

COURSE DESCRIPTIONS

ACCOUNTING

Introduction to Bookkeeping ACC 100 • 5 credits

Presents the accounting cycle, focusing on the routine recording of data in journals and ledgers. Includes payroll preparation and practical procedures. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

Hospitality Accounting ACC 116 • 3 credits

Applies accounting principles and practices to the hospitality industry. Studies the accounting cycle of recording, summarizing, and reporting financial information. Analyzes information from the viewpoint of the hospitality industry manager. Lecture 3 hours per week.

Payroll Accounting ACC 124 • 3 credits

Presents accounting systems and methods used in computing and recording payroll to include payroll taxes and compliance with federal and state legislation. Lecture 3 hours per week.

Principles of Accounting I ACC 211 • 3 credits

Presents accounting principles and their application to various businesses. Covers the accounting cycles, income determination, and financial reporting. Requires the use of a computer. Lecture 3 hours per week.

Principles of Accounting II ACC 212 • 3 credits

Continues Accounting 211 with emphasis on application to partnerships, corporations and the study of financial analysis. Includes an introduction to cost and managerial accounting. Requires the use of a computer. Prerequisite: ACC 211. Lecture 3 hours per week.

Computerized Accounting ACC 215 • 3 credits

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 corequisite: ACC 212 or equivalent. Lecture 3 hours per week.

Analyzing Financial Statements ACC 217 • 3 credits

Explains the generation and limitations of data, techniques for analyzing the flow of a business's funds, and the methods of selecting and interpreting financial ratios. Offers analytical techniques through the use of comprehensive case studies. Prerequisite: ACC 211. Lecture 3 hours per week.

Accounting for Small Business ACC 220 • 3 credits

Presents practical accounting procedures for small business operations including service occupations, retail stores, and manufacturing operations. Covers the accounting cycle, journals, ledgers, preparation of financial statements and payrolls, and checking account management. Includes regulations applicable to payroll, self-employment, social security and other taxes. Lecture 3 hours per week.

Intermediate Accounting I ACC 221 • 4 credits

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 4 hours per week.

Intermediate Accounting II ACC 222 • 4 credits

Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. Prerequisite: ACC 212 or equivalent. Lecture 4 hours per week.

Cost Accounting I ACC 231 • 3 credits

Presents cost accounting methods and reporting as applied to job order, process, and standard cost accounting systems. Includes cost control, profit analysis, and other topics. Prerequisite: ACC 212 or equivalent. Lecture 3 hours per week.

Auditing I ACC 241 • 3 credits

Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence-gathering techniques and other topics. Prerequisite: ACC 212 or equivalent. Lecture 3 hours per week.

Principles of Federal Taxation I ACC 261 • 3 credits

Presents the study of federal taxation as it relates to individuals and related entities. Includes tax planning, compliance, and reporting. Lecture 3 hours per week.

ACQUISITION AND PROCUREMENT

Introduction to Acquisition and Procurement Fundamentals I-II ACQ 121-122 • 3 credits each

Emphasizes contracting with the government. Covers entire government/industry contracting cycle including funding, procurement methods, types of contracts, source selection, negotiations, and contract administration. Satisfies requirements of the mandatory Department of Defense course: Management of Defense Acquisition Contracting Fundamentals when combined with DOD materials. Lecture 3 hours per week.

Contract Law ACQ 215 • 3 credits

Provides an introduction to government contract law. Covers legal aspects associated with contracting and the administration of contracts. Emphasizes the dispute process, including administrative and judicial methods of resolution of contract disputes. Satisfies requirements of the mandatory Department of Defense course: Government Contracts-Law when combined with DOD materials. Lecture 3 hours per week.

Advanced Acquisition and Procurement Management I

ACQ 221 • 3 credits

Covers advanced areas of contract management, accounting principles, contractor controls, contract administration, organizations, terminations, disputes, subcontractor controls and relationships. Satisfies requirements of the mandatory Department of Defense course: Management of Defense Acquisition Contracts-Advanced when combined with DOD materials. Lecture 3 hours per week.

Principles of Contract Pricing and Negotiations I-II

ACQ 231-232 • 3 credits each

Includes an estimation of the environment in which cost and price analysis takes place, sources of data for cost and price analysis, methods for analyzing direct and indirect costs, methods for performing profit analysis, and a selection of current pricing topics. Individual and group negotiation activities address the fundamentals of the negotiation process, including essential techniques, strategies and tactics. Satisfies requirements of the mandatory Department of Defense course: Principles of Contract Pricing 1990 when combined with DOD materials. Lecture 3 hours per week.

ADMINISTRATION OF JUSTICE**The Juvenile Justice System**

ADJ 105 • 3 credits

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.

Introduction to Law Enforcement

ADJ 110 • 3 credits

Studies the philosophy and history of law enforcement, presenting an overview of the crime problem and policy response issues. Surveys the jurisdictions and organizations of local, state, and federal law enforcement agencies. Examines the qualification requirements and career opportunities in the law enforcement profession. Lecture 3 hours per week.

Law Enforcement Organization and Administration I

ADJ 111 • 3 credits

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. Lecture 3 hours per week.

Introduction to Corrections

ADJ 140 • 3 credits

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.

Criminology

ADJ 201 • 3 credits

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.

Criminal Law, Evidence, and Procedures I-II

ADJ 211-212 • 3 credits each

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.

First Line Supervision

ADJ 230 • 3 credits

A supervisory development course for law enforcement. Includes a study of administration, legal issues, interpersonal and organizational communication, human resource management, internal and external influences, leadership, ADA issues and minority issues concerning supervisors and supervision. Lecture 3 hours per week.

Community Policing

ADJ 231 • 3 credits

Examines the history of police-community relations and the role of both the community and the police in establishing a crime fighting partnership for success. Emphasis is on building relationships between police officers and the community they serve. Case studies from various cities that have undertaken the philosophy of community policing will be explored. Lecture 3 hours per week.

Domestic Violence

ADJ 232 • 3 credits

Discusses the historical issues that have kept family violence hidden for so many centuries. Presents current trends that are dealing with domestic violence as the crime it represents. Lecture 3 hours per week.

Terrorism and Counter-Terrorism

ADJ 234 • 3 credits

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. Lecture 3 hours per week.

Principles of Criminal Investigation

ADJ 236 • 3 credits

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

ADMINISTRATIVE SUPPORT TECHNOLOGY**Keyboarding I** AST 101 • 3 credits

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 hours per week.

Keyboarding II AST 102 • 3 credits

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 hours per week.

Keyboarding for Computer Usage AST 117 • 1 credit

Teaches the alphabetic keyboard and 10-key pad. Develops correct keying techniques. Lecture 1 hour per week.

Word Processing I (Specify Software) AST 132 • 1 credit

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

Word Processing (Specify Software) AST 141 • 4 credits

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 4 hours per week.

Introduction to Voice Recognition Software AST 154 • 1 credit

Teaches the computer user to use the voice as an input device to compose documents and to give commands directly to the computer. Since this new technology is being used in many businesses, medical and legal offices, students should be prepared to use this input device. Lecture 1 hour per week.

Keyboarding III AST 201 • 3 credits

Develops decision-making skills, speed, and accuracy in production keying. Applies word processing skills in creating specialized business documents. Prerequisite: AST 102 or equivalent. Lecture 3 hours per week.

Business Communications AST 205 • 3 credits

Teaches techniques of oral and written communications. Emphasizes writing and presenting business-related material. Prerequisite: ENG 111. Lecture 3 hours per week.

Records and Database Management AST 234 • 3 credits

Teaches filing and records management procedures using microcomputer database software. Incorporates both manual and electronic methods for managing information. A laboratory co-requisite (AST 235) may be required. Lecture 3 hours per week.

Specialized Software Applications AST 236 • 4 credits

Teaches specialized integrated software applications on the microcomputer. Emphasizes document production to meet business and industry standards. Prerequisite: AST 101 or equivalent. Lecture 4 hours per week. Meets college's computer competency requirements.

Office Administration I AST 243 • 3 credits

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 or equivalent. Lecture 3 hours per week.

Office Administration II AST 244 • 3 credits

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.

Medical Machine Transcription AST 245 • 3 credits

Develops machine transcription skills, integrating operation of transcribing equipment with understanding of medical terminology. Emphasizes dictation techniques and accurate transcription of medical documents in prescribing formats. Prerequisite: AST 102 or equivalent and HLT 143. Lecture 3 hours per week.

WP Desktop Publishing (Specify Software) AST 257 • 4 credits

Uses word processing software to teach advanced document preparation. Prerequisite AST 101 or equivalent and experience in using the specified word processing software. Lecture 4 hours per week.

Medical Office Procedures I AST 271 • 3 credits

Covers medical office procedures, records management, preparation of medical reports, and other medical documents. Corequisite: AST 102 or equivalent. Lecture 3 hours per week.

AIR CONDITIONING, HEATING, AND REFRIGERATION**Air Conditioning and Refrigeration Controls I-II**
AIR 111-112 • 3 credits each

Presents electron theory, magnetism, Ohm's Law, resistance, current flow, and instruments for electrical measurement, AC motors, power distribution controls and their application. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Duct Construction and Maintenance AIR 116 • 2 credits

Presents duct materials including sheet metal, aluminum, and fiber glass. Explains development of duct systems, layout methods, safety hand tools, cutting and shaping machines, fasteners and fabrication practices. Includes duct fittings, dampers and regulators, diffusers, heater and air washers, fans, insulation, and ventilating hoods. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Air Conditioning and Refrigeration I AIR 121 • 3 credits

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 Conditioning and Refrigeration II AIR 122 • 3 credits

Presents operations of commercial refrigeration systems, ice machines, design, installation and service, air conditioning and heat pumps. Prerequisite: AIR 121. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Heating Systems I AIR 154 • 3 credits

Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Prerequisite: AIR 111. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Heating, Air Conditioning and Refrigeration Calculations I

AIR 161 • 3 credits

Introduces fractions, decimals, sign of operations, equations, Ohm's law, subtraction, multiplication and division of signed numbers. Teaches fundamentals of algebra, expression of stated problems in mathematical form, and solutions of equations. Lecture 3 hours per week.

Air Conditioning Systems I AIR 165 • 3 credits

Introduces comfort survey, house construction, load, types of distribution systems, calculations, and equipment selection. Prerequisite: AIR 161. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Planning and Estimating I AIR 181 • 2 credits

Presents fundamentals of blueprint reading as applied to the building trades. Emphasizes air conditioning distribution, designing and drawing residential and commercial systems, take-off of materials and estimating the cost of the systems. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Hydronics AIR 200 • 2 credits

Presents design and installation of hydronic systems for heating and cooling. Includes steam heated and chilled water systems. Primarily concerns systems using water under forced circulation. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Psychrometrics AIR 206 • 3 credits

Studies air and its properties, characteristics and measurements as they apply to human comfort. Considers control of temperature, humidity and distribution of air and air mixtures. Lectures 2 hours. Laboratory 2 hours. Total 4 hours per week.

Air Conditioning and Refrigeration Controls III-IV
AIR 213-214 • 3 credits each

Introduces electrical, pneumatic and electronic control circuits as applied to year-round air conditioning systems. Includes reading wiring and schematic diagrams, trouble-shooting, and designing high and low voltage control systems. Prerequisites: AIR 111 and 112. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Heat Pumps AIR 235 • 3 credits

Studies theory and operation of reverse cycle refrigeration systems as applied to air conditioning, including service, installation and maintenance. Prerequisites: AIR 112 and AIR 122. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Advanced Troubleshooting and Service AIR 238 • 3 credits

Presents advanced service techniques on wide variety of equipment used in refrigeration, air conditioning, and phases of heating and ventilation and controls. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AMERICAN SIGN LANGUAGE**American Sign Language I-II** ASL 101-102 • 3 credits each

Introduces the fundamentals of American Sign Language (ASL) used by the Deaf Community, including basic vocabulary, syntax, finger spelling, and grammatical non-manual signals. Focuses on communicative competence. Develops gesture skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf Community. Lecture 3 hours per week.

Applications in ASL I-VI
ASL 103-104, 203-204, 263-264 • 1 credit each

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

Finger Spelling and Number Use in ASL ASL 115 • 2 credits

Provides intensive practice in comprehension and production of finger spelled words and numbers with emphasis on clarity and accuracy. Focuses on lexicalized finger spelling and numeral incorporation as used by native users of American Sign Language. Prerequisite ASL 101 or permission of instructor. Lecture 2 hours per week.

History & Culture of the Deaf Community I ASL 125 • 3 credits

Presents an overview of various aspects of Deaf Culture, including educational and legal issues. Examines the history of the Deaf Community. Prerequisite: ASL 101. Lecture 3 hours per week.

Working with Deaf and Hard-of-Hearing People ASL 150 • 2 credits

Explores career options for serving Deaf/hard-of-hearing people and/or for using American Sign Language skills in a career. Examines interests, skills, and educational assessments. Investigates job market viability via the Internet and professional periodicals. Develops opportunities for students to network with professionals in the field of deafness. Lecture 2 hours per week.

American Sign Language III - IV ASL 201-202 • 3 credits each

Develops vocabulary, conversational competence, and grammatical knowledge with a total immersion approach. Introduces increasingly complex grammatical aspects including those unique to ASL. Discusses culture and literature. Contact with the Deaf Community is encouraged to enhance linguistic and cultural knowledge. Prerequisite: ASL 102 or permission of instructor. Lecture 3 hours per week.

Comparative Linguistics: ASL & English ASL 220 • 3 credits

Describes spoken English and ASL (American Sign Language) on five levels: phonological, morphological, lexical, syntactic, and discourse. Compares and contrasts the two languages on all five levels using real-world examples. Documents similarities between signed languages and spoken languages in general. Describes the major linguistic components and processes of English and ASL. Introduces basic theories regarding ASL structure. Emphasizes ASL's status as a natural language by comparing and contrasting similarities and unique differences between the two languages. Prerequisite: ASL 201. Lecture 3 hours per week.

Language Development of Deaf Children ASL 250 • 3 credits

Delineates developmental stages of language use of the Deaf. Compares and contrasts ASL use of Deaf children with the use of English by hearing children. Defines issues related to language choice (e.g. ASL vs. English), language proficiency, etc. Identifies individual roles within the Deaf student's IEP team. Prerequisites: ASL 125 & ASL 220. Lecture 3 hours per week.

American Sign Language V-VI ASL 261-262 • 3 credits each

Develops advanced American Sign Language comprehension and production skills. Emphasizes advanced linguistic aspects of ASL. Presents ASL literary forms. Encourages contact with the Deaf Community. Prerequisite: ASL program entrance exam. Lecture 3 hours per week.

ARCHITECTURE**Introduction to Architecture** ARC 100 • 3 credits

Outlines history and impact of architecture. Emphasizes dynamics and social aspects of architecture and society; focuses on 19th and 20th century architectural forms. Lecture 3 hours per week.

Architectural Drafting I ARC 121 • 3 credits

Introduces techniques of architectural drafting, including lettering, dimensioning, and symbols. Requires production of plans, sections, and elevations of a 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.

Architectural Drafting II ARC 122 • 3 credits

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.

Construction Methodology and Procedures I ARC 133 • 3 credits

Studies materials used in construction of buildings, covering foundations to structural framing systems. Includes appropriate use of materials for various construction types. Lecture 3 hours per week.

Introduction to Landscape Architecture and Site Planning ARC 220 • 3 credits

Introduces the basics of landscape design and development concepts through architectural construction and plantings. Shows relationship between design and environment, including objectives of design elements and materials, facilities. Lecture 3 hours per week.

Architectural CAD Applications Software I ARC 221 • 3 credits

Teaches the principles and techniques of architectural drawing practices through the use of architecture specific CAD software. Utilizes the commands and features of the software to generate drawings that emphasize architectural design and structural systems. Use local prerequisites. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Building Codes, Contract Documents and Professional Office Practices ARC 258 • 3 credits

Covers professional role of the architectural technician with regard to the construction industry. Includes building codes and their effect on specifications and drawings. Teaches purpose and writing of specifications with their legal and practical application to working drawings. Analyzes contract documents for client-architect-contractor responsibilities and duties. Lecture 3 hours per week.

ART**Advertising Copy Writing** ART 110 • 2 credits

Presents basic promotional copy writing skills. Includes persuasion, creativity, marketplace dynamics and media format. Challenges the student to develop creative thinking styles which take form in the written word. Prerequisite: ENG 111. Lecture 2 hours per week.

General Art I ART 113 • 3 credits

Introduces art to the student without previous training. Provides studio exercises in drawing, painting, and two- and three-dimensional design. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

Design for the Web I ART 116 • 3 credits

Introduces the basic elements of web page design: typography, imagery, and color, and examines how they are combined to create effective layouts. Teaches organization of materials, sketching and concept development, site planning and various methods of construction. Prerequisites: ART 133 and ART 283. Lecture 3 hours per week.

Drawing I-II ART 121-122 • 3 credits each

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 a pencil, charcoal, ink wash and color media. Includes field trips and gallery assignments as appropriate. Must be taken in sequence. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

Introduction to Multimedia ART 130 • 4 credits

Introduces the student to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how the components combine to create a multimedia product. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Prerequisites: ART 133, ART 203, ART 283, and ART 284. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Visual Arts Foundation ART 133 • 4 credits

Covers tools and techniques, design principles, and color theory. Introduces computers. Applicable to all fields of visual art. Co-requisite: SDV 101 Orientation to Visual Arts. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

Three-Dimensional Design ART 134 • 3 credits

Explores the concepts of three-dimensional design applicable to all fields of visual art. Prerequisite: ART 133. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

Matting and Framing Workshop ART 136 • 1 credit

Develops and/or improves mat cutting and framing skills. Includes choice of mat board; color; type of mat border; determination of size and location of windows; accuracy in cutting; cleanliness; selection of work areas, tools, equipment, and supplies; selection of molding for frames; cutting, assembling, and finishing (stain or paint) the frames; attaching dust covers; installation of hangers; and evaluation of total effect. May be repeated for credit. Laboratory 3 hours per week.

Typography I ART 141 • 4 credits

Studies the history of letter forms and type faces and examines their uses in contemporary communications media. Emphasizes applications to specific design problems. Includes identification and specification of type, copy fitting and hands-on typesetting problems. Prerequisite: ART 133 or divisional approval. Must be taken in sequence. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

History of Art I-II ART 201-202 • 3 credits each

Studies the historical context of art of the ancient, medieval, Renaissance and modern worlds. Includes research project. Lecture 3 hours per week.

Animation I ART 203 • 4 credits

Introduces the student to the basic techniques of animation, both traditional and computer generated. Teaches theoretical elements of the aesthetics of sequential imagery. Provides practical experience in animation. Exposes students to a variety of animation techniques through lectures, presentations, classroom work, and outside assignments. Prerequisite: ART 122, ART 133, and ART 283. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Video Techniques ART 208 • 4 credits

Addresses the fundamentals of video technology as applied to the creation of multimedia projects. Focuses on the aesthetics of editing. Extends the capabilities of graphic designers and artists and allows them to transfer art work and animation from the computer to video, and to capture video frames for use in multimedia design on the computer. Instructs a student in the development of sophisticated typographic design. Prerequisites: ART 133, ART 283, and ART 284. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Drawing III-IV ART 221-222 • 3 credits each

Introduces advanced concepts and techniques of drawing as applied to the figure, still life and landscape. Gives additional instruction in composition, modeling, space and perspective. Encourages individual approaches to drawing. Must be taken in sequence. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

Painting I-II ART 241-242 • 3 credits each

Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Must be taken in sequence. Prerequisites: ART 122 and ART 133 or divisional approval. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

Watercolor I-II ART 243-244 • 3 credits each

Presents abstracts and representational painting in watercolor with emphasis on design, color, composition, technique and value. Prerequisites: ART 122 and ART 133 or divisional approval. Must be taken in sequence. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

Communication Design I-II ART 251-252 • 3 credits each

Studies the principles of visual communications as applied to advertising in newspapers, magazines, direct mail advertising, house organs, etc. Analyzes the influence on contemporary art on design. Must be taken in sequence. Prerequisite: ART 133. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

Computer Graphics I-II ART 283-284 • 4 credits each

Introduces microcomputers and software used to produce computer graphics. Employs techniques learned to solve studio projects that reinforce instruction and are appropriate for portfolio use. Must be taken in sequence. Prerequisite: ART 133. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

Portfolio and Resume Preparation ART 287 • 2 credits

Focuses on portfolio preparation, resume writing, and job interviewing for students. Recommended for final semester program students. Requires instructor's approval. Lecture 1 hour. Studio instruction 2 hours. Total 3 hours per week.

AUTO BODY**Auto Body Repair** AUB 116 • 4 credits

Teaches collision straightening procedures and use of equipment, planning repair procedures, disassembly techniques, body fastening systems, glass removal and replacement and panel repair and alignment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Automotive Paint Preparation AUB 118 • 4 credits

Teaches auto body preparation for painting, using the materials, processes, and equipment required to prepare metal and old finishes. Includes sanding, cleaning, solvents, special materials, fillers and primers. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Automotive Painting AUB 119 • 4 credits

Teaches theory and application of painting and the use of painting equipment and materials including paints, thinners, primers, rubbing compounds and cleaners. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUTOMOTIVE**Introduction to Automotive Systems** AUT 101 • 3 credits

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

Small Gasoline Engines AUT 156 • 2 credits

Studies small gasoline engine operating principles, construction, design, variety, and their many purposes. Gives instruction on two-cycle and four-cycle small gas engines, their construction, design, fuel system, ignition system, and lubricating systems. Demonstrates disassembly, reconditioning, overhaul and reassembly in the lab. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Auto Diagnosis and Tune-Up AUT 165 • 2 credits

Presents the techniques for diagnosis of malfunctions in systems of the automobile. Uses dynamometers, oscilloscopes and other specialized diagnostic and testing equipment. Demonstrates tune-up of conventional and rotary engines. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Automotive Diagnostics I-II AUT 166-167 • 5 credits each

Presents the application of operation theory and diagnostic procedures on general engine mechanical and electrical systems. Course emphasis is on diagnostic procedures using the latest diagnostic equipment. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

Automotive Diagnostics III-IV AUT 168-169 • 5 credits each

Presents the application of theory and diagnostic procedures on engine performance systems, emissions analysis, computer controlled systems, body electronics, and climate control systems. Course emphasis is on diagnostic procedures using the latest diagnostic equipment. Includes preparation for Refrigerant Certification Test and ASE Tests A6, A7, A8. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

Computerized Fuel Systems AUT 217 • 3 credits

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

Automotive Diagnostics V-VI AUT 220-221 • 5 credits each

Presents the application and operation of diagnostic test equipment to test and inspect steering, suspension, and braking systems. Includes preparation for Virginia State Inspection Exam and ASE Tests A4, A5. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

Automotive Diagnostics VII-VIII AUT 247-248 • 5 credits each

Presents the application and operation of diagnostic test equipment to test and inspect power train systems. Includes preparation for ASE Tests A1, A2, and A3. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

BIOLOGY**Foundations of Biology** BIO 1 • 3 credits

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. Lecture 3 hours per week.

Basic Human Biology BIO 100 • 3 credits

Presents basic principles of human anatomy and physiology. Discusses cells, tissues, and selected human systems. Lecture 3 hours per week.

General Biology I-II BIO 101-102 • 4 credits each

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.

Human Anatomy and Physiology I-II BIO 141-142 • 4 credits each

Integrates anatomy and physiology of cells, tissues, organs, and systems of the human body. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

Introductory Microbiology BIO 150 • 4 credits

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.

Coastal Ecology BIO 278 • 3 credits

Investigates beach, salt marsh, and estuarine ecosystems, including the effects of chemical, geological, and physical factors upon the distribution of organisms. Discusses the effects of pollution and human manipulation of the coastline. Includes observation and identification of coastal plants and animals, and analysis of the dynamics of coastal community structure and function in a field-based setting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

BUSINESS MANAGEMENT AND ADMINISTRATION**Introduction to Business** BUS 100 • 3 credits

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 resources management. Lecture 3 hours per week.

Principles of Supervision BUS 111 • 3 credits

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.

Leadership Development BUS 117 • 3 credits

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

Applied Business Mathematics BUS 125 • 3 credits

Applies mathematics to business processes and problems such as checkbook records and bank reconciliation, simple interest, present value, bank discount notes, depreciation, commercial discounts, markup and markdown, distribution of profit and loss in partnerships, distribution of corporate dividend, sinking funds, compound interest, amortization, annuities, and multiple payment plans. Prerequisite: MTH 121. Lecture 3 hours per week.

