

Chantilly Academy Course Offerings for 2012-2013



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Family and Consumer Sciences



Culinary Arts- 2-level program; students learn basic skills and instruction in sanitation, hot food production, meat identification and fabrication, pantry, breakfast cookery, purchasing, and basic culinary skills. Students operate a school-based restaurant and catering business that provides experiences in menu selection, meal preparation, and management.



Early Childhood Careers- 2-level program; Early Childhood Careers 1 combines the study of child growth and development with participation in the planning and operation of a preschool laboratory. It focuses on basic teaching skills, learning theory, and lesson planning. Early Childhood Careers 2 focuses on curriculum planning, design of learning environments, leadership and employment strategies. Second-year students may participate in an internship in an elementary school.

Health & Medical sciences



Animal Science- 2-level program; prepares students for a future in veterinary science focusing on basic animal care, breeds, animal behavior, disease, and the anatomy and physiology of animals. Students learn to handle and restrain dogs and cats while performing pet grooming services.



Dental careers- 2-level program; introduces students to careers in the dental health sciences. Academic content includes head and neck anatomy, infection control, tooth numbering and charting, instrumentation, oral health education, dental specialties of oral surgery, orthodontics, periodontics and endodontics. In addition, students learn clinical skills necessary to perform as a dental assistant.



Exploring Health Sciences & Exploring Language of Medicine- introduces students to all health care careers and develops basic skills common to all health and medical sciences. This course focuses on exploring health careers, communication skills, safety, first aid, and CPR. During the Spring semester students learn medical terminology, concepts, terms and abbreviations. Course content includes anatomy and physiology, pathology, diagnostic procedures, therapeutic interventions, and pharmacology.



Medical Assistant- students study clinical and administrative duties of a medical assistant, delivery of medications, and gerontology. Clinical internships may occur in physicians' offices and hospital settings. Students may earn Certifications in American Heart Association Basic Life Support (BLS) Healthcare Provider CPR/AED.



Pharmacy- the Pharmacy Technician course incorporates both classroom and clinical pharmacy experiences. Topics include building a professional career, inventory control, patient communication skills, obtaining, filling & compounding medication orders to assist pharmacist.

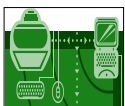
Information Technology



A+ Computer Systems Technology- students install, configure, upgrade, diagnose, troubleshoot and perform preventive maintenance on the computer motherboards, processors and memory chips. Other areas of study include basic networking software operations of Windows and DOS, memory management and preventive maintenance. Students are encouraged to complete the Comp TIA A+ Certification Examination.



Oracle – 2-levels; **on-line** program provides comprehensive hands-on computer training in data modeling and database application software with an emphasis on Oracle 9i. Requires students to analyze complex business scenarios and create conceptual representations of an organization's information.



Network Design & Engineering/CISCO- 2-level program enables students to design, install, configure, operate and troubleshoot simple and complex computer networks. Topics include network architecture, industry standards and communications protocols, networking devices (such as routers and switches), media selection, topologies, data transmission and cabling for local area networks and wide area networks.



Network Administration - Network Administration is a comprehensive, hands-on computer course where students are taught basic networking skills using Windows and Microsoft Server. Topics include network concepts, installation, configuration, management, & troubleshooting. Certifications available: MCP, MCSA, MCDST & MCSE.

Trade and Industrial



Auto Collision Service- 2-level program; provides students with skills needed to repair crashed and damaged automobile bodies to pre-accident condition for employment in the auto body and repair industry.



Automotive Technology- 2-level program; focuses on automotive skills needed to repair and perform maintenance for brakes, tires, engines, and more, for employment as automotive technicians.



Construction Technologies- 2-level program; students develop skills leading to careers in the construction industry and/or post secondary education. Students learn the principles and technologies of residential and light commercial construction. The program emphasizes layout, construction materials, construction methods, cost estimation, project management, and construction safety.



Cosmetology- 2-level program; students to master competencies that emphasize safety, sanitation procedures, professional ethics, salon business management, hair cutting, and hair care chemistry to prepare students for the Virginia State Cosmetology Licensing Exam.

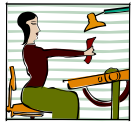


Criminal Justice- 2-level program; provides career exploration in criminal justice and preparation for higher education. Specific areas of studies includes criminal law and investigation, security training, communications, emergency response, crimes, search and seizures, arrests, crimes prevention, court procedure and police operations.

Technology & Engineering Education



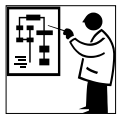
Engineering Systems- 2-level program; designed for students investigating or anticipating careers in science, engineering and technology. Students learn basic physics and engineering concepts and learn the principles of systems engineering as they plan, develop, and execute engineering projects.



Girls Exploring Engineering Girls Exploring Engineering (GE²)- an all-girls section of Engineering Systems 1 that includes additional learning experiences to encourage young women in engineering. GE² students are matched with women of achievement in engineering for mentorship, career exploration and college planning.



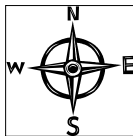
Engineering Physics - provides a mathematically rigorous approach to learning engineering and physics concepts. Students learn how to measure force, work, resistance, energy and power in mechanical, electronic, fluid, and aerodynamic systems. Students design and complete an intensive six-week engineering system project.



Engineering Math- Topics covered include algebra, trigonometry, 2-D and 3D vectors, matrices, complex numbers, phase shifted sinusoids, phasors, differential and integral calculus, linear differential equations with constant coefficients and Laplace transforms. Course material is taught through hands-on engineering physical experiments and is thoroughly integrated with MATLAB engineering analysis software.



Independent Research Engineering - This senior capstone course is a work-based learning experience at a selected industry, center of higher education or government organization. Mentorship enables students to engage in “real-world” problem solving with a mentor who has a record of high achievement in engineering. Students develop an approved research project, research journal, and an electronic digital portfolio.



Geographic Information Systems- In collaboration with James Madison University (JMU), this course introduces students to Geographic information systems software, global positioning system equipment, data analysis, integration of remotely sensed and ground-based information into powerful decision making analytical tools, problem-based service learning, community-based research, spatial reasoning and decision making.



Marketing

Entrepreneurship- 2 level program; this course enables students to learn and practice small business ownership skills. Students will experience the process of developing, financing, and marketing a new product or service through an interactive curriculum. Students will be active members of DECA, an association of marketing students.



Air Force JROTC – 2-level program; Air Force Junior ROTC (AFJROTC) Foundations and AFJROTC Advanced classes condense the standard four-year AFJROTC program into a comprehensive two-year program. Topics include the history of air power, the science of flight, global studies, and the organization of the US military. Students learn leadership, teamwork, military customs and courtesies, drill and ceremonies, communication skills, resume preparation, and interpersonal skills. Students who successfully complete the AFJROTC program are eligible for ROTC scholarships, appointments to military academies, and higher pay eligibility for those enlisting in the military.