broad spectrum of philosophical problems and perspectives with an emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality and values. Lecture 3 hours per week.

PHI 220 - Ethics (3 cr)

Provides a systematic study of representative ethical systems. Lecture 3 hours per week.

PHI 226 - Social Ethics (3 cr)

Provides a critical examination of moral problems and studies the application of ethical concepts and principles to decision-making. Topics may include abortion, capital punishment, euthanasia, man and the state, sexuality, war and peace, and selected issues of personal concern. Lecture 3 hours per week.

Physical Education

PED 101 - Fundamentals of Physical Activity I (1 cr)

Presents principles underlying the components of physical fitness. Utilizes conditioning activities involving cardiovascular strength and endurance, respiratory efficiency, muscular strength, and flexibility. May include fitness assessment, nutrition and weight control information, and concepts of wellness. Part I of II. Lecture 0-1 hours. Laboratory 2-4 hours. Total 2-4 hours per week.

PED 102 - Fundamentals of Physical Activity II (1 cr)

Presents principles underlying the components of physical fitness. Utilizes conditioning activities involving cardiovascular strength and endurance, respiratory efficiency, muscular strength, and flexibility. May include fitness assessment, nutrition and weight control information, and concepts of wellness. Part II of II. Lecture 0-1 hours. Laboratory 2-4 hours.

PED 103 - Aerobic Fitness (1 cr)

Develops cardiovascular fitness through activities designed to evaluate and sustain heart rates appropriate to age and physical condition. Variable hours per week.

PED 109 - Yoga (1-2 cr)

Focuses on the forms of yoga training emphasizing flexibility. Lecture 1-2 hours per week; laboratory 0-2 hours per week.

PED 111 - Weight Training I (1 cr)

Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Variable hours per week.

PED 116 - Lifetime Wellness and Fitness (1-2 cr)

Provides a study of fitness and wellness and their relationship to a healthy lifestyle. Defines fitness and wellness, evaluates the student's level of fitness and wellness, and motivates the student to incorporate physical fitness and wellness into daily living. A personal fitness/wellness plan is required for the 2-credit course. Lecture 1-2 hours per week; laboratory 0-2 hours per week.

PED 129 - Self-Defense (1-2 cr)

Examines history, techniques and movements associated with self-defense. Introduces the skills and methods of self-defense emphasizing mental and physical discipline. Lecture 1-2 hours per week; lab 0-2 hours per week.

PED 133 - Golf I (1 cr)

Teaches basic skills of golf, rules, etiquette, scoring, terminology, equipment selection and use and strategy. Variable hours per week.

PED 135 - Bowling I (1 cr)

Teaches basic bowling skills and techniques, scoring, rules, etiquette and terminology. Variable hours per week.

PED 139 - Ice Skating (1 cr)

Introduces the skills of figure skating with emphasis on form. Includes equipment selection and safety. Variable hours per week.

PED 140 - Water Aerobics (1 cr)

Focuses on cardiovascular endurance, muscular endurance, and flexibility using water resistance. Includes the principles and techniques of aerobic exercise. Lecture 0-1 hours. Laboratory 2-4 hours. Total 2-4 hours per week.

PED 141-142 - Swimming I-II (1 cr)

Introduces the skills and methods of swimming strokes. Focuses on safety and physical conditioning. Lecture 1-2 hours. Laboratory 0-2 hours. Total 1-3 hours per week.

PED 148 - Snowboarding (1 cr)

Teaches the basic skills of snowboarding, selection and use of equipment, terminology, and safety rules. Laboratory 2 hours per week.

PED 181 - Downhill Skiing I (1 cr)

Teaches the basic skills of downhill skiing, selection and use of equipment, terminology and safety rules. Includes field experience. Variable hours per week.

Physical Therapy

PTH 151 - Musculoskeletal Structure and Function (4-5 cr)

Studies the human musculoskeletal system. Covers terms of position and movement, location and identification of specific bony landmarks, joint structure and design, ligaments, muscle origin, action and innervation and emphasizes types of contraction. Prerequisite: HLT 180. Lecture 2-3 hours per week; laboratory 2-6 hours per week.

Physics

PHY 201 - General College Physics I (4 cr)

Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism and selected topics in modern physics. Prerequisites: MTH 163 or Divisional Approval, ENF 1 or ENF 2.

PHY 202 - General College Physics II (4 cr)

Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism and selected topics in modern physics. Prerequisite: PHY 201. Lecture 3 hours per week; laboratory 3 hours per week.

