



Description of Courses

My Success Starts Here!

Accounting**ACC 211 Principles of Accounting I (4 Cr)**

Presents accounting principles/application to various businesses. Covers the accounting cycle, income determination, and financial reporting. Lecture 4 hours per week. Basic math competence and college reading competence required. *Basic math competence and college reading competence required.*

ACC 212 Principles of Accounting II (4 Cr)

Emphasizes partnerships, corporations and the study of financial analysis. Includes and introduces cost/managerial accounting concepts. Lecture 4 hours per week. *Basic math competence and college reading competence required.*

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. *Basic math competence and college reading competence required.*

ACC 221 Intermediate Accounting I (3-4 Cr)

Covers accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities and investments. Introduces various accounting approaches and demonstrates the effect of these approaches on the financial statement users. Prerequisite ACC 212 or equivalent. Lecture 3-4 hours per week. *Basic math competence and college reading competence required.*

ACC 222 Intermediate Accounting II (3-4 Cr)

Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. Prerequisite ACC 221 or equivalent. Lecture 3-4 hours per week. *Basic math competence and college reading competence required.*

ACC 241 Auditing I (3 Cr)

Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence-gathering techniques and other topics. Pre-

requisite or co-requisite ACC 212 or equivalent. Lecture 3 hours per week. *Basic math competence and college reading competence required.*

ACC 261 Principles of Federal Taxation I (3 Cr)

Presents the study of federal taxation as it relates to individuals and other tax entities. Includes tax planning, compliance and reporting. Lecture 3 hours per week. *Basic math competence and college reading competence required.*

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, rehabilitation methods and current trends. Lecture 3 hours per week.

ADJ 106 Crime and Justice in America (3 Cr)

Examines current issues and trends of crime and responses (attitudes, behaviors, structures--both private and public) to crime. Lecture 3 hours per week.

ADJ 111 Law Enforcement Organization and Administration I (3 Cr)

Teaches the principles of organization and administration of law enforcement agencies. Studies the management of line operations, staff and auxiliary services, investigative and juvenile units. Introduces the concept of data processing; examines policies, procedures, rules, and regulations pertaining to crime prevention. Surveys concepts of protection of life and property, detection of offenses, and apprehension of offenders. Prerequisite for ADJ 112, divisional approval or ADJ 111. Lecture 3 hours per week.

ADJ 115 Patrol Procedures (3 Cr)

Describes, instructs and evaluates street-level procedures commonly employed by patrol officers in everyday law enforcement operations. Lecture 3 hours per week.

ADJ 118 Crisis Intervention and Critical Issues (3 Cr)

Addresses basic problems involved in crisis intervention and current critical issues in law enforcement and the administration of justice; emphasizes practical approaches to discover and implement solutions. Lecture 3 hours per week.

ADJ 120 Introduction to Courts (3 Cr)

Teaches the principles of organization and administration of law enforcement agencies. Studies the management of line operations, staff and auxiliary services, investigative and juvenile units. Introduces the concept of data processing; examines policies, procedures, rules, and regulations pertaining to crime prevention. Surveys concepts of protection of life and property, detection of offenses, and apprehension of offenders. Prerequisite for ADJ 112, divisional approval or ADJ 111. Lecture 3 hours per week.

ADJ 127 Firearms and Marksmanship (3 Cr)

Surveys lethal weapons in current use and current views on weapon types and ammunition design. Examines the legal guidelines as to use of deadly force, safety in handling of weaponry, and weapon care and cleaning; marksmanship instruction under standard range conditions. Prerequisite permission of instructor. Lecture 2 hours. Laboratory 3 hours. Total 5 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 133 Ethics and the Criminal Justice Professional (3 Cr)

Examines ethical dilemmas pertaining to the criminal justice system, including those in policing, courts and corrections. Focuses on some of the specific ethical choices that must be made by the criminal justice professional. Lecture 3 hours per week.

ADJ 138 Defensive Tactics (2 Cr)

Surveys and demonstrates the various types of non-lethal force tools and tactics for use by crimi-

nal justice personnel in self-defense, arrest, search, restraint and transport of those in custody. Lecture 2 hours per week.

ADJ 139 Private Detectives/Investigators (3-5 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. Lecture 3-5 hours per week.

ADJ 140 Introduction to Corrections (3 Cr)

Focuses on societal responses to the offender. Traces the evolution of practices based on philosophies of retribution, deterrence, and rehabilitation. Reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system. Lecture 3 hours per week.

ADJ 145 Corrections and the Community (3 Cr)

Studies and evaluates the relationships and interactions between correctional organizations and free society. Focuses on the shared responsibility of the community and correction agencies to develop effective programs for management and treatment of criminal offenders. Lecture 3 hours per week.

ADJ 152 Unarmed Security Officers - 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. Lecture 1 hour per week.

ADJ 171-172 Forensic Science I-II (4 Cr) (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 hours. Laboratory 3 hours. Total 6 hours per week.

ADJ 186 Forensic Psychology (3 Cr)

Introduces student to the constructs of criminal psychology. Introduces the student to the exploration of criminal investigative analysis, VI-CAP, mental disorders and the etiology of certain criminal behaviors. Lecture 3 hours per week.

ADJ 201-202 Criminology I-II (3 Cr) (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. Lecture 3 hours per week. *College reading and writing competence required.*

ADJ 205 Causes of Crime and Delinquency (3 Cr)
Teaches the principal causes, conditions, motives, and other influences which tend to encourage young persons or adults to become involved in illegal acts or criminal careers, crime, and delinquency rates. Adult and juvenile justice systems will also be compared and studied. Lecture 3 hours. Total 3 hours per week. *College reading and writing competence required.*

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 American court systems with focus on the Virginia jurisdiction. Lecture 3 hours per week. *College reading and writing competence required.*

ADJ 225 Courts and the Administration of Justice (3 Cr)
Studies court systems with emphasis on the technical procedures required, from incident occurrence to final disposition of the case, noting the applicable principles of civil and criminal law; focuses on Virginia courts, laws, and procedures. Prerequisite ADJ 130 or divisional approval. Lecture 3 hours per week. *College reading and writing competence required.*

ADJ 227 Constitutional Law for Justice Personnel (3 Cr)
Surveys the basic guarantees of liberty described in the U. S. Constitution and the historical development of these restrictions on government power, primarily through U. S. Supreme Court decisions. Reviews rights of free speech, press, assembly, as well as criminal procedure guarantees (to counsel, jury trial, habeas corpus, etc.) as they apply to the activities of those in the criminal justice system. Lecture 3 hours per week. *College reading and writing competence required.*

228 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. Lecture 3 hours per week.

ADJ 229 Law Enforcement and the Community (3 Cr)
Considers current efforts by law enforcement personnel to achieve an effective working relationship with the community. Surveys and analyzes various interactive approaches of law enforcement agencies and the citizenry they serve. Lecture 3 hours per week. *College reading and writing competence required.*

ADJ 234 Terrorism and Counter-Terrorism(3 Cr)
Surveys the historical and current practices of terrorism that are national, transnational, or domestic in origin. Includes biological, chemical, nuclear, and cyber-terrorism. Teaches the identification and classification of terrorist organizations, violent political groups and issue-oriented militant movements. Examines investigative methods and procedures utilized in counter terrorist efforts domestically and internationally. Prerequisites: ADJ 100 and ADJ 107. Lecture 3 hours per week. *College reading and writing competence required.*

ADJ 235 Research in the Justice System (3 Cr)
Presents research methodology—including the development of research questions, quantification techniques, collection procedures, analysis tools, and the means of establishing relationships between theory, policy, and practice. Lecture 3 hours per week. *College reading and writing competence required.*

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. Lecture 3 hours per week. *College reading and writing competence required.*

ADJ 237 Advanced Criminal Investigation (3 Cr)
Introduces specialized tools and scientific aids used in criminal investigation. Applies investigative techniques to specific situations and preparation of

trial evidence. Prerequisite ADJ 236 or divisional approval. Lecture 3 hours per week.

ADJ 247 Criminal Behavior (3 Cr)

Introduces and evaluates the concepts of normal and abnormal behavior. Focused on the psychological and sociological aspects of criminal and other deviant behavior patterns. Lecture 3 hours per week. *College reading and writing competence required.*

ADJ 248 Probation, Parole, and Treatment (3 Cr)

Surveys the philosophy, history, organization, personnel and functioning of traditional and innovative probation and parole programs; considers major treatment models for clients. Lecture 3 hours per week. *College reading and writing competence required.*

American Sign Language

ASL 100 Orientation to Acquisition of ASL as an Adult (2 cr)

Presents a brief introduction to the U.S. Deaf Community, focusing on the differences in language and literature. Introduces many common pitfalls experienced by adults when acquiring ASL as a second language. Provides students with an experience bridging spoken English and ASL via use of visual-gestural, non-verbal communication. Lecture 2 hours per week.

ASL 101-102 American Sign Language I-II (3-4 cr) (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. Lecture 3-4 hours. Laboratory 0-2 hours. Total 3-5 hours per week.

ASL 103-104 Applications in ASL I-II (1 cr) (1 cr)

Focuses on expanding and improving comprehension and production of ASL necessary for effective communication and success in ASL coursework. Laboratory 2 hours per week.

ASL 115 Fingerspelling and Number Use in ASL (2 cr)

Provides intensive practice in comprehension and

production of fingerspelled words and numbers with emphasis on clarity and accuracy. Focuses on lexicalized fingerspelling and numeral incorporation as used by native users of American Sign Language. Prerequisite ASL 101 or permission of instructor. Lecture 2 hours per week.

ASL 126 History & Culture of the Deaf Community I (3 cr)

Presents an overview of various aspects of Deaf Culture, including educational and legal issues. Lecture 3 hours per week.

Air Conditioning, Heating, and Refrigeration

AIR 121 Air Conditioning and Refrigeration I (3 Cr)

Studies refrigeration theory, tools, and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Provides laboratory application of refrigerators and freezers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 122 Air Conditioning and Refrigeration II (3 Cr)

Presents operations of commercial refrigeration systems, ice machines, design, installation, and service, air conditioning and heat pumps. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 123-124 Air Conditioning and Refrigeration III-IV (3-4 Cr) (3-4 Cr)

Psychometric properties of air, heat load and gain calculation, heated and chilled water systems, duct, design, air distribution, and air comfort requirements. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 134 Circuits and Controls I (4 Cr)

Presents circuit diagrams for heating units, reading and drawing of circuit diagrams, types of electrical components, analysis and characteristics of circuits and controls, testing and servicing. Lecture 3 hours, Laboratory 3 hours. Total 6 hours per week.

AIR 135 Circuits and Controls II (3-4 Cr)

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 systems. Prerequisite AIR 134. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 136 Circuits and Controls III (5 Cr)
Introduces types of circuits and controls used in home, commercial and industrial air conditioning systems. Includes servicing and installation procedures for electrical regulation of fan speed for air volume control. Explains operational and safety control and how schematic and pictorial diagrams are used in these systems. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

AIR 154 Heating Systems I (3 Cr)
Introduces types of fuels and their characteristics of combustion; types, components, and characteristics of burners, and burner efficiency analyzers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 155 Heating Systems II (3 Cr)
Studies commercial gas and oil boilers to include troubleshooting, preventive maintenance and servicing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 181 Planning and Estimating I (2-3 Cr)
Presents fundamentals of blueprint reading as applied to the building trades. Emphasizes air conditioning distribution, designing and drawing residential systems, take-off of materials and estimating the cost of the systems. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

AIR 200 Hydronics (3 Cr)
Presents design and installation of hydronics systems for heating and cooling. Includes steam heated and chilled water systems. Primarily concerns systems using water under forced circulation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Architecture

ARC 121 Architectural Drafting I (3 Cr)
Introduces techniques of architectural drafting, including lettering, dimensioning, and symbols. Requires production of plans, sections, and elevations of simple building. Studies use of common reference material and the organization of architectural working drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 122 Architectural Drafting II (3 Cr)
A continuation of Architectural Drafting I. Requires development of a limited set of working drawings, including a site plan and related details, and pictorial drawings. Prerequisite ARC 121 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Art

ART 101-102 History and Appreciation of Art I-II (3 Cr) (3 Cr)
Presents the history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of western civilization to the present. Lecture 3 hours per week. *College reading and writing competence required.*

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. Variable hours per week.

ART 125 Introduction to Painting (3 Cr)
Introduces study of color, composition and painting techniques. Places emphasis on experimentation and enjoyment of oil and/or acrylic paints and the fundamentals of tools and materials. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

ART 153-154 Ceramics I-II (3-4Cr)(3-4Cr)
Presents problems in the design and production of functional and non-functional ceramic works. Includes hand-building the potter's wheel and clays and glazes. Lecture 0-2 hours. Studio instruction 4-6 hours. Total 5-8 hours per week.

ART 241-242 Painting I-II (3-4 Cr)(3-4 Cr)
Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Prerequisites ART 122 or divisional approval. Lecture 1-2 hours. Studio instruction 4 hours. Total 5-6 hours per week.

Administrative Support Technology

AST 101 Keyboarding I (3-4 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. Lecture 3-4 hours per week. *College reading or enrollment in Eng 05 required.*

AST 102 Keyboarding II (3-4 Cr)

Develops keyboarding and document production skills with emphasis on preparation of specialized business documents. Continues skill-building for speed and accuracy. Prerequisite AST 101. Lecture 3-4 hours per week. *College reading or enrollment in Eng 05 is required.*

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. Lecture 3 hours per week. *College reading and writing competence required.*

AST 114 Keyboarding for Information Processing (1-2 Cr)

Teaches the alphabetic and numeric keys: develops correct techniques and competency in the use of computer keyboards. May include basic correspondence and report formats. Lecture 1-2 hours per week. *College reading or enrollment in ENG 05 is required.*

AST 120 Shorthand II (3-4 Cr)

Develops speed in typical business dictation, with emphasis on transcription accuracy from shorthand notes. Prerequisite AST 119 or equivalent. Lecture 3-4 hours per week. *College reading competence required.*

AST 130 Office Procedures (3 Cr)

Introduces general functions and duties performed in the office. Prerequisite AST 101. Lecture 3 hours per week. *College reading competence required.*

AST 132 Word Processing I (Specify Software) (1 Cr)

Introduces students to a word processing program to create, edit, save and print documents. Lecture 1 hour per week. *College reading competence required.*

AST 141 Word Processing I (3-4 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 equivalent. Lecture 3-4 hours per week. *College reading and writing competence required.*

AST 144 Word Processing I Laboratory (Specify Software) (1 Cr)

Provides supplemental instruction in AST 141. Should be taken concurrently with AST 141, in appropriate curricula, as identified by the college. Laboratory 2 hours per week.

AST 147 Introduction to Presentation Software (Specify Software) (1-2 Cr)

Introduces presentation options including slides, transparencies, and other forms of presentations. Lecture 1-2 hours per week.

AST 150 Desktop Publishing I (Specify Software) (1 Cr)

Presents desktop publishing features including page layout and design, font selection, and use of graphic images. Lecture 1 hour per week.

AST 206 Professional Development (3 Cr)

Develops professional awareness of handling business and social situations. Emphasizes goal setting, critical thinking, decision-making, and employment skills. Lecture 3 hours per week. *College reading competence required.*

AST 234 Records and Database Management (3-4 Cr)

Teaches filing and records management procedures using microcomputer database software. Incorporates both manual and electronic methods for managing information. Lecture 3-4 hours per week. *College reading competence required.*

AST 236 Specialized Software Applications (Specify Software) (2-4 Cr)

Teaches specialized integrated software application on the microcomputer. Emphasizes document production to meet business and industry standards. Prerequisite AST 101 or equivalent. A laboratory co-requisite (AST 237) may be required. Lecture 2-4 hours per week. Competency in Microsoft Word required.

AST 238 Word Processing Advanced Operations (2-4 Cr)

Teaches advanced word processing features includ-

ing working with merge files, macros, and graphics; develops competence in the production of complex documents. A laboratory co-requisite (AST 239) may be required. Lecture 2-4 hours per week.

AST 240 Machine Transcription (2-4 Cr)

Develops proficiency in the use of transcribing equipment to produce business documents. Emphasizes listening techniques, business English, and proper formatting. Includes production rates and mailable copy requirements. A laboratory co-requisite (AST 241) may be required. Co-requisite AST 102 or equivalent.

AST 243 Office Administration I (3 Cr)

Develops an understanding of the administrative support role and the skills necessary to provide organizational 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. College reading and Microsoft Word competency required.

AST 244 Office Administration II (3 Cr)

Enhances skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes administrative and supervisory role of the office professional. Includes travel and meeting planning, office budgeting and financial procedures, international issues, and career development. Prerequisite AST 243 or equivalent. Lecture 3 hours per week. College reading competence required.

AST 245 Medical Machine Transcription (2-4 cr)

Develops machine transcription skills, integrating operation of transcribing equipment with understanding of medical terminology. Emphasizes dictation techniques and accurate transcription of medical documents in prescribed formats. Prerequisite AST 102 or equivalent. A laboratory co-requisite (AST 246) may be required. Lecture 2-4 hours per week. *College reading and writing competency required.*

AST 253 Advanced Desktop Publishing I (3-4 Cr)

Introduces specific desktop publishing software. Teaches document layout and design, fonts, type

styles, style sheets, and graphics. Prerequisite AST 101 or equivalent and experience in using a word processing package. Lecture 3-4 hours per week. *College reading and writing competence required.*

AST 271 Medical Office Procedures I (3 cr)

Covers medical office procedures, records management, preparation of medical reports, and other medical documents. Co-requisite AST 102 or equivalent. Lecture 3 hours per week. *College reading and writing competency required.*

Automotive

AUT 101-102 Introduction to Automotive Systems I-II (3-4 Cr)

Introduces fundamental systems of automobile, the engine fuel, exhaust, electric, lubrication, cooling, transmission, steering, brake, and suspension system. Teaches theory and function of each system. Demonstrates operation. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

AUT 111-112 Automotive Engines I-II (3-4 Cr)

Presents analysis of power, cylinder condition, valves, and bearings in the automotive engine to establish the present condition, repairs or adjustments. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

AUT 121 Automotive Fuel Systems I (3-4 Cr)

Analyzes major domestic and foreign automotive fuel systems to include carburetors and fuel injection systems. Includes detailed inspection and discussion of fuel tanks, connecting lines, instruments, filters, fuel pumps, superchargers, and turbo charger. Also includes complete diagnosis, troubleshooting, overhaul and factory adjustment procedures of all major carbureted and fuel injection systems. Lecture 3 hours. Laboratory 0-3 hours. Total 3-6 hours per week.