Legal Aspects of Small Business Operations BUS 160 • 1 credit

Covers the functional areas of business law, specifically as it applies to small business. Provides the students with a working knowledge of business contracts, agency relationships, and product liability. Provides a knowledge base for small business owners to overcome problems that are individually within their abilities. Covers selection of professional assistance for problems of a more serious nature. Lecture 1 hour per week.

Small Business Management BUS 165 • 3 credits

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

Principles of Management BUS 200 • 3 credits

Teaches management and the management functions of planning, organizing, directing and controlling. Focuses on application of management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Prerequisite: BUS 100. Lecture 3 hours per week.

Organizational Behavior BUS 201 • 3 credits

Presents a behaviorally oriented course combining the functions of management with the psychology of leading and managing people. Focuses on the effective use of human resources through understanding human motivation and 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.

Applied Management Principles BUS 202 • 3 credits

Focuses on management practices and issues. May use case studies and/or management decision models to analyze and develop solutions to management problems. Prerequisite: BUS 200 or BUS 150. Lecture 3 hours per week.

Human Resource Management BUS 205 • 3 credits

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.

Probability and Statistics for Business and Economics
BUS 216 • 3 credits

Introduces methods of probability assessment and statistical inference. Includes data collection and presentation; descriptive statistics; basic probability concepts; discrete and continuous probability distributions; decision theory; sampling and estimation; and hypotheses testing. Emphasizes business and economic applications. Utilizes computer software as a tool for problem solving. Prerequisites: ITE 115 and MTH 163. Lecture 3 hours per week.

Introduction to Business Statistics BUS 220 • 3 credits

Introduces statistics as a tool in decision-making. Emphasizes ability to collect, present, and analyze data. Employs measures of central tendency and dispersion, statistical inference, index number, and time series analysis. Prerequisite: MTH 121. Lecture 3 hours per week.

Distribution and Transportation BUS 223 • 3 credits

Examines the background and history of transportation, emphasizing the fundamental role and importance the industry plays in companies, society, and the environment in which transportation service is provided. Provides an overview of carrier operations, management, technology, and strategies including transportation regulations and public policy. Lecture 3 hours per week.

Supply Chain Management BUS 234 • 3 credits

Examines the process of planning, organizing, and controlling the flow of materials and services from supplier to end users/customers. Focuses on coordinating supply management, operations and integrated logistics into a seamless pipeline to maintain a continual flow of products and services. Lecture 3 hours per week.

Communication in Management BUS 236 • 3 credits

Introduces the functions of communication in management with emphasis on gathering, organizing, and transmitting facts and ideas. Teaches the basic functions of oral and written communication. Lecture 3 hours per week.

Business Law I BUS 241 • 3 credits

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.

Business Law II BUS 242 • 3 credits

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.

Planning for Small Business BUS 260 • 2 credits

Provides knowledge of the development of a business plan, which can be used to acquire capital and serve as a management guide. Combines knowledge that has been acquired in the areas of planning, management, and finance using proforma statements and marketing. Covers Internet searching techniques. Recommended as a CAPSTONE course. Lecture 2 hours per week.

Ethical Issues in Management BUS 265 • 3 credits

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.

Introduction to International Business BUS 280 • 3 credits

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.

CHEMISTRY

Chemistry CHM 1 • 4 credits

Presents basic inorganic and organic principles to students with little or no chemistry background. Can be taken in subsequent semesters as necessary until course objectives are completed. Lecture 4 hours per week.

College Chemistry I-II CHM 111-112 • 4 credits each

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.

Health Science Chemistry I-II CHM 121-122 • 4 credits each

Introduces the health science student to concepts of inorganic, organic, and biological chemistry as applicable to the allied health profession. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Organic Chemistry I-II CHM 241-242 • 3 credits each

Designed for chemistry and chemical engineering majors. Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanism. Corequisites: CHM 245-246. Lecture 3 hours per week.

CHILDHOOD DEVELOPMENT

Music and Movement for Children CHD 109 • 3 credits

Emphasizes theory and practice in movement and music education and the integration of these skills in a curriculum. Designed for teachers and aides in child care, preschool, nursery, or primary schools. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Introduction To Reading Methods CHD 117 • 3 credits

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.

Language Arts for Young Children CHD 118 • 3 credits

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 story telling and story reading, and stresses the use of audio-visual materials. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Introduction to Early Childhood Education CHD 120 • 3 credits

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.

Creative Activities for Children CHD 125 • 3 credits

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.

Science and Math Concepts for Children CHD 126 • 3 credits

Teaches selecting developmentally appropriate learning activities using materials to develop logical thinking skills in the child. Lecture 3 hours per week.

Infant and Toddler Programs CHD 166 • 3 credits

Examines the fundamentals of infant and toddler development, including planning and implementing programs in group care. Emphasizes meeting physical, social, emotional, and cognitive needs: scheduling, preparing age-appropriate activities, health and safety policies, record keeping, and reporting to parents. Lecture 3 hours per week.

Guiding the Behavior of Children CHD 205 • 3 credits

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.

Introduction to Exceptional Children CHD 210 • 3 credits

Reviews the history of education for exceptional children. Studies the characteristics associated with exceptional children. Explores positive techniques for managing behavior and adapting materials for classroom use. Lecture 3 hours per week.

Introduction to School-Age Child Care CHD 220 • 3 credits

Examines the purposes of school-age child care in today's society, the role of adults within school-age child care, and the state of the profession of school-age child care. Lecture 3 hours per week.

Curriculum Development for School-Age Child Care CHD 225 • 3 credits

Explores the creative activities, techniques, interactions, and program development that promote positive social and emotional growth in school-age children. Emphasizes positive development through everyday programming and experiences. Lecture 3 hours per week.

Behavior Management for School-Age Child Care CHD 230 • 3 credits

Discusses the development of social skills that school-age children need for self-management, including self-discipline, self-esteem, and coping with stress and anger. Explores way to effectively guide and discipline school-age children, focusing on how adults can facilitate positive pro-social and self-management skills. Lecture 3 hours per week.

Health and Recreation for School-Age Child Care CHD 235 • 3 credits

Examines the physical growth of school-age children and the role of health and recreation in school-age child development. Explores the use of medication, misuse of drugs, health issues of children, and the availability of community resources. Lecture 3 hours per week.

Administration of Childcare Programs CHD 270 • 3 credits

Examines the skills needed for establishing and managing early childhood programs. Emphasizes professionalism and interpersonal skills, program planning, staff selection and development, creating policies, budgeting, and developing forms for record keeping. Lecture 3 hours per week.

CIVIL ENGINEERING TECHNOLOGY**Introduction to Civil Engineering Technology** CIV 110 • 2 credits

Introduces basic skills required for a career in civil engineering technology, focusing on the roles and responsibilities of the engineering team, professional ethics, problem solving with hand calculator and computer applications. Introduces civil engineering materials and analysis, standard laboratory procedures and reporting, and engineering graphics, including instruction in Computer Aided Drafting. Instructs students in oral presentation preparation and delivery. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Civil Engineering Drafting CIV 115 • 3 credits

Introduces terminology and drafting procedures related to civil engineering. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Topographic Drafting CIV 116 • 3 credits

Focuses on the development of techniques for topographic data computation, topographic map preparation and interpretation. Includes preparation of maps from survey field data, satellite and aerial photography, and techniques for the use of color in topographic presentation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Masonry Technology CIV 120 • 3 credits

Introduces the ASTM standards and the methodology of concrete masonry technology emphasizing mortar mix designs, field and laboratory testing, and typical field applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Construction Management and Estimating CIV 135 • 3 credits

Teaches the equipment and methods used in construction. Includes principles and economics of construction, planning and management, and principles of estimating primarily using highway and building project examples. Lecture 3 hours per week.

Surveying I CIV 171 • 3 credits

Introduces surveying equipment, procedures and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations and introduction to topography. Prerequisite: Engineering Technical Mathematics or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Surveying II CIV 172 • 3 credits

Introduces surveys for transportation systems, including the preparation and analysis of topographic maps, horizontal and vertical curves, earthwork and other topics related to transportation construction. Prerequisite: CIV 171 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Soil Mechanics CIV 225 • 2 credits

Focuses on soil in its relationship to engineering construction. Includes soil composition and structure, weight-volume relationships, sampling procedures, classification systems, water in soil, stresses, strains, bearing capacity, settlement and expansion, compaction, stabilization, and introduction to foundations and retaining walls. Lecture 2 hours per week.

Soil Mechanics Laboratory CIV 226 • 1 credit

Introduces practical soil sampling; classification of unified, ASTM and ASSHTO specifications; laboratory testing of soils to predict engineering performance. Laboratory 2 hours per week.

Concrete Technology CIV 228 • 2 credits

Introduces properties of Portland cement concrete, methods of mix design and adjustment, transportation, placement and curing in accordance with ACI and PCA recommended procedures. Lecture 2 hours per week.

Concrete Laboratory CIV 229 • 1 credit

Focuses on mixing, curing, testing and quality control of concrete. Laboratory 2 hours per week.

Asphalt Technology CIV 235 • 2 credits

Introduces properties of bituminous materials with emphasis on asphalt cements used in construction, methods of asphalt cement concrete mix design, transportation, placement and curing. Lecture 2 hours per week.

Asphalt Laboratory CIV 236 • 1 credit

Focuses on testing and quality control of bituminous material, mixing, testing and quality control of asphalt cements. Laboratory 2 hours per week.

Fluid Mechanics and Hydraulics CIV 240 • 3 credits

Introduces the principles of fluid flow and development of practical hydraulics resulting from study of fluid statics, flow of real fluid in pipes, multiple pipe lines, liquid flow in open channels, and fluid measurement techniques. Prerequisite: MEC 131. Lecture 3 hours per week.

Introduction to Environmental Engineering CIV 280 • 3 credits

Introduces the engineering elements of water and wastewater treatment, water distribution and wastewater collection systems, solid and hazardous waste, erosion control, and storm water management. Lecture 3 hours per week.

COMPUTER SCIENCE**Introduction to Computing** CSC 110 • 3 credits

Introduces problem solving via a programming language. Examines development of computers and properties of programming languages. Covers input, storage, data manipulation, software and hardware. Lecture 3 hours per week.

Computer Science I CSC 201 • 4 credits

Introduces algorithm and problem solving methods. Emphasizes structured programming concepts, elementary data structures and the study and use of a high level programming language. Prerequisites: CSC 110 or equivalent and MTH 173 or equivalent or divisional approval. Lecture 4 hours per week.

Computer Organization CSC 205 • 3 credits

Examines the hierarchical structure of computer architecture. Focuses on multi-level machine organization used with a simple assembler language. Includes processors, instruction execution, addressing techniques, data representation and digital logic. Prerequisite: CSC 110. Lecture 3 hours per week.

Programming with C++ CSC 210 • 4 credits

Includes language syntax, problem solving techniques, top-down refinement, procedure definition, loop invariance, theory of numerical errors and debugging. Covers the syntax of the C++ language. Prerequisite: CSC 201, or EGR 125 or permission of the instructor. Lecture 4 hours per week.

Advanced Computer Organization CSC 215 • 3 credits

Examines advanced topics in Computer Science such as I/O methods, virtual memory, disk management and operating systems. Introduces example of modern machine architecture. Prerequisite: CSC 205. Lecture 3 hours per week.

CRAFTS**Hand Built Pottery** CRF 101 • 3 credits

Introduces fundamental concepts and skills related to hand crafted hand-built pottery. Prerequisite: CRF 105. Lectures 1 hour. Studio instruction 4 hours. Total 5 hours per week.

Wheel-Thrown Pottery CRF 102 • 3 credits

Introduces fundamental concepts and skills related to hand crafted wheel-thrown pottery. Prerequisite: CRF 105. Lectures 1 hour. Studio instruction 4 hours. Total 5 hours per week.

Introduction to Pottery CRF 105 • 3 credits

Introduces art and design related to pottery. Teaches techniques of hand-building, throwing on the potter's wheel, glaze techniques and experimental firing. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

Glass Blowing I CRF 130 • 4 credits

Introduces a variety of techniques for manipulating molten "hot glass" into vessel or sculptural forms. Teaches studio safety, equipment operation, techniques of forming molten glass, annealing and cold working techniques. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Glass Blowing II CRF 131 • 4 credits

Introduces intermediate glass blowing techniques using progressively more complex forms. Emphasis on design and working from prepared drawings. Prerequisite: CRF 130. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Glass Blowing III CRF 230 • 4 credits

Introduces advanced techniques of producing blown glass pieces with multiple blown forms. Explores advanced design problems and the development of individual styles. Prerequisite: CRF 131. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

DANCE**Modern Dance** DAN 160 • 2 credits

Teaches the basic techniques of creative dance. Skills include self-expression, contemporary routines, dance forms, and basic choreography. Lecture 2 hours per week.

Dance Production I-II DAN 161-162 • 2 credits each

Focuses on creating a dance performance. Teaches the basic skills in creating and producing a dance. Includes lighting, costumes, music, and choreography. Lecture 2 hours per week.

Jazz I-II DAN 163-164 • 2 credits each

Introduces dance through contemporary jazz movements. Includes floor stretches, isolations, dance patterns and locomotive movements. Lecture 2 hours per week.

Tap Dance DAN 165 • 2 credits

Teaches the basic footwork, patterns, and coinciding body movements to various rhythms. Includes development of choreographic routines. Lecture 2 hours per week.

Ballet DAN 166 • 2 credits

Teaches ballet as a discipline with correct alignment and ballet form. Expresses movement through traditional dance form with choreographic emphasis. Lecture 2 hours per week.

Dance Improvisation DAN 167 • 2 credits

Explores the creation of spontaneous movement experiences with emphasis on self-expression and creature awareness. Includes improvisational techniques utilizing body awareness, use of the environment, and group dynamics. Lecture 2 hours per week.

Folk Dance DAN 168 • 2 credits

Introduces the basic step patterns, rhythmic patterns, position, and formations of traditional and ethnic group dances. Lecture 2 hours per week.

DIAGNOSTIC MEDICAL SONOGRAPHY**Introduction to Sonography** DMS 206 • 2 credits

Introduces the diagnostic foundations of diagnostic medical sonography, including terminology, scan plane orientations, anatomical relationships, departmental administrative operations, hospital organization and basic patient care principles. Lecture 2 hours per week.

Sectional Anatomy DMS 207 • 2 credits

Studies sectional anatomy in the transverse, longitudinal and coronal planes, with emphasis on the organs of sonographic interest within the abdominal-pelvic cavity. Prerequisite: Current enrollment in the program or divisional approval. Lecture 2 hours per week.

Ultrasound Physics and Instrumentation I DMS 208 • 3 credits

Discusses and solves mathematical problems associated with human tissue, basic instrumentation and scanning technology. Lecture 3 hours per week.

Ultrasound Physics and Instrumentation II DMS 209 • 3 credits

Focuses on areas of ultrasonic, instrumentation, image artifacts, biologic effects, quality control, as well as Doppler principles and applications and basic types of equipment through lecture and laboratory exercises. Prerequisite: DMS 208. Lecture 3 hours per week.

Ultrasound Imaging I DMS 211 • 4 credits

Examines the clinical applications within the specialty of abdominal sonography including interpretation of normal and abnormal sonographic patterns, pathology, related clinical signs and symptoms, normal variants and clinical laboratory tests. Includes laboratory sessions on basic scanning techniques and protocols. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Ultrasound Imaging II DMS 212 • 4 credits

Presents the clinical applications within the sonographic specialties of obstetrics and gynecology. Includes topics of discussion on normal and abnormal sonographic patterns, related clinical symptoms and associated laboratory tests. Includes laboratory sessions on basic scanning techniques. Prerequisite: DMS 211. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Ultrasound Seminar I DMS 221 • 3 credits

Introduces the fundamentals of renal failure and transplantations, small parts sonography, basic echocardiography, neonatal neuro-sonography, and rare and interesting ultrasonic case presentations. Prerequisite: Admission to the program. Lecture 3 hours per week.

Ultrasound Seminar II DMS 222 • 3 credits

Reviews material covered throughout the sonography program to prepare the student for the ultrasound registry examination. Prerequisite: Admission to the program. Lecture 3 hours per week.

Introduction to Vascular Ultrasound DMS 223 • 3 credits

Discusses the principles of vascular ultrasound, the related anatomy and more common pathologies detected as well as the physiology and hemodynamics detected and evaluated with ultrasound. Lecture 3 hours per week.

Clinical Education I DMS 231 • 2 credits

Develops the student's ultrasonic skills in a diagnostic environment; may include on-campus laboratories, private office settings, as well as hospital rotations. Includes experience in abdominal, pelvic and obstetrical and small parts scanning. Laboratory 10 hours per week.

Clinical Education II DMS 232 • 4 credits

Develops the student's ultrasonic skills in a diagnostic environment; may include on-campus laboratories, private office settings, as well as hospital rotations. Includes experience in abdominal, pelvic and obstetrical and small parts scanning. Prerequisite: DMS 231. Laboratory 20 hours per week.

Clinical Education III DMS 233 • 5 credits

Develops the student's ultrasonic skills in a diagnostic environment; may include on-campus laboratories, private office settings, as well as hospital rotations. Includes experience in abdominal, pelvic and obstetrical and small parts scanning. Prerequisite: DMS 232. Laboratory 25 hours per week.

Clinical Education IV DMS 234 • 6 credits

Develops the student's ultrasonic skills in a diagnostic environment; may include on-campus laboratories, private office settings, as well as hospital rotations. Includes experience in abdominal, pelvic and obstetrical and small parts scanning. Prerequisite: DMS 233. Laboratory 30 hours per week.

DIESEL**Diesel Engines I** DSL 121 • 6 credits

Studies the basic principles involved in the construction and operation of diesel engines. Examines fuel, air, cooling, and control systems of various designs. Includes an elementary study of performance characteristics of diesel engines and fuel systems. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

Diesel Engines II DSL 122 • 5 credits

Continues DSL 121 with emphasis on engine overhaul and repair, including such jobs as grinding valves, gaging cylinder wear, removing and replacing cylinder liners, boring cylinders, replacing and adjusting bearings, gaging proper measuring instruments and tools for these tasks. Prerequisite: DSL 121 or divisional approval. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

Diesel Fuel and Injection System DSL 133 • 6 credits

Studies the design, operation, care, and repair of fuel injection systems used on a variety of diesel engines. Includes testing and reconditioning fuel injectors, nozzles, fuel pumps, and transfer pumps. Teaches use of calibrating and reconditioning equipment. Emphasizes care and cleanliness in troubleshooting the fuel system. Prerequisite: DSL 122 or divisional approval. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

Diesel Truck Electrical Systems DSL 143 • 4 credits

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. Laboratory 4 hours. Total 6 hours per week.

Diesel Power Trains, Chassis, and Suspension DSL 152 • 4 credits

Studies the chassis, suspension, steering and brake system 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.

Air Brake Systems I DSL 161 • 2 credits

Studies the basic operational theory of pneumatic and air brake systems used in public transportation vehicles. Covers various air control valves, test system components, and advanced air system schematics. Prerequisites: sponsorship by a public transit authority and divisional approval. Lecture 2 hours per week.

DIETETICS**Introduction to Dietetics** DIT 100 • 2 credits

Orients the student to the field of dietetics, role responsibilities and relationships within the professions, and interrelations with other health professionals. Explains standards and ethics of professional conduct. Lecture 2 hours per week.

Nutrition I DIT 121 • 3 credits

Studies food composition, dietary guidelines, and nutrients essential to healthy human life. Analyzes nutrient function and metabolism. Lecture 3 hours per week.

Nutrition II DIT 122 • 3 credits

Applies the principles from DIT 121 to the life cycle. Includes current topics such as fad diets, preventive nutrition, weight control, and exercise. Lecture 3 hours per week.

Current Concepts in Diet and Nutrition DIT 125 • 3 credits

Studies the importance of diet to health and well-being in daily life. Addresses current controversies over food practices and information, food facts and fiction, fad diets, vegetarianism, diet and heart disease, and sound guidelines for maintaining good health with wise food choices. Applies computer technology for nutritional analysis. Intended especially for the non-dietetic major. Lecture 3 hours per week.

Food Management Systems DIT 130 • 3 credits

Studies the principles of food service delivery systems in institutional and other health care facilities. Includes fundamentals of menu planning, recipe standardization, food preparation, equipment, sanitation and safety, role of computers in food service, and concepts of food service management. Lecture 3 hours per week.

Nutritional Assessment DIT 210 • 3 credits

Studies the principles of nutritional assessment; procedures used in identifying individuals and groups at risk; and the planning, implementation, monitoring and evaluation of activities required to institute a successful nutritional intervention program. Presents quality assurance requirements and program implementation. Lecture 3 hours per week.

Therapeutic Nutrition I DIT 221 • 4 credits

Applies nutrition principles to the treatment of persons with special dietary needs. Lecture 4 hours per week.

DRAFTING**Technical Drafting I-II** DRF 111-112 • 3 credits each

Introduces technical drafting from the fundamentals through advanced drafting practices. Teaches lettering, metric construction, technical sketching, orthographic projection, sections, intersections, development, fasteners, theory and applications of dimensioning and tolerances. Includes pictorial drawing, and preparation of working and detailed drawings. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Engineering Drawing Fundamentals I-II DRF 151-152 • 3 credits each

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 6 hours. Total 7 hours per week.

Machine Blueprint Reading DRF 160 • 3 credits

Introduces interpretation of various blueprints and working drawings. Applies basic principles and techniques such as visualization of an object, orthographic projection, technical sketching and drafting terminology. Requires outside preparation. Lecture 3 hours per week.

Blueprint Reading I-II DRF 161-162 • 2 credits each

Teaches the application of basic principles, visualization, orthographic projection, details of drafting shop processes and terminology, assembly drawings and exploded views. Considers dimensioning, changes and corrections, classes of fits, tolerances and allowances, sections and convention in blueprint reading. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Architectural Blueprint Reading DRF 165 • 3 credits

Emphasizes reading, understanding and interpreting standard types of architectural drawings including plans, elevation, sections, and details. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Computer-Aided Drafting and Design I DRF 201 • 4 credits

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

Computer-Aided Drafting and Design II DRF 202 • 4 credits

Teaches working drawings and advanced operations in computer aided drafting. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Advanced Technical Drafting I DRF 211 • 3 credits

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.

Advanced Technical Drafting II DRF 212 • 3 credits

Teaches concepts of sheet metal fabrication including radii, fillets and tolerances, electrical and electronics symbols and drawing, and advanced design drafting techniques. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Computer-Aided Modeling and Rendering I-II
DRF 238-239 • 3 credits each

Focuses on training students in contemporary techniques of three-dimensional modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photo-realism, which enables the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-through that will bring the third dimension to architectural designs. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Parametric Solid Modeling I DRF 241 • 3 credits

Focuses on teaching students the design of parts by parametric solid modeling. Topics covered will include, but not limited to, sketch profiles; geometric and dimensional constraints; 3-D features; model generation by extrusion, revolution and sweep; and the creation of 2-D drawing views that include sections, details and auxiliary. Lecture 3 hours per week.

Parametric Solid Modeling II DRF 242 • 3 credits

Focuses on teaching students the design of parts by parametric solid modeling. Topics covered will include, but not limited to, sketch profiles; geometric and dimensional constraints; 3-D features; model generation by extrusion, revolution and sweep; and the creation of 2-D drawing views that include sections, details and auxiliary. Lecture 3 hours per week.

Ship Design Drafting DRF 247 • 3 credits

Introduces the shipbuilding industry, shop structure design components, and ship drafting to develop skills required in drawing the “lines” of a ship. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Design Capstone Project DRF 280 • 3 credits

Focuses on design projects developed independently and in consultation with the instructor. Topics covered, but not limited to: parametric modeling, civil, mechanical piping, architectural applications, structural, electro-mechanical, 3D solids, exploration of application software, and the integration of CAD/CAM. Prerequisites: DRF 211 and 212 and DRF 201 or 199. Lecture 3 hours per week.

ECONOMICS

Survey of Economics ECO 120 • 3 credits

Presents a broad overview of economic theory, history, development, and application. Introduces terms, definitions, policies, and philosophies of market economies. Provides some comparison with other economic systems. Includes some degree of exposure to microeconomic and macroeconomic concepts. Lecture 3 hours per week.

Principles of Economics I - Macroeconomics ECO 201 • 3 credits

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

Principles of Economics II - Microeconomics ECO 202 • 3 credits

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

EDUCATION

Introduction to Education EDU 100 • 1 credit

Provides an overview of teaching as a career with orientation to theories, practices, responsibilities, guidelines, current trends and issues in education. Lecture 1 hour per week.