PHY 241-242 - University Physics I-II (4 cr)

Teaches principles of classical and modern physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, relativity and nuclear physics. Prerequisite: PHY 241: MTH 173 or MTH 273 or Instructor approval. Prerequisite: PHY 242: MTH 174 or MTH 274 or Instructor approval. Lecture 3 hours per week; laboratory 3 hours per week.

Political Science

PLS 135 - American National Politics (3 cr)

Teaches political institutions and processes of the national government of the United States. Focuses on Congress, the Presidency and the Courts and on their interrelationships. Gives attention to public opinion, suffrage, elections, policy, political parties, interest groups, civil rights, domestic policy and foreign relations. Prerequisites: ENF 1 or ENF 2. Lecture 3 hours per week.

PLS 136 - State and Local Politics (3 cr)

Teaches structure, power and functions of state and local government in the United States. Prerequisites: ENF 1 or ENF 2. Lecture 3 hours per week.

Practical Nursing

PNE 110 - Practical Nursing Health and Disease I (5 cr)

Studies the pathophysiology, signs and systems, prescribed medical and surgical treatments, and appropriate nursing care for the patient with selected disorders. Part I of II Lecture 5 hours; Laboratory 0 hours; Total 5 hours per week.

PNE 111 - Practical Nursing Health and Disease II (5 cr)

Studies the pathophysiology, signs and systems, prescribed medical and surgical treatments, and appropriate nursing care for the patient with selected disorders. Part II of II Lecture 5 hours; Laboratory 0 hours; Total 5 hours per week.

PNE 135 - Maternal and Child Health Nursing (5 cr)

Examines pregnancy, childbirth, post-partum and newborn care from a family centered approach. Covers complications related to childbearing. Emphasizes growth and development and exploration of common childhood disorders at various stages. Lecture 4 hours. Laboratory 3 hours. Total 7 hours per week.

PNE 136 - Care of Maternal, Newborn, and Pediatric Patients (4cr)

Uses a family-centered approach; studies normal and common complications in pregnancy, childbirth, post-partum, the neonate, and children through adolescence. Covers milestones in all aspects of growth and development and common childhood disorders at various ages. Lecture 4 hours per week.

PNE 141 - Nursing Skills I (2 cr)

Studies principles and procedures essential to the basic nursing care of patients. Part I of II Lecture 1 hour; Laboratory 3 hours; Total 4 hours per week.

PNE 142 - Nursing Skills II (2 cr)

Studies principles and procedures essential to the basic nursing care of patients. Part II of II Lecture 1 hour; Laboratory 3 hours; Total 4 hours per week.

PNE 143 - Applied Nursing Skills (1 cr)

Applies principles and procedures essential to the basic nursing care of patients. Laboratory 3 hours per week. Prerequisite: PNE 162, Co-requisite: PNE 188.

PNE 145 - Trends in Practical Nursing (1 cr)

Studies the role of the LPN. Covers legal aspects, organizations, and opportunities in practical nursing. Assists students in preparation for employment. Lecture 1 hour; Laboratory 0 hours; Total 1 hour per week.

PNE 155 - Body Structure and Function (3 cr)

Studies the structure and function of the body. Lecture 3 hours; Laboratory 0 hours; Total 3 hours per week.

PNE 158 - Mental Health and Psychiatric Nursing (1 cr)

Recognizes emotional needs of patients. Provides knowledge of the role that emotions play. Enables students to understand their own behavior as well as patient behavior. Lecture 1 hours; Laboratory 0 hours; Total 1 hour per week.

PNE 173 - Pharmacology for Practical Nurses (2 Cr)

Studies history, classification, sources, effects, uses and legalities of drugs. Teaches problem solving skills used in medication administrations. Emphasizes major drug classes and specific agents within each class. Lecture 1-2 hours per week.

PNE 181 - Clinical Experience I (5 cr)

Provides guided nursing experience in the hospital setting. Practices skills and applies principles of nursing in basic areas. Includes supervision in administration of medicines. Encourages students to develop basic skills in analyzing patient needs and making nursing decisions. Part I of II. Lecture 0 hours; Laboratory 15 hours; Total 5 hours per week.

PNE 182 - Clinical Experience II (5 cr)

Provides guided nursing experience in the hospital setting. Practices skills and applies principles of nursing in basic areas. Includes supervision in administration of medicines. Encourages students to develop basic skills in analyzing patient needs and making nursing decisions. Part II of II. Lecture 0 hours; Laboratory 15 hours; Total 5 hours per week.

Psychology

PSY 116 - Psychology of Death and Dying (3 cr)

Focuses on psychological aspects of death and dying. Teaches the meaning of death and ways of handling its personal and social implications. Includes psychological, sociological, cultural, and religious views of death. Prerequisites: ENF 1 or ENF 2. Lecture 3 hours per week.