AUT 125 Anti-Pollution Systems (3 Cr)

Studies various anti-pollution systems used on modern automobiles, installation, inspection, repair, and service. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 136 Automotive Vehicle Inspection (2 Cr)

Presents information on methods for performing automotive vehicle safety inspection. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

AUT 141-142 Auto Power Trains I-II
(3-4 CR)(3-4 CR)

Presents operation, design, construction and repair of power train components, standard and automatic transmission. Includes clutches, propeller shaft, universal joints, rear axle assemblies, fluid couplings, torque converters as well as 2, 3, and 4 speed standard, overdrive and automatic transmissions. Lecture 2-3 hours. Laboratory 2-6 hours. Total 4-8 hours per week.

AUT 217 Computerized Fuel Systems (3 Cr)

Introduces devices which sense the engine condition and control fuel mixture to introduce economical fuel consumption. Teaches theory of operation, testing adjustment and repair or replacement of these devices. Lecture 1-2 hours, Laboratory 3-6 hours. Total 5-7 hours per week.

AUT 235 Automotive Heating and Air Conditioning (3 Cr)

Studies separate and combined automotive heaters and air conditioners, including direct and vacuum-operated controls, basic principles of refrigeration, adjustment, general servicing, and charging of air conditioning systems. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 241 Automotive Electricity I (3-4 Cr)

Introduces electricity and magnetism, symbols and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments and gauges. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

AUT 245 Automotive Electronics (3-4 Cr)

Introduces field of electronics as it applies to the modern automobile. Emphasizes basic circuit operation, diagnosis and repair of digital indicator and warning systems. Lecture 3 hours. Laboratory 0-3 hours. Total 3-6 hours per week.

AUT 251 Automatic Transmissions I (3-4 Cr)

Studies several types of automatic transmissions, torque converters, and their principles of operation. Includes adjustment, maintenance, and rebuilding. Lecture 2-3 hours. Laboratory 2-6 hours. Total 4-8 hours per week.

AUT 267 Automotive Suspension and Braking Systems (3-4 Cr)

Presents the operation, design, construction, repair, and servicing of braking and suspension

systems. Explains use of tools and test equipment, evaluation of test results, estimation of repair cost, front and rear suspension alignment, power and standard steering, and power, standard and disc brakes. Lecture 2-3 hours. Laboratory 2-3 hours. Total 4-6 hours per week.

AUT 268 Automotive Alignment (2 Cr)

Studies use of alignment equipment in diagnosing, adjusting, and repairing suspension problems. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

AUT 273 Automotive Driveability and Tune-Up I (3 Cr)

Presents diagnostic and service procedures for automatic electrical and mechanical systems. Teaches use of tools and test equipment, evaluation of test results, estimation of repair cost. Emphasizes performance of required service. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Biology

BIO 01 Foundations of Biology (3-4 Cr)

Develops a basic understanding of plant and animal form, function, and relationships. Prepares students who have a deficiency in high school biology. May be repeated for credit. Variable hours per week.

BIO 100 Basic Human Biology (3 cr)

Presents basic principles of human anatomy and physiology. Discusses cells, tissues, and selected human systems. Lecture 3 hours per week. College reading competence required. *Course prerequisites:* ENG 05, BIO 01.

BIO 101-102 General Biology I-II (4 Cr) (4 Cr)

Explores fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms, their structure, function and evolution. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week. Basic math competence and college reading and writing competence required. *Course prerequisites:* ENG 03, ENG 05, MTH 02, MTH 03.

BIO 110 General Botany (4 Cr)

Emphasizes plant life cycles, anatomy, morphology, taxonomy, and evolution. Considers the principles of genetics, ecology, and physiology. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6

hours per week. Basic math competence and college reading and writing competence required. *Course prerequisites: ENG 03, ENG 05, MTH 02, MTH 03.*

BIO 120 General Zoology (4 Cr)
Presents basic biological principles, and emphasizes structure, physiology and evolutionary relationships of invertebrates and vertebrates. Lecture 3 hours, Recitation and laboratory 3 hours. Total 6 hours per week. Basic math competence and college reading and writing competence required. *Course prerequisites: ENG 03, ENG 05, MTH 02, MTH 03.*

BIO 145 Human Anatomy and Physiology for the Health Sciences (5 Cr)
Introduces human anatomy and physiology primarily to those planning to pursue an AAS degree in nursing. Covers basic chemical concepts, cellular physiology, as well as the anatomy and physiology of human organ systems. Lecture 4 hours. Laboratory 3 hours. Total 7 hours per week. *Algebra I, Biology 100, Developmental Chemistry, Foundations of Biology and college reading and writing competence required. Course prerequisites: ENG 03, ENG 05, MTH 03, CHM 05, BIO 01.*

BIO 150 Introductory Microbiology (4 Cr)
Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week. *College reading competence and 1 semester college biology required.*

BIO 180 Introduction to Careers in Biotechnology (2 cr)
Exposes the student to the field of biotechnology including skills, opportunities, and employment opportunities. Introduces the requirements to complete training and facilitates the student's need in the construction of a student plan and educational goal. Lecture 1-2 hours per week. *College reading and writing competency required.*

BIO 231-232 Human Anatomy and Physiology I-II (4 Cr) (4 Cr)
Integrates the study of gross and microscopic anatomy with physiology, emphasizing the analysis and interpretation of physiological data. Prerequisites one year of college biology and one year of

college chemistry or divisional approval. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week. Basic Arithmetic, Algebra I, Developmental Chemistry, Foundations of Biology and college reading and writing competence required. *Course prerequisites: ENG 03, ENG 05, MTH 02, MTH 03.*

BIO 251 Biotechnology I: Protein Research (4 cr)
Introduces the student to the fundamental molecular knowledge and basic laboratory skills needed to work with proteins proficiently. Includes lab safety, scientific measurements, notebook keeping, proper laboratory techniques, and data analysis. Covers specialized techniques to utilize equipment applicable to protein research. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. *Basic Arithmetic, Algebra I, Developmental Chemistry, Foundations of Biology and college reading and writing competence is required.*

BIO 252 Biotechnology II: DNA Research (4 cr)
Builds on skills learned in BIO 251. Emphasizes lab safety, record keeping, lab math and measurement, and basic lab skills. Learns basic techniques of DNA manipulation and cloning. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. *Basic Arithmetic, Algebra I, Developmental Chemistry, Foundations of Biology and college reading and writing competence is required.*

Building

BLD 105 Shop Practices and Procedures (2-3 Cr)
Introduces basic hand and power tools with emphasis on proper care and safety practices. Introduces materials used in building trades including metals, plastics, and woods with stress placed on the processing techniques of each. Emphasizes fasteners such as screws, rivets, and glues as well as brazed, soldered, and welded joints. Lecture 1-2 hours. Laboratory 2-3 hours. Total 3-5 hours per week.

Business Management and Administration

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, finance, marketing, production, and risk and human resource management. Lecture 3 hours per week. *College reading competence required.*

BUS 111 Principles of Supervision I (3 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 hours per week. *College reading competence required.*

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. *College reading competence required.*

BUS 117 Human Relations and Leadership Development (3 Cr)
Examines the dynamics of teamwork, motivation, handling change and conflict and how to achieve positive results through others. Lecture 3 hours per week. *College reading competence required.*

BUS 125 Applied Business Mathematics (3 Cr)
Applies mathematical operations to business process and problems such as wages and payroll, sales and property taxes, checkbook records and bank reconciliation, depreciation, overhead, distribution of profit and loss in partnerships, distribution of corporate dividends, commercial discounts, markup, markdown, simple interest, present values, bank discount notes, multiple payment plans, compound interest annuities, sinking funds, and amortization. Lecture 3 hours per week. *College reading competence required.*

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. *College reading and writing competence required.*

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 the human resources through understanding human motivation and behavior patterns, conflict management and resolution, group functioning and process, the psychology of decision-making, and the importance of recognizing and managing change. Lecture 3 hours per week. *College reading and writing competence required.*

BUS 205 Human Resource Management (3 Cr)
Introduces employment, selection, and placement of personnel, usage levels and methods, job descriptions, training methods and programs, and employee evaluation systems. Includes procedures for management of human resources and uses case studies and problems to demonstrate implementation of these techniques. Lecture 3 hours per week. *College reading and writing competence required.*

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. *College reading and writing competence required.*

BUS 241 Business Law I (3 Cr)
Presents a broad introduction to legal environment of U. S. business. Develops a basic understanding of contract law and agency and government regulation. Lecture 3 hours per week. *College reading and writing competence required.*

BUS 242 Business Law II (3 Cr)
Develops a basic understanding of the uniform commercial code relating to business organization bankruptcy, and personal and real property. Prerequisite BUS 241 or divisional approval. Lecture 3 hours per week. *College reading and writing competence required.*

BUS 265 Ethical Issues in Management (3 Cr)
Examines the legal, ethical, and social responsibilities of management. May use cases to develop the ability to think and act responsibly. Lecture 3 hours per week. *College reading and writing competence required.*

BUS 280 Introduction to International Business (3 Cr)

Studies the problems, challenges, and opportunities which arise when business operations or organizations transcend national boundaries. Examines the functions of international business in the economy, international and transnational marketing, production, and financial operations. Lecture 3 hours per week. *College reading and writing competence required.*

BUS 285 Current Issues in Management (3 Cr)

Designed as a capstone course for management majors, the course is designed to provide an integrated perspective of the current issues and trends in business management. Contemporary issues will be explored in a highly participatory class environment. Lecture 3 hours per week. *College reading and writing competence required.*

BUS 298 Seminar and Project (3 Cr)

Capstone course designed to integrate and to connect all competencies covered in the Business Management curriculum. In addition, the course will provide job-search techniques that will enable the student to find the most suitable job for his or her special talents and skills. The course provides guidelines for preparing effective resumes, writing appropriate letters, filling out job application forms, and for presenting yourself in the most confident and professional manner at the interview. Lecture 3 hours per week. *College reading and writing competence required.*

Childhood Development

CHD 82 Early Childhood Development Overview (3 Cr)

Develops beginning skills for students to work in a variety of child care programs, including home and center-based. Examines the provider's role in supporting children's growth and development, in working with multi-age groups, special need children, and their families. Lecture 3 hours per week.

CHD 84 Activities, Routines, and Settings (3 Cr)

Prepares the student to plan and implement activities, routines, and settings for children of various age groups and differing ability levels. Lecture 3 hours per week.

CHD 86 Promoting Positive Behavior (3 Cr)

Introduces factors related to social, cognitive,

physical, and emotional development of children. Develops practical skills and techniques for promoting positive behavior in children. Lecture 3 hours per week.

CHD 89 Child Health and Safety Essentials (3 Cr)

Focuses on the skills and techniques necessary for providing an environment that is healthy and safe for children of various ages and abilities. Lecture 3 hours per week.

CHD 117 Introduction to Reading Methods (3 Cr)

Introduces current practices of teaching reading in the elementary school. Familiarizes students with materials currently in use, emphasizes observation of various reading techniques and trends in the classroom. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 118 Methods and Materials in the Language Arts for Children (3 Cr)

Presents techniques and methods for encouraging the development of language and perceptual skills in young children. Stresses improvement of vocabulary, speech and methods to stimulate discussion. Surveys children's literature, examines elements of quality storytelling and story reading, and stresses the use of audio-visual materials. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. *College reading competence required.*

CHD 120 Introduction to Early Childhood Education (3 Cr)

Introduces early childhood development through activities and experiences in nursery, pre-kindergarten, kindergarten, and primary programs. Investigates classroom organization and procedures, and use of classroom time and materials, approaches to education for young children, professionalism, and curricular procedures. Lecture 3 hours per week. *College reading competence required.*

CHD 125 Creative Activities for Children (3 Cr)

Prepares individuals to work with young children in the arts and other creative age-appropriate activities. Investigates affective classroom experiences and open-ended activities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. *College reading competence required.*

CHD 126 Science & Math Concepts for Children (3 Cr)

Covers the selection of appropriate developmental

learning materials for developing activities to stimulate the logical thinking skills in children. Lecture 2-3 hours. Laboratory 0-3 hours. Total 3-4 hours per week.

CHD 167 CDA Theories and Applications: Portfolio (1 Cr)

Supports the CDA candidate in organizing and developing a portfolio for presentation at local assessment team meeting. Lecture 1 hour per week. *College reading competence required.*

CHD 205 Guiding the Behavior of Children (3 Cr)

Explores positive ways to build self-esteem in children and help them develop self-control. Presents practical ideas for encouraging pro-social behavior in children and emphasizes basic skills and techniques in classroom management. Lecture 3 hours per week. *College reading competence required.*

Chemistry

CHM 05 Developmental Chemistry for Health Sciences (1-5 Cr)

Introduces basic principles of inorganic, organic, and biological chemistry. Emphasizes applications to the health sciences. Laboratory is optional. Variable hours per week. *Algebra I and College reading competence required.*

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. Laboratory 3 hours. Total 6 hours per week. *Algebra I and college reading competence required.*

CHM 111-112 College Chemistry I-II (4 Cr) (4 Cr)

Explores the fundamental laws, theories, and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Requires a strong background in mathematics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. *Algebra I and college reading competence required.*

CHM 241-242 Organic Chemistry I-II (3 cr) (3 cr)
Introduces fundamental chemistry of carbon compounds, including structures, physical properties,

syntheses, and typical reactions. Emphasizes reaction mechanisms. Corequisite CHM 243-244 or CHM 245-246. 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. Laboratory 3 hours per week.

Cosmetology

COS 81 Cosmetology Theory I (4 Cr)

Covers bacteriology, finger waving, sterilization and sanitation, wet hair styling, draping, shampooing and rinsing, permanent waving, haircutting, and properties of the scalp and hair. Lecture 4 hours per week.

COS 82 Cosmetology Theory II (5 Cr)

Covers hair coloring, theory of massage, the salon business, chemical hair relaxing and soft curl permanent, facial and facial make-up, hair pressing, skin and its disorders, artistry and artificial nails, cells, anatomy and physiology, manicuring and pedicure, electricity and light therapy, nail and its disorders, chemistry and the State Board Review. Prerequisite: COS 81 or permission of the instructor. Lecture 5 hours per week.

Drafting

DRF 135 Electrical/Electronics Blueprint Reading (2 Cr)

Presents an interpretation of basic shop drawings, conventional symbols, terminology, and principles used by the mechanical draftsman. Explains common electrical and electronic symbols, wiring diagrams, schematic drawing, and application of wiring diagrams, schematic drawings, and application of wiring diagrams. Lecture 2 hours per week.

DRF 151-152 Engineering Drawing Fundamentals I-II (3 Cr) (3 Cr)

Introduces technical drafting from the fundamentals through advanced drafting practices. Includes lettering, geometric construction, technical sketching, orthographic projection, sections, intersections, development, fasteners. Teaches theory and application of dimensioning and tolerances, pictorial drawing, and preparation of drawings. Lecture 1 hour. Laboratory 4-6 hours. Total 5-7 hours per week. *College reading competence required.*

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. Total 4-6 hours per week.

DRF 211 Advanced Technical Drafting I (3 Cr)

Teaches use of drafting equipment, with possible CAD applications, emphasizing knowledge and skill required for industrial drawing. May include piping, gearing, geometric and positional tolerances, drawing layout and lettering of all types. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. *College reading competence required.*

DRF 212 Advanced Technical Drafting II (3 Cr)

Teaches concepts of sheet metal fabrication including radii, fillets and tolerances, electrical and electronics symbols and drawing, and advanced design drafting techniques. Prerequisite DRF 211. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. *College reading competence required.*

DRF 225 Machine Drawing and Design (3 Cr)

Teaches design of basic machine elements and the analysis of linear and geometric tolerancing including the preparation of complete design and production drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DRF 231 Computer Aided Drafting I (2-3 Cr)

Teaches computer aided drafting concepts and equipment designed to develop a general understanding of components and operate a typical CAD system. Lecture 1-2 hours. Laboratory 2-3 hours. Total 3-5 hours per week.

DRF 232 Computer Aided Drafting II (2-3 Cr)

Teaches advanced operation in computer aided drafting. Lecture 1-2 hours. Laboratory 2-3 hours. Total 3-5 hours per week.

DRF 233 Computer Aided Drafting III (3 Cr)

Introduces programming skills and exposes student to geometric modeling. Focuses on proficiency in production drawing using a CAD system. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DRF 250 3D Game Level Design (3 Cr)

Introduces 3D game level design and provides students with the knowledge and skills needed to take

a design from concept to implementation in a professional game engine. Focuses on multiple modeling and level design techniques currently used in industry. Exposes students to the most current and popular software available for Game Level Design. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Diesel

DSL 111 Introduction to Diesel Engine (2 Cr)

Studies the modern diesel engine, including its fuel, cooling, induction, and exhaust systems. Covers construction, fabrication, maintenance, tune-up, and minor repair and adjustment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

DSL 123 Diesel Engine Systems I (2 cr)

Studies basic operational theory of the two and four-stroke cycle diesel engine used in public transportation vehicles. Covers the construction and function of the diesel engine and the major components as they relate to air, exhaust, and fuel systems. Emphasizes diesel engine tune-up and troubleshooting theory. Lecture 2 hours per week.