Introduction to Developmental Disabilities EDU 130 • 4 credits

Presents an overview, history, and current philosophy of the developmental disabilities program. Provides descriptions and examines causes of developmental disabilities, identifies intervention strategies, promotes social and legal advocacy, explores employment and career opportunities. Laboratory experiences include a minimum of ten hours of observation of work settings. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Behavior Technology for Use with Developmental Disabilities EDU 135 • 4 credits

Presents basic principles of behavior modification and behavioral learning theory. Promotes skills in pinpointing, observing, and recording human behavior. Learning objectives include addressing attitude, knowledge, and mental and physical skill competencies needed for implementing behavioral programs. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Techniques of Observation in Early Care EDU 160 • 3 credits

Introduces formal and informal methods of gathering data on children. Emphasis on understanding developmental patterns and implications for diagnostic teaching. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Introduction to Teaching as a Profession EDU 200 • 3 credits

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.

Teaching and Training of Language Skills for the Disabled EDU 245 • 3 credits

Covers the normal development of language, the identification of deficiencies in language development, and strategies for teaching language skills to individuals with a variety of developmental disabilities. Lecture 3 hours per week.

Adult Independent Living and Vocational Skills for the Disabled EDU 247 • 4 credits

Emphasizes skills required to develop competencies in teaching developmentally disabled individuals ages 16 and older in vocational training settings. Develops competencies related to teaching independent living and mobility skills, occupational behavior skills, and job task performance skills. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Teaching Basic Academic Skills to Exceptional Children

EDU 254 • 3 credits

Develops competencies required to teach readiness and basic skills to children with special needs in private and public school settings. Includes the preparation of lesson plans, instructional units, and Individualized Education Programs (IEP's). Emphasized exceptionalities for students ages 2–21 under Public Law 94-142. Familiarizes students with the indicators of effective teaching. Lecture 3 hours per week.

ELECTRICAL TECHNOLOGY**Residential Wiring Methods**

ELE 127 • 3 credits

Studies wiring methods and standards used for residential dwellings. Provides practical experience in design, layout, construction, and testing of a residential wiring system by use of scaled mock-ups. Lecture 2 hour. Laboratory 2 hours. Total 4 hours per week.

National Electrical Code I-II

ELE 131-132 • 4 credits each

Provides comprehensive study of the purpose and interpretations of the National Electrical Code as well as familiarization and implementation of various charts, code rulings and wiring methods including state and local regulations. Lecture 4 hours per week.

Transformer Connections and Circuits

ELE 145 • 2 credits

Studies transformer theory, symbols, diagrams, connections, terminology and troubleshooting techniques. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Electric Motor Control

ELE 146 • 4 credits

Studies solid state devices with application and emphasis toward control of power. Includes diodes, SCR's, photoelectric controls, timing, circuits, voltage regulation and three phase rectifiers. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Wiring Methods in Industry

ELE 149 • 3 credits

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

AC and DC Circuit Fundamentals

ELE 150 • 3 credits

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

Power Controls

ELE 160 • 3 credits

Introduces basic electrical and other controls used in home and industry. Includes application of panels, fuse boxes, breakers, and transformers, experiments to develop testing and troubleshooting techniques. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Programmable Logic Controller Systems I-II

ELE 233-234 • 3 credits each

Teaches operating and programming of programmable logic controllers. Covers analog and digital interfacing and communication schemes as they apply to system. Prerequisite: ELE 146 or divisional approval. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ELECTRONICS TECHNOLOGY**Electronic Fundamentals with Computer Applications** ETR 104 • 4 credits

Provides an introduction to the fundamentals of DC and AC circuit analysis and computer applications. Includes the study of electrical units and components, series, parallels, series-parallels, DC and AC circuits, inductive and capacitive reactance, impedance and use of circuit analysis software. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DC and AC Fundamentals I-II

ETR 113-114 • 4 credits each

Studies DC and AC 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.

D.C. and A.C. Circuits

ETR 115 • 3 credits

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 hours per week.

DC and AC Circuit Analysis

ETR 116 • 4 credits

Covers background information required by the Electronics Engineering Technology program but not covered in military electronic schools. Includes DC and AC circuit analysis techniques such as Thevenin, Norton, Mesh, Nodal, branch current, three phase power, two port parameters, etc. Lecture 4 hours per week.

Amplifiers and Integrated Circuits

ETR 148 • 4 credits

Studies amplifiers, solid state and thermionic devices with emphasis on analysis and design of the time and frequency domain. Included also are linear and non-linear op-amps circuits. May include summing and integrating amplifiers, chippers, modulators and other new devices. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Fundamentals of Computer Technology

ETR 166 • 3 credits

Introduces computer use and literacy. Includes operating systems, high level language programming, word processors, spreadsheets and other generic software. Uses engineering terms, standards and methods. Lecture 3 hours per week.

Electronic Devices I

ETR 203 • 3 credits

Studies active devices and circuits such as diodes, power supplies, transistors, amplifiers, and others. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Computer Troubleshooting and Repair ETR 228 • 4 credits

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

Electronic Communications I ETR 241 • 4 credits

Studies noise, information and band-width, 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. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Test Instruments and Measurements ETR 248 • 2 credits

Studies circuits used in electronics measurement and application of these circuits to test instruments such as oscilloscopes, electronic meters, and bridges. Stresses the accuracy of measurements, how instruments work, proper use of instruments, and calibration techniques. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Solid State Circuits ETR 250 • 4 credits

Teaches theory and application of amplifiers and oscillators. Includes amplifier circuit configurations, amplifier classes, operational amplifiers, power amplifiers, band-width distortion, and principles of feedback. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Microprocessor Application I ETR 261 • 4 credits

Teaches the 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.

Digital Principles, Terminology and Applications ETR 279 • 4 credits

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

Digital Systems ETR 281 • 3 credits

Includes basic numbering systems, Boolean algebra, logic circuits and systems, pulse circuits and pulse logic systems as applied to computer and microprocessor technology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

EMERGENCY MEDICAL TECHNOLOGY

First Responder EMT 105 • 3 credits

Prepares the students for certification as a Virginia First Responder. Includes all aspects of pre-hospital basic life support as defined by the Department of Transportation National Curriculum. Includes oxygen administration and resuscitation devices, automated External Defibrillation, and basic splinting of musculoskeletal injuries. Prerequisite: Current CPR certification at the Health Care Provider level. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Emergency Medical Technician/Basic EMT 106 • 6 credits

Prepares student for certification as a Virginia and National Registry EMT/B. Includes all aspects of pre-hospital basic life support as defined by the National Highway Traffic Safety Administration's National Curriculum for Emergency Medicine Technician/Basic. Prerequisite: CPR certification at the Health Care Provider level. Corequisite: EMT 190. Lecture 4 hours. Laboratory 4 hours. Total 8 hours per week.

Emergency Medical Technology I EMT 111 • 3 credits

Provides instruction in basic life support, physical assessment. Introduces role and responsibilities of the emergency medical technician/ambulance. Includes emergency operations, anatomy and physiology, bleeding, shock, MASTrousers, cardio-pulmonary resuscitation, soft tissue injuries, fractures and dislocations, abdominal and chest injuries. Required for certification as a Virginia EMT/B. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Emergency Medical Technology II EMT 112 • 3 credits

Continues material begun in EMT 112. Includes major trauma and medical emergencies, emergency childbirth procedures, lifting and moving patients, vehicle extrication, pediatric and environmental emergencies, and mass casualty situations. Required for certification as a Virginia EMT/B. Prerequisite EMT 111. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Basic Life Support Instructor EMT 120 • 1 credit

Prepares students for certification as an instructor in Basic Life Support (BLS) as defined by the American Heart Association. Prerequisite: Certification in American Heart Association HealthCare Provider CPR or American Red Cross Professional Rescuer. Lecture 1 hour per week.

Basic EMT/ B Refresher EMT 155 • 2 credits

Reviews material covered in the emergency medical technician/basic course. Emphasizes critical decision making and performance objectives. Includes material on recent developments in the area of pre-hospital basic life support. Required for the Virginia and National Registry recertification as an EMT/B. Prerequisite: Current EMT/B certification or division approval. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Introduction to Advanced Life Support EMT 176 • 3 credits

Prepares the student for initial ALS certification and for Virginia and National Registry Intermediate certification. Includes the theory and application of the following: foundations, human systems, pharmacology, overview of shock, venous access, airway management, patient assessment, respiratory emergencies, allergic reaction, and assessment based management. (Conforms to the 1998 Department of Transportation Curriculum for EMT-Intermediate/Paramedics.) Prerequisite: Current State or National Registry EMT-B and CPR. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Assessment Based Management EMT 177 • 1 credit

Prepares the student for Virginia and National Registry Paramedic certification. Focuses on integrating pathophysiological principles and assessment findings to formulate an impression and implement a treatment plan for patients with common complaints. Includes preparation for the National Registry Paramedic Exam. (Conforms to the 1998 Department of Transportation Curriculum for EMT/Paramedics.) Prerequisite: EMT 176. Lecture 1 hour per week.

ALS Trauma Care EMT 181 • 3 credits

Continues DOT's National Paramedic Curriculum. Includes ALS pharmacology, drug and fluid administration with emphasis on trauma patient assessment and management. Prerequisite: EMT/B Certification and divisional approval. Lecture 3 hours per week.

ALS Medical Care EMT 182 • 4 credits

Continues DOT's National Paramedic Curriculum. Emphasis placed upon assessment and management of medical modalities to include cardiac, pulmonary, neurological, endocrine, and other related medical complaints. Prerequisite: EMT/B Certification and divisional approval. Lecture 4 hours per week.

ALS Skills I EMT 183 • 1 credit

Focuses on the development of advanced life support skills for assessing and managing trauma, medical and specialty patients. Scenario practice in assessment based management. Prerequisite: EMT/B Certification and divisional approval. Laboratory 2 hours per week.

ALS Skills II EMT 184 • 2 credits

Focuses on the development of advanced life support skills for assessing and managing trauma, medical and specialty patients. Scenario practice in assessment based management. Prerequisite: EMT/B Certification and divisional approval. Laboratory 4 hours per week.

ALS Skills III EMT 185 • 2 credits

Focuses on the development of advanced life support skills for assessing and managing trauma, medical and specialty patients. Scenario practice in assessment based management. Prerequisite: EMT/B Certification and divisional approval. Laboratory 4 hours per week.

Pharmacology EMT 209 • 3 credits

Focuses on the principles of pharmacokinetics, pharmacodynamics, and drug administration. Includes routes and methods of medication administration, principles of math calculations, general actions of the common drug classifications. Emphasizes drugs used to manage respiratory, cardiac, central nervous system, and endocrine disorders, and includes classification, action, indications, contra-indications, precautions, and patient education. Includes an in depth study of drugs used to manage emergency situations. Prerequisite: EMT/B certification or Health Care Professional. Lecture 3 hours per week.

Pre-Hospital Physiological Assessment EMT 216 • 2 credits

Focuses on the application of normal anatomy and physiological phenomena to ill and injured individuals. Emphasizes the analysis and interpretation of physiological data to assist in patient assessment and management. Prerequisite: EMT/B certification or Health Care Professional. Lecture 2 hours per week.

Introduction to Cardiology EMT 220 • 2 credits

Focuses on the interpretation of Lead II electrocardiograms and their significance. Includes an overview of anatomy and physiology of the cardiovascular system including structure, function, and electrical conduction of the heart. (Recommended as a prerequisite or corequisite for the Paramedic curriculum or for individuals responsible for EKG recognition in the workplace.) Prerequisites: EMT/B certification or Health Care Professional. Lecture 2 hours per week.

12 Lead EKG Interpretation EMT 224 • 2 credits

Prepares the health care professional to perform EKG's and to interpret their findings. Includes advanced concepts that build on the knowledge and skills of basic dysrhythmia determination, and topics needed to understand and manage changes on a 12 lead EKG. Includes Bundle branch blocks and hemiblocks, axis deviation, chamber enlargement, and myocardial ischemic and infarction. Addresses clinical significance and interventions of all changes. Extensive practice at EKG interpretation is provided. Pre-requisite: Must have skill in Lead II EKG interpretation. Lecture 2 hours per week.

Operations EMT 245 • 2 credits

Prepares the student for Virginia and National Registry Paramedic certification. Includes 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 Department of Transportation Curriculum for EMT-Paramedics.) Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EMT-Cardiac/Paramedic Refresher EMT 255 • 3 credits

Reviews material covered in EMT-Intermediate and/or paramedic courses. Emphasizes recent developments in the area of pre-hospital advanced life support. Required for Virginia and National Registry recertification as an Intermediate or Paramedic and Virginia recertification as an EMT-Cardiac. Prerequisite: Current EMT-shock trauma, cardiac, intermediate and/or paramedic certification. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Pathophysiology EMT 274 • 3 credits

Focuses on the pathological processes of disease with the 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. Prerequisite: EMT Advanced Life Support Provider or Health Care Professional. Lecture 3 hours per week.

Concepts in Critical Care EMT 275 • 5 credits

Prepares the paramedic or RN to become a critical care specialist, capable of managing the care of a critical care patient both in a hospital setting or during a high risk inter-facility transfer. Includes advanced concepts that build on the knowledge and skills of the paramedic and/or nursing curricula, as well as topics needed to trouble shoot complex monitoring devices and equipment. Topics include anatomy and physiology based clinical assessment, advanced airway management to include mechanical ventilators, diagnostics data interpretation, bedside hemodynamic monitoring, 12 lead EKG interpretation and hemodialysis care. Corerequisite: EMT 290. Prerequisite: Current EMT/P, RN or divisional approval. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

ALS Specialty Care EMT 280 • 2 credits

Concludes didactic portion of DOT's National Paramedic Curriculum. Focuses on the assessment and management of specialty patients including behavioral, obstetrical, pediatric, geriatric and the chronically ill. Prerequisite: EMT/B Certification and divisional approval. Lecture 2 hours per week.

ALS Skills IV EMT 281 • 2 credits

Focuses on the development of advanced life support skills for assessing and managing trauma, medical and specialty patients. Scenario practice in assessment based management. Prerequisite: EMT/B Certification and divisional approval. Laboratory 4 hours per week.

ENGINEERING

Engineering Graphics EGR 110 • 3 credits

Presents theories and principles of orthographic projection. Studies multi-view, pictorial drawings and sketches, geometric construction, sectioning, lettering, tolerancing, dimensioning and auxiliary projections. Studies the analysis and graphic presentation of space relationships of fundamental geometric elements: points, lines, planes and solids. Includes computer-aided drafting. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Introduction to Engineering EGR 120 • 2 credits

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

Introduction to Engineering Methods EGR 125 • 4 credits

Applies problem-solving techniques to engineering problems utilizing computer programming and algorithms in a higher level computer language such as FORTRAN, PASCAL, or C++. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Engineering Mechanics - Statics EGR 140 • 3 credits

Introduces mechanics of vector forces and space, scalar mass and time, including S.I. and U.S. customary units. Teaches equilibrium, free-body diagrams, moments, couples, distributed forces, centroids, moments of inertia analysis of two-force and multi-force members. Lecture 3 hours per week.

Engineering Mechanics - Dynamics EGR 245 • 3 credits

Presents approach to kinematics of particles in linear and curvilinear motion. Includes kinematics of rigid bodies in plane motion. Teaches Newton's second law, work-energy and power, impulse and momentum, and problem solving using computers. Lecture 3 hours per week.

Mechanics of Materials EGR 246 • 3 credits

Teaches concepts of stress, strain, deformation, internal equilibrium, and basic properties of engineering materials. Analyzes axial loads, torsion, bending, shear and combined loading. Studies stress transformation and principle stresses, column analysis and energy principles. Lecture 3 hours per week.

Mechanics of Materials Laboratory EGR 247 • 1 credit

Examines mechanical behavior of bars, rods, shafts, tubes and beams subjected to various types of loading. Introduces experimental stress analysis techniques, such as the use of strain gauges and data reduction. Laboratory 2 hours per week.

Circuit Analysis EGR 260 • 3 credits

Covers topics in linear circuit analysis, including basic electrical properties, resistive circuits, network equations, network reduction techniques, network theorems, two-port parameters and networks, inductors, capacitors, first-order circuits, and second-order circuits. Prerequisites may be applied locally. Lecture 3 hours per week.

Signals and Systems EGR 261 • 3 credits

Covers topics including Laplace transforms and Laplace transform analysis of circuits, time and frequency domain representation of linear systems, methods of linear system analysis including convolution and Laplace transforms, frequency domain representation of signals including frequency response, filters, Fourier series, and Fourier transforms. Prerequisites may be applied locally. Lecture 3 hours per week.

Fundamental Circuits EGR 262 • 2 credits

Covers topics including microprocessor hardware and programming, lab test equipment, lab safety, technical report writing, and using a microprocessor, such as the MicroStamp 11, to control basic electric circuits. Experiments include topics such as resistive circuits, analog-to-digital and digital-to-analog conversion, pulse width modulation, and the design of power supplies. Co-requisite: EGR 261. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Digital Logic EGR 277 • 3 credits

Provides an introduction to digital logic, including such topics as number systems, Boolean algebra, minimization techniques, implementation of digital functions, sequential machines, state diagrams, state tables, and programmable logic devices. Lecture 3 hours per week.

Digital Logic Laboratory EGR 278 • 2 credits

Construction of digital logic circuits to verify analysis and design methods. Topics covered include logic gates, combinational and sequential logic circuits, programmable logic devices, measurement techniques, and report writing. Laboratory 4 hours per week.

ENGLISH**Preparing for College Writing I** ENG 1 • 4 credits

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. Prerequisite: Placement Test. Lecture 4 hours per week.

Preparing for College Writing II ENG 3 • 4 credits

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. Prerequisite: Placement Test or ENG 1. Lecture 4 hours per week.

Reading Improvement I ENG 4 • 4 credits

Helps students improve their reading processes to increase their understanding of reading materials. Includes word forms and meanings, comprehension techniques, and ways to control reading pace. Prerequisite: Placement Test. Lecture 4 hours per week.

Reading Improvement II ENG 5 • 4 credits

Helps students read critically and increase appreciation of reading. Guides students in making inferences, drawing conclusions, detecting relationships between generalizations and supporting details. Includes interpreting graphic aids and basic library skills. Prerequisite: Placement Test or ENG 4. Lecture 4 hours per week.

Writing and Reading Improvement II ENG 8 • 6 credits

Emphasizes strategies within the writing and critical reading processes to help students with specific writing and reading assignments. Encourages an appreciation for clear writing and practical reading applications. Lecture 6 hours per week.

Speed Reading ENG 106 • 3 credits

Emphasizes reading faster with comprehension. Includes controlling pace through scanning for specific details, skimming for main ideas, and reading quickly but completely. Presents common ways reading material is organized and techniques for processing information rapidly. Lecture 3 hours per week.

Critical Reading and Study Skills ENG 108 • 3 credits

Helps students improve their reading and learning processes. Includes advanced comprehension strategies and study skills such as time management, note-taking, studying from textbooks and other reading materials, taking examinations, and using the library. Lecture 3 hours per week.

College Composition I ENG 111 • 3 credits

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 Composition II ENG 112 • 3 credits

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.

Introduction to Journalism I-II ENG 121-122 • 3 credits each

Introduces students to all news media, especially news gathering and preparation for print. Prerequisite: ENG 111 or 112 or divisional approval. Lecture 3 hours per week.

Technical Report Writing I ENG 131 • 3 credits

Offers a review of organizational skills including paragraph writing and basic forms of technical communications, various forms of business correspondence, and basic procedures for research writing. Includes instruction and practice in oral communication skills. Prerequisite: ENG 111. Lecture 3 hours per week.

College Grammar ENG 139 • 3 credits

Studies formal English grammar and effective expression with attention to recognizing and employing appropriately the various levels of English usage, thinking logically, speaking and writing effectively, editing, evaluating content and intent of both spoken and written English, and punctuating correctly. Lecture 3 hours per week.

Advanced Composition ENG 210 • 3 credits

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.

Creative Writing I-II ENG 211-212 • 3 credits each

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.

Survey of American Literature I-II ENG 241-242 • 3 credits each

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.

Survey of English Literature I-II ENG 243-244 • 3 credits each

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.

Major American Writers ENG 246 • 3 credits

Examines major writers of American literary history. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

Contemporary African-American Women Writers ENG 248 • 3 credits

Surveys the literary contributions made by contemporary African-American women. Examines the intellectual, social, cultural, psychological, and economic trends of the African-American experience. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

Survey of African American Literature I ENG 253 • 3 credits

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.

Advanced Creative Writing I-II ENG 261-262 • 3 credits each

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

Southern Literature ENG 276 • 3 credits

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

ENGLISH AS A SECOND LANGUAGE**English as a Second Language II** ESL 2 • 12 credits

Provides intensive instruction and practice at the low intermediate level. Provides an introduction to the sound system, stress, and intonational and rhythmic patterns of English through listening and speaking exercises. Includes individualized instruction to improve basic reading comprehension. Requires practice in writing with emphasis on building basic sentence structures, grammar and sentence-level writing. Prerequisite: ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 12 hours per week.

English as a Second Language: Reading I ESL 5 • 4 credits

Helps students to acquire and improve English reading and vocabulary skills. Includes practice in these skill areas: vocabulary building, prefixes and suffixes, predicting, reading by phrases, using context clues, skimming, scanning, reading maps. Also includes library orientation, reading literature, reading the newspaper. Prerequisite: ESL 2 or ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 4 hours per week.

English as a Second Language: Reading II ESL 6 • 4 credits

Helps students improve their reading processes for academic and business reading by building skills such as finding and remembering facts, making inferences, drawing conclusions, getting meaning from context, increasing vocabulary, increasing reading speed; also includes library work, reading novels, and newspaper reading. Prerequisite: ESL 5 or ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 4 hours per week.

Oral Communications I ESL 7 • 4 credits

Provides opportunities for students to acquire or improve fluency in speaking English. Includes assessment of students' oral skills, provides exercises and practice in pronunciation, rhythm, stress, intonation, linking, pausing, and reductions. Prerequisite: ESL 2 or ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 4 hours per week.

Oral Communications II ESL 8 • 4 credits

Helps students develop or improve speaking and listening skills for academic, business, and social settings. Includes review of pronunciations, rhythm, and intonation. Emphasizes clear communication in large or small groups through formal and informal presentations. Prerequisite: ESL 8 or ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 4 hours per week.

English as a Second Language: Composition I ESL 11 • 4 credits

Provides instruction and practice in the writing process, emphasizing development of fluency in sentence level and paragraph writing and competence in structural and grammatical patterns of written English. Prerequisite: ESL 2 or ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 4 hours per week.

English as a Second Language: Composition II ESL 12 • 4 credits

Provides further instruction and practice in the writing process, emphasizing short and longer paragraphs and introducing advanced language patterns. Includes word processing orientation, writing business letters, and extensive practice in developing and improving writing strategies. Prerequisite: ESL 11 or ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 4 hours per week.

English as a Second Language: Composition III ESL 13 • 4 credits

Prepares for college-level writing by practice in the writing process, emphasizing development of thought in essays of greater length and complexity, and use of appropriate syntax and diction. Prerequisite: ESL 12 or ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 4 hours per week.

English as a Second Language: Reading III ESL 17 • 4 credits

Helps students improve their reading comprehension and vocabulary development. Improves students' reading proficiency to a level which would allow students to succeed in certificate and degree programs. Emphasizes applying and synthesizing ideas. Includes ways to detect organization, summarize, make inferences, draw conclusions, evaluate generalizations, and recognize differences between facts and opinions, and other advanced comprehension strategies. May also include comprehensive library skills. Prerequisite: ESL 6 or ESL Placement Test. ESL students must enroll at the International Student Services Office. Lecture 4 hours per week.

ENVIRONMENTAL SCIENCE**Basic Wastewater Licensure Review** ENV 40 • 1 credit

Reviews materials that are normally associated with the Wastewater Treatment Plant Operator's Class IV or Class III level licensure examinations. Utilizes lecture, audio-visual, and workshop sessions to review required materials and to prepare the trainee to complete the wastewater operator examinations. Prerequisite: Divisional approval. Laboratory 2 hours per week.

Basic Environmental Science ENV 100 • 3 credits

Presents and discusses basic scientific, health-related, ethical, economic, social and political aspects of environmental activities, policies/decisions. Emphasizes the multidisciplinary nature of environmental problems and their potential solutions. Lecture 3 hours per week.

Introduction to Environmental Technology I ENV 101 • 3 credits

Introduces students to basic scientific principles. Includes fundamentals of biology, chemistry, physics, and geology. Course integrates scientific disciplines as they relate to environmental technology. Lecture 3 hours per week.

Evaluating the Hazard Risk ENV 126 • 3 credits

Teaches entry procedures, attendance requirements, and personal protective equipment selection and use. Stresses the evaluation of entry risks. Meets the OSHA standards for employees and Commonwealth of Virginia 16 hour certification requirements. Lecture 3 hours per week.