PSY 126 - Psychology for Business and Industry (3 cr)

Focuses on the application of psychology to interpersonal relations and the working environment. Includes topics such as group dynamics, motivation, employee-employer relationship, interpersonal communications. May include techniques for selection and supervision of personnel. Lecture 3 hours per week.

PSY 200 - Principles of Psychology (3 cr)

Examines human and animal behavior, relating experimental studies to practical problems. Includes topics such as sensation/perception, learning, memory, motion, emotion, stress, development, intelligence, personality, psychopathology, therapy and social psychology. Prerequisite: readiness to enroll in ENG 111. Lecture 3 hours per week.

PSY 215 - Abnormal Psychology (3 cr)

Explores historical views and current perspectives on abnormal behavior. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior and types of therapy. Includes methods of clinical assessment and research strategies. Prerequisites: PSY 200. Lecture 3 hours per week.

PSY 216 - Social Psychology (3 cr)

Examines individuals in social contexts, their social roles, group processes and intergroup relations. Includes topics such as small group behavior, social behavior, social cognition, conformity, attitudes and motivation. Prerequisites: PSY 200. Lecture 3 hours per week.

PSY 230 - Developmental Psychology (3 cr)

Studies the development of the individual from conception to death. Follows a life-span perspective on the developmental tasks of the person's physical, cognitive and psychosocial growth. Prerequisite: readiness to enroll in ENG 111. Lecture 3 hours per week.

PSY 235 - Child Psychology (3 cr)

Studies development of the child from conception to adolescence. Investigates physical, intellectual, social and emotional factors involved in the child's growth. Prerequisite: readiness to enroll in ENG 111. Lecture 3 hours per week.

PSY 236 - Adolescent Psychology (3 cr)

Studies development of the adolescent. Investigates physical, intellectual, social and emotional factors of the individual from late childhood to early adulthood. Prerequisite: readiness to enroll in ENG 111. Lecture 3 hours per week.

PSY 237 - Adult Psychology (3 cr)

Studies development of the adult personality. Investigates physical, intellectual, social and emotional aspects of aging from early adulthood to death. Prerequisite: readiness to enroll in ENG 111. Lecture 3 hours per week.

PSY 270 - Psychology of Human Sexuality (3 cr)

Focuses on scientific investigation of human sexuality and psychological and social implications of such research. Considers socio-cultural influences, the physiology and psychology of sexual response patterns, sexual dysfunctions, and development of relationships. Prerequisites: PSY 200. Lecture 3 hours per week.

Recreation and Parks

RPK 152 - Sports First Aid & Safety (1 cr) (Dual Enrollment)

Focuses on the introduction to first aid protocols causes, signs and symptoms of injury for coaches, injury prevention, preseason physicals, fitness screenings, and conditioning programs and return to play guidelines, injury prevention and risk management, as well as the design and implementation of a medical emergency plan. Laboratory 2 hours per week. 1 credits.

Religion

REL 200 - Survey of the Old Testament (3 cr)

Surveys books of the Old Testament with emphasis on prophetic historical books. Examines the historical and geographical setting and place of the Israelites in the ancient Middle East as background to the writings. Lecture 3 hours per week.

REL 210 - Survey of the New Testament (3 cr)

Surveys books of the New Testament with special attention upon placing the writing within their historical and geographical setting. Lecture 3 hours per week.

REL 216 - Life and Teachings of Jesus (3 cr)

Studies the major themes in the teachings of Jesus of Nazareth as recorded in the Gospels, and examines the events of his life in light of modern biblical and historical scholarship. Lecture 3 hours per week.

REL 225 - Selected Topics in Biblical Studies (3 cr)

Examines a selected body of literature, a specific book of the Bible or a pervasive theme. Lecture 3 hours per week.

REL 230 - Religions of the World (3 cr)

Introduces the religions of the world with attention to origin, history, and doctrine. Lecture 3 hours per week.

REL 231 - Religions of the World I (3 cr)

Studies religions of the world with attention to origin, history and doctrine. Lecture 3 hours per week.

REL 232 - Religions of the World II (3 cr)

Studies religions of the world with attention to origin, history and doctrine. Lecture 3 hours per week.

Safety

SAF 126 - Principles of Industrial Safety (3 cr)

Teaches principles and practices of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, housekeeping, occupational diseases, first aid, safety organization, protection equipment and general safety principles and promotion. Lecture 3 hours per week.