DSL 126 Diesel Engine Reconditioning (6 Cr)

Provides basic knowledge of the construction, design, and application of selected modern diesel engines and their components. Covers induction and exhaust systems, cooling and lubricating systems, and fuel injection and governing systems. Provides opportunity to disassemble, inspect, recondition, reassemble, and test selected engines. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

DSL 131 Diesel Fuel Systems and Tune-Up (4-5 Cr)

Teaches maintenance, adjustment, testing, and general repair of the typical fuel injection components used on non-automotive diesel engines. Includes engine and fuel system tune-up procedures and troubleshooting using current diagnostic equipment. Lecture 2-3 hours. Laboratory 4-6 hours. Total 6-9 hours per week.

DSL 143 Diesel Truck Electrical Systems (4 Cr)

Studies the theory and operation of various truck and tractor electrical systems. Covers preheating, starting, generating, and lighting systems. Uses modern test equipment for measurement, adjustment, and troubleshooting. Lecture 2 hours per week. Laboratory 4 hours. Total 6 hours per week.

DSL 152 Diesel Power Trains, Chassis, and Suspension (4 cr)

Studies the chassis, suspension, steering and brake systems found on medium and heavy-duty diesel trucks. Covers construction features, operating principles and service procedures for such power train components as clutches, multi-speed transmissions, propeller shafts, and rear axles. Teaches operations of modern equipment to correct and adjust abnormalities. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

DSL 160 Air Brake Systems (3 Cr)

Studies the basic operational theory of pneumatic and air brake systems as used in heavy-duty and public transportation vehicles. Covers various air control valves, test system components, and advanced air system schematics. Teaches proper service and preventative maintenance of systems. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL 161 Air Brake Systems I (2 cr)

Studies the basic operational theory of pneumatic and air brake systems used in public transportation vehicles. Covers various air control valves, air and test system components, and advanced air system schematics. Lecture 2 hours per week.

DSL 181-182 Diesel Mechanics I-II (6 Cr) (6 Cr)

Studies basic internal engines, including cylinder blocks, cylinder heads, crankshafts, and pistons. Studies fuel injection systems, fuel pumps, injectors and nozzles, preventive maintenance and troubleshooting. Lecture 4 hours. Laboratory 6 hours. Total 10 hours per week.

DSL 195 Microcomputers for Diesel Technicians (1 cr)

Examines concepts and terminology related to microcomputers. Includes demonstration of specific uses of microcomputers with extensive opportunities for hands-on experience in use of software diagnostic programs. Lecture and lab. 1 hour per week.

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 spend-

ing and taxation, along with international trade and investments. Lecture 3 hours per week. *College reading and writing competence and basic math required.*

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. Lecture 3 hours per week. *College reading and writing competence and basic math required.*

Education**EDU 169 Adult Literacy Training (3 Cr)**

Provides an opportunity for participation in adult basic education and adult literacy settings. Emphasizes planning and implementation of appropriate activities and materials for adults. Students will receive 15 hours of literacy training in addition to 60 clock hours in the field. Prerequisite recommendation of advisor or instructor. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week. *College reading competence required.*

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. Prerequisite: Successful completion of 24 credits of transfer courses. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 211-212 Creative Writing I-II (3 cr) (3Cr)

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 divisional approval. Lecture 3 hours per week.

EDU 235 Health, Safety, and Nutrition Education (3 Cr)

Focuses on the physical needs of children and explores strategies to meet these needs. Emphasizes positive health routines, hygiene, nutrition, feeding

and clothing habits, childhood diseases, and safety. Places emphasis on the development of food habits and concerns in food and nutrition. Describes symptoms and reporting procedures for child abuse. Lecture 3 hours per week.

Engineering

EGR 100 Engineering Technology Orientation

(1 Cr)

Focuses on the roles and responsibilities of the engineering team, professional ethics, problem solving with hand calculator and computer applications. Laboratory 2 hours per week.

EGR 120 Introduction to Engineering

(1-2 Cr)

Introduces the engineering profession, professional concepts, ethics, and responsibility. Reviews hand calculators, number systems, and unit conversions. Introduces the personal computer and operating systems. Includes engineering problem solving techniques using computer software. Lecture 0-2 hours. Laboratory 0-3 hours. Total 1-4 hours per week.

EGR 123 Introduction to Engineering Design

(2 Cr)

Introduces the fundamental knowledge and experience needed to understand the engineering design process through the basics of electrical, computer, and mechanical systems. Includes the completion of a project in which a specific electromechanical robot kit will be analyzed, assembled, and operated. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Electricity

ELE 113-114 Electricity I-II

(3 Cr) (3 Cr)

Teaches principles of electricity covering fundamentals, devices and components in both DC and AC circuits. Lecture 3 hours per week.

ELE 121-122 Electrical Circuits I-II

(3 Cr) (3 Cr)

Studies passive and active components with applications. Includes DC and AC analysis of networks and circuits as applied to fundamental electrical and electronic circuits and systems. Lecture 2 hours. Laboratory 3 hours. Total 4 hours per week.

ELE 127 Residential Wiring Methods

(2-3 Cr)

Studies wiring methods and standards used for res-

idential dwellings. Provides practical experience in design, layout, construction, and testing of residential wiring systems by use of scaled mock-ups. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

ELE 131-132 National Electrical Code I-II

(3-4 Cr) (3-4 Cr)

Provides comprehensive study of the purposes and interpretations of the National Electric Code as well as familiarization and implementation of various charts, code rulings and wiring methods including state and local regulations. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ELE 133-134 Practical Electricity I-II

(3 Cr) (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. May require preparation of a report as an out-of-class activity. 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 159 - Electrical Motors

(3 Cr)

Teaches practical applications and fundamentals of A.C. and D.C. machines. Includes the concepts of magnetism and generators used in electrical motor applications. 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. Lecture 1-2 hour. Laboratory 3 hours. Total 4-5 hours per week.

ELE 211-212 Electrical Machines I-II

(1-5 Cr) (1-5 Cr)

Studies the construction, theory of operations, and

applications of DC and AC machines. Variable hours per week.

ELE 216 Industrial Electricity (3 Cr)
Studies rotating devices, single phase and polyphase distribution, magnetic devices, circuits and systems for industrial applications. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ELE 239 Programmable Controllers (2-3 Cr)
Deals with installation, programming, interfacing, and concepts of troubleshooting programmable controllers. Co/Prerequisite ETR 156 and ELE 211 or equivalent, or permission of instructor. Lecture 1-2 hours. Laboratory 2 hours. Total 3-4 hours per week.

ELE 245 Industrial Wiring (3 Cr)
Teaches the practical applications of industrial and commercial wiring. Includes the principles essential to the understanding of conduit applications and other raceway installations. Includes conduit sizing, cutting, bending, and threading. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMERGENCY MEDICAL SERVICES

EMT 111 Emergency Medical Technician – Basic (6 Cr)
Prepares student for certification as a Virginia and 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. Prerequisite: CPR certification at the Health Care Provider level. Co-requisite: EMS 120. Lecture 4 hours. Laboratory 4 hours. Total 8 hours per week.

EMS 120 Emergency Medical Technology – Basic Clinical (1Cr)
Observes in a program approved clinical/field setting. Includes topics for both EMS 111 and EMS 113, dependant 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, phar-

macology, 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, Clinical and Field Internship. Lecture 3 hours per week. Laboratory 2 hours per week. 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 to 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 per week. Laboratory 2 hours per week. Total 3 hours per week.

EMS 163 Pre-hospital Trauma Life Support (PHTLS) (1 Cr)

Prepares for certification as a Pre-hospital Trauma Life Support provider as defined by the American College of Surgeons. Prerequisites: EMS 111 or equivalent. 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 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 (1Cr)

Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3 hours per week.

EMS 201 EMS Professional Development (2 Cr)

Prepares students for Paramedic certification at the National Registry Level by fulfilling community activism, personal wellness, resource management, ethical considerations in leadership and research

objectives in the Virginia Office of Emergency Medical Services Paramedic curriculum. Lecture 2 hours per week.

EMS 205 Advanced Pathophysiology (3 Cr)

Focuses on the pathological processes of disease with emphasis on the anatomical and physiological alterations of the human body by systems. Includes diagnosis and management appropriate to the advanced health care provider in and out of the hospital environment. Lecture 3 hours per week.

EMS 207 Advanced Patient Assessment (3 Cr)

Focuses on the principles of normal and abnormal physical exam. Emphasizes the analysis and interpretation of physiological data to assist in patient assessment and management. Applies principles during the assessment and management of trauma, medical, and specialty patients in laboratory environment. Lecture 2 hours per week. Laboratory 2 hours per week. Total 4 hours per week.

EMS 209 Advanced Pharmacology (4 Cr)

Focuses on the principles of pharmacokinetics, pharmacodynamics and drug administration. Includes drug legislation, techniques of medication administration, and principles of math calculations. Emphasizes drugs used to manage respiratory, cardiac, neurological, gastrointestinal, fluid and electrolyte and endocrine disorders and includes classification, mechanism of action, indications, contra-indications, precautions, and patient education. Incorporates principles related to substance abuse and hazardous materials. Applies principles during the assessment and management of trauma, medical, and specialty patients in a laboratory environment. Lecture 3 hours per week. Laboratory 2 hours per week. Total 5 hours per week.

EMS 211 Operations (2 Cr)

Prepares the student in the theory and application of the following: medical incident command, rescue awareness and operations, hazardous materials incidents, and crime scene awareness. (Conforms to the current Virginia Office of Emergency Medical Services curriculum for EMT-Paramedics.) Lecture 1 hour per week. Laboratory 2 hours per week. Total 3 hours per week.

EMS 213 ALS Skills Development (1-2 Cr)

Utilizes reinforcement and remediation of additional advanced life support skills, as needed. Laboratory 2-4 hours per week.

EMS 242 ALS Clinical Internship III (1-2 Cr)
Continues with the third 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 243 ALS Field Internship III (1-2 Cr)
Continues with the third in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3-6 hours per week.

EMS 244 ALS Clinical Internship IV (1-2 Cr)
The fourth 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. May be repeated as necessary. Laboratory 3-6 hours per week.

EMS 245 ALS Field Internship IV (1-2 Cr)
Continues with the fourth in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. May be repeated as necessary. Laboratory 3-6 hours per week.

English

ENG 01 Preparing for College Writing I (1-6 Cr)
Helps students discover and develop writing processes needed to bring their proficiency to the level necessary for entrance into their respective curricula. Guides students through the process of starting, composing, revising, and editing. Variable hours per week.

ENG 03 Preparing for College Writing II (1-6 Cr)
Emphasizes strategies within the writing process to help students with specific writing situations. Develops techniques to improve clarity of writing and raise proficiency to the level necessary for entrance into particular curricula. Variable hours per week.

ENG 05 Reading Improvement II (1-6 Cr)
Helps students read critically and increase appreciation of reading. Guides students in making infer-

ences, drawing conclusions, detecting relationships between generalizations and supporting details. Includes interpreting graphic aids and basic library skills. Variable hours per week.

ENG 50 Reading and 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. Prerequisite: ENG 111 suggested. Lecture 1-2 hours per week.

ENG 105 Communication in Business and Industry (1-6 Cr)
Develops ability to communicate effectively in business and industry, emphasizing gathering, organizing, and transmitting information. Primarily for noncurricular, on-site use in business and industry. Variable hours per week. *College reading and writing competence required.*

ENG 111 College Composition I (3Cr)
Introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students 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. Writing activities will include exposition and argumentation with at least one researched essay. Lecture 3 hours per week. *College reading and writing competence required.*

ENG 112 College Composition II (3 Cr)
Continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Lecture 3 hours per week. Prerequisite ENG 111.

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. Lecture 3

hours per week. *College reading and writing competence required.*

ENG 137-138 Communication Processes I-II
(3-4 Cr)(3-4 Cr)

Covers content, form, and procedures for research writings, which may include reports, articles, summaries, essays and correspondence. Stresses editing, proofreading skills, sentence structure, and paragraph development. Offers instruction and practice in oral communication skills. May use reading selections for discussions and writing assignments. Lecture 3-4 hours per week. *College reading and writing competence required. Strongly recommend word processing skills.*

ENG 210 Advanced Composition (3 Cr)

Helps students refine skills in writing non-fiction prose. Guides development of individual voice and style. Introduces procedures for publication. Prerequisite ENG 112 or divisional approval. Lecture 3 hours per week. *College reading and writing competence required.*

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 divisional 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 characteristics of our national literature. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Lecture 3 hours per week. *College reading and writing competence required.*

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 characteristics of the British literary tradition. Involves critical reading and writing. Prerequisite ENG 112 or divisional approval. Lecture 3 hours per week. *College reading and writing competence required.*

ENG 251-252 Survey of World Literature I-II
(3 Cr) (3 Cr)

Examines major works of world literature. 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. *College reading and writing competence required.*

ENG 253-254 Survey of Afro-American Literature I-II
(3 Cr) (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. Lecture 3 hours per week. *College reading and writing competence required.*

ENG 265 The Modern Short Story (3 Cr)

Studies the modern short story as a literary form. Emphasizes appreciation and interpretation of selected stories. Requires critical reading and writing. Prerequisite ENG 112 or divisional approval. Lecture 3 hours per week. *College reading and writing competence required.*

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.

English As A Second Language

ESL 07 Oral Communication I (3-6 Cr)

Helps students practice and improve listening and speaking skills as needed for functioning successfully in academic, professional, and personal settings. Assesses students' oral skills and includes, as needed, practice with pronunciation, rhythm, stress, and intonation. Provides exercises, practices, small and large group activities, and oral presentations to help students overcome problems in oral communication. Variable hours per week.

ESL 14 ESL: Oral and Written Communications I
(3-6 Cr)

Provides practice in the sound, stress, intonation, structural patterns, grammar, vocabulary, and idioms of beginning-level English. Variable hours per week.

Electronics

ETR 101 Electrical/Electronic Calculations
(3 Cr)

Deals with calculations and fundamental applications as they apply to electrical/electronic problem

solving. Stresses basic calculations required in circuit analysis. Includes problem solving utilizing calculations and/or computers. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ETR 106 Basic Programming Applied to Electrical/Electronic Calculations (1-5 Cr)

Studies all purpose symbolic instruction code (BASIC). Focuses on applications of BASIC to electrical problem solving and circuit analysis. May require preparation of a report as an out-of-class activity. Lecture hours variable. Laboratory hours variable.

ETR 113-114 D.C. and A.C. Fundamentals (4 Cr) (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. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 115 D.C. and A.C. Circuits (3-4 Cr)

Studies current flow in direct and alternating current circuits with emphasis upon practical problems. Reviews mathematics used in circuit calculations. Introduces concepts of resistance, capacitance, inductance and magnetism. Focuses on electronics/circuits application. Lecture 3-4 hours per week.

ETR 116 - D.C. and A.C. Circuit Analysis (4 Cr)

Covers background information required by the Electronics Engineering Technology program but not covered in military electronic schools. Includes D.C. and A.C. circuit analysis techniques such as Thevenin, Norton, Mesh, Nodal, Branch current, three phase power, two port parameters, etc. Co-requisite: MTH 166. Lecture 4 hours per week.

ETR 141-142 Electronics I-II (3 Cr)

Introduces electronic devices as applied to basic electronic circuits and systems. Lecture 3 hours per week.

ETR 143 Devices and Applications I (3 Cr)

Teaches theory of active devices and circuits such as diodes, power supplies, transistors (BJTS), amplifiers and their parameters, fets, and op amps. May include UJTS, oscillators, RF amplifiers, thermionic devices, and others. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ETR 144 Devices and Applications II (4 Cr)

Teaches theory of active devices and circuits such as diodes, power supplies, transistors (BJTS), amplifiers and their parameters, fets, and op amps. May include UJTS, oscillators, RF amplifiers, thermionic devices, and others. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 168 Digital Circuit Fundamentals (3 Cr)

Covers the fundamentals of digital logic and the study of digital circuits and their applications. Lecture 3 hours per week.

ETR 214 Advanced Circuits and New Devices (2 Cr)

Includes lectures and demonstrations on the latest developments in electronics. Lecture 2 hours per week.

ETR215 Network Analysis (3 Cr)

Teaches basic concepts, theories and laws, power and energy, resistive networks, resistive two port networks, first order networks, second order networks, sinusoidal sources and phasor. Prerequisites: ETR 175 or equivalent. Lecture 3 hours per week.

ETR 228 Computer Troubleshooting and Repair (3-4 Cr)

Teaches procedures for isolating and correcting problems in computers and computer-related hardware. Emphasizes operational concepts, use of diagnostic software and troubleshooting equipment. Prerequisite ETR 226. Lecture 1-3 hours. Laboratory 3-6 hours. Total 6-7 hours per week.

ETR 241-242 Electronic Communications I-II (3-4 Cr) (3-4 Cr)

Studies noise, information and bandwidth, modulation and demodulation, transmitters and receivers, wave propagation, antennas and transmission lines. May include broad band communication systems, microwave, both terrestrial and satellite, fiber optics, multiplexing and associated hardware. Variable hours per week.