Advanced Wastewater Licensure Review ENV 146 • 1 credit

Reviews the materials associated with the Wastewater Treatment Plant Operator's Class II or Class I level certification examinations. Consists of lecture, audio-visual, and workshop sessions to review the required material and to prepare the trainee to complete the wastewater operator's examinations. Laboratory 2 hours per week.

OSHA Hazardous Waste Operations and Response ENV 183 • 3 credits

Presents the OSHA Hazardous Waste Operations and Emergency Response regulations and how these standards are relevant to the protection of hazard waste workers. Certifies the students in the requirements of the OSHA Hazwoper program. Lecture 3 hours per week.

Sampling Techniques ENV 215 • 3 credits

Covers laboratory analysis, equipment, laboratory skills, sampling methods, and data collection and interpretation. Includes classroom and field work in the sampling of known and unknown substances. Prerequisite: SAF 175. Lecture 3 hours per week.

Environmental Problems ENV 220 • 3 credits

Studies the relationship of man to his environment; ecological principles, population dynamics, topics of current importance including air, water, and noise pollution; poisoning and toxicity, radiation, conservation and management of natural resources. Lecture 3 hours per week.

Environmental Law ENV 227 • 3 credits

Introduces environmental law including the history of environmental laws, the National Environment Policy Act, state environmental acts, hazardous wastes, endangered species, pollution, and surface mine reclamation. Lecture 3 hours per week.

Environmental Codes I-II ENV 231-232 • 3 credits each

Introduces the regulations, their intent, interpretation of the Resources Conservation and Recovery Liability Act (RCRLA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and similar environmental legislation. Additionally, studies their impact on industry. Lecture 3 hours per week.

FINANCIAL SERVICES**Personal Finance** FIN 107 • 3 credits

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.

Personal Investments FIN 115 • 2 credits

Examines personal financial investments, money management and risk reward strategies. Covers most widely employed investment instruments, including current information on stocks, bonds, mutuals, real estate, limited partnerships and tax sheltering devices. Lecture 2 hours per week.

Financial Management FIN 215 • 3 credits

Introduces basic financial management topics including statement analysis, working capital, capital budgeting, and long-term financing. Focuses on net present value and internal rate of return techniques, lease vs. by analysis, and cost of capital computations. Uses problems and cases to enhance skills in financial planning and decision making. Prerequisite: ACC 212. Lecture 3 hours per week.

Financial Management for Small Business FIN 260 • 2 credits

Provides the tools of financial planning for the small business owner. Includes areas such as financial statements, ratio analysis, forecasting profit, cash flow, pricing, and obtaining capital. Prerequisite: ACC 220 (or ACC 211) and BUS 165. Lecture 2 hours per week.

FIRE SCIENCE

Introduction to Fire Science FIR 100 • 3 credits

Introduces basic concepts involved in fire suppression including fire behavior, building codes built-in protection systems and the life safety code. Discusses the history and philosophy of the fire service at the national, state, and local levels and analyzes the overall fire problem. Lecture 3 hours per week.

Fire Suppression Operations FIR 105 • 3 credits

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

Hazardous Materials for Protective Services FIR 110 • 4 credits

Presents an overview of chemistry of hazardous materials including solids, liquids, gases and methods used in their identification. Examines the use, handling, transportation, medical and environmental problems associated with hazardous materials. Discusses methods and provides specific skills and techniques used by the emergency worker in the abatement of hazardous materials incidents. Also provides an overview of specific medical incidents and treatment modalities associated with hazardous materials exposures. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Fire Prevention Fundamentals FIR 116 • 3 credits

Introduces fire safety through study of fire causes, inspections, investigation procedures, and life safety education. Familiarizes students with laws, ordinances, and codes which influence the field of fire prevention and related problems. Lecture 3 hours per week.

Fire Hydraulics and Distribution Systems FIR 205 • 3 credits

Teaches mathematics, laws and formulas as applied to fire service hydraulics, including the development of mental ability to solve fire flow requirements and water supply needs. Emphasizes the principles, techniques, and application of water distribution systems used for fire suppression. Prerequisite: MTH elective. Lecture 3 hours per week.

Fire Service and the Law FIR 210 • 3 credits

Teaches the laws that apply to fire service organizations and their employees. Examines the law-making authority and process at the federal, state and local levels as it applies to emergency service personnel. Lecture 3 hours per week.

Building Construction FIR 220 • 3 credits

Teaches various types of construction materials and their properties with emphasis on the effect of heat, water, and internal pressure generated under fire conditions. Familiarizes students with national, state, and local ordinances and codes, which influence fire safety. Lecture 3 hours per week.

Investigation Procedures FIR 230 • 3 credits

Introduces the development and philosophy of fire investigation and detection, including inspection techniques, gathering of evidence and development of a criminal procedure to conform to judicial requirements. Lecture 3 hours per week.

Emergency Incident Management FIR 234 • 3 credits

Teaches concepts, principles and processes of unified incident management concepts and medical triage for fire and emergency medical services systems. Applies modern management techniques designed for the mitigation of fire, rescue and emergency medical services incidents. Includes the study of coordinating complex emergency operations within a dynamic system designed to command and control all elements involving fire suppression, medical incidents, multi-agency operations and mass casualty situations. Prerequisites: FIR 105 or EMT 105. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Emergency Services Administration FIR 238 • 3 credits

Provides an overview of management and administration methods and procedures in fire service and emergency medical services organizations. Includes ethical and legal considerations, budget preparation, records management, public relations, conflict resolution, intergovernmental relationships, cultural diversity, and personnel management issues. Discusses managerial attitudes and decisions, general and strategic organizational planning and career development. Lecture 3 hours per week.

Fire Suppression Systems and Equipment FIR 256 • 3 credits

Covers the examination and utilization of portable extinguishers, standpipe systems, sprinkler systems, foam systems, carbon dioxide systems, dry chemical systems, halogenated agent systems, explosion suppression systems, and other specialized hazard suppression systems. May include field trips to evaluate various system installations and operations as they relate to property protection and fire department operations. Lecture 3 hours per week.

FRENCH

Beginning French I-II FRE 101-102 • 4 credits each

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

Intermediate French I-II FRE 203-204 • 3 credits each

Continues to develop understanding, speaking, reading, and writing skills. Prerequisite: FRE 102 or equivalent. Lecture 3 hours per week.

GEOGRAPHY

Introduction to Physical Geography GEO 200 • 3 credits

Studies major elements of the natural environment including earth sun relationship, land forms, weather and climate, natural vegetation and soils. Introduces the student to types and uses of maps. Lecture 3 hours per week.

People and the Land: An Introduction to Cultural Geography GEO 210 • 3 credits

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, politics, and economic activities. Introduces the student to types and uses of maps. Lecture 3 hours per week.

World Regional Geography GEO 220 • 3 credits

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.

Regions of the World I-II GEO 221-222 • 3 credits each

Presents an overview of physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions. Studies the European cultural sphere including Europe, Soviet Union, the Americas and Australia and the emerging nations in Africa, Southwest Asia and the Orient. Introduces the student to types and uses of maps. Lecture 3 hours per week.

Economic Geography GEO 225 • 3 credits

Familiarizes the student with the various economic, geographic, political and demographic factors that affect international target markets and trade activities. Lecture 3 hours per week.

GENERAL USAGE COURSES

These courses are used in all disciplines by using the appropriate course prefix with a specific discipline or course content title.

Coordinated Internship In 90-190-290 • 1-5 credits

Includes supervised practice in selected business, industrial, and service firms coordinated by the college. Credit/practice ratio maximum 1:5 hours. Variable hours per week.

Studies In 93-193-293 • 1-5 credits

Covers new content not covered in existing courses in the discipline. Allows instructor to explore content and instructional methods to assess the course's viability as a permanent offering. Variable hours per week.

Topics In 95-195-295 • 1-5 credits

Provides an opportunity to explore topic areas of an evolving nature or of short-term importance in the discipline. Variable hours per week.

On-Site Training In 96-196-296 • 1-5 credits

Offers opportunities for career orientation and training without pay in selected businesses and industry. Supervised and coordinated by the college. Credit/work ratio not to exceed 1:5 hours. Variable hours per week.

Cooperative Education In 97-197-297 • 1-5 credits

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

Seminar and Project In 98-198-298 • 1-5 credits

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. Variable hours per week.

Supervised Study In 99-199-299 • 1-5 credits

Assigns problems for independent study outside the normal classroom setting under the guidance and direction of an instructor. Incorporates prior experience and instruction in the discipline. Variable hours per week.

GEOPHYSICAL SCIENCES

Physical Geology GOL 105 • 4 credits

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.

Historical Geology GOL 106 • 4 credits

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 records. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Earth Science for Non-Science Majors GOL 110 • 4 credits

Examines the dynamics of the earth and its relations to the solar system. Applies the principles of geology, oceanography, meteorology and astronomy in a multi-disciplinary sciences environment. Stresses the effects of geologic processes on the environment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Oceanography I-II GOL 111-112 • 4 credits each

Examines the dynamics of the oceans and ocean basins. Applies the principles of physical, chemical, biological, and geological oceanography. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Field Studies in Geology GOL 135 • 2 credits

Investigates geologic phenomena. Includes activities such as observation of regional geology and landforms, collection of samples, and measurement and interpretation of geologic structures. Field studies 6 hours per week.

Environmental Geology GOL 225 • 4 credits

Explores the interaction between man and his physical environment. Stresses geologic hazards and environmental pollution utilizing case histories. Prerequisite: GOL 105. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GEOGRAPHICAL INFORMATION SYSTEMS

Geographical Information Systems I GIS 200 • 4 credits

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

GERMAN

Beginning German I-II GER 101-102 • 4 credits each

Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structure. Lecture 4 hours per week. May include one additional hour oral practice per week.

Intermediate German I-II GER 201-202 • 3 credits each

Continues to develop understanding, speaking, reading, and writing skills. Classes conducted in German. Prerequisite: GER 102 or equivalent. Lecture 3 hours per week.

HEALTH

First Aid and Cardiopulmonary Resuscitation HLT 100 • 3 credits

Focuses on the principles and techniques of safety and first aid. Lecture 3 hours per week.

Cardiopulmonary Resuscitation HLT 105 • 1 credit

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

First Aid and Safety HLT 106 • 2 credits

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

Concepts of Personal and Community Health

HLT 110 • 3 credits

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.

Introduction to Personal Wellness Concepts HLT 116 • 3 credits

Explores the relationship between personal health and physical fitness as they apply to individuals in today's society. Includes nutrition, weight control, stress, conditioning, and drugs. Lecture 3 hours per week.

Introduction to Drug Use and Abuse HLT 121 • 3 credits

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

Introduction to Alcohol Abuse and Control HLT 122 • 1 credit

Explores the physiological, psychological, sociological effects of alcohol. Studies why people drink, disease concepts, alcohol tolerance curves, and alcohol's effect on the operation of a motor vehicle. Lecture 1 hour per week.

Nutrition and Diet Therapy HLT 130 • 1 credit

Studies nutrients, sources, functions, and requirements with an introduction to diet therapy. Lecture 1 hour. Total 1 hour per week.

Child Health and Nutrition HLT 135 • 3 credits

Focuses on the physical needs of the preschool child and the methods by which these are met. Emphasizes health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases, and safety as related to health, growth and development. Lecture 3 hours per week.

Principles of Nutrition HLT 138 • 2 credits

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 2 hours per week.

Introduction to Medical Terminology HLT 141 • 2 credits

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

Medical Terminology I-II HLT 143-144 • 3 credits each

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

Current Issues in Health Care HLT 155 • 2 credits

Focuses on current issues in the health care industry. Lecture 2 hours per week.

Health Care for Athletic Injuries HLT 156 • 3 credits

Teaches prevention and care of athletic injuries, recognition and management of head and spinal injuries, fractures, strains, sprains, as well as cardiac emergencies. Discusses taping, protective equipment, and medical referral. Lecture 3 hours per week.

Human Sexuality HLT 200 • 3 credits

Provides a basic understanding of human sexuality. Includes anatomy, physiology, pregnancy, family planning, venereal diseases, and sexual variation. Lecture 3 hours per week.

Women's Health HLT 204 • 3 credits

Explores current issues related to women's health and wellness with an emphasis upon prevention of disease and optimum well being. Takes a multi-ethnic approach to exploring the most up-to-date findings, diagnostic tools, and treatments for breast cancer, reproductive tract illness, heart, and other common diseases faced by women from puberty through menopause. Lecture 3 hours per week.

Personal Stress and Stress Management HLT 215 • 3 credits

Provides a basic understanding of stress and its physical, psychological, and social effects. Includes the relationships between stress and change, self-evaluation, sources of stress, and current coping skills for handling stress. Lecture 3 hours per week.

AIDS Awareness HLT 226 • 2 credits

Provides basic understanding of Acquired Immune Deficiency Syndrome (AIDS), AIDS-related Complex ARC, and Human Immunodeficiency Virus (HIV) Infection. Includes information on the etiology of AIDS, historical perspectives, signs and symptoms, HIV antibody testing, safer sex guidelines, AIDS in the workplace, including health care settings, psychosocial issues, death and dying issues, homophobia, and HIV transmission and prevention. Lecture 2 hours per week.

Health and Well-Being of the Older Adult HLT 270 • 3 credits

Focuses on the health of the older adult, teaches health promotion, preventive health techniques and accident prevention. Lecture 3 hours. Total 3 hours per week.

Physical Care Management of the Older Adult HLT 271 • 3 credits

Introduces physiology of aging, integrates caretaker guidelines, demonstrates skills to care for aging at a variety of functional levels. Lecture 3 hours per week.

Medical Management of the Older Adult HLT 272 • 3 credits

Introduces common medical problems associated with the aging, examines preventive and restorative care associated with common illnesses. Focuses on assessments, evaluation, and safe administration of medications. Includes emergency care and CPR. Lecture 3 hours per week.

HEALTH INFORMATION TECHNOLOGY**Health Information Technology I** HIT 101 • 4 credits

Introduces the values, uses and content of the medical record. Defines numbering, filing and retention policies and practices. Prerequisite: Admission into the Health Information Technology program. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Health Information Technology II HIT 103 • 2 credits

Introduces principles of data quality and validation types and uses of health registers. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Introduction to Human Pathology HIT 110 • 3 credits

Introduces the basic concepts, terminology, etiology, and characteristics of pathological processes. Prerequisites: BIO 142 and HLT 143. Lecture 3 hours per week.

Managing Electronic Billing in a Medical Practice HIT 143 • 2 credits

Presents practical knowledge on use of computer technology in medical practice management. Develops basic skills in preparation of universal billing claim. Explores insurance claim processing issues. Lecture 2 hours per week.

Reimbursement Issues in Medical Practice Management HIT 151 • 2 credits

Introduces major reimbursement systems in the United States. Focuses on prospective payment systems, managed care, and documentation necessary for appropriate reimbursement. Emphasizes management of practice to avoid fraud. Lecture 2 hours per week.

Health Data Classification Systems HIT 215 • 5 credits

Focuses on disease and procedure classification systems currently utilized for collecting health data for the purposes of statistical research and financial reporting. Prerequisite HIT 111-112 or permission of the divisional chairman. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

Health Statistics HIT 220 • 2 credits

Introduces the students to basic statistical principles and calculations as applied in the health care environment, procedures for collection and reporting vital statistics, and quality control basics. Lecture 2 hours per week.

Legal Aspects of Health Record Documentation HIT 226 • 2 credits

Presents the legal requirements associated with health record documentation. Emphasizes the policies and procedures concerning the protection of the confidentiality of the patient's health record. Lecture 2 hours per week.

Performance Improvement in Health Care Settings HIT 229 • 2 credits

Focuses on concepts of facility-wide performance improvement, resource management, and risk management. Applies tools for data collection and analysis. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Information Systems and Technology in Healthcare HIT 230 • 3 credits

Explores computer technology and system application in healthcare. Introduces the information systems life cycle. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Supervision and Management Practices HIT 249 • 3 credits

Introduces supervision and management principles with emphasis on application of these principles in the health information setting. Lecture 3 hours per week.

Health Records Coding HIT 253 • 4 credits

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. Prerequisites: HLT 143 and 220 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Advanced Coding and Reimbursement HIT 254 • 4 credits

Stresses advanced coding skills through practical exercises using actual medical records. Introduces CPT-4 coding system and guidelines for out-patient/ambulatory surgery coding. Introduces prospective payment system and its integration with ICD-9-CM coding. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Pharmacology for Health Information Technology HIT 260 • 2 credits

Introduces the general study of drug classifications, uses, and effects as required to perform health data collection and retrieval tasks. Lecture 2 hours per week.

HISTORY**History of Western Civilization I-II** HIS 101-102 • 3 credits each

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.

History of World Civilization I-II HIS 111-112 • 3 credits each

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

United States History I-II HIS 121-122 • 3 credits each

Surveys United States history from its beginning to the present. Lecture 3 hours per week.

African-American History I-II HIS 141-142 • 3 credits each

Surveys the history of black Americans from their African origins to the present. Lecture 3 hours per week.

Life in Colonial Virginia HIS 155 • 3 credits

Studies life in Virginia before the American Revolution, including politics, economics, customs, culture, and the slave plantation system. Lecture 3 hours per week.

History of Modern Europe I-II HIS 221-222 • 3 credits each

Examines political, social, cultural, and economic developments from the Renaissance to the present. Lecture 3 hours per week.

United States History in Film HIS 262 • 3 credits

Examines selected topics in United States history which shaped the American experience, presented in film. Lecture 3 hours per week.

History of the Old South HIS 265 • 3 credits

Examines the unique society that existed in the southern United States between 1815 and 1860. Emphasizes political, economic, social, and cultural characteristics that developed in the South before the Civil War. Prerequisites: HIS 121-122. Lecture 3 hours per week.

Military History of the Civil War HIS 266 • 3 credits

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.

Civil War and Reconstruction HIS 269 • 3 credits

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.

American Foreign Policy Since 1890 HIS 280 • 3 credits

Examines American foreign policy since 1890 with an emphasis on current events and diverse points of view. Includes a strong writing component. Lecture 3 hours per week.

History of Virginia I HIS 281 • 3 credits

Examines the cultural, political, and economic history of the Commonwealth from its beginning to the present. Lecture 3 hours per week.

HORTICULTURE

Principles of Horticulture HRT 110 • 3 credits

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

Plant Propagation HRT 115 • 3 credits

Teaches principles and practices of plant propagation. Examines commercial and home practices. Provides experience in techniques using seed-spores, cuttings, grafting, budding, layering, and division. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Greenhouse Crop Production I-II HRT 121-122 • 3 credits each

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

Chemicals in Horticulture HRT 125 • 3 credits

Emphasizes basic chemical principles and their application to horticulture. Introduces principles of inorganic and organic chemicals. Studies chemical activities of insecticides, fungicides, herbicides, fertilizers, and growth regulators. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Theory of Landscape Design HRT 150 • 3 credits

Presents the theoretical aspects of landscape planning and design. Uses theory to analyze and solve design problems. Lecture 3 hours per week.

Plants and Society HRT 155 • 3 credits

Covers the relationship between plants and people and the uses of plants as sources of food, medicine, drugs, spices, beverages, poisons, fibers, oils and plants exudates. Prerequisite: HRT 110, Principles of Horticulture. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Landscape Plants I-II HRT 201-202 • 3 credits each

Studies landscape use of plants. Considers ornamental value, growth habit, identification, and limitations. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Soils HRT 205 • 3 credits

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

Pesticides in Horticulture HRT 206 • 3 credits

Discusses pesticide selection, mixing, application, storage, and disposal. Stresses safety, environmental considerations, and legal restrictions. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Plant Pest Management HRT 207 • 3 credits

Teaches principles of plant pest management. Covers morphology and life cycles of insects and other small animal pests and plant pathogens. Laboratory stresses diagnosis, chemical and non-chemical control of specific pests, and pesticide safety. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Nursery and Garden Center Management HRT 225 • 3 credits

Covers aspects of nursery management, including culture, plant handling, and facilities layout. Discusses aspects of garden center management, including planning and layout, purchasing, produce selection, marketing, merchandising, and display. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Greenhouse Management HRT 226 • 3 credits

Discusses the theoretical and applied practices of managing a greenhouse facility. Emphasizes greenhouse construction and design, environmental control, energy conservation, and related topics. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Professional Landscape Management HRT 227 • 3 credits

Focuses on basic practices and techniques involving landscape management. Includes development of a year round management calendar and preparation of bid and contract proposals. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Turfgrass Management I HRT 228 • 3 credits

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

Turfgrass Management II HRT 229 • 3 credits

Continuation of HRT 228. Applies scientific principles for the establishment and maintenance of intensely managed turfgrass. Topics covered include cultivator selection, seeding, sprigging and sodding techniques, fertilization, watering, weed identification and control, insect identification and control, fungus identification and control, soil structure, drainage, and mowing frequency and height. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Planting Design I HRT 231 • 3 credits

Applies landscape theory and principles of drawing to the planning of residential and small scale commercial landscape designs. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Landscape Drawing HRT 235 • 3 credits

Teaches students the use of drafting equipment. Emphasizes drawing techniques and use of media. Includes hard line and free-style landscape drawing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Principles of Weed Science HRT 240 • 3 credits

Provides in-depth knowledge and expertise in handling the critical tasks of identifying and determining appropriate methods of controlling weeds of turfgrass, landscapes, and greenhouses. Lecture 2 hours. Laboratory 2 hours. Total 4 hour per week.

Arboriculture HRT 259 • 3 credits

Studies the techniques of tree care. Covers surgery, pruning, insect and disease recognition and control, fertilization, cabling, and lightning rod installation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Landscape Construction and Maintenance HRT 275 • 3 credits

Examines practical applications of commercial landscape construction techniques and materials used. Covers construction, planting, and maintenance. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HOTEL-RESTAURANT-INSTITUTIONAL MANAGEMENT

Hotel-Restaurant Organization and Management I-II
HRI 101-102 • 3 credits each

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. Lecture 3 hours per week.

Principles of Food Preparation HRI 120 • 4 credits

Applies scientific principles and techniques to the preparation of food, including carbohydrates, such as fruits, vegetables, sugars and starches; fats, including both animal and vegetable, as well as natural and manufactured; and proteins, such as milk, cheese, eggs, meats, legumes, fish and shellfish. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Principles of Baking HRI 128 • 3 credits

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

Maritime Culinary Arts HRI 133 • 1 credit

Concentrates on the knowledge, skills, and abilities required to successfully manage a food service operation in a maritime environment including publications and instructions, chain of command and support activities, Armed Forces Recipe Service, waste management operations and NAVOSH programs. Lecture 1 hour per week.

Food and Beverage Service Management HRI 134 • 3 credits

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 3 hours per week.

Garde Manger HRI 145 • 3 credits

Studies garde manger, the art of decorative cold food preparation and presentation. Provides a detailed practical study of cold food preparation and artistic combination and display of cold foods. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Introduction to Hospitality Ownership HRI 150 • 3 credits

Presents growth, development, present status and trends of the food and lodging industry. Includes special problems of operating small and medium sized establishments. Introduces credit and accounting procedures, management of staff, marketing, advertising, and security, as well as personal attitudes, qualifications, and ethics. Lecture 3 hours per week.

Sanitation and Safety HRI 158 • 3 credits

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.

Executive Housekeeping HRI 160 • 3 credits

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.

Convention Management and Service HRI 180 • 3 credits

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.

International Cuisine HRI 206 • 3 credits

Introduces the concepts of cultural differences and similarities and the preparation of the food specialties of the major geographical areas of the world. Focuses on emerging cuisines, as they become popular. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

American Regional Cuisine HRI 207 • 3 credits

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

Food Purchasing HRI 215 • 3 credits

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

Stock, Soup, and Sauce Preparation HRI 219 • 3 credits

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

Recipe and Menu Management HRI 224 • 3 credits

Presents a comprehensive framework for creating and evaluating recipes and menus for commercial and non-commercial food service operations. Requires students to use microcomputer software to design recipes, recipe files, and menus. Teaches students menu engineering analysis and methods for optimizing menu contribution margin. Lecture 3 hours per week.

Menu Planning and Dining Room Service HRI 225 • 3 credits

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

Marketing of Hospitality Services HRI 235 • 3 credits

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

Food and Beverage Cost Control I HRI 251 • 3 credits

Presents methods of pre-cost and pre-control as applied to the menu, purchasing, receiving, storing, issuing, production, sales and service which results in achievement of an operation's profit potential. Emphasizes both manual and computerized approaches. Prerequisite: MTH 121 or equivalent. Lecture 3 hours per week.