SAF 127 - Industrial Safety (2 cr)

Provides basic understanding of safety and health in an industrial situation. Includes hazardous materials, substances, conditions, activities and habits as well as the prescribed methods and equipment needed for the apprentice to protect himself/herself and others. Lecture 2 hours per week.

SAF 130 - Industrial Safety – OSHA-10 (1 cr)

Presents an introduction to occupational health and safety and its application in the workplace. Emphasizes safety standards and the Occupational Safety and Health Act (OSHA), its rules and regulations (OSHA 10). Lecture 1 hour per week.

SAF 195 - Construction Safety - OSHA 10 (1 cr)

Presents an introduction to occupational health and safety and its application on the construction site. Introduces the safety standards and the Occupational Safety and Health Act (OSHA), its rules and regulations with emphasis on recognizing job-site hazards (OSHA 10) and welding safety. Lecture 1 hour.

Sociology

SOC 200 - Principles of Sociology (3 cr)

Introduces fundamentals of social life. Presents significant research and theory in areas such as culture, social structure, socialization, deviance, social stratification and social institutions. Lecture 3 hours per week.

SOC 215 - Sociology of the Family (3 cr)

Studies topics such as marriage and family in social and cultural context. Addresses the single scene, dating and marriage styles, child-rearing, husband and wife interaction, single parent families, alternative lifestyles. Lecture 3 hours per week.

SOC 268 - Social Problems (3 cr)

Applies sociological concepts and methods to analysis of current social problems. Includes delinquency and crime, mental illness, drug addiction, alcoholism, sexual behavior, population crisis, race relations, family and community disorganization, poverty, automation, wars and disarmament. Prerequisite: ENF 1. Lecture 3 hours per week.

Spanish

SPA 101-102 - Beginning Spanish (3 - 4 cr)

Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. May include an additional hour of oral drill and practice per week.

SPA 201-202 - Intermediate Spanish (3 - 4 cr)

Continues to develop understanding, speaking, reading, and writing skills. Prerequisite SPA 102 or equivalent. May include an additional hour of oral drill and practice per week.

Student Development

SDV 100 - College Success Skills (1 cr)

Assists students in transition to colleges. Provides overviews of college policies, procedures, curricular offerings. Encourages contacts with other students and staff. Assists students toward college success through information regarding effective study habits, career and academic planning and other college

resources available to students. May include English and placement testing. Strongly recommended for beginning students. Required for graduation. Lecture 1 hour per week.

SDV 101 - Orientation to Education/Teaching (1 cr)

Introduces students to skills which are necessary to achieve their academic goals, to services offered at the college and to the discipline in which they are enrolled. Covers topics such as services at the college including the learning resources center (library); counseling, and advising; listening, test taking, and study skills; and topical areas which are applicable to their particular discipline. Lecture 1 hour per week. Readiness to enroll in ENG 111.

SDV 101 - Orientation to the Arts (2 cr)

Introduces students to skills necessary to achieve academic goals; become aware of services offered at the College; and to be successful in arts-related employment. Covers college services; Library and learning resources center; counseling and advising; listening, test taking, and study skills; and topical areas which are applicable to their particular discipline. Includes observation and overview of the arts and includes an introduction to related venues/organizations based on a variety of performing and visual arts. May include guest lecturers and/or field trips. Lecture 2 hours per week.

SDV 101 - Orientation to Practical Nursing (1 cr)

Focuses on assisting the student in self-discovery and developing practical skills to enhance academic success in college. Topics covered in this course include, but are not limited to: time management, critical thinking skills, communication skills, test-taking and study skills, orientation to the practical nursing program, review of the nursing program handbook policies and procedures, and employment opportunities available as a practical nurse.

Welding

WEL 116 - Welding I (Oxyacetylene) (2 cr)

Teaches oxygen acetylene welding and cutting including safety of equipment, welding, brazing and soldering procedures and cutting procedures. Lecture 1 hour per week; laboratory 3 hours per week. (for Business Interests as requested)

WEL 123 - Shielded Metal Arc Welding (Basic) (3 cr)

Teaches operation of AC and DC power sources, welding polarities, heats and electrodes for use in joining various metal alloys by the arc welding process. Deals with running beads, butt, and fillet welds in all positions. Emphasizes safety procedures. Lecture 2 hours per week; laboratory 3 hours per week.

WEL 124 - Shielded Metal Arc Welding (Advanced) (3-4 cr)

Continues instruction on operation of AC and DC power sources, welding polarities, heats and electrodes for use in joining various metal alloys by the arc welding process. Deals with running beads, butt, and fillet welds in all positions. Emphasizes safety procedures.