ETR 266 Microprocessor Applications (4 Cr)

Teaches fundamentals of microprocessors including architecture, internal operations, memory, I/O devices, machine level programming and interfacing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 279 Digital Principles, Terminology and Applications (4 Cr)

Studies digital principles, terminology and applications covering number systems, arithmetic, Boolean algebra, karnaugh maps and advanced logic circuits such as A/D, D/A displays and others. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Finance

FIN 107 Personal Finance (3 Cr)

Presents a framework of personal money management concepts, including establishing values and goals, determining sources of income, managing income, preparing a budget, developing consumer buying ability, using credit, understanding savings and insurance, providing for adequate retirement, and estate planning. Lecture 3 hours per week. *Basic math competence and college reading competence required.*

FIN 215 Financial Management (3 Cr)

Introduces the process of identifying and solving financial problems confronting the business enterprise. Includes topics such as the basic tools of financial analysis, working capital, capital budgeting, and long-term financing. Uses problems and cases to enhance skills in financial planning and decision making. Lecture 3 hours per week. *Basic math competence and college reading competence required. Prerequisite: ACC 211 and MTH 141 or permission of instructor.*

French

FRE 101-102 Beginning French I-II (3 Cr) (3 Cr)

Introduces understanding, speaking, reading, and writing skills and emphasizes basic French sentence structure. Lecture 4-5 hours per week. May include one additional hour of oral practice per week. College reading and writing competence required.

Fire Science

FST 100 Principles of Emergency Services (3 Cr)

This course provides an overview to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection func-

tions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics. Lecture 3 hours per week.

FST 105 Fire Suppression Operations (3 Cr)

Introduces the fundamentals of fire suppression. Explores fire behavior and basic physical and chemical laws of fire dynamics. Prepares student to understand the need for quick operational decisions made on the fire ground including emergency incident management. Lecture 3 hours per week.

FST 110 Fire Behavior and Combustion (3 Cr)

Explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. Lecture 3 hours per week.

FST 111 Hazardous Materials Response (3 Cr)

Studies hazardous materials storage, standards, and applicable laws designed to protect the public and emergency personnel. Discusses specific methods and techniques used by the emergency worker in the abatement of hazardous materials incidents. Lecture 3 hours per week.

FST 112 Hazardous Materials Chemistry (3 Cr)

Provides basic fire chemistry relating to the categories of hazardous materials including problems of recognition, reactivity, and health encountered by firefighters. Lecture 3 hours per week.

FST 115 Fire Prevention (3 Cr)

This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education. Lecture 3 hours per week.

FST 120 Occupational Safety & Health for the Fire Service (3 Cr)

Introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Includes risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, EMS, hazardous materials, and technical rescue. (Upon completion of this course, students should be able to establish and manage a safety program in an emergency service organization. Lecture 3 hours per week.

FST 135 Fire Instructor I (3 Cr)
Emphasizes development of teaching methods and aids, including role-playing, small group discussion and development of individual learning methods and materials. Requires students to develop lesson plans and make presentations on appropriate topics. Based on current requirements of NFPA 1041, Standards for Fire Instructor Professional Qualifications, and prepares student for certification as Fire Instructor I. Lecture 3 hours per week.

FST 205 Fire Hydraulics and Distribution System (3 Cr)
Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Lecture 3 hours per week.

FST 210 Legal Aspects of Fire Science (3 Cr)
Introduces the Federal, State, and local laws that regulate emergency services, national standards influencing emergency services, standard of care, tort, liability, and a review of relevant court cases. Lecture 3 hours per week.

FST 215 Fire Protection Systems (3 Cr)
This course provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection and portable fire extinguishers. Lecture 3 hours per week.

FST 220 Building Construction for Fire Protection (3 Cr)
This course provides the components of building construction that relate to fire and life safety. The focus of this course is on firefighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. Lecture 3 hours per week.

FST 235 Strategy and Tactics (3 Cr)
Provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment, and extinguishing agents on the fire ground. Lecture 3 hours per week.

FST 240 Fire Administration (3 Cr)
Introduces the student to the organization and

management of a fire department and the relationship of government agencies to the first service. Emphasis on fire service leadership from the perspective of the company officer. Lecture 3 hours per week.

FST 245 Fire and Risk Analysis (3 Cr)
Presents a study of current urban fire problems with emphasis on solutions based upon current available technology. Includes master planning, as well as methods of identifying, analyzing and measuring accompanying risk and loss possibilities. Prerequisite: FST 240. Lecture 3 hours per week.

Geography
GEO 210 People and the Land: An Introduction to Cultural Geography (3 Cr)
Focuses on the relationship between culture and geography. Presents a survey of modern demographics, landscape modification, material and non-material culture, language, race and ethnicity, religion, policies, and economic activities. Introduces the student to types and uses of maps. Lecture 3 hours per week. *College reading and writing competence required.*

GEO 220 World Regional Geography (3 Cr)
Studies physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions, and examines the geographical background of those problems. Introduces the student to types and uses of maps. Lecture 3 hours per week.

Geology
GOL 105 Physical Geology (4 Cr)
Introduces the composition and structure of the earth and modifying agents and processes. Investigates the formation of minerals and rocks, weathering, erosion, earthquakes, and crustal deformation. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. *College reading and writing competence required.*

GOL 106 Historical Geology (4 Cr)
Traces the evolution of the earth and life through time. Presents scientific theories of the origin of the earth and life and interprets rock and fossil record. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. *College reading and writing competence required.*

History

HIS 101-102 History of Western Civilization I-II (3 Cr) (3 Cr)

Examines the development of western civilization from ancient times to the present. The first semester ends with the seventeenth century; the second semester continues through modern times. Lecture 3 hours per week. College reading and writing competence required.

HIS 121-122 United States History I-II (3 Cr) (3 Cr)

Surveys United States history from its beginning to the present. Lecture 3 hours per week. *College reading and writing competence required.*

HIS 126 Women in World History (3 Cr)
Studies the role of women and attitudes toward women from ancient times to the present. Lecture 3 hours per week. *College reading and writing competence required.*

HIS 141 Afro-American History I (3 Cr)
Surveys the history of Black Americans from their African origins to the present. Lecture 3 hours per week. *College reading and writing competence required.*

HIS 141-142 African-American History I-II (3 Cr) (3 Cr)
Surveys the history of Black Americans from their African origins to the present. Lecture 3 hours per week.

HIS 155 Life in Colonial Virginia (3 Cr)
Studies life in Virginia before the American Revolution, including politics, economics, customs, culture, and the slave plantation system. Lecture 3 hours per week.

HIS 266 Military History of the Civil War (3 Cr)
Analyzes military campaigns of the Civil War, including factors contributing to the defeat of the Confederacy and problems created by the war. May include field trips to Civil War sites in the region. 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. Lecture 3 hours per week.

HIS 268 The American Constitution (3 Cr)
Analyzes the origin and development of the United States Constitution. Includes the evolution of civil liberties, property rights, contracts, due process, judicial review, federal-state relationships, and corporate-government relations. Lecture 3 hours per week. *College reading and writing competence required.*

Health

HLT 100 First Aid and Cardiopulmonary Resuscitation (2-3 Cr)
Focuses on the principles and techniques of safety, first aid, and cardiopulmonary resuscitation. Lecture 2-3 hours per week.

HLT 105 Cardiopulmonary Resuscitation (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 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 3 hours per week. *College reading and writing competence required.*

HLT 121 Introduction to 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. *College reading and writing competence required.*

HLT 138 Principles of Nutrition (1-2 Cr)
Studies nutrient components of food, including carbohydrates, fats, proteins, vitamins, minerals and water. Provides a behavioral approach to nutrient guidelines for the development and maintenance of optimum wellness. 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 tech-

niques in understanding medical terminology. Lecture 3 hours per week. *College reading competency required.*

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. Lectures 3 hours per week.

Health Information Technology

HIT 253 Health Records Coding (4-5 cr)

Examines the development of coding classification systems. Introduces ICD-9-CM coding classification system, its format and conventions. Stresses basic coding steps and guidelines according to body systems. Provides actual coding exercises in relation to each system covered. Lecture 3-4 hours. Laboratory 0-3 hours. Total 3-7 hours per week. *College reading and writing competency required.*

HIT 254 Advanced Coding and Reimbursement (3-4 cr)

Stresses advanced coding skills through practical exercises using actual medical records. Introduces CPT-4 coding system and guidelines for outpatient/ambulatory surgery coding. Introduces prospective payment system and its integration with ICD-9-CM coding. Lecture 3-4 hours. Laboratory 0-3 hours. Total 3-6 hours per week. *College reading and writing competency required.*

Human Services

HMS 100 Introduction to Human Services (3 Cr)

Introduces human service agencies, roles and careers. Presents an historical perspective of the field as it relates to human services today. Additional topics include values clarification and needs of target populations. Lecture 3 hours per week.

HMS 139 Community Resources and Services (3 Cr)

Studies federal, state, and local agencies, their functions, limitations and interrelationships. Emphasizes purposes of agencies as related to delivery of human services and procedures for referral, team building, and regional cooperation. Lecture 3 hours per week.

HMS 141 Group Dynamics I (3 Cr)

Examines the stages of group development, group dynamics, the role of the leader in a group, and

recognition of the various types of group processes. Discusses models of group dynamics that occur as a result of group membership dynamics. Lecture 3 hours per week.

HMS 142 Group Dynamics II (3 Cr)

Examines group dynamics, group leadership, group cohesion, transference and group helping through experiential involvement in group facilitating and leadership. Increases group skills through active classroom participation in group experiences. Lecture 3 hours per week.

HMS 203 Marriage and Family Counseling I (3 Cr)

Explores the various approaches to marriage and family counseling. Prerequisites: SOC 215, HMS 200 and HMS 225. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 220 Addiction and Prevention (3 Cr)

Examines the impact of drugs and addiction on individuals and their families. Explores the myths about various drugs and their benefit or lack of benefit. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 225 Functional Family Intervention (3 Cr)

Provides an understanding of functions and dysfunctions within the family. Emphasizes the development of effective skills through an interpersonal/interactional approach to family intervention. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 226 Helping Across Cultures (3 Cr)

Provides a historical overview of selected cultural and racial groups. Promotes understanding of group differences and the impact on counseling services. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 227 The Helper as a Change Agent (3 Cr)

Teaches the following skills for implementing alternative models of change and influence: action research, problem-solving, consultation, workshop development, and outreach and advocacy for diverse client populations. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 230 Assessment Techniques for Care Managers (3 Cr)

Presents basic theory, demonstrations, and practice

of the entry level assessment techniques for determining social, health, environmental, physical and emotional needs of the aged. Examines basic theory and practices for interviewing clients, and counseling skills necessary when working with individual clients. Considers concepts of cultural perspectives influencing assessment. *Prerequisite: PSY 237. Lecture 3 hours per week.*

HMS 231-232 Gerontology I-II (3 Cr) (3 Cr)

Examines characteristics of the aging process and problems for the elderly. Considers both theoretical and applied perspectives on the following issues: biological, psychological, sociological, economic and political. Lecture 3 hours per week.

HMS 234 Managing Senior Adult Activity Programs (3-4 Cr)

Prepares the activity professional to develop and implement an activity program for clients in a long term care facility. Includes management techniques, policy and procedure development, and procedures for the evaluation of an activity program in a long term care. Lecture 3-4 hours per week.

HMS 235 Recreation Activities for Senior Adults (3 Cr)

Provides competency in planning, evaluating and implementing programs and activities for senior adults, with special emphasis on awareness of limitation and aspirations for senior adults as individuals, in groups, and in institutions. Lecture 1 hour. Laboratory 5 hours. Total 6 hours per week. *College reading and writing competence required.*

HMS 236 Gerontology (3 Cr)

Examines the process of aging; its implications in relation to health, recreation, education, transportation, meaningful work or activity, and to community resources. Emphasizes experiencing the aging process, facilitating retirement, and application of the helping relationship to work with older adults. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 255 Adolescent Alcohol Use and Abuse (3 Cr)

Examines adaptive and injurious effects of alcohol on the adolescent. Teaches adolescent developmental tasks, behavior concepts and principles. Explores specific treatment modalities. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 258 Case Management and Substance Abuse (3 Cr)

Focuses on the process for interviewing substance abuse clients. Includes intake, assessment, handling denial, and ending the interview. Teaches skills for writing short-term goals and treatment plans with emphasis on accountability. Examines various reporting devices. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 260 Substance Abuse Counseling (3 Cr)

Provides an understanding of the skills of guidance of clients and those associated with being an advocate. Examines the dynamics of the client/counselor relationship in developing treatment plans and empowerment skills. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 266 Counseling Psychology (3 Cr)

Studies major counseling theories, their contributions and limitations, and the application of each to a counseling interaction. Students develop their own personal counseling theory. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 270 Treatment Systems (3 Cr)

Examines the services and facilities established for the purpose of treating addictions. Focuses on treatment therapy models and ethical standards related to addiction-disease theory. Lecture 3 hours per week. *College reading and writing competence required.*

HMS 275 Adult Home Administration (3 Cr)

Provides opportunities to develop an adequate and precise knowledge base of the aging population from an administrative perspective. Focuses on health care and prevention, nutrition, financial planning, management and family intervention. Lecture 3 hours per week. *College reading and writing competence required.*

Hotel-Restaurant-Inst Mgmt (HRI)

HRI 101 Hotel-Restaurant Organization & Management I (3 Cr)

Introduces the history, opportunities, problems and trends of the hospitality industry. Covers the organization of the various sectors of the hospitality industry including human resources, general business considerations, and management theory. Part I of II. Lecture 3 hours per week.

HRI 102 Hotel-Restaurant Organization & Management II (3 Cr)

Introduces the history, opportunities, problems and trends of the hospitality industry. Covers the organization of the various sectors of the hospitality industry including human resources, general business considerations, and management theory. Part II of II. Lecture 3 hours per week.

HRI 134 Food and Beverage Service Management (3 Cr)

Provides a conceptual and technical framework for managing the service of meals in a variety of commercial settings. Studies the integration of production and service delivery, guest contact dynamics, reservations management and point-of-sale systems. Lecture 2-3 hours. Laboratory 0-3 hours. Total 3-5 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 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 160 Executive Housekeeping (3 Cr)

Studies the housekeeping department with emphasis on organization, staffing and scheduling, staff development, work methods improvements, equipment, cleaning materials and cleaning procedures; maintenance and refurbishing; room design and safety engineering. Lecture 3 hours per week.

HRI 180 Convention Management and Service (3 Cr)

Examines the scope and different segments that make up the convention market; explains what is required to meet individual needs; and explores methods and techniques for better service. Lecture 3 hours per week. 3 credits

HRI 265 Hotel Front Office Operations (3 Cr)

Analyzes hotel front office positions and the procedures involved in reservation registration, account-

ing for and checking out guests, and principles and practices of night auditing. Covers the complete guest operation in both traditional and computerized operations. Lecture 3 hours per week.

Horticulture**HRT 106 Practical Horticulture (1 Cr)**

Provides practical experience in landscape construction equipment operations and maintenance. Laboratory 2 hours per week.

HRT 110 Principles of Horticulture (3 Cr)

Introduces concepts of plant growth and development. Covers horticultural practices, crops and environmental factors affecting plant growth. Lecture 3 hours per week.

HRT 127 Horticultural Botany (3 Cr)

Studies taxonomy, anatomy, morphology, physiology, and genetics of plants as applied to identification, propagation and culture. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

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. *College reading and writing competence required.*

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. *College reading and writing competence required.*

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. *College reading and writing competence required.*

HUM 210 Introduction to Women's Studies**(3 Cr)**

Introduces interdisciplinary and cross-cultural theories that explore gender, race, and class issues

relating to women's lives, past and present. Prerequisite: ENG 112. Lecture 3 hours per week. *College reading and writing competence required.*

HUM 211-212 Survey of American Culture I-II
(3 Cr) (3 Cr)

Examines elements of our national culture as they evolved from the first European explorations through colonization and independence to the present day. Lecture 3 hours per week. *College reading and writing competence required.*

HUM 220 Introduction to African American Studies
(3 Cr)

Presents an interdisciplinary approach to the study of African-American life, history, and culture. Examines specific events, ideologies, and individuals that have shaped the contours of African-American life. Studies the history, sociology, economics, religion, politics, psychology, creative productions, and culture of African-Americans. Lecture 3 hours per week.

Heavy Equipment Technology

HVE 120-121 Track Type Tractor Operation I-II
(8 Cr.) (7 Cr)

Develop skills in the safe and efficient operation of the track-type tractor. Topics include safety, preventive maintenance, basic operation of pushing, dozing, ditching, sloping, and other related topics. Lecture 4 hours. Laboratory 6-8 hours. Total 10-12 hours per week.

HVE-130-131 Rubber Tire and Track Loader Operation I-II
(8 Cr)(7 Cr)

Develops the knowledge and skills required to safely operate and maintain the rubber-tired and track front-end loader. Includes safety, preventive maintenance, basic loading, stripping, and other related topics. Lecture 4 hours. Laboratory 6-8 hours. Total 10-12 hours per week.

HVE 140-141 Backhoe and Hydraulic Excavator Operation I-II
(8 Cr)(7 Cr)

Covers the safe operation of the backhoe-loader combination and the hydraulic excavator. Includes safety, preventive maintenance, ditching, loading, excavation of footers and foundations, trenching, sloping, pipe laying with the use of lasers, and other related topics. Lecture 4 hours. Laboratory 6-8 hours. Total 10-12 hours per week.

HVE 150-151 Motor Grader Operation I-II
(8 Cr.)(7 Cr.)

Introduces students to motor graders and the basic operations. Includes safety, grade stakes, preventive maintenance, windrowing, scarifying, rough grading, and other related topics. Lecture 4 hours. Laboratory 6-8 hours. Total 10-12 hours per week.

HVE 152-153 Motor Grader Operation III-IV
(8 Cr)(7 Cr)

Continues instruction covered in HVE 150-151 and expands to advanced operation on the motor grader. Includes safety, preventive maintenance, ditching, slopes, fine grading and other related topics. Lecture 4 hour. Laboratory 6-8 hours. Total 10-12 hours per week.

Industrial Engineering

IND 108

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 115 Materials and Process of Industry (4 Cr)

Studies industrial/engineering materials and contemporary processes for the manufacture of products. Investigates the processes for the manufacture of products. Investigates the material's nature, structure, and properties. Examines the processes and their effects on materials. Lecture 4 hours per week.

