



Advancing Excellence in Career & Technical Education... Chantilly Governor's STEM Academy is committed to developing the leaders of tomorrow by preparing all students to meet the high academics, scientific and technical skills, civic and workforce challenges of the 21st century. As the largest of six Career & Technical Education Academies in FCPS, Chantilly Governor's STEM Academy enrolls more than 1,600 students annually from 23+ FCPS division high schools. Industry certifications are available in all classes.

Cyber Security and Information Technology



Cyber: Computer Systems Technology A+- 2 level program; 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.

***Cyber: Cloud Computing** - Students will gain an introduction to the cloud-computing environment and various services offered. The course is intended for people interested in the IT legal and IT marketing fields, business analysts, project managers, and other IT-related professionals.

***Cyber: Database Design & Management Oracle**- 2-level program; online 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. ORACLE 1 DE ONLY

***Cyber: Routing and Switching 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.

***Cyber Network Administration**- 2-level program 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.

Cyber: Security+ Capstone- course provides in depth instruction in the basics of network security. Instruction includes security objectives, security architecture, security models and security layers, risk management, network security policy, and security training. The purpose of this course is to instill the basics of network security, aka "information assurance."

Education and Training



Air Force JROTC – Air Force Junior ROTC (AFJROTC). 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 wellness/physical training. Students who complete the AFJROTC program are eligible for ROTC scholarships, appointments to military academies, and higher pay when enlisting in the military.

Korean 1 & 2 - Students develop the ability to communicate about themselves and their immediate environment using simple sentences containing basic language structures. The communication is evidenced in all four language skills -listening, speaking, reading and writing with an emphasis on the ability to communicate orally and in writing. Students begin to explore and study themes of Personal and Family Life, School Life, Social Life and Community Life.

***Teachers for Tomorrow**- 2-level program; students will learn from the perspective of both the student and the teacher in the classroom. Student learning styles, development, and self-esteem importance will be addressed. Students will also learn about classroom management, procedures and routines, and differentiation techniques that teachers use in the classroom. Additionally, students participate in observation experiences at the pre-school, elementary, middle, and high school levels in the fall/winter.

STEM (Sciences, Technology, Engineering, and Mathematics)



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.

Engineering Systems- 2 level program- This course provides an orientation to high demand, high salary careers in advanced manufacturing. Students learn to evaluate manufacturing processes by designing and conducting research programs; applying knowledge of product design, fabrication, assembly, tooling, and materials; conferring with equipment vendors; and soliciting observations from operators.

Robotic Systems - 2-level course; students develop an in-depth understanding of automation and the applications of robotics systems in manufacturing. Activities center on flexible manufacturing processes and computer integrated manufacturing (CIM). Emphasis is placed on the use of robotics in manufacturing systems, safety, materials, production, business concepts and the manufacturing process. Students work individually and in teams to solve complex interdisciplinary problems that stem from the major systems in automated manufacturing.

STEM Engineering Honors- 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.

Marketing



Fashion Marketing 2 (Classroom on the Mall)- Students gain a basic knowledge of the apparel and accessories industry and skills necessary for successful employment in apparel businesses. Students develop general marketing skills necessary for successful employment in fashion marketing, general marketing skills applicable to the apparel and accessories industry and specialized skills unique to fashion marketing.

Marketing Management (Classroom on the Mall)- This specialized program enables students to learn business organization as well as operation skills and techniques in a realistic business setting. Classes are held in Fair Oaks shopping mall. Students will develop critical-thinking and decision-making skills through the application of marketing principles to small and large businesses, nonprofit organizations, service industries, and other institutions or associations that make products or provide services.

Human Services



Cosmetology- 2-level program; students 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 include criminal law and investigation, security training, communications, emergency response, crimes, search and seizures, arrests, crimes prevention, court procedure and police operations.

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.

Health and Medical Sciences



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. 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.

Introduction to Nursing 1&2- These courses provide an orientation to becoming a Nurse Aide and explores the in-depth requirements of the entry-level nursing profession. Curriculum includes the health care system, infection control and medical asepsis, body systems and disorders, community health and first aid, basic nursing skills, nutrition, dying & death, drug addiction and pain management.

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 AHA Basic Life Support (BLS) Healthcare Provider CPR/AED.

Pharmacy Technician- 2-level program course incorporates classroom and possible clinical pharmacy experiences. Topics include building a professional career, inventory control, patient communication skills, obtaining, filling & compounding medication orders to assist pharmacist.

***Physical/Occupation Therapy**- Students are introduced to the professions of Physical and Occupational Therapy (PT and OT), with medical terminology, basic human anatomy and active hands-on clinical labs throughout the course year.

Firefighting 1&2 – Students will become familiar with the procedures, equipment, and technologies used by current fire departments to successfully fight live fires, address hazardous-material incidents, and conduct search and rescue operations at the Fairfax Training Facility on West Ox Road, Fairfax. This course challenges students academically, mentally, and physically, and leads to the opportunity for Firefighting certifications. Open for students in their senior year.

Veterinary 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.

Trade and Industrial



***Auto Collision Service**- 3-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**- 3-level program; focuses on automotive skills needed to repair and perform maintenance for brakes, tires, engines, and more, for employment as automotive technicians.

Carpentry- 3-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.

*Dual Enrollment Courses

*Dual Enrollment (DE) – both high school and college credit may be available for this course.



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