Prerequisite: WEL 123 or instructor approval. Lecture 2 hours per week; laboratory 6 hours per week. Total 8 hours per week.

WEL 125 - Shielded Metal Arc Welding Capstone (1-2 cr)

Continuation of Shielded Metal Arc Welding (SMAW) instruction with emphasis on taking the American Welding Society's all position SMAW qualification test and continued instruction in carbon arc gouging. Lecture 0-1 hour. Laboratory 3 hours. Total 3-4 hours per week. Prerequisite: WEL 123, Corequisite: WEL 124

WEL 126 - Pipe Welding I (3 cr)

Teaches metal arc welding processes, including the welding of pressure piping in the horizontal, vertical and horizontal-fixed positions in accordance with Section IX of the ASME Code. Co-requisite: WEL 124. Lecture 2 hours per week; laboratory 3 hours per week.

WEL 127 - Pipe Welding II (3 cr)

Provides practice in the welding of pressure piping in the horizontal, vertical and fixed positions. Prerequisite: WEL 126. Laboratory 9 hours per week. Independent Study Only: (for Business Interests as requested)

WEL 130 - Inert Gas Welding I (3 cr)

Introduces practical operation in use of inert-gas-shield arc welding and equipment, operations in safety practices in various positions, shielding gases, filler rods, process variations and their applications. Discusses manual, semiautomatic and automatic welding. Lecture 2 hours per week; laboratory 3 hours per week.

WEL 138 - Pipe and Tube Welding (2 cr)

Develops entry level skills for the inert gas tungsten welding process (TIG) with emphasis upon thin and thick wall carbon and stainless piping and tubing. Prerequisite: Instructor Permission. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 141-142 - Welder Qualification Tests I-II (3 cr) (3 cr)

Studies techniques and practices of testing welded joints through destructive and nondestructive tests, guiding, discoloration heat test, porous examinations, tensile, hammer and free bend tests. Also studies visual, magnetic and fluorescent tests. Lecture 2 hours per week; laboratory 3 hours per week. Independent Study Only: (for Independent Study at Student Request or for Business Interests as requested)

WEL 145 - Welding Metallurgy (3-4 cr)

Studies steel classifications, heat treatment procedures, properties of ferrous and nonferrous metals. Discusses techniques and practices of testing welded joints and destructive/nondestructive, visual magnetic and fluorescent testing. Lecture 2-3 hours per week. Laboratory 1-2 hours. Total 3-5 hours per week.

WEL 175 - Semi-Automatic Processes (3-4 cr)

Introduces Semi-Automatic Processes performed with Carbon Steel and Aluminum. Emphasizes practical applications in field techniques. Includes the study of filler wires, fluxes and cover gasses. Lecture 1-2 hours, lab 3-6 hours. Total 4-8 hours per week.

WEL 190 - Co-ordinated Internship (1-5 cr)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours. 1-5 credits.

WEL 195- Topics in GTAW II (2 cr)

Continues training in the practical operation in use of gas tungsten arc welding and safety practices in various positions, shielding gases, filler rods, process variations and their applications. Emphasizes open root welding on all position plate and pipe. 1 hour lecture 3 hours lab.

WEL 250 - Welding Quality Control & Inspection (3 cr)

Teaches techniques and practices of inspection, and interpretation of tests and measurements. Includes weld chemistry, destructive testing and nondestructive examination. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. (for Business Interests as requested)

WEL 290 - Coordinated Internship (1-5 cr)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

WEL 297 - Cooperative Education in Welding (3 cr)

Supervises in on-the-job training for pay in approved business, industrial and service firms, coordinated by the college's cooperative education office. Is applicable to all occupational-technical curricula at the discretion of the college. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) 90,190, 290 - (1-5 cr)

Coordinated Practice or Internship in (Insert Appropriate Discipline)

Includes supervised practice or on-the-job training in selected curriculums coordinated by the College. Credit/practice ratio maximum 1:5 hours. May be repeated for credit. Variable hours. (Insert Appropriate Prefix) 95, 195, 295 (1-5 cr) Topics in (Insert Appropriate Topic) Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the College. Credit/ work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) 97, 197, 297 (1-5 cr)

Cooperative Education in (Insert Appropriate Discipline)

Supervises an on-the-job training for pay in approved business, industrial or service firm coordinated by the College's Cooperative Education office. Is applicable to all occupational-technical curricula at the discretion of the College. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) 98, 198, 298 (1-5 cr)

Seminar and Project in (Insert Appropriate Discipline)

Requires completion of a project or research report related to the student's occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) 99, 199, 299 (1-5 cr)

Supervised Study in (Insert Appropriate Discipline)

Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.