IND 216 Plant Layout and Materials Handling
(3 Cr)

Examines arrangement and layout of physical facilities. Explains material handling and modern techniques for efficient utilization of space. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Interpreter Education

INT 105-106 Interpreting Foundations I-II
(3-4 cr) (3-4 cr)

Develops fundamental skills of interpreting, including cognitive processes and intralingual language development in English and ASL. Reviews Process Models of interpreting, and uses one to analyze interpretations. Develops feedback skills

essential to the team interpreting proves. Lecture 3-4 hours per week.

INT 107 Translation Skills (3-4 cr)

Further develops fundamental skills needed for the task of interpreting. Targets comprehending source language (either ASL or English), transferring content into memory store (breaking from original form), restructuring into target language, maintaining message equivalence, conveying implicit and inferred information, and applying appropriate discourse structure. Review Process Model of Interpreting, and uses it to analyze translations. Further develops feedback skills essential to the team interpreting process. Prerequisite: INT 105. Lecture 3-4 hours per week.

INT 130 Interpreting: An Introduction to the Profession (2-3 cr)

Introduces basic principles and practices of interpreting, focusing on the history of the profession, logistics of interpreting situations, regulatory and legislative issues, resources, and the Code of Ethics. Describes the state quality assurance screening and national certification exam systems, including test procedures. Lecture 2-3 hours per week.

INT 133 ASL-to-English Interpretation I (3-4 cr)

Begins consecutively interpreting monologues from the source language (ASL) to the target language (English). Watch entire ASL monologues, process them, analyze them, then choose appropriate English to match the message. Eventually interpret the monologue into English. Puts interpreting theory into practice in a lab environment. Conducts research in the field of interpretation. Develops team interpreting techniques. Interacts with consumers of ASL-English interpretation. Prerequisite: INT 107. Lecture 2-3 hours. Laboratory 2 hours. Total 4-5 hours per week.

INT 134 English –to-ASL Interpretation I (3-4 cr)

Begins consecutively interpreting monologues from the source language (English) to the target language (ASL). Listen to entire English monologues, process them, analyze them, then choose appropriate ASL to match the message. Puts interpreting theory into practice in a lab environment. Conducts research into the field of interpretation. Develops team interpreting techniques. Encourages interaction with consumers of ASL-English inter-

pretation. Prerequisite: INT 107. Lecture 2-3 hours. Laboratory 2 hours. Total 4-5 hours per week.

**Information Systems Technology
Information Technology Database Processing (ITD)**

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

Stresses a working knowledge of web site designs, construction, and management using HTML or XHTML. Includes headings, lists, links, images, image maps, tables, forms, and frames. Lecture 3-4 hours per week.

ITD 112 Designing Web Page Graphics (3-4 Cr)

Explores the creation of digital graphics for web design. Includes basic design elements such as color and layout will be explored utilizing a computer graphics program(s). 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(s). 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. Emphasizes the importance of usability, accessibility, optimization and performance. Lecture 3-4 hours per week.

Information Technology Essentials (ITE)

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 microcomputers and introduces specific uses of microcomputers. Lecture 1-2 hours per week.

ITE 102 Computers and 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 uses a software suite which includes word processing, spreadsheet, database, and presentation software to demonstrate skills. Recommended prerequisite keyboarding skills. Lecture 3-4 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. Presents the basics of the features and applications included in the Windows operating system package. Lecture 1-2 hours per week.

ITE 130 Introduction to Internet Services (3-4 Cr)

Provides students with a working knowledge of Internet terminology and services including e-mail, WWW browsing, search engines, ftp, file compression, and other services using a variety of software packages. Provides instruction for basic web page construction. Lecture 3-4 hours per week.

ITE 131 Survey of Internet Services (1-2 Cr)

Introduces students to basic Internet terminology and services including e-mail, WWW browsing, search engines, ftp telnet, and other services. 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. Includes database concepts, principles of table design and table relationships, entering data, creating and using forms, using data from different sources, filtering, creating mailing labels. Lecture 3-4 hours per week.

ITE 160 Introduction to E-Commerce (3-4 Cr)
Studies the culture and demographics of the Internet, on-line business strategies and the hardware and software tools necessary for Internet commerce. Includes the identification of appropriate target segments, the development of product opportunities, pricing structures, distribution channels over the Internet, and the execution of marketing strategy in computer-mediated environments. Presents case histories of successful Web applications. Lecture 3-4 hours per week.

ITE 170 Multimedia Software (3-4 Cr)
Explores technical fundamentals of creating multimedia projects with related hardware and software. Students will learn to manage resources required for multimedia production and evaluation and techniques for selection of graphics and multimedia software. Lecture 3-4 hours per week.

ITE 175 Email Essentials (1-2 Cr)
Focuses on providing the student with a working knowledge of introductory email function. Includes the basic concepts of customizing email and using all the email capabilities for reading, creating, sending emails, managing calendar functions and managing contacts, tasks, and notes. Lecture 1-2 hours per week.

ITE 200 Technology for Teachers (3-4 Cr)
Provides K-12 classroom teachers with the knowledge and skills needed to fulfill the Commonwealth of Virginia's Technology Standards for Instructional Personnel. Students will finish the course with a solid understanding of educational technology, including how to use computers, how to access information on the World Wide Web, and how to integrate computers and educational technology into classroom curriculum. Students will learn how to base technology integration decisions on contemporary learning theories. Lecture 3-4 hours per week.

ITE 215 Advanced Computer Applications and Integration (3-4 Cr)

Incorporates advanced computer concepts including the integration of a software suite. Lecture 3-4 hours per week.

ITE 221 PC Hardware and OS Architecture (3-4 Cr)

Covers instruction about processors, internal functions, peripheral devices, computer organization, memory management, architecture, instruction format, and basic OS architecture. Lecture 3-4 hours per week.

ITE 270 Advanced Multimedia Development (3 Cr)

Refines multimedia skills, focusing on project development using digital media; video clips, still images, and audio (sounds, music, and narration). Prerequisite: [ITE 170](#). Lecture 3 hours per week.

ITN Information Technology Networking (ITN)**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. Emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Includes selected topics in network implementation, support and LAN/WAN connectivity. Lecture 3-4 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. 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. Lecture 3-4 hours per week.

ITN 109 Internet and Network Foundation (3-4 Cr)

Provides a basic comprehension of Internet and network technologies including IT job roles, connection methods, TCP/IP functionality and DNS. Explores web server technologies with security and project management concepts. Introduces network creation, physical and logical topologies including media properties, server types, IP addressing and network security. Lecture 3-4 hours. Laboratory 0-2 hours. Total 3-5 hours per week.

ITN 114 Windows XP Professional (3-4 Cr)

Consists of instruction in installation, configuration, administration, and troubleshooting of Windows XP Professional as a desktop operating system in a networked data communication environment. Lecture 3-4 hours per week.

ITN 154 Networking Fundamentals – Cisco (3-4 Cr)

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

ITN 155 Introductory Routing – Cisco (3-4 Cr)

Features an introduction to basic router configuration using Cisco IOS software. Includes system components, interface configuration, ip network design, troubleshooting techniques, configuration and verification of IP addresses, and router protocols. Lecture 3-4 hours per week.

ITN 156 Basic Switching and Routing – Cisco (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. Lecture 3-4 hours per week.

ITN 157 WAN Technologies – Cisco (3-4 Cr)

Concentrates on an introduction to Wide Area Networking (WANs). Includes WAN design, LAPB, Frame Relay, ISDN, HDLC, and PPP. Lecture 3-4 hours per week.

ITN 267 Legal Topics in Network Security (3-4 Cr)

Conveys an in-depth exploration of the civil and common law issues that apply to network security. Explores statutes, jurisdictional, and constitutional issues related to computer crimes and privacy. Includes rules of evidence, seizure and evidence handling, court presentation and computer privacy in the digital age. Lecture 3-4 hours per week.

Information Technology Programming (ITP)

ITP 100 Software Design (3-4 Cr)

Introduces principles and practices of software development. Includes instruction in critical thinking, problem solving skills, and essential programming logic in structured and object-oriented design using contemporary tools. Lecture 3-4 hours per week.

ITP 110 Visual Basic Programming I (3-4 Cr)

Involves instruction in fundamentals of event-driven programming using Visual Basic. Emphasizes program construction, algorithm development, coding, debugging, and documentation of graphical user interface applications. Lecture 3-4 hours per week.

ITP 112 Visual Basic.NET I (3-4 Cr)

Concentrates instruction in fundamentals of object-oriented programming using Visual Basic.NET and the .NET framework. Emphasizes program construction algorithm development, coding debugging, and documentation of graphical user interface applications. Lecture 3-4 hours per week.

ITP 120 Java Programming I (3-4 Cr)

Entails instruction in fundamentals of object-oriented programming using Java. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. Lecture 3-4 hours per week.

ITP 132 C++ Programming I (3-4 Cr)

Stresses instruction in fundamentals of structured programming using C. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console applications. Lecture 3-4 hours per week.

ITP 154 Basic Programming I (3-4 Cr)

Involves instruction in development of structured

programs using BASIC from problems or specifications. Lecture 3-4 hours per week.

ITP 158 Micro Assembler I (3-4 Cr)

Provides instruction in writing and debugging of programs in a manufacturer's assembly language for microcomputers. Focuses on the principles of debugging and core-dump reading and uses a micro-assembly language in a total programming system. Lecture 3-4 hours per week.

ITP 160 Introduction to Game Design & Development (3-4 Cr)

Introduces object-oriented game design and development. Provides overview of the electronic game design and development process and underlines the historical context, content creation strategies, game careers, and future trends in the industry. Utilizes a game language environment to introduce game design, object-oriented paradigms, software design, software development and product testing. Teaches skills of writing a game design document and creating a game with several levels and objects. Integrate 2D animations, 3D models, sound effects, and background music as well as graphic backgrounds. Lecture 3-4 hours per week.

ITP 212 Visual Basic.NET II (3-4 Cr)

Includes instruction in application of advanced event-driven techniques to application development. Emphasizes database connectivity, advanced controls, web forms, and web services using Visual Basic.NET. Lecture 3-4 hours per week.

Machine Shop

MAC 161 Machine Shop Practices I (3 Cr)

Introduces safety procedures, bench work, hand tools, precision measuring instruments, drill presses, cut-off saws, engine lathes, manual surface grinders, and milling machines. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MAC 171-172 Machine Tool Operations I-II (3 Cr) (3 Cr)

Uses basic fractional and decimal measuring tools and hand tools. Covers linear, angular, and radial layout, and precision measuring. Includes setup and operations of hand saws, drill presses, the engine lathe, and the vertical and horizontal milling machines. Requires solutions of related problems and preparation of weekly laboratory reports. Laboratory 6 hours per week.

Mechanical Engineering Technology

MEC 103 Electronic Circuits and Instrumentation (4 Cr)

Designed for non-majors. Covers electronic circuits, devices, instrumentation and basic communications, DC and AC theory, introduction to power supplies, amplifiers, and measurement devices. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

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. Laboratory 2-3 hours. Total 4-6 hours per week.

MEC 175 Fundamental Shop Procedures and Internal Combustion Eng (4 Cr)

Introduces the practical use and care of tools, shop equipment and pullers, use of service manuals and parts catalogs, and safety. Includes introduction to the design, operation, testing, and service procedures of the internal combustion engines. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

MEC 176 Transportation Electrical Systems (3 Cr)

Introduces electrical systems found on transportation vehicles and heavy-duty equipment. Stresses function, construction, operation, troubleshooting procedures and servicing of the charging, cranking, and ignition. Provides experience in disassembly, testing, and assembly of the various units comprising the electrical system. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MEC 215 Advanced Jig and Fixture Design (2 Cr)

Applies the principles, practices, tools, and commercial standards of jig and fixture designs. Employs lectures, visual aids, individual projects and design work, with emphasis on problem-solving and independent design. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week. *College reading competence required.*

Medical Laboratory

MDL 105 Phlebotomy (3-4 Cr)

Introduces basic medical terminology, anatomy, physiology, components of health care delivery and clinical laboratory structure. Teaches techniques of

specimen collection, specimen handling, and patient interactions. Lecture 2 hours. Laboratory 3-6 hours. Total 5-8 hours per week.

MDL 125 Clinical Hematology I (3 Cr)

Teaches the cellular elements of blood including blood cell formation, and routing hematological procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 195 Coordinated Practical Phlebotomy (3 Cr)

Focuses on obtaining blood specimens, processing specimens, managing assignments, assisting with and/or performing specified tests, performing clerical duties and maintaining professional communication. Provides supervised learning in college laboratory/and or cooperating agencies. Laboratory 6 hours per week.

Mental Health

MEN 101-102 Mental Health Skill Training I-II (3 CR) (3 CR)

Develops skills necessary to function as a mental health worker, with emphasis on guided practice in counseling skills as well as improved self-awareness. Includes training in problem-solving, goal-setting, and implementation of appropriate strategies and evaluation techniques relating to interaction involving a variety of client needs. Lecture 3 hours per week.

MEN 135 Human Services and the Law (3 Cr)

Examines current issues in mental health and impact of federal and state laws on delivery of services. Considers issues of civil commitment of the mentally ill and confidentiality and rights of clients. Lecture 3 hours per week. *College reading competency required.*

MEN 225 Counseling Therapy (3 Cr)

Studies various models of counseling theories and appropriate application of counseling techniques in the helping profession. Lecture 3 hours per week. *College reading and writing competency required.*

Marketing

MKT 100 Principles of Marketing (3 Cr)

Presents principles, methods and problems involved in the distribution and marketing of goods and services to industrial and ultimate consumers. Introduces various marketing middlemen: wholesaler, retailer, broker, agent, including coop-

erative and trade associations, shippers, stores and facilitators. Discusses present-day problems and policies connected with distribution and sale of products, pricing, promotion, and buyer motivation. Examines variations of the marketing mix and market research, plus legal, social and ethical considerations in marketing. Lecture 3 hours per week. *College reading competence required.*

MKT 110 Principles of Selling (3 Cr)

Presents fundamental aspects of personal selling, sales, ethics, and selling methods. Emphasizes professional sales techniques. Examines organization necessary for a well-coordinated sales effort, including the training of sales personnel for maximum efficiency in selling and organization of the sales division within the business enterprise. Introduces sales management in planning, organizing, directing and controlling the total sales effort. Lecture 3 hours per week. *College reading competence required.*

MKT 115 Retail Organization and Management (3 Cr)

Examines the organization of the retail establishment to accomplish its goals in an effective and efficient manner. Includes study of site location, internal layout, store operations, and security. Examines the retailing mix, the buying or procurement process, pricing, and selling. Studies retail advertising, promotion and publicity as a coordinated effort to increase store traffic. Lecture 3 hours per week. *College reading competence required.*

MKT 170 Customer Service (1 Cr)

Introduces students to the concepts of marketing as they relate to customer service. Teaches development of customer service training and implementation of strategies to improve customer relations and service. Includes lecture, role-playing, and case studies. Lecture 1-2 hours per week. 1-2 credits

MKT 282 Principles of E-Commerce (3 Cr)

Studies on-line business strategies, and the hardware and software tools necessary for Internet commerce. Includes the identification of appropriate target segments, the development of product opportunities, pricing structures, distribution channels and execution of marketing strategies. Lecture 3 hours per week.

Mathematics

MTH 02 Arithmetic (1-5 Cr)

Covers arithmetic principles and computations including whole numbers, fractions, decimals, percents, measurement, graph interpretation, geometric forms, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Variable hours per week.

MTH 03 Algebra I (1-5 Cr)

Covers the topics of Algebra I including real numbers, equations and inequalities, exponents, polynomials, Cartesian coordinate system, rational expressions, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisites a placement recommendation for MTH 03 and Arithmetic or equivalent. Variable hours per week.

MTH 04 Algebra II (1-5 Cr)

Expands upon the topics of Algebra I including rational expressions, radicals and exponents, quadratic equations, systems of equations, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisites a placement recommendation for MTH 04 and Algebra I or equivalent. Variable hours per week.

MTH 07 Developmental Trigonometry (1-5 Cr)

Covers topics including right triangles, oblique triangles, identities, graphs, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisites a placement recommendation for MTH 07 and Algebra I and Algebra II or equivalent. Variable hours per week.

MTH 50 Mathematics for Teacher Entrance Exams (1-2 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: MTH 02 or equivalent. Lecture 1-2 hours per week.

MTH 120 Introduction to Mathematics (3 Cr)

Introduces number systems, logic, basic algebra, and descriptive statistics. Prerequisites a placement recommendation for MTH 120. (Intended for

occupational/technical programs.) Lecture 3 hours per week. *Basic math competence, Algebra I competence and college reading competence required.*

MTH 141-142 Business Mathematics I-II (3 Cr) (3 Cr)

Provides instruction, review, and drill in percentages, cash and trade discounts, mark-up, payroll, sales, property and other taxes, simple and compound interest, bank discounts, loans, investments, and annuities. Prerequisites strong background in basic arithmetic operations and MTH 03 or equivalent. Lecture 3 hours per week. *Basic math competence, Algebra I competence and college reading competence required.*

MTH 150 Topics in Geometry (3 Cr)

Presents the fundamentals of plane and solid geometry and introduces non-Euclidean geometries and current topics. Prerequisites: a placement recommendation for MTH 150 and Algebra I, Algebra II and Geometry or equivalent. Lecture 3 hours per week. *College reading competence required.*

MTH 151 Mathematics for the Liberal Arts I (3 Cr)

Presents topics in sets, logic, numeration systems, geometric systems, and elementary computer concepts. Prerequisites a placement recommendation for MTH 151 and Algebra I, and Geometry or equivalent. Lecture 3 hours per week. *College reading competence required.*

MTH 152 Mathematics for the Liberal Arts II (3 Cr)

Presents topics in functions, combinations, probability, statistics and algebraic systems, Prerequisites a placement recommendation for MTH 152 and Algebra I, and Geometry or equivalent. Lecture 3 hours per week. *College reading competence required.*

MTH 163 Precalculus I (3 Cr)

Presents college algebra, matrices, and algebraic, exponential, and logarithmic functions. Prerequisites a placement recommendation for MTH 163 and Algebra I, Algebra II, and Trigonometry or equivalent. Lecture 3 hours per week. *College reading competence required.*

MTH 164 Precalculus II (3 Cr)

Presents trigonometry, analytic geometry, and sequences and series. Prerequisite MTH 163 or equivalent. Lecture 3 hours per week. *College reading competence required.*

MTH 166 Precalculus with Trigonometry (4-5 Cr)

Presents college algebra, analytic geometry, trigonometry, and algebraic exponential, and logarithmic functions. Prerequisite: a placement recommendation for MTH 166 and Algebra I, Algebra II, and Geometry or equivalent. (Credit will not be awarded for both MTH 163 and MTH 166). Lecture 4-5 hours per week.