Human Resource Management and Training for Hospitality and Tourism HRI 255 • 3 credits

Prepares the students for interviewing, training and developing employees. Covers management skills (technical, human, and conceptual) and leadership. Covers the establishment and use of effective training and evaluates tools to improve productivity. Emphasizes staff and customer relations. Lecture 3 hours per week.

Principles and Applications of Catering HRI 256 • 3 credits

Analyzes and compares the principles of on-premise and off-premise catering. Includes student presentations in a series of catered functions where they assume typical managerial/employee positions emphasizing planning, organizing, operating, managing, and evaluating. Prerequisite: Divisional approval. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Hotel Front Office Operations HRI 265 • 3 credits

Analyzes hotel front office positions and the procedures involved in reservations, registration, accounting 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.

Hospitality Law HRI 275 • 3 credits

Studies the laws applicable to the ownership and operation of food and lodging operations. Includes duties to guests, ejection of undesirables, liabilities for personal injuries, damage, arrest and detention of offenders. Lecture 3 hours per week.

HUMANITIES**Introduction to Viet Nam** HUM 150 • 3 credits

Introduces the culture, history, religion, literature and poetry of Viet Nam. Lecture 3 hours per week.

Controversial Issues in Contemporary American Culture HUM 165 • 3 credits

Introduces students to selected issues in contemporary American culture. Includes topic areas ranging from welfare reform, economic development, privacy, environmental protection and conservation, evolution vs. creation, to family values, and special interest lobbying in our state and national governments. Focuses on the development of the student's critical thinking skills by analyzing, evaluating, and reflecting on opposing sides of the same issue as expressed by public leaders, special interest groups and academicians. Lecture 3 hours per week.

Survey of Western Culture I HUM 201 • 3 credits

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.

Survey of Western Culture II HUM 202 • 3 credits

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.

Introduction to Women's Studies HUM 210 • 3 credits

Introduces interdisciplinary and cross-cultural theories that explore gender, race, and class issues relating to women's lives, past and present. Prerequisite: ENG 111. Lecture 3 hours per week.

Introduction to African-American Studies HUM 220 • 3 credits

This interdisciplinary approach to the study of African-American life, history, and culture. Students will examine the specific events, ideologies, and individuals that have shaped the contours of African-American life. In studying the history, sociology, economics, religion, politics, psychology, creative productions, and culture of African-Americans, we hope to better understand the internal dynamics of life in America and how African-American life has had a great impact on white America. Lecture 3 hours per week.

Filipino-American Culture HUM 235 • 3 credits

Surveys the cultural history of the Filipinos in the United States from early immigration until the present. Studies history, cultural values, social and economic life, music, dance, art, and literature including acculturation and assimilation. Lecture 3 hours per week.

Interdisciplinary Principles of the Humanities I-II
HUM 241-242 • 3 credits each

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

Creative Thinking HUM 246 • 3 credits

Examines and analyzes creative and effective thinking processes with applications in individual and group projects to solve business, scientific, environmental, and other practical problems. Lecture 3 hours per week.

Chronicles of the Sea HUM 247 • 3 credits

Studies the ocean and man's relationship with it. Covers the study of selected readings about the sea from a literary, historical and social/political perspective. May include field trips, reports, and a sea voyage. Lecture 3 hours per week.

Mythology in Literature and the Arts HUM 256 • 3 credits

Studies cultural expressions of mythology in literature and the arts. Considers several of the following mythologies, with emphasis on parallels and divergences: Egyptian, Near-Eastern, Greek, Roman, Celtic, Norse, Asian, and African. Lecture 3 hours per week.

Greek Mythology HUM 259 • 3 credits

Surveys and analyzes major stories from Greek Mythology. Explores psychological, anthropological, and historical interpretations of the myths. Acquaints students with recurring mythological themes in language, art, music, and literature. Lecture 3 hours per week.

Survey of Twentieth-Century Culture HUM 260 • 3 credits

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

HUMAN SERVICES

Introduction to Human Services HMS 100 • 3 credits

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.

Gerontology I-II HMS 231-232 • 3 credits each

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.

Selected Topics in Aging HMS 238 • 3 credits

Provides students with an opportunity to explore a variety of major current issues in aging. Topics may include care giving and the elderly, elderly drug use and misuse, protective services, crisis interventions, homecare, elder-abuse, and other current topics. Lecture 3 hours per week.

INDUSTRIAL ENGINEERING TECHNOLOGY

Quality Assurance Technology I-II IND 101-102 • 3 credits each

Studies principles and techniques of quality engineering for the management, design, engineering, economics, production, and assurance of quality. Emphasizes fundamentals of total quality assurance for product and process control. May include design review, fundamentals of statistics, procurement control, sampling and control chart systems, quality reporting, process capability analysis, tool and gauge control, document control, or troubleshooting quality control. Lecture 3 hours per week.

Nondestructive Inspection (NDI) and Testing IND 105 • 3 credits

Studies nondestructive inspection and testing methods as they relate to industry. May include radiographic (RT), ultrasonic (UT), eddy current (ET), magnetic particle (MT), and liquid penetrant (PT) or other methods of testing. Lecture 3 hours per week.

Industrial Engineering Technology IND 106 • 3 credits

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

Force, Mass, & Torque Measurement IND 109 • 2 credits

Introduces the basic concepts, theories, and applications of Force, Mass, and Torque measurement. Includes a history of Force, Mass, and Torque measurement and the concepts of the transducers and measuring systems used to make such measurements. Incorporates trace ability, documentation, and uncertainty analysis into the measurement process as required for laboratory accreditation to ISO 17025. Prerequisite: MTH 115 or equivalent. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Materials and Processes of Industry IND 115 • 4 credits

Studies industrial/engineering material and contemporary 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.

Industrial Supervision I IND 121 • 3 credits

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

Industrial Supervision II IND 122 • 3 credits

Introduces the concept of the supervisor as a manager. Discusses the primary management functions and the differences between supervision and management. Discusses the planning process and scheduling techniques. Introduces concepts in organizing both formally and informally, accountability, span of control and delegation. Discusses the staffing process including legal considerations, forecasting, job analysis techniques, recruiting, interviewing and selection. Introduces the control process including what the industrial supervisor should control, control strategies, and how to control costs. Defines the decision making process and how to use employees, information and creativity in decision making. Lecture 3 hours per week.

Standards of Quality and Auditing IND 135 • 3 credits

Presents general requirements of industrial, military and international quality standards. Reviews quality audit principles relative to products, processes and systems. Includes the design of an approach to the audit and audit standards, procedures, methods, facilities control, personnel, and reporting methods. Includes case studies and in-plant audits. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Team Concepts and Problem Solving IND 137 • 3 credits

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

Introduction to Metrology IND 145 • 3 credits

Studies principles of measurement and calibration control, application of statistics to measurement processes, and standards of measurements in calibration. May include the use of gauges and instruments in modern production and dimensional control concepts. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Statistical Quality Control IND 146 • 3 credits

Studies essentials and application of statistics in quality control function. May include definitions and uses of averages, standard deviations, ranges, and sampling plans. May discuss dependent and independent variable and distribution probabilities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Industrial Management IND 150 • 3 credits

Studies planning, organizing, directing, and influencing industrial activities. May include research, product design, methods and time management, quality assurance and current manufacturing methodologies. Lecture 3 hours per week.

Precision Dimensional Measurement IND 159 • 3 credits

Introduces the basic concepts, theories, and applications of Precision Dimensional measurement. Includes a history of Precision Dimensional measurement and the concepts of the transducers and measuring systems used to make such measurements. Incorporates trace ability, documentation, and uncertainty analysis into the measurement process as required for laboratory accreditation to ISO 17025. Prerequisite: MTH 115 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Introduction to Robotics IND 160 • 3 credits

Studies evolution and history of robotics with an emphasis on automated and flexible manufacturing. Presents advantages and limitations of present robot systems. Lecture 3 hours per week.

Principles of Industrial Technology I IND 165 • 4 credits

Introduces principle concepts of technology involving mechanical, fluid, electrical, and thermal power as they relate to force, work, and rate. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Principles of Industrial Technology II IND 166 • 4 credits

Introduces principle concepts of technology involving mechanical, fluid, electrical, and thermal power as they relate to resistance, energy, power, and force transformers. Places an emphasis on mechanical and advantage systems. Prerequisite: IND 165. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Pressure Measurement IND 175 • 2 credits

Introduces the basic concepts, theories, and applications of Pressure measurement. Includes a history of Pressure measurement and the concepts of the transducers and measuring systems used to make such measurements. Incorporates trace ability, documentation and uncertainty analysis into the measurement process as required for laboratory accreditation to ISO 17025. Prerequisite: MTH 115 or equivalent. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Temperature and Humidity Measurement IND 203 • 2 credits

Introduces the basic concepts, theories, and applications of Temperature and Humidity measurement. Includes a history of Temperature and Humidity measurement and the concepts of transducers and measuring systems used to make such measurements. Incorporates trace ability, documentation, and uncertainty analysis into the measurement process as required for laboratory accreditation to ISO 17025. Prerequisite: MTH 115 or equivalent. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Database Architecture and Administration ITD 250 • 4 credits

Involves in-depth instruction about the underlying architecture of databases and the handling of database administration. Prerequisite is ITD 132 and ITN 171. Lecture 4 hours per week.

Database System Development ITD 251 • 3 credits

Provides the student the opportunity to solve a business problem from identification of the problem through the logical design and implementation on a database. Makes use of the knowledge that was gained in the prerequisite courses. Recommended prerequisite: ITD 260. Recommended corequisite: Backup and Recovery and Performance Tuning. Lecture 3 hours per week.

Data Modeling and Design ITD 260 • 4 credits

Introduces life cycle application development methodologies in a systematic approach to developing relational databases and designing applications. This course presents content introducing functional and business process modeling, using modeling information to produce application designs, analyzing data requirements as entities, attributes, and relationships and map an entity relationship diagram to an initial database design. The course identifies the available automated development tools and utilizes Oracle Developer software to perform practical applications of these concepts. Recommended pre-requisite: ITD 132 (Oracle) or SQL programming experience. Lecture 4 hours per week.

INFORMATION TECHNOLOGY ESSENTIALS**Introduction to Microcomputers** ITE 101 • 2 credits

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

Information Systems for Legal Assistants ITE 109 • 3 credits

Presents terminology and concepts of computer-based systems, an introductory coverage of operating systems and business application software to conduct legal research for litigation and other application programs traditionally used in the practice of law. Lecture 3 hours per week.

Introduction to Computer Applications and Concepts

ITE 115 • 4 credits

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

Microcomputer Software: Beginning Windows ITE 127 • 1 credit

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 hour per week.

Introduction to Internet Services ITE 130 • 4 credits

Provides instruction to provide 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. This course provides instruction for basic web page construction. Lecture 4 hours per week.

Survey of Internet Services ITE 131 • 1 credit

Introduces students to basic Internet terminology and services including e-mail, WWW browsing, search engines, ftp, telnet, and other services. Lecture 1 hour per week.

Spreadsheet Software ITE 140 • 4 credits

Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics will 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. This course covers MOS Excel objectives. Recommended prerequisite: ITE 115. Lecture 4 hours per week.

Microcomputer Software: Spreadsheets ITE 141 • 1 credit

Gives first-time users sufficient information to make practical use of spreadsheet software using the basics of building spreadsheets. Lecture 1 hour per week.

Desktop Database Software ITE 150 • 4 credits

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

Microcomputer Software: Database Management ITE 151 • 1 credit

Presents first-time users with sufficient information to make practical use of database management software using the basics of building databases. This course covers specific business applications. Lecture 1 hour per week.

Advanced Computer Applications and Integration ITE 215 • 4 credits

Incorporates advanced computer concepts including the integration of a software suite. Prerequisite: ITE 115. Lecture 4 hours per week.

INFORMATION TECHNOLOGY NETWORKING**Introduction to Telecommunications** ITN 100 • 4 credits

Surveys data transmission systems, communication lines, data sets, network, interfacing, protocols, and modes of transmission. Course content emphasizes network structure and operation. Lecture 4 hours per week.

Introduction to Network Concepts ITN 101 • 4 credits

Provides instruction in networking media, physical and logical topologies, common networking standards and popular networking protocols. Course content emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Course content also includes selected topics in network implementation, support and LAN/WAN connectivity. Recommended prerequisite: ITN 106. Lecture 4 hours per week.

Microcomputer Operating Systems ITN 106 • 4 credits

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

Personal Computer Hardware and Troubleshooting ITN 107 • 4 credits

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

Windows XP Professional ITN 114 • 4 credits

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

Windows 2003 Server ITN 115 • 4 credits

Consists of instruction that teaches students how to manage and maintain a Microsoft Windows Server 2003 environment. Recommended prerequisite-corequisite: ITN 114. Lecture 4 hours per week.

Windows 2003 Network Infrastructure Implementation, Management and Maintenance (NI-IMM) ITN 116 • 4 credits

Provides instruction on how to implement, manage, and maintain a Microsoft Windows Server 2003 network infrastructure. Recommended prerequisite: ITN 115. Lecture 4 hours per week.

Windows 2003 Network Infrastructure Planning and Maintenance (NI-PIM) ITN 117 • 4 credits

Includes instruction on how to plan and maintain a Microsoft Windows Server 2003 network infrastructure. Recommended prerequisite: ITN 115. Lecture 4 hours per week.

Windows 2003 Active Directory Infrastructure Planning ITN 118 • 4 credits

Encompasses instruction on how to plan, implement, and maintain a Microsoft Windows Server 2003 Active Directory infrastructure. Recommended prerequisite: ITN 115. Lecture 4 hours per week.

Wireless – Network Administration (W-NA) ITN 120 • 3 credits

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

Wireless – Mobile Networking (W-MN) ITN 125 • 3 credits

Presents an introduction to radio frequency, FHSS, and Bluetooth technology used in mobile networking solutions. Provides instruction in the scope, goals, specifications, applications and structure of Bluetooth technology and its applications and interrelationships with Wireless Local Area Networks (WLAN), Personal Area Networks (WPAN), Home RF networks, wireless protocols, and data communications systems. Recommended prerequisite: ITN 120. Lecture 3 hours per week.

Wireless – Network Operating System (W-NOS) ITN 126 • 3 credits

Concentrates on instruction in Windows-based network operating systems requirements including setup and installation procedures, maintenance and recovery, file/folder management, disk management, networking protocol, wireless services and utilities, and security management systems in support of Wireless Local Area Networks. Recommended prerequisite-corequisite: ITN 101. Lecture 3 hours per week.

Novell Fundamentals of Networking Netware 6.X ITN 131 • 4 credits

Provides instruction in basic knowledge of the layers of the OSI model and the features/functions of the components that make up a network. Course content includes installation, configuration, and troubleshooting of basic networking hardware peripherals and protocols. Recommended prerequisite: ITN 101. Lecture 4 hours per week.

Networking Fundamentals and Introductory Routing – Cisco ITN 150 • 4 credits

Contains an introduction to the functions of layer of the OSI reference model, data link and network addresses, data encapsulation, different classes of IP addresses and subnetting, and the functions of the TCP/IP network-layer protocols. Course content includes features of the Cisco IOS software, including login, context-sensitive help, command history and editing, loading software, configuring and verifying IP addresses, preparing the initial configuration of a router, and adding routing protocols to the router configuration. Recommended prerequisite: ITN 101. Lecture 4 hours per week.

Introductory Routing and Switching – Cisco ITN 151 • 4 credits

Encompasses instruction in the advantages of LAN segmentation using bridges, routers, and switches. Course content includes Spanning Tree Protocol and Virtual LANs as well as multiprotocol support and traffic filtering. Course content also includes network design issues and differences between the following WAN services: LAPB, Frame Relay, ISDN, HDLC, and PPP. Prerequisite: ITN 150. Lecture 4 hours per week.

Linux System Administration ITN 170 • 4 credits

Focuses instruction on the installation, configuration and administration of the Linux operating system and emphasizes the use of Linux as a network client and workstation. Recommended prerequisite: ITN 171. Lecture 4 hours per week.

Unix I ITN 171 • 4 credits

Provides an introduction to UNIX operating systems. Teaches login procedures, file creation, UNIX file structure, input/output control, and the UNIX shell. Lecture 4 hours per week.

Windows 2000 SQL Server ITN 216 • 4 credits

Stresses instruction in planning, installing, configuring, administering, maintaining, optimizing, auditing, and troubleshooting Windows 2000 SQL Server. Lecture 4 hours per week.

Wireless – Network Security (W-NS) ITN 220 • 3 credits

Provides instruction in designing and implementing security systems in a wireless windows network environment. Course content includes use of wireless, Internet, and windows-based protocols and management techniques in wireless security systems. Recommended prerequisite: ITN 120. Lecture 3 hours per week.

Wireless – Satellite Systems (W-SS) ITN 221 • 3 credits

Brings together instruction in the fundamentals satellite of communications systems. Course content includes installation, modification, configuration, monitoring, testing, troubleshooting, maintenance, and servicing commercial and customer satellite systems. Recommended prerequisite: ITN 120. Lecture 3 hours per week.

Wireless – Network Interoperability (W-NI) ITN 222 • 3 credits

Provides instruction in combining wired and wireless networks. Includes development of wired and wireless network infrastructure to configure, implement, manage and integrate Ethernet, Internet, and wireless network systems. Recommended prerequisite: ITN 120. Lecture 3 hours per week.

Web Server Management ITN 224 • 4 credits

Focuses on the Web Server as a workhorse of the World Wide Web (WWW). Teaches how to set up and maintain a Web server and provides in-depth instruction in Web server operations and provides hands-on experience in installation and maintenance of a Web server. Recommended prerequisite: ITN 100. Lecture 4 hours per week.

Wireless – Network Data Transmission (W-NDT) ITN 228 • 3 credits

Stresses in-depth instruction in data communications theory, hardware, transmissions media, instrumentation, testing and measuring techniques employed in wireless networking systems. Course content will include data communications with equipment, formulas, measuring tools for determining radio-wave, microwave, satellite, spread-spectrum, infra-red, fiber-optics, and telecommunications systems data communication requirements. Recommended prerequisite: ITN 120. Lecture 3 hours per week.

Novell Network Design and Implementation ITN 232 • 4 credits

Emphasizes instruction in skills to create an NDS design and implementation strategy. Course content includes templates for use in the work environment, hands-on labs to use these strategies, schedules to complete a network implementation. Course content includes processes for creating a solid network design and provides lab experiences for integration of NT/2000, UNIX/Linux, and NetWare into the same environment. Recommended prerequisite: ITN 131. Lecture 4 hours per week.

Novell Desktop Management with ZENworks for Desktops ITN 234 • 4 credits

Provides in-depth instruction in the concepts and skills necessary to implement ZENworks for Desktops 3 (ZfD 3) with a focus on the application management features (i.e. Application Launcher, Snapshot, Microsoft Installer, Directory Enabled Disk Imaging) and policy management features (i.e. user, workstation, server, container policies, Inventory, Reporting, and Remote Management components). Additionally, hands-on experience leveraging NDS to use the ZfD application management component and policy management components are included. Recommended prerequisite: ITN 131. Lecture 4 hours per week.

Novell Network Management ITN 235 • 4 credits

Covers in-depth instruction to perform network management tasks common and critical to administrators of LANs and WANs. Course content emphasizes the use of network management utilities of NetWare 6, deployment of NetWare 6 features, and troubleshooting skills for an entry-level network administration position. Recommended prerequisite: ITN 131. Lecture 4 hours per week.

Advanced Novell Network Management ITN 236 • 4 credits

Incorporates instruction in advanced management and troubleshooting instruction pertaining to a NetWare 6 network and its components using the web services, tools, and utilities of NetWare 6. Recommended prerequisite: ITN 235. Lecture 4 hours per week.

Windows 2003 Active Directory and Network Infrastructure Design (AD-NID) ITN 240 • 4 credits

Includes instruction that teaches students how to design a Microsoft Windows Server 2003 Active Directory and network infrastructure. Recommended prerequisites: ITN 116, ITN 117, and ITN 118. Lecture 4 hours per week.

Windows 2003 Security Design (SD) ITN 241 • 4 credits

Provides instruction that shows students how to gather and analyze business requirements for a secure network infrastructure and design a security solution that meets those requirements. Recommended prerequisites: ITN 116, ITN 117, and ITN 118. Lecture 4 hours per week.

Windows Microsoft Exchange 2003 Server (EX03) ITN 242 • 4 credits

Incorporates instruction on how to implement, manage, and troubleshoot an Exchange Server 2003 organization. Recommended prerequisites: ITN 116, ITN 117, and ITN 118. Lecture 4 hours per week.

Windows 2003 Security Implementation and Administration (S-IA)

ITN 243 • 4 credits

Consists of instruction on how to implement, manage, maintain, and troubleshoot security in a Windows Server 2003 network infrastructure and also plan and configure a Windows Server 2003 PKI. Recommended prerequisites: ITN 116, ITN 117, and ITN 118. Lecture 4 hours per week.

Advanced Routing – Cisco

ITN 250 • 4 credits

Includes instruction focusing on the characteristics of various Routing Protocols used in the TCP/IP networking environment, static routing, OSPF, IGRP, EIGRP, BGP, advanced IP addressing, and security. Course content also examines various strategies for optimizing network routing performance. ITN 151 should be taken prior to or with ITN 250. Lecture 4 hours per week.

Remote Access Networking – Cisco

ITN 251 • 4 credits

Focuses on in-depth instruction to a variety of wide area networking technologies and their implementation. Course content includes POTS and analog network connectivity, ISDN (both BRI and PRI), PPP, Cisco, AAA Security System, and Frame Relay. Recommended prerequisite: ITN 151. Lecture 4 hours per week.

Advanced Switching – Cisco

ITN 252 • 4 credits

Provides in-depth instruction in switching as a core technology in today's networking environment. Course content includes VLANs, trunking protocols, spanning-tree protocol, HSRP, and multi-layer switching. Recommended prerequisite: ITN 151. Lecture 4 hours per week.

Network Troubleshooting – Cisco

ITN 253 • 4 credits

Centers on instruction in troubleshooting tools and techniques appropriate to the network communications environment. Course content includes workstation troubleshooting software, communication equipment troubleshooting options, and typical problems related to Switching, WAN, and routing technologies. Prerequisite: ITN 250, ITN 251, and ITN 252. Lecture 4 hours per week.

Network Security Basics

ITN 260 • 4 credits

Provides instruction in the basics of network security in depth. Course content includes security objectives, security architecture, security models and security layers. Course content also includes risk management, network security policy, and security training. Course content includes the give security keys, confidentiality integrity, availability, accountability, and audit ability. Recommended prerequisite: ITN 101. Lecture 4 hours per week.

Network Attacks, Computer Crimes, and Hacking

ITN 261 • 4 credits

Encompasses in-depth exploration of various methods for attacking and defending a network. Course content explores network security concepts from the viewpoint of hackers and their attack methodologies. Course content also includes topics about hackers, attacks, Intrusion Detection Systems (IDS) malicious code, computer crime and industrial espionage. Recommended prerequisite: ITN 260. Lecture 4 hours per week.

Network Communication, Security, and Authentication

ITN 262 • 4 credits

Covers an in-depth exploration of various communication protocols with a concentration on TCP/IP. Course content explores communication protocols from the point of view of the hacker in order to highlight protocol weaknesses. Course content includes Internet architecture, routing, addressing, topology, fragmentation and protocol analysis, and the use of various utilities to explore TCP/IP. Recommended prerequisite: ITN 260. Lecture 4 hours per week.

Internet/Intranet Firewalls and e-Commerce Security

ITN 263 • 4 credits

Conveys an in-depth exploration of firewall, Web security, and e-commerce security. Course content also explores firewall concepts, types, topology and the firewall's relationship to the TCP/IP protocol. Course content also includes client/server architecture, the Web server, HTML and HTTP in relation to Web Security, and digital certification, D.509, and public key infrastructure (PKI). Recommended prerequisite: ITN 260. Lecture 4 hours per week.

Network Security Layers

ITN 266 • 4 credits

Provides an in-depth exploration of various security layers needed to protect the network. Course content explores Network Security from the viewpoint of the environment in which the network operates and the necessity to secure that environment to lower the security risk to the network. Course content also includes physical security, personnel security, operating system security, software security and database security. Recommended prerequisite: ITN 260. Lecture 4 hours per week.

Legal Topics in Network Security

ITN 267 • 3 credits

Conveys an in-depth exploration of the civil and common law issues that apply to network security. Course content explores statutes, jurisdictional, and constitutional issues related to computer crime and privacy. Course content also includes rules of evidence, seizure and evidence handling, court presentation and computer privacy in the digital age. Lecture 3 hours per week.