MTH 168 Precalculus II with Introductory Calculus (3 Cr)

Presents trigonometric functions, analytic geometry, limits, continuity, and an introduction to the derivative. Prerequisite: MTH 163 or equivalent. (Credit will not be awarded for both MTH 164 and MTH 168.) Lecture 3 hours per week. *College reading competence required.*

MTH 175 Calculus of One Variable I (3 Cr)

Presents differential calculus of one variable including the theory of limits, derivatives, differentials, antidervatives and applications to algebraic and transcendental functions. Designed for mathematical, physical, and engineering science programs. Prerequisite a placement recommendation for MTH 175 or equivalent. Lecture 3 hours per week. *Algebra I, algebra II, geometry and trigonometry or equivalent, and college reading competence required.*

MTH 176 Calculus of One Variable II (3 Cr)

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. Lecture 3 hours per week.

MTH 177 Introductory Linear Algebra (2 Cr)

Covers matrices, vector spaces, determinants, solutions of systems of linear equations, and eigen values. Designed for mathematical, physical, and engineering science programs. Co-requisite: MTH 175. Lecture 2 hours per week.

MTH 178 Topics in Analytic Geometry (2 Cr)

Covers conic sections, polar and parametric graphing. Designed for mathematical, physical, and engineering science programs. Co-requisite: MTH 176. Lecture 2 hours per week.

MTH 241 Statistics I (3 Cr)
Covers descriptive statistics, elementary probability, probability distributions, estimation, and hypothesis testing. Prerequisites a placement recommendation for MTH 241 and MTH 163 or MTH 166 or equivalent. Lecture 3 hours per week. *Algebra I, algebra II, geometry or equivalent, and college reading competency required.*

MTH 242 Statistics II (3 Cr)
Continues the study of estimation and hypothesis testing with emphasis on correlation and regression, analysis of variance, chi-square tests, and non-parametric methods. Prerequisite: MTH 241 or equivalent. Lecture 3 hours per week.

MTH 270 Applied Calculus (3 Cr)
Introduces limits, continuity, differentiation and integration of algebraic and transcendental functions, techniques of integration, and partial differentiation. Prerequisite: MTH 163 or MTH 166 or equivalent. (Credit will not be awarded for both MTH 270 and MTH 271.)

MTH 273 Calculus I (4 Cr)
Presents topics in differential calculus of one variable including the theory of limits, derivatives, differentials, definite and indefinite integrals and applications to algebraic and transcendental functions. Designed for mathematical, physical, and engineering science programs. Prerequisites: a placement recommendation for MTH 273 and one year of precalculus. (Credit will not be awarded for more than one of MTH 173, MTH 175 or MTH 273.) Lecture 3 hours per week. *MTH 03, 04, 07 and college reading competence required.*

MTH 274 Calculus II (4 Cr)
Covers vectors in three dimensions, definite integrals, methods of integration, indeterminate forms, partial differentiation, and multiple integrals. Designed for mathematical, physical, and engineering science programs. Prerequisite MTH 273 or equivalent. Lecture 4 hours per week.

MTH 275 Multivariable Calculus and Linear Algebra (4 Cr)
Presents vector valued functions, partial derivatives, multiple integrals, matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigen values, and eigen vectors. Designed for mathematical, physical and

engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture 4 hours per week.

Music

MUS 121-122 Music Appreciation I-II (3 Cr) (3 Cr)

Increases the variety and depth of the student's interest, knowledge, and involvement in music and related cultural activities. Acquaints the student with traditional and twentieth century music literature, emphasizing the relationship music has as an art form with man and society. Increases the student's awareness of the composers and performers of all eras through listening and concert experiences. Lecture 3 hours per week. *College reading competency required.*

MUS 149 Band Ensemble (1-2 Cr)

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Divisional approval required. May be repeated for credit. Laboratory 3-6 hours per week.

Natural Science

NAS 125 Meteorology (4 Cr)

Presents a non-technical survey of fundamentals meteorology. Focuses on the effects of weather and climate on humans and their activities. Serves for endorsement or recertification of earth science teachers. Lecture 3 hours per week. Recitation and laboratory 2 hours per week. Total 5 hours per week. *Algebra I, college reading and writing competence required.*

NAS 161-162 Health Science I-II (4 Cr) (4 Cr)

Presents an integrated approach to human anatomy and physiology, microbiology, and pathology. Includes chemistry and physics as related to health sciences. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week. *Algebra I, Developmental Chemistry, Foundations of Biology and college reading and writing competence required.*

Nursing

NUR 27 Nurse Aide I (3-5 Cr)

Teaches care of older patients with emphasis on the social, emotional, and spiritual needs. Covers procedures; communication and interpersonal relations; observation, charting and reporting; safety

and infection control; anatomy and physiology; personal care, nutrition and patient feeding; death and dying. May include laboratory or clinical hours. Lecture 2-4 hours. Laboratory 3-9 hours. Total 6-11 hours per week.

NUR 105 Nursing Skills (2 Cr)

Develops nursing skills for the basic needs of individuals and introduces related theory. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 2 hours per week. *College reading and writing competence required.*

NUR 111 Nursing I (5-10 Cr)

Introduces nursing principles, concepts and the nursing process. Develops nursing skills to meet the biopsychosocial needs of individuals. May include math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in college nursing laboratory and/or cooperating agencies. Variable hours per week. *College reading and writing competence required. See prerequisites on program sheet.*

NUR 115 LPN Transition (2-7 Cr)

Introduces the role of the registered nurse through concepts and skill development in the discipline of professional nursing. This course serves as a bridge course for licensed practical nurses and is based upon individualized articulation agreements, mobility exams, or other assessment criteria as they relate to local programs and service areas. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Lecture 1-7 hours. Laboratory 0-18 hours. Total 2-19 hours per week. *College reading and writing competence required.*

NUR 120 Nursing Terminology and Charting (1-2 Cr)

Focuses on basic terminology used in nursing. Emphasizes combining word forms and applications to nursing situations and the patient's record. Lecture 1-2 hours per week. *College reading competence required.*

NUR 135 Drug Dosage Calculations (1-2 Cr)

Teaches apothecary, metric, household conversion; reading of drug orders and labels. Provides a practical approach to learning to prepare dosages and solutions, including calculating intravenous flow

rates and pediatric drugs. Lecture 1-2 hours per week. *Basic math and college reading competence required.*

NUR 136-137 Principles of Pharmacology I-II (1-2 Cr) (1-2 Cr)

Teaches principles of medication administration which include 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. *College reading and writing competence required.*

NUR 161 Nursing Perspectives (1 Cr)

Teaches the philosophy and curricular framework of the nursing program. Explores the dimensions of the discipline of nursing. Includes historical aspects and selected current trends, ethical/ legal issues, and responsibilities of the associate degree nurse. Lecture 1 hour per week.

NUR 221-222 Second level Nursing Principles and Concepts I, II (9-10 Cr) (9-10 Cr)

Focuses on nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. 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. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 1-9 hours. Laboratory 3-27 hours. Total 11-28 hours per week. *College reading and writing competence required.*

NUR 223 Second level Nursing Principles and Concepts III (9-10 Cr)

Focuses on nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. 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. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 1-9 hours. Laboratory 3-27 hours. Total 11-28 hours per week. *College reading and writing competence required.*

NUR 226 Health Assessment (2-3 Cr)

Teaches the systematic approach to obtaining a health history and performing a physical assessment. Lecture 0-2 hours. Laboratory 3-9 hours.

Total 4-9 hours per week. *College reading and writing competence required.*

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. Lecture 1-2 hours per week. *College reading and writing competence required.*

Physical Education

PED 100 Pilates (2 Cr)

Provides a method of mind-body exercise and physical movement designed to stretch, strengthen, balance the body, and improve posture and core stabilization while increasing body awareness. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 103-104 Aerobic Fitness I-II
(1-2 Cr) (1-2 Cr)

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

PED 105-106 Aerobic Dance I-II
(1-2 Cr) (1-2 Cr)

Focuses on physical fitness through dance exercises. Emphasizes the development of cardiovascular endurance, muscular endurance, and flexibility. Variable hours per week.

PED 109 Yoga (1-2 Cr)

Focuses on the forms of yoga training emphasizing flexibility. Lecture 1-2 hours. Laboratory 0-2 hours. Total 1-3 hours per week.

PED 111-112 Weight Training I-II
(1-2 Cr)(1-2 Cr)

Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Lecture 1-2 hours. Laboratory 0-2 hours. Total 1-3 hours per week.

PED 116 Lifetime Fitness and Wellness (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. Laboratory 0-2 hours. Total 1-4 hours per week.

PED 117 Fitness Walking (1 Cr)

Teaches content and skills needed to design, implement, and evaluate an individualized program of walking, based upon fitness level. Laboratory 2 hours per week.

PED 118 Baseball Fundamentals I (1 Cr)

Enhances the mental and physical ability of students for playing the sport of baseball. Consists of units related to weight training, flexibility, fielding, throwing, hitting, pitching, and position play. Students will gain knowledge about the history of the sport and gain an understanding and respect for the game and its role in society. Laboratory 2 hours per week.

PED 123-124 Tennis I-II (1-2 Cr) (1-2 Cr)

Teaches tennis skills with emphasis on stroke development and strategies for individual and team play. Includes rules, strategies for individual and team play. Includes rules, scoring, terminology, and etiquette. Variable hours per week.

PED 137 Martial Arts I (And Self-Defense)
(1-2 Cr)

Emphasizes forms, styles, and techniques of body control, physical and mental discipline, and physical fitness. Presents a brief history of development of martial arts theory and practice. Part I of II. Lecture 1-2 hours. Laboratory 0-2 hours. Total 1-3 hours per week.

PED 140 Water Aerobics (1-2 Cr)

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

PED 144 Skin and Scuba Diving (3 Cr)

Emphasizes skills and methods of skin and scuba diving. Includes training with underwater breathing apparatus and focuses on safety procedures, selection and use of equipment. Prerequisite strong swimming skills. Lecture 2 hours. Laboratory 2hours. Total 4 hours per week.

PED 152 Basketball (2 Cr)
Introduces basketball skills, techniques, rules, and strategies. Lecture 0-1 hours. Laboratory 2-4 hours. Total 2-4 hours per week.

PED 154 Volleyball (1-2 Cr)
Introduces skills, techniques, strategies, rules, and scoring. Variable hours per week.

PED 156 Softball (1-2 Cr)
Emphasizes skills, techniques, strategies, rules. Variable hours per week.

PED 171-172 Ballroom Dance I-II
(1-2 Cr)(1-2 Cr)
Presents the basic step patterns, rhythmic patterns, and positions in ballroom dance. Includes techniques based upon traditional steps with basic choreographic patterns. Lecture 1-2 hours. Laboratory 0-2 hours. Total 1-3 hours per week.

PED 179 Wilderness Survival (1-2 Cr)
Teaches techniques for outdoor survival including construction of snares, finding edible plants and animals, recognition and prevention of hypothermia, and how to build shelters and fires. Emphasizes man's relationship to the outdoor environment. Lecture 1-2 hours. Laboratory 0-2 hours. Total 1-3 hours per week.

Philosophy

PHI 100 Introduction to Philosophy (3 Cr)
Presents an introduction to philosophical problems and perspectives with emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality, and values. Lecture 3 hours per week. *College reading competence required.*

PHI 101-102 Introduction to Philosophy I-II
(3 Cr) (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 115 Practical Reasoning (3 Cr)
Studies informal logic and language techniques as they relate to reasoning and argument. Provides practice in analyzing arguments and constructing sound arguments. L Lecture 3 hours per week.

PHI 220 Ethics (3 Cr)
Provides a systematic study of representative ethi-

cal systems. Lecture 3 hours per week. College reading and writing competence required.

PHI 260 Studies in Eastern Thinking (3 Cr)
Introduces an in-depth study of the East through a variety of approaches which include music, literature, drama and cinema. Places special emphasis on Chinese and Japanese philosophy and religion, especially Buddhism. Lecture 3 hours per week.

Physics

PHY 101-102 Introduction to Physics I-II
(4 Cr) (4 Cr)
Surveys general principles of physics. Includes topics such as force and motion, energy, heat, sound, light, electricity and magnetism, and modern physics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. Algebra I, algebra II and college reading competence required.

PHY 111-112 Technical Physics I-II (4 Cr)
Emphasizes technical applications. Includes precision measurement, statics, dynamics, energy and momentum, heat, sound, optics, DC and AC electricity, and modern physics. Prerequisites one year of high school algebra or equivalent. A concurrent course in college algebra or and trigonometry is recommended. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PHY 130 Survey of Applied Physics (3 Cr)
Surveys topics such as heat, electricity, and light with emphasis on practical applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PHY 201-202 General College Physics I-II
(4 Cr) (4 Cr)
Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism, and selected topics in modern physics. Prerequisite MTH 163 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. Algebra I and II, Trigonometry and college reading competence required.

Political Science

PLS 130 Basics of American Politics (2- 3 Cr)
Teaches basics of the operations of Congress, the presidency, and the federal court system. Includes civil liberties, citizenship, elections, political parties, and interest groups. Lecture 2-3 hours per week. *College reading and writing competence required.*

PLS 135 American National Politics (3 Cr)

Teaches political institutions and processes of the national government of the United States, focuses on the Congress, presidency, and the courts, and on their inter-relationships. Gives attention to public opinion, suffrage, elections, political parties, interest groups, civil rights, domestic policy, and foreign relations. Lecture 3 hours per week.

PLS 211-212 U.S. Government I-II (3 Cr) (3 Cr)

Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Lecture 3 hours per week. *College reading and writing competence required.*

Practical Nursing

PNE 145 Trends in Practical Nursing (1 Cr)

Studies the role of the Licensed Practical Nurse. Covers legal aspects, organizations, and opportunities in practical nursing. Assists students in preparation for employment. Lecture 1 hour per week. *College reading and writing competence required.*

PNE 161 Nursing in Health Changes I (6-7 Cr)

Focuses on nursing situations and procedures necessary to assist individuals in meeting special needs related to human functions. Lecture 2-4 hours. Laboratory 6-15 hours. Total 10-17 hours per week. *College reading and writing competence required.*

PNE 162 Nursing in Health Changes II

(10-11 Cr)

Continues the focus on nursing situations and procedures necessary to assist individuals in meeting special needs related to human functions. Prerequisite: PNE 161 or equivalent. Lecture 4-6 hours. Laboratory 12-21 hours. Total 18-25 hours per week. *College reading and writing competence required.*

PNE 163 Nursing in Health Changes III

(8-9 Cr)

Continues the focus on nursing situations and procedures necessary to assist individuals in meeting special needs related to human functions. Prerequisite: PNE 162 or equivalent. Lecture 4-5 hours. Laboratory 9-15 hours. Total 14-19 hours per week. *College reading and writing competence required.*

PNE 173 Pharmacology for Practical Nurses

(1-2 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. *College reading competency required.*

Psychology

PSY 01 Preparation for College (1-3 Cr)

Teaches good habits of listening, studying, and exam-taking. Especially recommended for students who are in academic difficulty after one semester of college. Students may re-register for the course in subsequent quarters as necessary until the course objectives are completed. Variable hours.

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. Lecture 3 hours per week.

PSY 120 Human Relations (3 Cr)

Introduces the theory and practice of effective human relations. Increases understanding of self and others and interpersonal skills needed to be a competent and cooperative communicator. Lecture 3 hours per week. *College reading competency required.*

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, and techniques for selection and supervision of personnel. Lecture 3 hours per week. *College reading competency required.*

PSY 200 Principles of Psychology I-II (3 Cr)

Surveys the basic concept of psychology. Covers the scientific study of behavior, behavioral research methods and analysis, and theoretical interpretations. Includes topics such as: physiological mechanisms, sensation/perception, motivation, learning, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week. *College reading and writing competency required.*

PSY 201-202 Introduction to Psychology I-II
(3 Cr) (3 Cr)

Examines human and animal behavior, relating experimental studies to practical problems. Includes topics such as sensation/perception, learning, memory, motivation, emotion, stress, development, intelligence, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week. *College reading and writing competence required.*

PSY 205 Personal Conflict and Crisis Management
(2-3 Cr)

Studies the effective recognition and handling of personal and interpersonal conflicts. Discusses cooperative roles of public and private agencies, management of family disturbances, child abuse, rape, suicide, and related cases. Lecture 2-3 hours per week. *College reading and writing competence required.*

PSY 215 Abnormal Psychology (3 Cr)

Explores historical views and current perspectives of 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. Prerequisite PSY 201. Lecture 3 hours per week. *College reading and writing competence required.*

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. Prerequisite PSY 201. Lecture 3 hours per week. *College reading and writing competence required.*

PSY 225 Theories of Personality (3 Cr)

Studies the major personality theories and their applications. Includes psychodynamic, behavioral, cognitive, and humanistic perspectives. Prerequisite PSY 201 or divisional approval. Lecture 3 hours per week. *College reading and writing competence required.*

PSY 226 Introduction to Counseling Relationships
(3 Cr)

Introduces counseling theories and provides opportunity for their application through role-

playing and supervised paraprofessional counseling experiences. Prerequisite Divisional Approval. Lecture 3 hours per week. *College reading and writing competence required.*

PSY 230 Developmental Psychology (3 Cr)

Studies the development of the individual from conception to death. Follows a life-span perspective on the development of the person's physical, cognitive, and psychosocial growth. Lecture 3 hours per week.

PSY 231-232 Life Span Human Development I-II
(3 Cr) (3 Cr)

Investigates human behavior through the life cycle. Describes physical, cognitive and psycho-social aspects of human developmental from conception to death. Lecture 3 hours per week. *College reading and writing competence required.*

PSY 238 Development 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 psycho-social growth. Lecture 3 hours per week. *College and writing reading competence required.*

PSY 246 Psychology of Management (3 Cr)

Applies principles of industrial and organizational psychology to work environments. Includes topics such as job assessment, work design, employer-employee relations, and organizational climate. Prerequisite PSY 100, 120, or 201 or divisional approval. Lecture 3 hours per week. *College reading and writing competence required.*

PSY 255 Psychological Aspects of Criminal Behavior
(3 Cr)

Studies psychology of criminal behavior. Includes topics such as violent and non-violent crime, sexual offenses, insanity, addiction, white collar crime, and other deviant behaviors. Provides a background for law enforcement occupations. Prerequisites: PSY 125, 200, 201, 202 or divisional approval. Lecture 3 hours per week.

Real Estate

REA 100 Principles of Real Estate (4 Cr)

Examines practical applications of real estate principles. Includes a study of titles, estates, land descriptions, contracts, legal instruments, financing and management of real estate. Lecture 4 hours per week. *College reading competency required.*

REA 216 Real Estate Appraisal (3 Cr)

Explores fundamentals of real estate evaluation: methods used in determining value; application of the valuation process and the principal techniques by simulations, working problems and reviewing actual appraisals. Includes the opportunities available in the appraisal field. Lecture 3 hours per week. *College reading and writing competency required.*

Religion

REL 100 Introduction to the Study of Religion (3 Cr)

Explores various religious perspectives and ways of thinking about religious themes and religious experience. Lecture 3 hours per week.

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 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. *College reading and writing competency required.*

REL 217 Life and Letters of Paul (3 Cr)

Studies the journeys and religious thought of the apostle Paul. 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. *College reading and writing competency required.*

REL 255 Selected Problems and Issues in Religion (3 Cr)

Examines selected problems and issues of current interest in religion. May be repeated for credit. Lecture 3 hours per week.

Recreational Vehicle

RVH 110 Introduction to Motorcycle Mechanics I (4 Cr)

Covers theory of operation, differences of operation, preventive maintenance, and operating principles involved in servicing and repairing motorcycles, ATV's and personal watercraft. Upon completion, students should be able to perform basic inspection, diagnosis, repair and/or adjustment of motorcycles, ATV's and personal watercraft. Part I of II. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

RVH 111 Introduction to Motorcycle Mechanics II (4 Cr)

Covers theory of operation, differences of operation, preventive maintenance, and operating principles involved in servicing and repairing motorcycles, ATV's and personal watercraft. Upon completion, students should be able to perform basic inspection, diagnosis, repair and/or adjustment of motorcycles, ATV's and personal watercraft. Part II of II. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

RVH 120 Motorcycle Electrical Systems I (3 Cr)

Introduces starting, ignition, charging, and electrical accessory systems and their components and how they function in modern motorcycles. Part I of II. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

RVH 121 Motorcycle Electrical Systems II (3 Cr)

Introduces starting, ignition, charging, and electrical accessory systems and their components and how they function in modern motorcycles. Part II of II. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

RVH 130 Motorcycle Rider Safety - Beginner (1-2 Cr)

Studies principles and basic skills of motorcycle riding with an emphasis on safety. Includes street strategies, protective gear, and selection and care/maintenance of motorcycles. Lecture 1-2 hours. Laboratory 0-2 hours. Total 2-3 hours per week.

RVH 131 Motorcycle Engines (5 Cr)

Introduces starting, ignition, charging, and electrical accessory systems and their components and how they function in modern motorcycles. Topics include wiring diagrams, batteries, AC generators, rectifiers, voltage regulators, and diodes as well as points, coil, capacitor discharge, and electronic ignition systems. Upon completion, students should be able to diagnose and repair various starting, ignition, charging, and electrical accessory systems. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

RVH 132 Motorcycle Fuel Systems (5 Cr)

Introduces various types of fuels and fuel systems used in motorcycle internal combustion engines. Emphasis is placed on the theory and principles of carburetion and fuel injection. Upon completion, students should be able to service, disassemble, inspect, reassemble, and adjust to manufacturer's specifications the components of various fuel systems. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

RVH 133 Motorcycle Chassis (4 Cr)

Covers chassis adjustments, components, and types and uses of frames and suspensions. Emphasis is placed on proper and safe use of tools and equipment in servicing and maintaining motorcycle chassis. Upon completion, students should be able to service and repair motorcycle chassis systems and suspension components. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

RVH 140 Troubleshooting (4 Cr)

Covers shop procedures for fast and accurate diagnosis of problems in the electrical, mechanical, and fuel systems of motorcycles. Emphasis is placed on developing a logical sequence of diagnostic procedures. Upon completion, students should be able to diagnose problems in the electrical, mechanical, and fuel systems of motorcycles. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

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. *College reading and writing competence required.*

SOC 201-202 Introduction to Sociology I-II (3 Cr) (3 Cr)

Introduces basic concepts and methods of sociology. Presents significant research and theory in areas such as socialization, group dynamics, gender roles, minority group relations, population, social change, and social institutions (family, education, religion, political system, economic system). Lecture 3 hours per week. *College reading and writing competence required.*

SOC 211-212 Principles of Anthropology (3 Cr) (3 Cr)

Inquires into the origins, development, and diversification of human biology and human cultures. Includes fossil records, physical origins of human development, human population genetics, linguistics, cultures' origins and variation, and historical and contemporary analysis of human societies. Lecture 3 hours per week. *College reading and writing competency required.*

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. *College reading and writing competence required.*

SOC 218 Family Violence (3 Cr)

Examines occasions and reasons family relationships do not work. Includes types of family violence, and its prevention. Lecture 3 hours per week. *College reading and writing competence required.*

SOC 235 Juvenile Delinquency (3 Cr)

Studies demographic trends, casual theories, and control of juvenile delinquency. Presents juveniles' interaction with family, schools, police, courts, treatment programs, and facilities. Also approved for ADJ Juvenile curriculum. Lecture 3 hours per week. *College reading and writing competence required.*

SOC 236 Criminology (3 Cr)
Studies research and causal theories of criminal behavior. Examines crime statistics, crime victims, and types of criminal offenses. Introduces role of police, judicial and correctional system in treatment and punishment of offenders. Is also approved for ADJ Criminology. Lecture 3 hours per week. *College reading and writing competence required.*

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. Lecture 3 hours per week.

Spanish

SPA 101-102 Beginning Spanish I-II
(4-5 Cr) (4-5 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. Lecture 4-5 hours per week. *College reading competence required.*

SPA 111-112 Conversation in Spanish I-II
(3 Cr) (3 Cr)
Emphasizes the spoken language, stressing fluency and correctness of structure, pronunciation, and vocabulary. Prerequisite SPA 102. Lecture 3 hours per week.

SPA 163-164 Spanish for Health Professionals I-II (3 Cr) (3 Cr)
Introduces Spanish to those in the health sciences. Emphasizes oral communication and practical medical vocabulary. May include oral drill and practice. Lecture 3 hours per week.

SPA 103-104 Basic Spoken Spanish I-II
(3 Cr) (3 Cr)
Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week. *College reading competence required.*

SPA 201-202 Intermediate Spanish I-II
(3-4 Cr) (3-4 Cr)
Continues to develop understanding, speaking, reading, and writing skills. Prerequisite SPA 102 or

equivalent. May include oral drill and practice. Lecture 3-4 hours per week. *College reading and writing competence required.*

SPA 233-234 Introduction to Spanish Civilization and Literature I-II (3 Cr) (3 Cr)
Introduces the student to Spanish culture and literature. Readings and discussions conducted in Spanish. Prerequisite SPA 202 or equivalent. Lecture 3 hours per week. *College reading and writing competence required*

Speech

SPD 100 Principles of Public Speaking (3 Cr)
Applies theory and principles of public address with emphasis on preparation and delivery. Lecture 3 hours per week. *College reading and writing competence required.*

SPD 110 Introduction to Speech Communication
(2-3 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 2-3 hours per week.

SPD 130 Introduction to the Theatre (3 Cr)
Surveys the principles of drama, the development of theatre production, and selected plays to acquaint the student with various types of theatrical presentations. Lecture 3 hours per week.

Social Science

SSC 101-102 Contemporary Social Problems I-II
(3 Cr) (3 Cr)
Surveys contemporary American social problems from the perspective of the social sciences. Provides an interdisciplinary approach as a basis for forming individual judgments on major domestic issues. Lecture 3 hours per week.

Student Development

SDV 01 Student Development (Insert Appropriate Disciplines) (1-5 Cr)
Reviews the basic concepts and skills necessary for students to progress satisfactorily in regular college courses. Lecture 1-5 hours per week.

SDV 80 Integrated Basic Academic/Life Skills
(5 Cr)
Provides an integrated approach to developing

skills in grammar usage, vocabulary, writing, career exploration/planning, job-related computation skills, study skills and other functional academics. Required for first semester PAVE students. Lecture 5 hours per week.

SDV 100 Orientation (1 Cr)

Assists students in transition to colleges. Provides overviews of college policies, procedures, curricula 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 math placement testing. Strongly recommended for beginning students. Required for graduation. Lecture 1 hour per week.

SDV 104 Study Skills (1-3 Cr)

Assists students in planning strategies to overcome nonproductive study habits and in implementing positive study behaviors. Includes management, memory improvement, note taking, and test taking. Lecture 1-3 hours per week.

SDV 106 Preparation for Employment (1-2 Cr)

Provides experience in resume writing, preparation of applications, letters of application, and successfully preparing for and completing the job interview. Assists students in identifying their marketable skills and aptitudes. Develops strategies for successful employment search. Assists students in understanding effective human relations techniques and communication skills in job search. Lecture 1-2 hours per week.

SDV 107 Career Education (1-3 Cr)

Surveys career options available to students. Stresses career development and assists in the understanding of self in the world of work. Assists students in applying decision-making to career choice. Lecture 1-3 hours per week.

SDV 108 College Survival Skills (1-3 Cr)

Provides an orientation to the college. Introduces study skills, career and life planning. Offers an opportunity to engage in activities aimed at self-discovery. Emphasizes development of "coping skills" such as listening, interpersonal relations, competence, and improved self-concept. Recommended for students enrolled in developmental courses. Lecture 1-3 hours per week.

SDV 109 Student Leadership Development

(1 Cr)

Provides opportunities for students to learn leadership theory and skills for application in campus organizations, committees and groups. Lecture 1 hour per week.

Trucking

TRK 101 DOT Safety Rules and Regulations

(2 Cr)

Includes an intensive study of the Department of Transportation and state and local laws and regulations governing the motor carrier industry as applied to the professional operation of commercial vehicles. Corequisite TRK 102 and 103. Lecture 2 hours per week.

TRK 102 Preventive Maintenance for Truck Drivers

(1 Cr)

Focuses on the fundamentals of preventive maintenance and inspection procedures for gasoline and diesel powered tractor-trailers. Includes drivelines, brake systems, electrical system and accessories encountered by the professional truck driver. Corequisite TRK 101 and 103. Lecture 1 hour per week.

Welding

WEL 110 Welding Processes

(3 Cr)

Introduces types of welding, their advantages and disadvantages. Points out effects of welds on metals to be machined. Provides practice and demonstration in welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 120 Introduction to Welding (2-3 Cr)

Introduces history of welding processes. Covers types of equipment, and assembly of units. Stresses welding procedures such as fusion, non-fusion, and cutting oxyacetylene. Introduces arc welding. Emphasizes procedures in the use of tools and equipment. Lecture 1-2 hours. Laboratory 2-3 hours. Total 3-5 hours per week.

WEL 123 Shielded Metal Arc Welding (Basic)

(3-4 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. Laboratory 3-6 hours. Total 5-8 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. Lecture 2 hours. Laboratory 3-6 hours. Total 5-8 hours per week.

WEL 126 Pipe Welding I (3- 4 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. Lecture 2-3 hours. Laboratory 3 hours. Total 5-6 hours per week.

WEL 130 Inert Gas Welding (3-4 Cr)

Introduces practical operations in the uses of inert-gas- shield arc welding. Discusses equipment, safety operations, welding practice in the various positions, process applications, and manual and semi-automatic welding. Lecture 2 hours. Laboratory 3-6 hours. Total 5-8 hours per week.

WEL 136 Welding III (Inert Gas) (2 Cr)

Studies Tungsten and metallic inert gas procedures and practices including principles of operation, shielding gasses, filler rods, process variations and applications, manual and automatic welding, equipment and safety. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 150 Welding Drawing and Interpretation
(2-3 Cr)

Teaches fundamentals required for successful drafting as applied to the welding industry. Includes blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings and interpretation of symbols. Lecture 2-3 hours per week.

WEL 195 Topics In (1-5 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. Variable hours.

General Usage Courses

NOTE: The following General Usage Courses

apply to multiple curricula and all prefix sections. The titles and descriptions are generally applicable for such use. However, colleges may elect to substitute different, but essentially equivalent, titles (e.g. Field Experiences in lieu of Coordinated Internship) to satisfy the preferences of respective professional fields or disciplines. Similarly, the course description may be restructured for adaptation to appropriate context or to a more-specialized applicability (e.g. health agencies/facilities or hospitals in lieu of business, industrial and service firms).

(INSERT APPROPRIATE PREFIX) 90, 190, 290 Coordinated Practice in (Insert Appropriate Discipline) (1-5 Cr)

Includes supervised practice in selected health agencies coordinated by the college. Credit/Practice ratio maximum 1:5 hours. May be repeated for credit. Variable hours.

(INSERT APPROPRIATE PREFIX) 90, 190, 290 Coordinated Internship in (Insert Appropriate Discipline) (1-5 Cr)

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/Practice ratio maximum 1:5 hours. May be repeated for credit. Variable hours.

(INSERT APPROPRIATE PREFIX) 95, 195, 295 Topics in: (Insert appropriate topic) (1-5 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. Variable hours.

(INSERT APPROPRIATE PREFIX) 96, 196, 296 On-Site Training in (Insert appropriate discipline) (1-5 Cr)

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 Cooperative Education in (Insert Appropriate Discipline) (1-5 Cr)

Supervises in on-the-job training for pay in approved business, industrial and service forms 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
Seminar and Project in (Insert Appropriate Discipline)
(1-5 Cr)**

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
Supervised Study in (Insert Appropriate Discipline)
(1-5 Cr)**

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

SVCC DEVELOPMENTAL**PREREQUISITES**

Curricular students should not enroll in the following courses until they have demonstrated proficiency on the placement examination or completed the appropriate developmental course.