Advanced Linux Network Administration

ITN 270 • 4 credits

Focuses instruction on the configuration and administration of the Linux operating system as a network server. Course content emphasizes the configuration of common network services such as routing, http, DNS, DHCP, ftp, telnet, SMB, NFS, and NIS. Recommended prerequisite: ITN 270. Lecture 4 hours per week.

Wireless – Network Field Engineering (W-NFE)

ITN 281 • 3 credits

Concentrates instruction on how to survey, design, configure, and implement field wireless networking solutions using wireless products. The student will learn radio frequency theory, WLAN fundamentals, Visual and Radio Frequency Site Surveys, antenna systems, standards and regulations, network security features and troubleshooting in a wireless networking environment. Recommended prerequisite: ITN 120. Lecture 3 hours per week.

Wireless – Network Field Site Survey (W-NFSS) ITN 283 • 3 credits

Involves instruction on how to survey, design, configure, and implement field wireless networking solutions using wireless products. The student will learn radio frequency theory, WLAN fundamentals, Visual and Radio Frequency Site Surveys, antenna systems, standards and regulations, network security features and troubleshooting in a wireless networking environment. Recommended prerequisite: ITN 120. Lecture 3 hours per week.

INFORMATION TECHNOLOGY PROGRAMMING**Software Design** ITP 100 • 4 credits

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

Visual Basic.Net I ITP 112 • 4 credits

Concentrates instruction in fundamentals of object-oriented programming using Visual Basic.NET and the .NET framework. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of graphical user interface applications. Recommended prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

Java Programming I ITP 120 • 4 credits

Entails instruction in fundamentals of object-oriented programming using Java. This course emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. Recommended prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

C++ Programming I ITP 132 • 4 credits

Centers instruction in fundamentals of object-oriented programming and design using C++. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of C++ applications. Recommended prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

C# Programming I ITP 136 • 4 credits

Presents instruction in fundamentals of object oriented programming and design using C#. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of applications within the .NET Framework. Recommended prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

Visual Basic.Net II ITP 212 • 4 credits

Includes instruction in application of advanced object-oriented techniques to application development. Course content emphasizes database connectivity, advanced controls, web forms, and web services using Visual Basic.NET. Prerequisite: ITP 112. Lecture 4 hours per week.

Java Programming II ITP 220 • 4 credits

Imparts instruction in application of advanced object oriented techniques to application development using Java. Course content emphasizes database connectivity, inner classes, collection classes, networking, and threads. Recommended prerequisite: ITP 120. Lecture 4 hours per week.

C++ Programming II ITP 232 • 4 credits

Presents in-depth instruction of advanced object-oriented techniques for data structures using C++. Recommended prerequisite: ITP 132. Lecture 4 hours per week.

C# Programming II ITP 236 • 4 credits

Focuses instruction in advanced object oriented techniques using C# for application development. Course content emphasizes database connectivity and networking using the .NET Framework. Recommended prerequisite: ITP 136. Lecture 4 hours per week.

Server Side Programming ITP 240 • 4 credits

Centers around instruction in fundamentals of Internet application design, development, and deployment. Course content includes implementation of server component models, security, and database connectivity using server-side programming. Recommended prerequisites: ITD 132 and ITD 110. Lecture 4 hours per week.

ASP Server Side Scripting ITP 242 • 4 credits

Provides instruction in creation of ASP.NET Web applications to deliver dynamic content to a Web site utilizing server controls, web forms, and web services to accomplish complex data access tasks. Recommended prerequisites: ITD 132. Lecture 4 hours per week.

System Analysis and Design ITP 251 • 3 credits

Focuses on application of information technologies (IT) to system life cycle methodology, systems analysis, systems design, and system implementation practices. Methodologies related to identification of information requirements, feasibility in the areas of economic, technical and social requirements, and related issues are included in course content. Software applications may be used to enhance student skills. Recommended prerequisite: ITP 100 and one semester of an approved programming language. Lecture 3 hours per week.

INTERIOR DESIGN**Theory and Techniques of Interior Design** IDS 100 • 3 credits

Introduces drafting and presentation, color theory, and coordination, space planning and arrangement of furnishings. Prerequisite: STD 101. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Architectural Drafting for Interior Design IDS 105 • 3 credits

Introduces tools and equipment, lettering, methods of construction, designing and delineation of architecture. Prerequisite: STD 101. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Three-Dimensional Drawing and Rendering IDS 106 • 3 credits

Provides instruction in graphic presentation of three-dimensionally drawn interiors. Presents the use of colored media to render three-dimensional drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Styles of Furniture and Interiors IDS 109 • 3 credits

Teaches history of furnishings and interiors from the ancient world to the present. Lecture 3 hours per week.

Period Residential Design IDS 116 • 4 credits

Plans a period-inspired interior. May use field trips and visual materials to enhance this project. Presents problems and their solutions found in this kind of project. May require a final visual presentation with all necessary furnishings, materials, and color boards with rendered perspectives. Prerequisites: IDS 105, IDS 109. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Estimation for Interior Coverings IDS 120 • 3 credits

Provides instruction in estimation of yardage for window treatments, carpet, custom carpet designs, wall coverings, tile, etc. Covers fixturing, labor costing, procedures of fabrication and styling options. May require site/research visits to fabricators. Lecture 3 hours per week.

Materials and Sources IDS 205 • 3 credits

Presents textiles, floor and wall coverings, and window treatments. Emphasizes construction, fiber, finish, and code applications. May use research and field trips to trade sources representing these elements. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Lighting and Furnishings IDS 206 • 3 credits

Provides instruction in lighting terminology and calculations and instruction in techniques of recognizing quality of construction in furnishings and related equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Theory and Research in Commercial Design IDS 215 • 3 credits

Teaches graphic standards and specifications in interior design. Explains handicap codes and fire codes for large scale spaces. Provides programming and space planning with emphasis on systems furniture. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Advanced Rendering and Presentation IDS 217 • 3 credits

Gives advanced problems in rendering and visual presentation. Teaches methods of presentation and development of completed interior design projects with rendered perspectives and presentation boards of furnishings, fixtures, finishes, schedules, and related materials. Prerequisites: IDS 105 and IDS 106. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

Designing Commercial Interiors II IDS 222 • 4 credits

Presents problems in designing and developing presentations with emphasis on office spaces. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Business Procedures IDS 225 • 3 credits

Provides instruction in preparation of contracts, purchase orders, specifications, and other business forms used in the interior design field. Lecture 3 hours per week.

Antiques IDS 235 • 3 credits

Involves process of research, authentication, and determining provenance. Covers examples of furnishings, fixtures, textiles, glass, and ceramics. May provide field trips, lectures, examination, and discussion to assist in determining age, condition, and other properties. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Computer Aided Drafting for Interior Designers IDS 245 • 3 credits

Instructs in the use of the computer for drafting of floor plans, elevations, perspectives, shadowing, lighting, and color applications using Auto Cad software and the architectural and engineering software. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

INTERPRETER EDUCATION

Interpreting Foundations I - II INT 105-106 • 3 credits each

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 process. Prerequisite: program entrance exam. Lecture 3 hours per week.

Translation Skills INT 107 • 3 credits

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. Reviews 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 hours per week.

Interpreting: An Introduction to the Profession INT 130 • 3 credits

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 3 hours per week.

ASL-to-English Interpretation I INT 133 • 3 credits

Begins consecutively interpreting monologues from the source language (ASL) to the target language (English). Watch entire ASL monologues, process them, analyze them, and 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. Corequisite: INT 134. Lecture 3 hours per week.

English-to-ASL Interpretation I INT 134 • 3 credits

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 interpretation. Prerequisite: INT 107. Corequisite: INT 133. Lecture 3 hours per week.

ASL-to-English Interpretation II INT 233 • 3 credits

Perform simultaneous interpretations of monologues in the source language (ASL) to the target language (English). Process an incoming ASL monologue while simultaneously producing an appropriate interpretation in English. Conduct research in the field of interpretation. Apply team interpreting techniques. Interact with consumers of interpretation. Prerequisites: INT 133 & INT 134. Corequisite: INT 234. Lecture 3 hours per week.

English-to-ASL Interpretation II INT 234 • 3 credits

Perform simultaneous interpretations of monologues in the source language (English) into the target language (ASL). Process an incoming English monologue while simultaneously producing an appropriate interpretation in ASL. Conduct research in the field of interpretation. Apply team interpreting techniques. Interact with consumers of interpretation. Prerequisites: INT 133 & INT 134. Corequisite: INT 233. Lecture 3 hours per week.

Interpreting in the Educational Setting INT 235 • 3 credits

Examines the role, responsibilities, and communication techniques of the educational setting. Provides information on the nature and needs of the deaf student and methods used in working with students who are Deaf and hard of hearing. Describes various communication systems used for a variety of educational environments. Prerequisites: ASL 102 & INT 130. Lecture 3 hours per week.

Interpreting in Special Situations INT 236 • 3 credits

Studies roles, responsibilities, and qualifications involved in interpreting in specific settings, such as medical, legal, conference, religious, and performing arts. Addresses specific linguistic and ethical concerns for each. Prerequisite: ASL 102 & INT 130. Lecture 3 hours per week.

Dialogic Interpretation I INT 250 • 3 credits

Apply interpreting fundamentals. Interpret dialogs between spoken English and ASL users. Analyze interpretations by using a Process Model of Interpreting. Conduct research. Practice team interpreting skills in an interactive interpreting environment. Prepare for the interactive nature of standard interpreting evaluations. Prerequisites: INT 233 and INT 234. Lecture 3 hours per week.

JAPANESE**Japanese for the Tourist I-II** JPN 17-18 • 2 credits each

Introduces spoken Japanese to people intending to travel to a Japanese speaking country. Lecture 2 hours per week.

MACHINE TECHNOLOGY**Machine Trade Theory and Computation I** MAC 111 • 3 credits

Covers elementary shop mathematics specifically adapted to fractional and precision measuring tools. Includes shop theory and mathematics pertaining to layout, bandsaw, drill presses, the twist drill, lathe tool bit geometry and the engine lathe. Prerequisite: MTH 03 or equivalent. Corequisite: MAC 171. Lecture 3 hours per week.

Machine Trade Theory and Computation II MAC 112 • 3 credits

Covers shop theory and mathematics pertaining to precision measuring tools. Includes thread cutting, taper turning, and other lathe operations. Covers shop theory and mathematics pertaining to the vertical and horizontal milling machines. Prerequisite: MAC 111. Corequisite: MAC 172. Lecture 3 hours per week.

Machine Trade Theory and Computation III MAC 113 • 3 credits

Teaches advanced theory and computation of practical trigonometry in the use of the sine bar, computation for the index head, rotary table and boring bar, and the use of the milling machine. Covers shop theory of grinding wheels, the surface grinder, and tool and cutter grinder. Prerequisite: MAC 112. Corequisite: MAC 173. Lecture 3 hours per week.

Computer Numerical Control I-II MAC 121-122 • 3 credits each

Focuses on numerical control techniques in metal forming and machine processes. Includes theory and practice in lathe and milling machine computer numerical control program writing, setup and operation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Machine Tool Operations I MAC 171 • 3 credits

Uses basic fractional and decimal measuring tools and hand tools. Covers linear, angular, and radial layout including bolt hole circles. Includes setup and operations of handsaws, drill presses, and the engine lathe as well as lathe tool bit grinding. Requires solutions of related problems and preparation of weekly laboratory reports. Corequisite: MAC 111. Laboratory 6 hours per week.

Machine Tool Operations II MAC 172 • 3 credits

Covers precision measuring with inside and depth micrometers, vernier calipers, and vernier height gage. Demonstrates cutting external and internal threads, and performing these operations on the engine lathe. Teaches setup and operation of the vertical and horizontal milling machines. Requires solutions of related problems and preparation of weekly laboratory reports. Corequisite: MAC 112. Laboratory 6 hours per week.

Machine Tool Operations III MAC 173 • 3 credits

Covers layout and measuring with the sine bar and gage block. Uses the index head and rotary table for precision division of units such as gear, groove, splines and holes. Selects grinding wheels for surface grinding and cutter grinding. Requires solutions of related problems and preparation of weekly laboratory reports. Prerequisite: MAC 172. Laboratory 6 hours per week.

Machine Blueprint Reading I-II MAC 181-182 • 3 credits each

Introduces reading and interpreting blueprints and working drawings. Applies visualization of objects, sketching, and machine terminology. Lecture 3 hours per week.

MARKETING**Principles of Marketing** MKT 100 • 3 credits

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 cooperative and trade associations, shippers, stores and facilitators. Also 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.

Principles of Selling MKT 110 • 3 credits

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.

Marketing for Small Business MKT 160 • 3 credits

Presents the development of the marketing mix for a small business. Includes areas such as product development, pricing, promotion, salesmanship, customer relations, and consumer behavior. Lecture 3 hours per week.

Retail Organization and Management MKT 216 • 3 credits

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.

Principles of Advertising MKT 220 • 3 credits

Emphasizes the role of advertising in the marketing of goods and services. Discusses the different uses of advertising; types of media; how advertising is created; agency functions and legal, social and economic aspects of the industry. Introduces advertising display, copy and art work preparation, printing and selection of media. Lecture 3 hours per week.

Customer Service Management MKT 260 • 3 credits

Examines the role of customer service in achieving a firm's long-term goals; discusses the basic principles of effective customer service; explores the tasks and responsibilities of a customer service manager. Includes such topics as purpose of customer service; establishment of customer service goals and policies; recruitment, selection and training of customer service employees motivation techniques; empowering employees for better decision making; and evaluation of customer service employees and program. Lecture 3 hours per week.

Consumer Behavior MKT 271 • 3 credits

Examines the various influences affecting consumer buying behavior before, during, and after product purchase, including societal, cultural, environmental, group and economic determinants. Lecture 3 hours per week.

International Marketing Management MKT 276 • 3 credits

Presents the process of marketing and management and applies it to the marketing of products within the global market place. Introduces the student to activities involving the gathering and analyzing of information in the development and implementation of an international marketing plan. Lecture 3 hours per week.

International Sales MKT 277 • 3 credits

Analyzes the personal sales function as it applies to international marketing. Studies effective communications, sales negotiations, presentations, various correspondence media and management of the sales process. Lecture 3 hours per week.

Principles of E-Commerce MKT 282 • 3 credits

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**Arithmetic** MTH 2 • 4 credits

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. Lecture 4 hours per week.

Algebra I MTH 3 • 5 credits

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. Lecture 5 hours per week.

Algebra II MTH 4 • 5 credits

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. Lecture 5 hours per week.

Applied Technical Mathematics I-II MTH 103-104 • 3 credits each

Presents a review of arithmetic, elements of algebra, geometry, and trigonometry. Directs applications to specialty areas. Prerequisites: A placement recommendation for MTH 103 and one unit of high school mathematics or equivalent. Lecture 3 hours per week.

Technical Mathematics I-II MTH 115-116 • 3 credits each

Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 115 and Algebra I and Geometry, or Algebra I and Algebra II, or equivalent. Lecture 3 hours per week.

Fundamentals of Mathematics I MTH 121 • 3 credits each

Covers concepts of numbers, fundamental operations with numbers, formulas and equations, graphical analysis, binary numbers, Boolean and matrix algebra, linear programming, and elementary concepts of statistics. Prerequisites: A placement recommendation for MTH 121 and one unit of high school mathematics or equivalent. (Intended for career and technical programs.) Lecture 3 hours per week.

Mathematics for Allied Health MTH 126 • 3 credits

Presents scientific notation, precision and accuracy, decimals and percents, ratio and proportion, variation, simple equations, techniques of graphing, use of charts and tables, logarithms, and the metric system. Prerequisites: A placement recommendation for MTH 126 and one unit of high school mathematics or equivalent. Lecture 3 hours per week.

Topics in Geometry MTH 150 • 3 credits

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 and Geometry or equivalent. Lecture 3 hours per week.

Mathematics for the Liberal Arts II MTH 152 • 3 credits

Presents topics in functions, combinations, probability, statistics and algebraic systems. Prerequisites: A placement recommendation for MTH 152 and Algebra I, Algebra II, and Geometry or equivalent. Lecture 3 hours per week.

College Algebra MTH 158 • 3 credits

Covers the structure of complex number systems, polynomials, rational expressions, graphing, systems of equations and inequalities and functions, quadratic and rational equations and inequalities. Prerequisites: A placement recommendation for MTH 158 and Algebra I, Algebra II and Geometry or equivalent. Lecture 3 hours per week.

Precalculus I MTH 163 • 3 credits

Presents college algebra, matrices, and algebraic, exponential, and logarithmic functions. Prerequisites: A placement recommendation for MTH 163 and Algebra I, Algebra II, and Geometry or equivalent. (Credit will not be awarded for both MTH 163 and MTH 166.) Lecture 3 hours per week.

Precalculus II MTH 164 • 3 credits

Presents trigonometry, analytic geometry, and sequences and series. Prerequisite: MTH 163 or equivalent. (Credit will not be awarded for both MTH 164 and MTH 166.) Lecture 3 hours per week.

Precalculus with Trigonometry MTH 166 • 5 credits

Presents college algebra, analytic geometry, trigonometry, and algebraic, exponential, and logarithmic functions. Prerequisites: A placement recommendation for MTH 166 and Algebra I, Algebra II, and Geometry or equivalent. (Credit will not be awarded for both MTH 163-164 and MTH 166.) Lecture 5 hours per week.

Calculus with Analytic Geometry I MTH 173 • 5 credits

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

Calculus with Analytic Geometry II MTH 174 • 5 credits

Continues the study of analytic geometry and the calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with their applications. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 173 or equivalent. (Credit will not be awarded for more than one of MTH 174, MTH 176 or MTH 274.) Lecture 5 hours per week.

Statistics MTH 240 • 3 credits

Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, and correlation and regression. Prerequisites: A placement recommendation for MTH 240, Algebra I and II or equivalent. (Credit will not be awarded for both MTH 240 and MTH 241.) Lecture 3 hours per week.

Applied Calculus MTH 270 • 3 credits

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.) Lecture 3 hours per week.

Multivariable Calculus and Linear Algebra MTH 275 • 4 credits

Presents vector valued functions, partial derivatives, multiple integrals, matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigenvalues, and eigenvectors. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture 4 hours per week.

Ordinary Differential Equations MTH 279 • 4 credits

Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with applications. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture 4 hours per week.

MECHANICAL ENGINEERING TECHNOLOGY**Materials for Industry** MEC 111 • 3 credits

Studies the nature, structure, properties, and typical applications of metallic, polymeric, ceramic, and composite materials. Promotes job entry understanding of basic material concepts. Focuses on applications of materials as well as the behavior of materials subjected to external stresses. Addresses as required the earth's limited material resources, energy efficient materials, dependence on foreign sources of materials, materials systems, thermal processing, and electronic-related materials. Lecture 3 hours per week.

Principles of Machine Technology MEC 120 • 3 credits

Studies fundamental machine operations and practices, including layout, measuring devices, hand tools, drilling, reaming, turning between centers, cutting tapers and threads, and milling; fabrication of mechanical parts on drill press, lathe and mill. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Computer Programming for Technologists MEC 126 • 3 credits

Includes computer software and programming. Covers programming for the microcomputer using high level languages such as BASIC, FORTRAN, C, or PASCAL. Teaches computer solutions of mathematical problems. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Mechanics I - Statics for Engineering Technology MEC 131 • 3 credits

Teaches Newton's laws, resultants and equilibrium of force systems, trusses and frames, determination of centroids, and distributed loads and moments of inertia. Introduces dry friction and force system in space. Prerequisite: MTH 116. Lecture 3 hours per week.

Mechanics II - Strength of Materials for Engineering Technology MEC 132 • 3 credits

Teaches the concepts of stress and strain. Provides an analysis of stresses and deformations in loaded members, connectors, shafts, beams, columns, and combined stress. Prerequisite: MTH 116. Lecture 3 hours per week.

Fluid Power - Hydraulic Systems MEC 268 • 3 credits

Studies hydraulic components and their integration into complex systems including system analysis and troubleshooting. Introduces design considerations necessary for repair and modification. Covers closed loop control and proportional valves with electronic control. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Fluid Power - Pneumatic Systems MEC 269 • 3 credits

Teaches pneumatic components, systems and trouble analysis. Introduces basic design for modification and repair. Covers open loop control, fluidics, robotics and computer controls. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEDICAL ASSISTING**Introduction to Medical Assisting** MDA 100 • 1 credit

Introduces students to the medical practice environment. Stresses the responsibilities of the humanistic approach in the rendering of health care. Lecture 1 hour per week.

Medical Assistant Science I MDA 101 • 4 credits

Provides an in-depth study of medical terminology, anatomy and physiology and pathology for the medical assistant. Focuses on clinical application and decision making in the health care environment. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Medical Assistant Science II MDA 102 • 2 credits

Prepares students to perform patient care procedures including but not limited to respiratory care procedures, basic nursing arts, equipment maintenance, and patient teaching. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Medical Assistant Science III MDA 103 • 2 credits

Prepares students to perform clinical assistant skills and emergency care procedures, including basic life support, bandage application, physical assessment of patient, surgical asepsis, and basic diagnostic techniques. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Medical Assistant Science IV MDA 104 • 3 credits

Prepares students to perform diagnostic tests and assist with physical examinations including basic radio logic procedures, ECG administration, basic pulmonary functions, and allergy testing. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Pharmacology for Medical Assistants MDA 107 • 2 credits

Focuses on the administration of medications by the medical assistant. Introduces general principles of drug action, pharmacology of the major drug classifications, and drug side effects. Lecture 2 hours per week.

Medical Office Procedures MDA 203 • 3 credits

Instructs students in the practice of the management of a medical office in areas such as receptionist duties, telephone techniques, appointment scheduling, verbal and written communications, medical and non-medical record management. Explains library and editorial duties, inventory, care of equipment and supplies, security, office maintenance, management responsibilities, placement, and professional ethics and professionalism. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Medical Law and Ethics MDA 207 • 2 credits

Instructs students in the legal relationship of the physician, patient, and medical assistant; professional liabilities, Medical Practice Acts, professional attitudes and behavior and the types of medical practice. Also includes a basic history of medicine. Lecture 2 hours per week.

Medical Office Coding MDA 208 • 2 credits

Introduces students to ICD-9 and CPT-4 classification coding systems used in physician offices, hospitals, and ambulatory care settings. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Medical Office Insurance MDA 209 • 2 credits

Focuses on various medical insurance policies with in-depth study of health insurance and managed care including capitation versus fee for service in the HMO area. Discusses managed care companies in this area and their requirements. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Medical Office Software Applications MDA 210 • 1 credit

Instructs students in the use of software in the medical office including billing, scheduling appointments, and patient records. Laboratory 2 hours per week.

Diagnostic Laboratory Procedures MDA 221 • 4 credits

Instructs students in the practice of laboratory procedures commonly performed in a physician's office. Includes the use and care of equipment and supplies, the processing of reports and requisitions, terminology, and the safety of patient and student. Also includes urinalysis and hematology testing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

MILITARY SCIENCE**Military Science I-II** MSC 111-112 • 2 credits each

Covers the first year of general military science: organization of the Army and ROTC, U.S. Army and national security, individual weapons, marksmanship, and leadership laboratory. Courses offered only in cooperation with four-year colleges authorized to offer Army ROTC programs. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Military Science III-IV MSC 211-212 • 2 credits each

Focuses on the second year of general military science: American military history, introduction to operations and basic tactics, map and aerial photo reading, and leadership laboratory. Courses offered only in cooperation with four-year colleges authorized to offer Army ROTC programs. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUSIC**Basic Musicianship I-II** MUS 101-102 • 3 credits each

Provides exercises leading to knowledge and skill in the rudiments of music. Includes rhythmic notation as well as scales, keys, and intervals along with exercises in sight reading and ear training. Lecture 3 hours per week.

Music Theory I-II MUS 111-112 • 4 credits each

Discusses elements of musical construction of scales, intervals, triads, and chord progressions. Develops ability to sing at sight and write from dictation. Introduces the analysis of the Bach chorale style. Expands facility with harmonic dictation and enables the student to use these techniques at the keyboard. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

Music Appreciation I-II MUS 121-122 • 3 credits each

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.

Class Voice I-II MUS 131-132 • 2 credits each

Introduces the many aspects of singing from the physical act through the aesthetic experience. The course is designed for the beginning singer who desires vocal improvement, and for the voice major as an addition to and extension of skills and knowledge necessary for artistic development. Introduces appropriate repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Applied Music-Voice MUS 136 • 1-2 credits

Teaches singing, proper breath control, diction, and development of tone. Studies the standard vocal repertoire. Prerequisite: Divisional approval. 1-2 half-hour lessons per week. 4-8 hours practice required per week.

Chorus Ensemble MUS 137 • 1 credit

Course consists of performance from the standard repertoire, including study of ensemble techniques and interpretation. Prerequisite: Divisional approval. May be repeated for credit. Laboratory 3 hours per week.

Class Piano I-II MUS 141-142 • 2 credits each

Offers the beginning piano student activities, learning musical notation, accomplishing sight reading skills, and in mastering techniques of keyboard playing. Presents appropriate literature. Open to all students and may be used to fulfill applied minor instrument requirement for music majors. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Applied Music - Keyboard MUS 145 • 1-2 credits

Teaches piano, organ, harpsichord, or synthesizer. Studies the standard repertoire. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be 1/2 hour for 1 hour credit and 1 hour for 2 hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 4-8 hours practice required per week.

Applied Music - Woodwinds MUS 155 • 1-2 credits

Teaches fundamentals of the woodwind instruments. Studies the standard repertoire. Prerequisite divisional permission. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be 1/2 hour for 1 hour credit and 1 hour for 2 hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 4-8 hours practice required per week.

Improvisational Techniques MUS 159 • 3 credits

Introduces the principals of improvisation using harmonic structures and progressions from the period of common practice. Includes listening to and performing music of the standard jazz and popular repertoire. Develops performance skills utilizing specific improvisational devices employed in different historical periods. Prerequisite: Selected Applied Music or freshman level proficiency. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Applied Music - Strings MUS 165 • 1-2 credits

Teaches fundamentals of string instruments, harp or guitar. Studies the standard repertoire. Prerequisite: Divisional approval. 1-2 half-hour lessons per week. 4-8 hours practice required per week.

Applied Music - Brass MUS 175 • 1-2 credits

Teaches fundamentals of brass instruments. Studies the standard repertoire. Prerequisite divisional approval. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be 1/2 hour for 1 hour credit and 1 hour for 2 hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 4-8 hours practice required per week.

Applied Music - Percussion MUS 185 • 1-2 credits

Teaches fundamentals of percussion instruments. Studies the standard repertoire. Prerequisite divisional permission. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be 1/2 hour for 1 hour credit and 1 hour for 2 hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 4-8 hours practice required per week.

Advanced Music Theory I-II MUS 211-212 • 4 credits

Increases facility in the analysis and usage of diatonic and chromatic harmonies. Continues harmonic analysis of Bach style. Includes exercises in sight-singing, ear-training, and keyboard harmony. Prerequisite MUS 111-112 or equivalent. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

History of Music I-II MUS 221-222 • 3 credits each

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

Advanced Applied Music - Voice MUS 236 • 1-2 credits

Continues MUS 136. 4-8 hours practice required per week.

Chorus Ensemble MUS 237 • 1 credit

Continues MUS 137. Laboratory 3 hours per week.

Advanced Applied Music - Keyboard MUS 245 • 1-2 credits

Continues MUS 145. 4-8 hours practice required per week.

Advanced Applied Music – Woodwinds MUS 255 • 1-2 Credits

Continues Applied Music - Woodwinds MUS 155. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be 1/2 hour for 1 hour credit and 1 hour for 2 hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 4-8 hours practice required per week.

Advanced Applied Music - Strings MUS 265 • 1-2 credits

Continues MUS 165. 4-8 hours practice required per week.

Advanced Applied Music – Brass MUS 275 • 1-2 credits

Continues Applied Music Brass MUS 175. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be 1/2 hour for 1 hour credit and 1 hour for 2 hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 4-8 hours practice required per week.

Advanced Applied Music – Percussion MUS 285 • 1-2 credits

Continues Applied Music - Percussion MUS 185. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be 1/2 hour for 1 hour credit and 1 hour for 2 hours credit per semester. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor. 4-8 hours practice required per week.

NATURAL SCIENCE**Introductory Meteorology** NAS 120 • 3 credits

Studies cloud formation, weather maps, forecasting, and wind systems with emphasis on local weather patterns. Lecture 3 hours per week.

Meteorology NAS 125 • 4 credits

Presents a non-technical survey of fundamental 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. Recitation and laboratory 2 hours. Total 5 hours per week.

Elements of Astronomy NAS 130 • 4 credits

Covers history of astronomy and its recent developments. Stresses the use of astronomical instruments and measuring techniques and includes the study and observation of the solar system, stars, and galaxies. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

Astronomy I-II NAS 131-132 • 4 credits each

Studies the major and minor bodies of the solar system, stars and nebulae of the milky way, and extragalactic objects. Examines life and death of stars, origin of the universe, history of astronomy, and instruments and techniques of observation. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

Upper Extremity Anatomy and Kinesiology NAS 177 • 1 credit

Presents specific details of the skeletal, articular, muscular and neurologic anatomy of the human arm. Lecture 1 hour per week.

Man in His Environment NAS 215 • 6 credits

Analyzes ecological and technological forces at work in today's world including air and water pollution, pesticides, and land use. Lecture 4 hours per week. Recitation and laboratory 6 hours per week. Total 10 hours per week.

NURSING**Nurses Aide I** NUR 27 • 4 credits

Teaches care of older patients with emphasis on the social, emotional and spiritual needs of geriatric patients; procedures, communication and interpersonal relations; observations, charting and reporting; safety and infection control; anatomy and physiology; personal care; nutrition and patient feeding; death and dying. Corequisite: NUR 90. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

LPN Transition NUR 115 • 6 credits

Synthesizes essential theoretical concepts related to the use of the nursing process in meeting basic needs of individuals and families, promoting optimal wellness, applying communication theory and understanding the role/function of the associate degree nurse graduate. Lecture 4 hours. Laboratory 6 hours. Total 10 hours per week.

Nursing Fundamentals II NUR 122 • 9 credits

Utilizes the nursing process to meet the biopsychosocial needs of individuals/families experiencing prevalent variations in health throughout the lifespan. Focuses on introducing basic concepts and needs and continued development of nursing skills. Includes math computational skills, basic computer instruction related to the delivery of nursing care; oxygenation, neurological, endocrine, safety, sensory, rest, sleep, activity, self-esteem, respiratory, cardiovascular, gastrointestinal and musculoskeletal needs; and the care of clients with dementia. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture 5 hours. Laboratory 12 hours. Total 17 hours per week.

Drug Dosage Calculations NUR 135 • 2 credits

Teaches apothecary, metric, household conversion; reading drug orders and labels. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates and pediatric dosages. Lecture 2 hours per week.

Essentials of Medical/Surgical Nursing NUR 170 • 4 credits

Teaches care of individuals/families requiring medical or surgical treatment. Uses all components of the nursing process with increasing skill. Includes mathematical 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 2 hours. Laboratory 6 hours. Total 8 hours per week.

Essentials of Maternal/Newborn Nursing NUR 180 • 4 credits

Teach nursing care of individuals and families during the ante partum, intra partum, and post partum periods. Includes pediatric dosage computational skills and the utilization of the nursing process in caring for individuals and families. Provides supervised learning experiences in the college laboratory and/or cooperating agencies. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

Psychiatric Nursing NUR 201 • 4 credits

Teaches care of individuals requiring psychiatric treatment. Uses all components of the nursing process with increasing degrees of skill. Provides supervised learning experiences in a college nursing laboratory and/or cooperating agencies. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

Second Level Nursing I NUR 211 • 8 credits

Emphasizes the nursing area of individuals/families in various stages of development experiencing problems related to their biopsychosocial needs. Uses all components of the nursing process with increasing degrees of skill. Provides supervised learning experiences in a college nursing laboratory and/or cooperating agencies. Lecture 4 hours. Laboratory 12 hours. Total 16 hours per week.

Second Level Nursing II NUR 212 • 8 credits

Emphasizes the nursing area of individuals/families in various stages of development experiencing problems related to their biopsychosocial needs. Uses all components of the nursing process with increasing degrees of skill. Provides supervised learning experiences in a college nursing laboratory and/or cooperating agencies. Lecture 4 hours. Laboratory 12 hours. Total 16 hours per week.

Second Level Nursing Principals and Concepts II NUR 222 • 9 credits

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 4 hours. Laboratory 15 hours. Total 19 hours per week.

Nursing Organization and Management NUR 255 • 3 credits

Addresses management and organizational skills as they relate to nursing. Emphasizes group dynamics, resolution of conflicts, and leadership styles. Lecture 3 hours per week.

OCCUPATIONAL THERAPY

Introduction to Occupational Therapy OCT 100 • 3 credits

Introduces the concepts of occupational therapy as a means of directing a person's participation in tasks selected to develop, maintain or restore skills in daily living. Examines the role of the assistant for each function of occupational therapy, and for various practice settings in relationship to various members of the health care team. Lecture 3 hours per week.

Occupational Therapy with Psychosocial Dysfunction OCT 201 • 3 credits

Focuses on the theory and application of occupational therapy in the evaluation and treatment of psychosocial dysfunction. Includes a survey of conditions which cause emotional, mental, and social disability, as well as the role of the occupational therapy assistant in the assessment, planning and implementation of treatment programs. Corequisite: OCT 190. Lecture 3 hours per week.

Occupational Therapy with Physical Disabilities OCT 202 • 4 credits

Focuses on the theory and application of occupational therapy in the evaluation and treatment of physical dysfunction. Includes a survey of conditions which cause physical disability as well as the role of the occupational therapy assistant in assessment, planning and implementation of treatment programs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Occupational Therapy with Developmental Disabilities OCT 203 • 4 credits

Focuses on the theory and application of occupational therapy in the evaluation and treatment of developmental dysfunction. Includes a survey of conditions which cause developmental disability across the life span, with particular emphasis on children and the elderly. Investigates the role of the occupational therapist in assessment, planning and implementation of treatment programs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Therapeutic Media OCT 205 • 2 credits

Develops proficiency in various crafts used as treatment modalities in occupational therapy. Emphasizes how to analyze, adapt and teach select activities as well as how to equip and maintain a safe working environment. Lecture 1 hours. Laboratory 3 hours. Total 4 hours per week.

Dyadic and Group Dynamics OCT 206 • 3 credits

Provides theory and activity to develop positive interpersonal relationships and effective communication ability. Includes non-verbal communication, listening, observation, interviewing and documentation. Covers group process and its application to occupational therapy, including types of therapeutic groups, group membership roles, leadership skills and forces which affect group function and decision making. Lecture 3 hours per week.

Occupational Therapy Service Management OCT 208 • 3 credits

Presents principles and techniques of management appropriate to the occupational therapy assistant. Includes roles and functions of the supervisor and the supervisee, scheduling, billing, quality improvement with an emphasis on organizing and managing activity departments in long-term facilities. Lecture 3 hours per week.

Assistive Technology in Occupational Therapy OCT 210 • 2 credits

Explores the assertive technologies available for persons with physical, sensory and cognitive disabilities. Provides instruction in the process of assessment, selection adaptation and training of assertive technology to persons with disabilities. Presents information on funding and maintenance of devices. Exposes students to technology in clinical practice and equipment companies. Prerequisites: OCT 202-203. Lecture 2 hours per week.

Occupational Therapy for the Adult OCT 220 • 2 credits

Reviews normal changes related to aging and factors contributing to dysfunction. Analyzes intervention strategies for common problems, including wellness programs and home modifications. Reviews relevant legislation, continuum of care and caregiver issues. Lecture 2 hours per week.

PARALEGAL STUDIES

Introduction to Law and the Legal Assistant LGL 110 • 3 credits

Introduces various areas of law in which a legal assistant will be working. Includes intense study of court systems (Virginia and federal) as well as a brief overview of criminal law, tort, domestic relations, evidence, ethics, the role of the legal assistant and other areas of interest. Prerequisite: ENG 3 and ENG 5 or placement scores indicating readiness for ENG 111. Lecture 3 hours per week.

Real Estate Law for Legal Assistants LGL 115 • 3 credits

Studies law of real property, and gives in-depth survey of more common types of real estate transactions and conveyances such as deeds, contracts, leases, and deeds of trust. Focuses on drafting problems involving these various instruments. Includes research projects, and studies the system of recording and search of public documents. Corequisite: LGL 110. Lecture 3 hours per week.

Family Law LGL 117 • 3 credits

Studies elements of a valid marriage, grounds for divorce and annulment, separation, defenses, custody, support, adoptions, and applicable tax consequences. Includes property settlement, pre- and ante-nuptial agreements, pleadings, and rules of procedure. May include specific federal and Virginia consumer laws. Lecture 3 hours per week.

Family Mediation LGL 118 • 3 credits

Explores concepts in the resolution of family disputes, such as a comparison of family mediation with general mediation, custody and visitation, divorce and separation, parenting issues and parenting arrangements, support and property issues, tax consequences of divorce, and ethics of family mediation. Focuses on experiential learning as informed by role-play, demonstration and critique. Introduces students to the variety of settings in which family mediation processes are utilized, and the ethical and unauthorized practice of law opinions encountered in family mediation practice. Lecture 3 hours per week.

Legal Research LGL 125 • 3 credits

Provides an understanding of various components of a law library, and emphasizes research skills through the use of digests, encyclopedias, reporter systems, codes, Shepards, ALR and other research tools. Prerequisite: LGL 110. Lecture 3 hours per week.

Legal Writing LGL 126 • 3 credits

Studies proper preparation of various legal documents, including case and appeal briefs, legal memoranda, letters and pleadings. Involves practical applications. Requires competence in English grammar. Prerequisite: ENG 111 and LGL 125. Lecture 3 hours per week.

Law Office Administration and Management LGL 130 • 3 credits

Introduces management principles and systems applicable to law firms, including record keeping, disbursements, escrow accounts, billing, and purchasing. May include accounting methods and software packages applicable to law firms. Lecture 3 hours per week.

Law and Mediation LGL 150 • 3 credits

Introduces the dispute resolution technique known as mediation. Explores concepts, such as conflict resolution, communication and problem solving, as the basis for the exploration of the mediation process. Significant focus is on experiential learning, as informed by initial introduction to the theoretical bases. Students will also be introduced to the variety of settings in which mediation processes are utilized and the utilization of mediation within the Commonwealth of Virginia. Corequisite: LGL 110. Lecture 3 hours per week.

Ethics for the Legal Assistant LGL 200 • 1 credit

Examines general principles of ethical conduct applicable to legal assistants. Includes the application of rules of ethics to the practicing legal assistant. Corequisite: LGL 110. Lecture 1 hour per week.

Virginia and Federal Procedure LGL 210 • 3 credits

Examines the rules of procedure in the Virginia and federal court systems, including the Federal Rules of Civil Procedure and the Rules of Practice and Procedure in the District Court, Circuit Court, Court of Appeals, and Supreme Court of Virginia. Lecture 3 hours per week.

Deeds of Trust and Mortgages LGL 212 • 3 credits

Introduces the legal aspects of government and conventional real estate financing. Covers processing from initial application to final closing procedures. Includes commercial property, land acquisition, and construction loan deeds of trust or mortgages. Examines defaults and foreclosures. Prerequisite: LGL 115. Lecture 3 hours per week.

Torts LGL 215 • 3 credits

Studies fundamental principles of the law of torts. May include preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes personal injury, products liability, and malpractice cases. Lecture 3 hours per week.

Trial Preparation and Discovery Practice LGL 216 • 3 credits

Examines the trial process, including the preparation of a trial notebook, pretrial motions, and orders. May include preparation of interrogatories, depositions, and other discovery tools used in assembling evidence in preparation for the trial or an administrative hearing. Lecture 3 hours per week.

Criminal Law LGL 218 • 3 credits

Focuses on major crimes: their classification, elements of proof, intent, conspiracy, responsibility, parties, and defenses. Emphasizes Virginia law. Gives general principles of applicable constitutional law and criminal procedure. Prerequisite: LGL 110. Lecture 3 hours per week.

Administrative Practice and Procedure LGL 220 • 3 credits

Surveys applicable administrative laws, including the Privacy Act, the Administrative Process Act, and Freedom of Information Act. Studies practice and procedure involving the ABC Commission, State Corporation Commission, Division of Workers' Compensation, Social Security Administration, the Virginia Employment Commission and other administrative agencies. Prerequisite: LGL 125 Lecture 3 hours per week.

Estate Planning and Probate LGL 225 • 3 credits

Introduces various devices used to plan an estate, including wills, trusts, joint ownership and insurance; considers various plans in light of family situations and estate objectives. Focuses on practices involving administration of an estate, including taxes and preparation of forms. Prerequisite: LGL 110. Lecture 3 hours per week.

Real Estate Abstracting LGL 226 • 3 credits

Reviews aspects of abstracting title to real estate, recordation of land transactions, liens, grantor-grantee indices, warranties, covenants, restrictions, and easements. Prerequisite: LGL 115. Lecture 3 hours per week.

Legal Transactions LGL 230 • 3 credits

Presents an in-depth study of general contract law, including formation, breach, enforcement, and remedies. Also includes an overview of UCC sales, commercial paper, and collections. Corequisite: LGL 110. Lecture 3 hours per week.

Intellectual Property Law LGL 234 • 3 credits

Presents outline of federal copyright and federal and state trademark law. Examines the functions of legal assistants in preparing registrations as well as infringement litigation. Covers related areas of law including trade secrecy and differences between various types of intellectual property. Examines the basics of patent law. Prerequisite: LGL 235. Lecture 3 hours per week.

Legal Aspects of Business Organizations LGL 235 • 3 credits

Studies fundamental principals of agency law and the formation of business organizations. Includes sole proprietorships, partnerships, corporations, limited liability companies, and other business entities. Reviews preparation of the documents necessary for the organization and operation of businesses. Prerequisite: LGL 110. Lecture 3 hours per week.

Bankruptcy LGL 238 • 3 credits

Provides a practical understanding of non-bankruptcy alternatives and the laws of bankruptcy including Chapters 7, 11, 12 and 13 of the Bankruptcy Code. Emphasis will be placed on preparing petitions, schedules, statements and other forms. Corequisite: LGL 110. Lecture 3 hours per week.

PHILOSOPHY**Introduction to Philosophy I-II** PHI 101-102 • 3 credits each

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.

Logic I PHI 111 • 3 credits

Introduces inductive and deductive reasoning with an emphasis on common errors and fallacies. Lecture 3 hours per week.

Practical Reasoning PHI 115 • 3 credits

Studies informal logic and language techniques as they relate to reasoning and argument. Provides practice in analyzing arguments and constructing sound arguments. Lecture 3 hours per week.

Ethics PHI 220 • 3 credits

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

Social Ethics PHI 226 • 3 credits

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

Studies in Eastern Thinking PHI 260 • 3 credits

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.

PHOTOGRAPHY**Photography I-II** PHT 101-102 • 3 credits each

Teaches principles of photography and fundamental camera techniques. Requires outside shooting and laboratory work. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

History of Photography PHT 110 • 3 credits

Surveys important photographers, processes, and historical influences of the nineteenth and twentieth centuries. Lecture 3 hours per week.

Electronic Darkroom PHT 135 • 3 credits

Teaches students to create and manipulate digital photographs. Covers masking, color corrections, and merging of illustrations with photographs. Examines the ethical and property-rights issues which are raised in the manipulation of images. Prerequisite: PHT 101 or equivalent. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

Advanced Photography I PHT 201 • 3 credits

Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Prerequisite: PHT 102 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Zone System in Photography PHT 205 • 3 credits

This is an advanced course designed for users of all photographic formats. Teaches control of image quality through calibration and testing of film, exposure, and development and negative printing. Teaches creative "previsualization" techniques. Prerequisite: PHT 102 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Studio Lighting I-II PHT 221-222 • 3 credits each

Examines advanced lighting and camera techniques under controlled studio conditions. Includes view camera use, electronic flash, advanced lighting techniques, color temperature and filtration, and lighting ratios. Requires outside shooting. Prerequisite: PHT 102 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Photojournalism I-II PHT 231-232 • 3 credits each

Introduces equipment, techniques, skills, and concepts of photojournalism. Teaches photography for features, spot news, and photo essays. Emphasizes editing, captioning, and layout. May require individual projects. Prerequisite PHT 102 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Alternative Photographic Processes PHT 247 • 3 credits

Explores manipulated imagery including traditional and non-traditional processes such as non-silver and electronic imaging. Uses enlarged film negatives in order to investigate a variety of methods. Prerequisite: PHT 102 or equivalent. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHYSICAL EDUCATION**Fundamentals of Physical Activity** PED 101-102 • 2 credits each

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

Aerobic Fitness I PED 103 • 2 credits

Develops cardiovascular fitness through activities designed to elevate and sustain heart rates appropriate to age and physical condition. Lecture 2 hours per week.

Aerobic Dance I PED 105 • 2 credits

Focuses on physical fitness through dance exercises. Emphasizes the development of cardiovascular endurance, muscular endurance, and flexibility. Lecture 2 hours per week.

Yoga PED 109 • 2 credits

Focuses on the forms of yoga training emphasizing flexibility. Special emphasis given to cardiovascular endurance. Lecture 2 hours per week.

Weight Training I PED 111 • 2 credits

Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Lecture 2 hours per week.

Lifetime Activities I-II PED 113 – 114 • 2 credits each

Presents lifetime sports and activities. Teaches skills and methods of lifetime sports and activities appropriate to the local season and facilities available. Lecture 2 hours per week.

Fitness Walking PED 117 • 1 credit

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

Racketball I PED 121 • 2 credits

Teaches racketball skills and strategies for team and individual play. Includes terminology, scoring, etiquette, equipment selection, and safety. Lecture 2 hours per week.

Tennis I-II PED 123-124 • 2 credits each

Teaches tennis skills with emphasis on stroke development and strategies for individual and team play. Includes rules, scoring, terminology, and etiquette. Lecture 2 hours per week.

Cycling PED 127 • 2 credits

Introduces cycling techniques, equipment selection, care and maintenance, safety, and physical conditioning. Lecture 2 hours per week.

Self Defense PED 129 • 2 credits

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

Golf I-II PED 133-134 • 2 credits each

Teaches basic skills of golf, rules, etiquette, scoring, terminology, equipment selection and use, and strategy. Lecture 2 hours per week.

Bowling I-II PED 135-136 • 2 credits each

Teaches basic bowling skills and techniques, scoring, rules, etiquette, and terminology. Lecture 2 hours per week.

Martial Arts I PED 137 • 2 credits

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. Lecture 2 hours per week.

Swimming I-II PED 141-142 • 2 credits each

Introduces skills and methods of swimming strokes. Focuses on safety and physical conditioning. Lecture 2 hours per week.

Volleyball PED 154 • 2 credits

Introduces volleyball skills, techniques, strategies, rules, and scoring. Lecture 2 hours per week.

Softball PED 156 • 2 credits

Emphasizes softball skills, techniques, strategies, and rules. Lecture 2 hours per week.

Camping PED 176 • 2 credits

Introduces camping techniques, equipment, site selection and use, safety procedures, and camping ecology. Lecture 2 hours per week.

Downhill Skiing I PED 181 • 2 credits

Teaches basic skills of downhill skiing; selection and use of equipment; terminology and safety rules. Includes field experience. Lecture 2 hours per week.

PHYSICAL THERAPY ASSISTANT

Introduction to Physical Therapist Assisting PTH 105 • 3 credits

Introduces the physical therapist assistant student to the field of physical therapy practice and develops basic patient care skills for application in the initial physical therapy clinical experience. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

Medical Reporting PTH 110 • 1 credit

Emphasizes the principles of medical reporting, including the ability to abstract pertinent information from actual medical records. Includes the writing of patient progress notes in standardized formats and medical terminology. Lecture 1 hour per week.

Kinesiology for the Physical Therapist Assistant PTH 115 • 4 credits

Focuses on the relationship of specific joint structure and function, the role of individual muscles and groups of muscles and neurological principles in both normal and pathological movement. The course includes a review of basic physics and biomechanical principles applied to human movement. Includes specific posture and gait analysis. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

Therapeutic Procedures I-II PTH 121-122 • 5 credits each

Prepares the students to properly and safely administer basic physical therapy procedures utilized by physical therapist assistants. The procedures include therapeutic modalities. Procedures may include therapeutic exercise, electrotherapy and cardiopulmonary rehabilitation. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

Clinical Education PTH 131 • 2 credits

Provides supervised instruction in the delivery of physical therapy in one of various clinical settings. Emphasizes the practice of all therapeutic skills learned in the first year, including direct patient care skills and all forms of communication. Laboratory 8 hours per week.