Course # Course Name

ACC 211	Principles of Accounting I (ENG 05, MTH 02)	AST 107	Editing/Proofreading Skills (ENG 03, ENG 05)
ACC 212	Principles of Accounting II (ENG 03, ENG 05, MTH 02)	AST 114	Keyboarding for Information Processing (ENG 05 co-requisite)
ACC 215	Computerized Accounting (ENG 03, ENG 05, MTH 02)	AST 130	Office Procedures (ENG 05)
ACC 221	Intermediate Accounting I (ENG 03, ENG 05, MTH 02)	AST 132	Word Processing I (ENG 05)
ACC 222	Intermediate Accounting II (ENG 03, ENG 05, MTH 02)	AST 141	Word Processing I (ENG 05)
ACC 241	Auditing I (ENG 03, ENG 05, MTH 02)	AST 144	Word Processing I Lab (ENG 05)
ACC 261	Principles of Federal Taxation I (ENG 03, ENG 05, MTH 02)	AST 234	Records and Database Management (ENG 05)
ADJ 201	Criminology I (ENG 03, ENG 05, MTH 02)	AST 236	Specialized Software Applications (ENG 03, ENG 05)
ADJ 202	Criminology II (ENG 03, ENG 05, MTH 02)	AST 238	Word Processing Advanced Operations (ENG 03, ENG 05)
ADJ 205	Causes of Crime and Delinquency (ENG 03, ENG 05)	AST 243	Office Administration I (ENG 05)
ADJ 211	Criminal Law, Evidence & Procedures I (ENG 03, ENG 05)	AST 244	Office Administration II (ENG 05)
ADJ 212	Criminal Law, Evidence & Procedures II (ENG 03, ENG 05)	AST 253	Advanced Desktop Publishing I (ENG 05)
ADJ 225	Courts and the Administration of Justice (ENG 03, ENG 05)	BIO 100	Basic Human Biology (ENG 05)
ADJ 227	Constitutional Law for Justice Personnel (ENG 03, ENG 05)	BIO 101	General Biology I (ENG 03, ENG 05, MTH 02)
ADJ 229	Law Enforcement and the Community (ENG 03, ENG 05)	BIO 102	General Biology II (ENG 03, ENG 05, MTH 02)
ADJ 234	Terrorism and Counter Terrorism (ENG 03, ENG 05)	BIO 110	General Botany (ENG 03, ENG 05, MTH 02)
ADJ 235	Research in the Justice System (ENG 03, ENG 05)	BIO 120	General Zoology (ENG 03, ENG 05, MTH 02)
ADJ 236	Principles of Criminal Investigation (ENG 03, ENG 05)	BIO 145	Human Anatomy and Physiology for the Health Sciences (ENG 03, ENG 05, MTH 03, CHM 05, BIO 01)
ADJ 237	Advanced Criminal Investigation (ENG 03, ENG 05)	BIO 150	Introductory Microbiology (ENG 05, MTH 02)
ADJ 247	Criminal Behavior (ENG 03, ENG 05)	BIO 180	Introduction to Career in Biotechnology (ENG 03, ENG 05)
ADJ 248	Probation, Parole, and Treatment (ENG 03, ENG 05)	BIO 231	Human Anatomy & Physiology I (ENG 03, ENG 05, MTH 03, CHM 05, BIO 01)
ART 101	History and Appreciation of Art I (ENG 03, ENG 05)	BIO 232	Human Anatomy & Physiology II (ENG 03, ENG 05)
AST 101	Keyboarding I (ENG 05 co-requisite)	BIO 251	Biotechnology I: Protein Research (ENG 03, ENG 05, MTH 03, CHM 05, BIO 01)
AST 102	Keyboarding II (ENG 05 co-requisite)	BIO 252	Biotechnology II: DNA Research (ENG 03, ENG 05, MTH 03, CHM 05, BIO 01)
		BUS 100	Introduction to Business (ENG 05)
		BUS 111	Principles of Supervision (ENG 05)
		BUS 116	Entrepreneurship (ENG 05)
		BUS 117	Human Relations and Leadership Development (ENG 05)
		BUS 125	Applied Business Mathematics (MTH 02, MTH 03)
		BUS 200	Principles of Management (ENG 05)
		BUS 201	Organizational Behavior (ENG 05)

BUS 205	Human Resource Management (ENG 03, 05)	ENG 115	Technical Writing (ENG 03, ENG 05)
BUS 236	Communication in Management (ENG 03, ENG 05)	ENG 137	Communication Processes I (ENG 03, ENG 05)
BUS 241	Business Law I (ENG 03, 05)	ENG 138	Communication Processes II (ENG 03, ENG 05)
BUS 242	Business Law II (ENG 03, 05)	ENG 210	Advanced Composition (ENG 03, ENG 05)
BUS 265	Ethical Issues in Management (ENG 03, 05)	ENG 241	Survey of American Literature I (ENG 03, ENG 05)
BUS 280	Intro to International Business (ENG 03, 05)	ENG 242	Survey of American Literature II (ENG 03, ENG 05)
BUS 285	Current Issues in Management (ENG 03, 05)	ENG 243	Survey of English Literature I (ENG 03, ENG 05)
BUS 298	Seminar and Project (ENG 03, 05)	ENG 244	Survey of English Literature II (ENG 03, ENG 05)
CHD 117	Intro to Reading Methods (ENG 05)	ENG 251-252	Survey of World Literature I-II (ENG 03, ENG 05)
CHD 118	Methods and Materials in the Language Arts for Children (ENG 05)	ENG 253	Survey of Afro-American Literature I (ENG 03, ENG 05)
CHD 120	Intro to Early Childhood Education (ENG 05)	ENG 254	Survey of Afro-American Literature II (ENG 03, ENG 05)
CHD 125	Creative Activities for Children (ENG 05)	ENG 265	The Modern Short Story (ENG 03, ENG 05)
CHD 126	Science and Math Concepts for Children (ENG 05)	ENG 279	Film & Literature (ENG 03, ENG 05)
CHD 167	CDA Theories and Applications: Portfolio (ENG 05)	FIN 107	Personal Finance (ENG 05, MTH 02)
CHD 205	Guiding the Behavior of Children (ENG 05)	FIN 215	Financial Management (ENG 05, MTH 02)
CHM 05	Developmental Chemistry for Health Sciences (MTH 03, ENG 05)	FIR 100	Introduction to Fire Science (ENG 05)
CHM 101	General Chemistry I (ENG 05, MTH 03)	FIR 105	Fire Suppression Operations (ENG 05)
CHM 102	General Chemistry II (ENG 05, MTH 03)	FIR 111	Hazardous Materials Response (ENG 05)
CHM 111	College Chemistry I (ENG 05, MTH 03)	FIR 116	Fire Prevention Fundamentals (ENG 05)
CHM 112	College Chemistry II (ENG 05, MTH 03)	FIR 215	Fire Suppression and Detection Systems (ENG 03, ENG 05)
DRF 135	Electrical/Electronics Blueprint Reading (ENG 05)	FIR 220	Building Construction (ENG 03, ENG 05)
DRF 151-152	Engineering Drawing Fundamentals I-II (ENG 05)	FRE 101	Beginning French I (ENG 03, ENG 05)
DRF 201	Computer Aided Drafting & Design (ENG 05)	FRE 102	Beginning French II (ENG 03, ENG 05)
DRF 211	Advanced Technical Drafting I (ENG 05)	GEO 210	People & the Land: An Intro to Cultural Geography (ENG 03, ENG 05)
DRF 212	Advanced Technical Drafting II (ENG 05)	GOL 105	Physical Geology (ENG 03, ENG 05)
ECO 201	Principles of Economics I (ENG 03, 05, MTH 02)	GOL 106	Historical Geology (ENG 03, ENG 05)
ECO 202	Principles of Economics II (ENG 03, 05, MTH 02)	HIS 101	History of Western Civilization I (ENG 03, ENG 05)
EDU 160	Adult Literacy Training (ENG 05)	HIS 102	History of Western Civilization II (ENG 03, ENG 05)
EDU 200	Intro to Teaching as a Profession (ENG 05)	HIS 121	United States History I (ENG 03, ENG 05)
EDU 235	Health, Safety and Nutrition Education (ENG 03, ENG 05)	HIS 122	United States History II (ENG 03, ENG 05)
ENG 105	Communication in Business (ENG 03, ENG 05)	HIS 126	Women in World History (ENG 03, ENG 05)
ENG 111	College Composition I (ENG 03, ENG 05)	HIS 141-142	Afro-American History I-II (ENG 03, ENG 05)
ENG 112	College Composition II (ENG 03, ENG 05)		

HIS 155	Life in Colonial Virginia (ENG, 03, ENG 05)	HUM 212	Survey of American Culture II (ENG 03, ENG 05)
HIS 266	Military History of the Civil War (ENG 03, ENG 05)	HUM 220	Introduction to African American (ENG 03, ENG 05)
HIS 268	The American Constitution (ENG 05)	ITD 110	Web Page Design I (ENG 05)
HIS 269	Civil War and Reconstruction (ENG 03, ENG 05)	ITD 112	Designing Web Page Graphics (ENG 05)
HLT 110	Concepts of Health (ENG 03, ENG 05)	ITD 210	Web Page Design II (ENG 05)
HLT 121	Intro to Drug Use and Abuse (ENG 03, ENG 05)	IDT 212	Interactive Web Design (ENG 05)
HLT 143	Medical Terminology I (ENG 05)	ITE 100	Intro to Information Systems (ENG 05)
HLT 144	Medical Terminology II (ENG 05)	ITE 101	Introduction to Microcomputers (Eng 05)
HLT 230	Principles of Nutrition and Human Development (ENG 05)	ITE 102	Computers and Information Systems (ENG 05)
HMS 203	Marriage and Family Counseling I (ENG 03, ENG 05)	ITE 115	Intro to Computer Applications & Concepts (ENG 05)
HMS 205	Marriage and Family Counseling II (ENG 03, ENG 05)	ITE 127	Microcomputer Software: Beginning Windows (ENG 05)
HMS 220	Addiction & Prevention (ENG 03, ENG 05)	ITE 130	Intro to Internet Services (ENG 05)
HMS 225	Functional Family Intervention (ENG 03, ENG 05)	ITE 131	Survey of Internet Services (Eng 05)
HMS 226	Helping Across Cultures (ENG 03, ENG 05)	ITE 140	Spreadsheet Software (ENG 05)
HMS 226	The Helper as a Change Agent (ENG 03, ENG 05)	ITE 150	Desktop Database Software (ENG 05)
HMS 230	Assessment Techniques for Care Managers (ENG 03, ENG 05)	ITE 160	Introduction to E-Commerce (ENG 05)
HMS 231	Gerontology I (ENG 03, ENG 05)	ITE 170	Multimedia Software (ENG 05)
HMS 234	Managing Senior Adult Activity Programs (ENG 03, ENG 05)	ITE 175	Email Essentials (ENG 05)
HMS 236	Gerontology (ENG 03, ENG 05)	ITE 200	Technology for Teachers (Eng 05)
HMS 255	Adolescent Alcohol Use and Abuse (ENG 03, ENG 05)	ITE 221	PC Hardware & OS Architecture (ENG 03, ENG 05)
HMS 258	Case Management and Substance Abuse (ENG 03, ENG 05)	ITE 215	Advanced Computer Applications & Integration (ENG 03, ENG 05)
HMS 260	Substance Abuse Counseling (ENG 03, ENG 05)	ITE 270	Advanced Multimedia Development (Eng 05)
HMS 266	Counseling Psychology (ENG 03, ENG 05)	ITN 101	Intro to Network Concepts (ENG 05)
HMS 270	Treatment Systems (ENG 03, ENG 05)	ITN 106	Microcomputer Operating Systems (ENG 05)
HMS 275	Adult Home Administration (ENG 03, ENG 05)	ITN 107	Personal Computer Hardware and Troubleshooting (ENG 05)
HUM 100	Survey of the Humanities (ENG 03, ENG 05)	ITN 109	Internet and Network Foundation (Eng 05)
HUM 111	Great Books I (ENG 03, ENT 05)	ITN 154	Networking Fundamentals – Cisco (ENG 05)
HUM 112	Great Books II (ENG 03, ENG 05)	ITN 155	Introductory Routing-Cisco (ENG 05)
HUM 201	Survey of Western Culture I (ENG 03, ENG 05)	ITN 156	Basic Switching and Routing-Cisco (ENG 05)
HUM 202	Survey of Western Culture II (ENG 03, ENG 05)	ITN 157	WAN Technologies-Cisco (ENG 05)
HUM 210	Introduction to Women's Studies (ENG 03, ENG 05)	ITN 267	Legal Topics in Network Security (Eng 05)
HUM 211	Survey of American Culture I (ENG 03, ENG 05)	ITP 100	Software Design (ENG 05)
		ITP 110	Visual Basic Programming I (ENG 05)
		ITP 112	Visual Basic.NET (ENG 05)
		ITP 120	Java Programming I (ENG 05)
		ITP 132	C++ Programming I (ENG 05)
		ITP 154	Basic Programming I (Eng 05)
		ITP 158	Micro Assembler I (Eng 05)
		ITP 160	Introduction to Game Design & Development (Eng 05)

IPT 175	Concepts of Programming Languages (ENG 05)	NUR 111	Nursing I (ENG 03, ENG 05)
ITP 210	Visual Programming II (ENG 03, ENG 05)	NUR 115	LPN Transition (ENG 03, ENG 05)
ITP 212	Visual Basic.NET II (ENG 03, Eng 05)	NUR 120	Nursing Terminology (ENG 05)
ITP 220	Java Programming II (ENG 05)	NUR 135	Drug Dosage Calculation (ENG 05, MTH 02)
ITP 232	C++ Programming II (ENG 05)	NUR 136-137	Principles of Pharmacology I-II (ENG 03, ENG 05)
MEC 215	Advanced Jig and Fixture Design (ENG 03, ENG 05)	NUR 221-222	Second Level Nursing Principles and Concepts I, II (ENG 03, ENG 05)
MEN 135	Human Services and the Law (ENG 03, ENG 05)	NUR 223	Second Level Nursing Principles and Concepts III (ENG 03, ENG 05)
MEN 225	Counseling Therapy (ENG 03, ENG 05)	PHI 100	Introduction to Philosophy (ENG 03, ENG 05)
MKT 100	Principles of Marketing (ENG 05)	PHI 115	Practical Reasoning (ENG 05)
MKT 110	Principles of Selling (ENG 05)	PHI 220	Ethics (ENG 03, ENG 05)
MKT 115	Retail Organization and Management (ENG 05)	PHI 225	Selected Problems in Applied Ethics (ENG 03, ENG 05)
MTH 103	Applied Technical Math I (MTH 02)	PHY 101	Introduction to Physics I (ENG 05, MTH 03, MTH 04)
MTH 120	Introduction to Mathematics (ENG 05, MTH 02, MTH 03)	PHY 102	Introduction to Physics II (ENG 05, MTH 03, MTH 04)
MTH 141	Business Mathematics I (ENG 05, MTH 02, MTH 03)	PHY 111-112	Technical Physics I-II (MTH 03 or MTH 07 co-requisite)
MTH 142	Business Mathematics II (ENG 05, MTH 02, MTH 03, MTH 141)	PHY 130	Survey of Applied Physics (ENG 05, MTH 03, MTH 04, MTH 07)
MTH 150	Topics in Geometry (ENG 05, MTH 03, MTH 04)	PHY 201	General College Physics I (ENG 05, MTH 03, MTH 04, MTH 07)
MTH 151	Math for Liberal Arts I (ENG 05, MTH 03, MTH 04)	PHY 202	General College Physics II (ENG 05, MTH 03, MTH 04, MTH 07)
MTH 152	Math for Liberal Arts II (ENG 05, MTH 03, MTH 04)	PLS 130	Basics of American Politics (ENG 03, ENG 05)
MTH 163	Pre-Calculus I (ENG 05, MTH 03, MTH 04)	PLS 135	American National Politics (ENG 03, ENG 05)
MTH 164	Pre-Calculus II (ENG 05, MTH 03, MTH 04)	PLS 211	U.S. Government I (ENG 03, ENG 05)
MTH 168	Pre-Calculus II (ENG 05, MTH 03, MTH 04)	PLS 212	U.S. Government II (ENG 03, ENG 05)
MTH 175	Calculus of One Variable I (ENG 05, MTH 03, MTH 04, MTH 07)	PNE 145	Trends in Practical Nursing (ENG 05)
MTH 176	Calculus of One Variable II (ENG 05, MTH, 03, MTH 04, MTH 07)	PNE 161	Nursing in Health Changes I (ENG 03, ENG 05)
MTH 241	Statistics I (ENG 05, MTH 03)	PNE 162	Nursing in Health Changes II (ENG 03, ENG 05)
MTH 242	Statistics II (ENG 05, MTH 03)	PNE 163	Nursing in Health Changes III (ENG 03, ENG 05)
MTH 273	Calculus I (ENG 03, ENG 05, MTH 03, MTH 04, MTH 07)	PNE 173	Pharmacology for Practical Nurses (ENG 03, ENG 05)
MTH 274	Calculus II (ENG 03, ENG 05, MTH 03, MTH 04, MTH 07)	PSY 116	Psychology of Death and Dying (ENG 05)
MTH 275	Multivariable Calculus and Linear Algebra (MTH 174)	PSY 126	Psychology for Business and Industry (ENG 05)
MUS 121	Music Appreciation I (ENG 05)	PSY 200	Principles of Psychology (ENG 03, ENG 05)
MUS 122	Music Appreciation Ii (ENG 05)	PSY 201	Introduction to Psychology I (ENG 03, ENG 05)
NAS 125	Meteorology (ENG 03, ENG 05, MTH 03)		
NAS 161	Health Science I (ENG 03, ENG 05, MTH 03, CHM 05, BIO 01)		
NAS 162	Health Science II (ENG 03, ENG 05, MTH 03, CHM 05, BIO 01)		

PSY 202	Introduction to Psychology II (ENG 03, ENG 05)	REL 230	Religions of the World (ENG 03, ENG 05)
PSY 205	Personal Conflict and Crisis Management (ENG 03, ENG 05)	REL 255	Selected Problems and Issues in Religion (ENG 03, ENG 05)
PSY 215	Abnormal Psychology (ENG 03, ENG 05)	SOC 200	Principles to Sociology (ENG 03, ENG 05)
PSY 216	Social Psychology (ENG 03, ENG 05)	SOC 211	Principles of Anthropology I (ENG 03, ENG 05)
PSY 225	Theories of Personality (ENG 03, ENG 05)	SOC 212	Principles of Anthropology II (ENG 03, ENG 05)
PSY 226	Introduction to Counseling Relationships (ENG 03, ENG 05)	SOC 215	Sociology of the Family (ENG 03, ENG 05)
PSY 230	Developmental Psychology (ENG 03, ENG 05)	SOC 218	Family Violence (ENG 03, ENG 05)
PSY 246	Psychology of Management (ENG 03, ENG 05)	SOC 235	Juvenile Delinquency (ENG 03, ENG 05)
PSY 255	Psychological Aspects of Criminal Behavior (PSY 125, 200, 201, 201)	SOC 236	Criminology (ENG 03, ENG 05)
REA 100	Principles of Real Estate (ENG 05)	SOC 268	Social Problems (ENG 03, ENG 05)
REA 216	Real Estate Appraisal (ENG 03, ENG 05)	SPA 101	Beginning Spanish I (ENG 05)
REL 100	Introduction to the Study of Religion (ENG 05)	SPA 102	Beginning Spanish II (ENG 05)
REL 200	Survey of the Old Testament (ENG 03, ENG 05)	SPA 103-104	Basic Spoken Spanish I-II (ENG 05)
REL 216	Life and Teachings of Jesus (ENG 03, ENG 05)	SPA 111	Conversation in Spanish I
REL 217	Life and Letters of Paul (ENG 03, ENG 05)	SPA 201	Intermediate Spanish I (ENG 03, ENG 05)
REL 225	Selected Topics in Biblical Studies (ENG 03, ENG 05)	SPA 202	Intermediate Spanish II (ENG 03, ENG 05)
		SPA 233	Introduction to Spanish Civilization & Literature I (ENG 03, ENG 05)
		SPA 234	Introduction to Spanish Civilization & Literature II (ENG 03, ENG 05)
		SPD 110	Introduction to the Theatre (ENG 03, ENG 05)