Musculoskeletal Structure and Function PTH 151 • 5 credits

Studies the human musculoskeletal system. Terms of position and movement, location, and identification of specific bony landmarks, joint structure and design, ligaments, muscle origin, action and innervation, and types of contraction are emphasized. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

Psychological Aspects of Therapy PTH 210 • 2 credits

Focuses on the psychological reactions and sociological impact of illness and injury in clients and their families, and among health caregivers who work with them. Examines individual self-identity and the nature of changing client/therapist relationships across the life span. Lecture 2 hours per week.

Rehabilitation Procedures PTH 225 • 5 credits

Focuses on treatment techniques typical of long term rehabilitation, e.g., the rehabilitation of congenital, neurological, and disfigurement associated with chronic injury and disease. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

Therapeutic Exercise PTH 226 • 4 credits

Emphasizes the basic principles underlying different approaches to exercise including rationale for treatment and may include neurological treatments such as simple facilitation and inhibitory techniques and the teaching of home programs. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

Clinical Practicum I-II PTH 251-252 • 3 credits each

Provides instruction in local health care facilities in the actual administration of physical therapy treatments under the supervision of licensed physical therapists. Provides experience in a variety of clinical settings. Laboratory 15 hours per week

Seminar in Physical Therapy PTH 255 • 2 credits

Includes preparation for licensing examinations, specialized lectures, and preparation of a student project. Lecture 2 hours per week.

PHYSICS

Elements of Physics PHY 100 • 4 credits

Covers basic concepts of physics, including Newtonian mechanics, properties of matter, heat and sound, and fundamentals of electricity. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Survey of Applied Physics PHY 130 • 3 credits

Surveys topics such as heat, electricity, and light with emphasis on practical applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

General College Physics I-II PHY 201-202 • 4 credits each

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.

University Physics I-II PHY 241-242 • 4 credits each

Teaches principles of classical and modern physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, relativity, and nuclear physics. Prerequisite for PHY 241: MTH 173 or MTH 273 or divisional approval. Prerequisite for PHY 242: MTH 174 or divisional approval. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

POLITICAL SCIENCE**Basics of American Politics** PLS 130 • 3 credits

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 3 hours per week.

U.S. Government I-II PLS 211-212 • 3 credits each

Teaches structure, operation, and processes 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.

International Relations I PLS 241 • 3 credits

Teaches geographic, demographic, economic, ideological, and other factors conditioning the policies of countries and discusses conflicts and their adjustment. Lecture 3 hours per week.

PSYCHOLOGY**Principles of Applied Psychology** PSY 100 • 3 credits

Introduces the general principles of psychology as they are applied to work, relationships, and self. Includes perception, learning, development, motivation, emotion, therapy, communication, attitudes. Lecture 3 hours per week. (Credit for both PSY 100 and PSY 201 will not be awarded.)

Psychology of Personal Adjustment PSY 105 • 3 credits

Introduces psychological principles that contribute to well-adjusted personality. Considers the effects of stress and coping with the problems of everyday life. Lecture 3 hours per week.

Psychology of Death and Dying PSY 116 • 3 credits

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.

Interpersonal Relationships PSY 125 • 3 credits

Studies individual behavior as it affects the individual's relationships. Considers such topics as attitudes, needs, values, leadership, communication, and group dynamics. Teaches constructive methods of interpersonal problem solving. Lecture 3 hours per week.

Psychology for Business and Industry PSY 126 • 3 credits

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

Psychology of Human Sexuality PSY 165 • 3 credits

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

Psychology of Marriage PSY 166 • 3 credits

Analyzes personality interactions in marriage and other intimate relationships. Examines theories of personal development and types of relationships resulting from interactions. Lecture 3 hours per week.

Principles of Psychology PSY 200 • 3 credits

Surveys the basic concepts 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.

Introduction to Psychology I-II PSY 201-202 • 3 credits each

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

Abnormal Psychology PSY 215 • 3 credits

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.

Social Psychology PSY 216 • 3 credits

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 200, 201, or 202. Lecture 3 hours per week.

Cross-Cultural Psychology PSY 219 • 3 credits

Investigates psychological principles from a cross-cultural perspective. Examines cultural basics for views of reality. Describes topics such as time, space, values, sex-roles, and human development in relation to culture. Prerequisites: PSY 200, 201 or 202. Lecture 3 hours per week.

Introduction to Behavior Modification PSY 220 • 3 credits

Studies the history of behaviorism and the principles and applications of behavior modification. Emphasizes observation and application of behavior modification principles. Lecture 3 hours per week.

Developmental Psychology PSY 230 • 3 credits

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.

Child Psychology PSY 235 • 3 credits

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

Adolescent Psychology PSY 236 • 3 credits

Studies development of the adolescent. Investigates physical, intellectual, social, and emotional factors of the individual from late childhood to early adulthood. Lecture 3 hours per week.

Psychological Aspects of Criminal Behavior PSY 255 • 3 credits

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. Lecture 3 hours per week.

Psychology of Men and Women PSY 265 • 3 credits

Examines the major determinants of sex differences. Emphasizes psychosexual differentiation and gender identity from theoretical, biological, interpersonal, and sociocultural perspectives. Includes topics such as sex roles, socialization, rape, abuse, and androgyny. Lecture 3 hours per week.

RADIOGRAPHY**Radiographic Procedures I** RAD 121 • 4 credits

Introduces procedures for positioning the patient's anatomical structures relative to X-ray beams and image receptors. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Elementary Clinical Procedures I-II RAD 131-132 • 3 credits each

Develops advanced technical skills in fundamental radiographic procedures. Focuses on manipulation of equipment, patient care, osseous studies, skull procedures, and contrast studies. Provides clinical experience in cooperative health agencies. Clinical 15 hours per week.

Principles of Radiographic Quality I-II RAD 141-142 • 4 credits each

Presents all factors that control and influence radiographic quality as well as various technical conversion factors useful in radiography. Automatic film processing, sensitometry, and quality assurance testing are also discussed. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Radiation Protection and Radiobiology RAD 205 • 3 credits

Studies methods and devices used for protection from ionizing radiation. Teaches theories of biological effects, cell organism sensitivity, and the somatic and genetic effects of ionizing radiation. Presents current radiation protection philosophy for protecting the patient and the technologist. Lecture 3 hours per week.

Human Disease and Radiography RAD 206 • 1 credit

Introduces the various diseases and anomalies that may be manifested on the radiograph. Presents diseases related to the various body systems. Places emphasis on the relationship of the disease process and radiographic density. Lecture 1 hour per week.

Radiographic Procedures II RAD 221 • 4 credits

Continues procedures for positioning the patient's anatomical structures relative to X-ray beams and image receptors. Emphasizes procedures for routine examination of the skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Advanced Clinical Procedures I-II RAD 231-232 • 5 credits each

Reinforces technical skills in fundamental radiographic procedures. Introduces more intricate contrast media procedures. Focuses on technical proficiency, application of radiation, protection, nursing skills, and exposure principles. Teaches advanced technical procedures and principles of imaging modalities, correlating previous radiographic theory, focusing on full responsibility for patients in technical areas, perfecting technical skills, and developing awareness of related areas utilizing ionizing radiation. Provides clinical experience in cooperating health agencies. Clinical 25 hours per week.

Anatomy and Positioning of the Breast RAD 233 • 1 credit

Presents the risk factors for breast disease, anatomy and physiology of the breast and discusses the various pathologies identified through mammography. Includes routine and special projections of the breast. Prerequisite: ARRT or eligible. Lecture 1 hour per week.

Breast Imaging/Instrumentation RAD 234 • 1 credit

Discusses the dedicated radiography equipment necessary for breast imaging. Includes proper technical factors, radiation protection techniques, and proper accessory equipment. Prerequisite: ARRT or eligible. Lecture 1 hour per week.

Quality Assurance in Mammography RAD 235 • 1 credit

Discusses the components of quality assurance in mammography and the accreditation programs developed to ensure quality in breast imaging facilities. Prerequisite: ARRT or eligible. Lecture 1 hour per week.

Computed Tomography Procedures and Instrumentation RAD 242 • 2 credits

Focuses on the patient care, imaging procedure and physics and instrumentation related to computed tomography imaging. Prerequisite: ARRT or eligible. Lecture 2 hours per week.

Case Studies in Computed Tomography RAD 244 • 1 credit

Presents case studies in computed tomography. Focuses on both abnormal and normal studies. Prerequisite: ARRT or eligible. Lecture 1 hour per week.

Radiologic Specialties RAD 245 • 1 credit

Introduces the study of the treatment of disease as it relates to various imaging modalities, computerized tomography, and magnetic resonance imaging. Introduces computers and other innovations in radiology. Emphasizes theory, principal of operation, and clinical application of these topics. Lecture 1 hour per week.

Radiographic Equipment RAD 255 • 3 credits

Studies principles and operation of general and specialized X-ray equipment. Lecture 3 hours per week.

Terminal Competencies in Radiography RAD 280 • 1 credit

Includes preparation and ensures that students possess competencies which relate to materials covered by the ARRT Content specifications for national exam eligibility. Incorporates activities designed to verify that students have mastered skills in the critical content areas to include equipment operation and maintenance, image production and evaluation, radiographic procedures, radiation protection and patient care. Prerequisite/Co-requisite: Admission to RAD program. Laboratory 3 hours per week.

REAL ESTATE**Principles of Real Estate** REA 100 • 4 credits

Examines practical applications of real estate principles. Includes a study of titles, estates, land description, contracts, legal instruments, financing and management of real estate. Lecture 4 hours per week.

Real Estate Brokerage REA 215 • 4 credits

Considers administrative principles and practices of real estate brokerage, financial control and marketing of real property. Lecture 3 hours per week.

Real Estate Law REA 245 • 3 credits

Focuses on real estate law, including rights pertaining to property ownership and management, agency, contracts, transfers of real property ownership, fair housing, and tax implications. Lecture 3 hours per week.

RELIGION**Introduction to the Study of Religion** REL 100 • 3 credits

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

Survey of the Old Testament REL 200 • 3 credits

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 of the writings. Lecture 3 hours per week.

Survey of the New Testament REL 210 • 3 credits

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

New Testament and Early Christianity REL 215 • 3 credits

Surveys the history, literature, and theology of early Christianity in the light of the New Testament. Lecture 3 hours per week.

Life and Teachings of Jesus REL 216 • 3 credits

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.

Life and Letters of Paul REL 217 • 3 credits

Studies the journeys and religious thought of the apostle Paul. Lecture 3 hours per week.

Religions of the World REL 230 • 3 credits

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

Christianity REL 246 • 3 credits

Examines the origins and historical development of Christianity, its basic metaphysical and theological assumptions, its essential doctrines, and the present state of the church in the modern world. Lecture 3 hours per week.

History of Christianity REL 247 • 3 credits

Surveys the development of Christianity from its origins to the present. Lecture 3 hours per week.

Selected Problems and Issues in Religion REL 255 • 3 credits

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

RESPIRATORY THERAPY

Integrated Sciences for Respiratory Care RTH 102 • 3 credits

Integrates the application of mathematics, chemistry, microbiology, physics, and computer technology as these sciences apply to the practice of respiratory care. Lecture 3 hours per week.

Fundamental Theory for Respiratory Care RTH 120 • 2 credits

Presents the theory of basic patient assessment and functional medical terminology. Lecture 2 hours per week.

Cardiopulmonary Science I RTH 121 • 3 credits

Focuses on pathophysiology, assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary, renal and neuromuscular physiology and pathophysiology. Lecture 3 hours per week.

Respiratory Care Theory and Procedures I-II RTH 131-132 • 4 credits each

Presents theory of equipment and procedures and related concepts used for patients requiring general, acute, and critical cardiopulmonary care. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Pharmacology for Respiratory Care I RTH 145 • 1 credit

Presents selection criteria for the use of and detailed information on pharmacologic agents used in pulmonary care. Lecture 1 hour per week.

Pulmonary Rehabilitation, Home Care and Health Promotion RTH 217 • 2 credits

Focuses on purpose and implementation of a comprehensive pulmonary rehabilitation program. Explores procedures and approaches used in pulmonary home care. Identifies and discusses major health and wellness programs applied to cardiopulmonary patients. Lecture 2 hours per week.

Cardiopulmonary Science II RTH 222 • 3 credits

Focuses on assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary, renal and neuromuscular physiology, and pathophysiology. Lecture 3 hours per week.

Neonatal and Pediatric Respiratory Procedures RTH 225 • 3 credits

Focuses on cardiopulmonary physiology, pathology and application of therapeutic procedures in the management of the newborn and pediatric patient. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Diagnostic and Therapeutic Procedures II RTH 235 • 3 credits

Presents the use of multiple diagnostic and therapeutic techniques used in ambulatory and critical care patients. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Critical Care Monitoring RTH 236 • 3 credits

Focuses on techniques and theory necessary for the evaluation and treatment of the critical care patient, especially arterial blood gases and hemodynamic measurements. Explores physiologic effects of advanced mechanical ventilation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

RUSSIAN

Beginning Russian I-II RUS 101-102 • 4 credits each

Develops the understanding, speaking, reading, and writing of Russian, and emphasizes the structure of the language. Lecture 4 hours per week. May include one additional hour of oral practice per week.

SAFETY

Safety and Health Standards: Regulations and Codes SAF 120 • 3 credits

Teaches development of safety standards, the Occupational Safety and Health Act (OSHA), its rules and regulations; penalties for non-compliance, and methods of compliance. Includes an examination of Government Regulatory Codes and appraisal of consensus, advisory, and proprietary standards. Lecture 3 hours per week.

Computer Applications for Technicians SAF 125 • 4 credits

Introduces the use of the personal computer with emphasis on technical software for occupational/technical professionals. Lecture 4 hours per week.

Principles of Industrial Safety SAF 126 • 3 credits

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

Industrial Safety SAF 127 • 2 credits

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

Safety Program Organization and Administration SAF 135 • 3 credits

Introduces techniques of organizing and administering practical safety programs. Emphasizes safety as a management function. Includes an examination of history, occupational safety and health regulations, and a survey of current laws and standards. Lecture 3 hours per week.

Industrial Safety Design and Maintenance Management

SAF 136 • 3 credits

Studies the significant aspects of sites and facility planning, process and equipment layout, transportation facilities, illumination standards and color dynamics. Includes a study of the hazards and conditions involving floors, walkways, ramps, stairs, ladders, mechanical and personal protective equipment, safety maintenance, schedules and controls and their relationship to the prevention of accidents. Lecture 3 hours per week.

Introduction to Industrial Hygiene

SAF 140 • 3 credits

Studies environmental energy, physical and chemical hazards, including gases, vapors, dusts, fumes, and mists; the importance of personal protective equipment, and contamination control methodology. Lecture 3 hours per week.

Human Factors and Safety Psychology

SAF 205 • 3 credits

Studies stresses on the human system, both physiological and psychological, that contributes to the severity of industrial accidents. Includes the interrelationship of industrial medicine and industrial hygiene and a study of the various occupational illnesses. Lecture 3 hours per week.

Hazardous Chemicals, Materials, and Waste in the Workplace

SAF 246 • 3 credits

Introduces the rules and regulations governing use, exposure to, and disposal of hazardous chemicals, materials and waste by-products. Discusses OSHA "Right to Know Laws," EPA and RCRA regulations. Provides the techniques to interpret and understand the code of Federal Regulations. Emphasizes management mandates, strategies, and options to comply with these regulations. Lecture 3 hours per week.

SOCIAL SCIENCE**Culture and Social Study of Women**

SSC 205 • 3 credits

Analyzes historical and contemporary social, cultural, political, and economic factors affecting the role of women. Uses selected literature about women in the modern world as a basis for study and discussion. Lecture 3 hours per week.

SOCIOLOGY**Principles of Sociology**

SOC 200 • 3 credits

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.

Introduction to Sociology I-II

SOC 201-202 • 3 credits each

Introduces basic concepts and methods of sociology. Presents significant research and theory in areas such as socialization, group dynamics, gender roles, minority group relations, stratification, deviance, culture, community studies. Includes population, social change, and social institutions (family, education, religion, political system, economic system). Lecture 3 hours per week.

Principles of Anthropology I-II

SOC 211-212 • 3 credits each

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.

Sociology of the Family

SOC 215 • 3 credits

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 life styles. Lecture 3 hours per week.

Criminology

SOC 236 • 3 credits

Studies research and causal theories of criminal behavior. Examines crime statistics, crime victims, and types of criminal offenses. Introduces the role of police, judicial and correctional systems in treatment and punishment of offenders. Is also approved for ADJ Criminology curriculum. Lecture 3 hours per week.

Sociology of Aging

SOC 245 • 3 credits

Introduces study of aging with special emphasis on later stages of the life cycle. Includes theories of aging, historical and comparative settings, social policy, and future trends of aging. Lecture 3 hours per week.

Death and Society

SOC 246 • 3 credits

Analyzes death and its relationship to social behavior and social institutions. Focuses attention on types of death, bereavement, funerals, estate planning/inheritance, and the student's own responses to these issues. Lecture 3 hours per week.

Minority Group Relations

SOC 266 • 3 credits

Investigates minorities such as racial and ethnic groups. Addresses social and economic conditions promoting prejudice, racism, discrimination, and segregation. Lecture 3 hours per week.

Social Problems

SOC 268 • 3 credits

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**Spanish For Business**

SPA 16 • 2 credits

Introduces the student to Spanish used in business transactions. Lecture 2 hours per week.

Beginning Spanish I-II

SPA 101-102 • 4 credits each

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 hours per week.

Spanish for Law Enforcement SPA 150 • 3 credits

Introduces Spanish to those in the criminal justice field. Emphasizes oral communication and practical first-hand police and justice vocabulary. May include oral drill and practice. Lecture 3 hours per week.

Spanish for the Green Industry I SPA 160 • 3 credits

Introduces basic conversation skills in Spanish to those working in the “Green” industry. Emphasizes the use of vocabulary and expressions needed for communication in horticulture, landscaping, nursery/greenhouse, and turf management. Addresses cultural aspects of working with Spanish speaking populations. Lecture 3 hours per week.

Spanish for Health Professionals SPA 163 • 3 credits

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.

Intermediate Spanish I-II SPA 203-204 • 3 credits each

Continues to develop understanding, speaking, reading, and writing skills. Classes conducted in Spanish. Prerequisite: SPA 102 or equivalent. May include oral drill and practice. Lecture 3 hours per week.

SPEECH AND DRAMA

Principles of Public Speaking SPD 100 • 3 credits

Applies theory and principles of public address with emphasis on preparation and delivery. Lecture 3 hours per week.

Oral Communication SPD 105 • 3 credits

Studies effective communication with emphasis on speaking and listening. Lecture 3 hours per week.

Voice and Diction I SPD 111 • 3 credits

Enables students to improve pronunciation, articulation, and voice quality. Includes applied phonetics. Lecture 3 hours per week.

Interpersonal Communication SPD 126 • 3 credits

Teaches interpersonal communication skills for both daily living and the world of work. Includes perception, self-concept, self-disclosure, listening and feedback, nonverbal communication, attitudes, assertiveness, and other interpersonal skills. Lecture 3 hours per week.

Introduction to the Theatre SPD 130 • 3 credits

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.

Acting I-II SPD 131-132 • 3 credits each

Develops personal resources and explores performance skills through such activities as theatre games, role playing, improvisation, work on basic script units, and performance of scenes. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Oral Interpretation SPD 137 • 3 credits

Studies the theory and practice of performing various types of literature: prose, poetry, and drama. Emphasizes the relationship among the oral interpreter, the literary work, and the audience. Lecture 3 hours per week.

Theatre Appreciation I-II SPD 141-142 • 3 credits each

Aims to increase knowledge and enjoyment of theatre. Considers process, style, organization, written drama, and performed drama. Lecture 3 hours per week.

Stagecraft SPD 145 • 3 credits

Acquaints the student with fundamental methods, materials, and techniques of set construction for the stage. Lecture 2 hours. Laboratory 2 hour. Total 4 hours per week.

Film Appreciation I-II SPD 151-152 • 3 credits each

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

Advanced Public Speaking SPD 200 • 3 credits

Focuses on preparation and delivery of various advanced forms of public address. Prerequisite SPD 100 or divisional approval. Lecture 3 hours per week.

Intercultural Communication SPD 229 • 3 credits

Emphasizes the influence of culture on the communication process including differences in values, message systems, and communication rules. Lecture 3 hours per week.

Rehearsal and Performance I-II SPD 233-234 • 3 credits each

Explores various aspects of the theatre through involvement in college theatre production. Lecture 3 hours per week.

Introduction to Directing I-II SPD 241-242 • 3 credits each

Introduces theory and practice of stage direction through the study of directing methods as well as the execution and discussion of directing exercises. Prerequisites: SPD 131-132 or divisional approval. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Stage Lighting and Sound SPD 251 • 3 credits

Provides students with a basic understanding of the principles of stage lighting and sound. Instructs students in the fundamentals of stage lighting such as: functions of lighting, qualities of light, design, basic electricity, lighting instruments and equipment, board operation, and safety. Instructs students in the functions of sound, equipment, design, and sound operation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Outdoor Drama SPD 266 • 3 credits

Enables students to study production techniques through participation as actors or technicians in outdoor drama. Prerequisite divisional approval. Lecture 3 hours per week.

STUDENT DEVELOPMENT**College Success Skills** SDV 100 • 1 credit

Assists students in transition to college. Provides over-views of college policies, procedures, curricular offerings. Encourages contacts with other students and staff. Assists students toward college success through information regarding effective study habits, career and academic planning, and other college resources available to students. May include English and math placement testing. Strongly recommended for beginning students. Required for graduation. Lecture 1 hour per week.

Orientation to (Specific Disciplines) SDV 101 • 1 credit

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

Study Skills SDV 104 • 2 credits

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 2 hours per week.

Personal Development From A Women's Perspective SDV 105 • 1 credit

Addresses the psychological and educational adjustment needs of the female college student. Covers three segments: personal development, career education, and study skills. Emphasizes the special needs of the re-entry woman. Provides education and support for the individual. Lecture 1 hour per week.

Preparation for Employment SDV 106 • 1 credit

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. May be substituted for SDV 100. Lecture 1 hour per week.

Career Education SDV 107 • 1 credit

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

College Survival Skills SDV 108 • 1- 3 credits

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.

Student Leadership Development SDV 109 • 1 credit

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

TRUCKING**DOT Safety Rules and Regulations** TRK 101 • 2 credits

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. Lecture 2 hours per week.

Preventive Maintenance for Truck Drivers TRK 102 • 1 credit

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

Tractor Trailer Driving TRK 103 • 9 credits

Prepares the prospective driver to operate a motor vehicle in a safe and responsible manner. Provides practical training in over-the-road and city driving, including backing skills, and pre-trip inspection. Emphasizes defensive driving. Co-requisite: TRK 101 and 102. Lecture 3 hours. Laboratory 12 hours. Total 15 hours per week.

Survey of the Trucking Industry TRK 110 • 3 credits

Provides an overview of the trucking industry and the characteristics of the professional truck driver. Emphasizes the uses of technology in the trucking industry, including simulators, mobile information management and communication, and electronic mapping techniques. Provides an introduction to the transportation of hazardous materials and environmental issues. Lecture 3 hours per week.

WELDING**Fundamentals of Welding** WEL 100 • 3 credits

Introduces arc and oxyfuel welding and cutting. Provides fundamental principles of joining ferrous and non-ferrous metals, welding and cutting processes, equipment operation, and safety procedures with emphasis upon welding and cutting procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Oxyfuel Welding and Cutting WEL 117 • 3 credits

Introduces history of oxyacetylene welding, principles of welding and cutting, nomenclature of the equipment, development of the puddle, running flat beads, and butt welding in different positions. Explains silver brazing, silver and soft soldering, and safety procedures in the use of tools and equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Shielded Metal Arc Welding (Basic) WEL 123 • 3 credits

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 hours. Total 5 hours per week.

Shielded Metal Arc Welding (Advanced) WEL 124 • 3 credits

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 hours. Total 5 hours per week.

Pipe Welding I WEL 126 • 3 credits

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 hours. Laboratory 3 hours. Total 5 hours per week.

Gas Shielded Processes WEL 135 • 2 credits

Introduces practical operations in use of inert gas shielded arc welding. Studies equipment operation, setup, safety and practice of GMAW (MIG) and GTAW (TIG). Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Gas Shielded Processes II WEL 136 • 2 credits

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.

Pipe and Tube Welding WEL 138 • 2 credits

Develops entry level skills for the inert gas tungsten welding process (TIG) with emphasis upon thin and thick wall carbon and stainless piping and tubing. Prerequisite: WEL 136. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

Welder Qualification Tests I-II WEL 141-142 • 3 credits each

Studies techniques and practices of testing welding joints through destructive and non-destructive testing. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Welding Metallurgy WEL 145 • 3 credits

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

Welding Drawing and Interpretation WEL 150 • 2 credits

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