

NEW CYBERSECURITY

Career Pathway Courses Offered

Beginning Fall 2017



16 CAREER CLUSTERS

Agriculture, Food & Natural Resources
Architecture & Construction
Arts, Audio/Visual Technology
& Communications
Business Management & Administration
Education & Training
Finance
Government & Public Administration
Health & Medical Sciences
Hospitality & Tourism
Human Services
Information Technology
Law, Public Safety, Corrections & Security
Manufacturing
Marketing
Science, Technology, Engineering
& Mathematics (STEM)
Transportation, Distribution & Logistics

Career and Technical Education (CTE) actively partners with business and industry and Virginia educators to design and implement high quality, dynamic programs that meet current and projected workforce needs. Relevant work-based learning opportunities are critical for helping students connect learning to successful transition from high school to further education and careers.

A **“CTE completer”** is a student who has met the requirements for a “concentration” of courses and all requirements for high school graduation or an approved alternative education program.

A **“concentration”** is a coherent sequence of state-approved courses in which the student earns the equivalent of two 36-week courses and related stackable industry-recognized credentials.

Students in Cybersecurity courses will...

- Perform threat analysis strategies
- Simulate risk management protocols while working in problem solving teams
- Model communication practices and troubleshooting techniques
- Investigate networking concepts
- Explore the importance of safeguarding electronic information
- Examine cyber threats and protective measures
- Research cyber opportunities, responsibilities, and ethical and legal constraints

Cybersecurity affects ALL occupations!
Pathway courses will be customized for each
of the 16 Career Clusters.

See descriptions of NEW CYBERSECURITY COURSES on reverse.

NEW Cybersecurity Career Pathway Courses COMING Fall 2017

YEAR 1

Cybersecurity Fundamentals

(Course Code 6302/SCED Code 10302/36weeks)

Suggested Grade Level: 9, 10 or 11

Teacher Endorsement Code: 2004, 3010, 6900, 7200, 8000, 8100, 8200, 8425, 8490, 8620, 9010

This course focuses on the evolving and pervasive technological environment with an emphasis on securing personal, organizational, and national information. Students will investigate the high-skills, high-wage, and in-demand career opportunities in the vast field of cybersecurity. Learn the principles, explore emerging technologies, and examine threats and protective measures.

YEAR 2

Cybersecurity Software Operations

(Course Code 6304/SCED Code 10302/36 weeks)

Suggested Grade Level: 10, 11, or 12

Teacher Endorsement Code: 6900, 6630, 2004, 3010

The Cybersecurity Software Operations course focuses on aspects of computer support and network administration with an emphasis on project-driven learning and cybersecurity. Students learn networking concepts, create peer-to-peer network systems and client server networks, install and configure network cards and operating systems, and create and implement security plans.

YEAR 2

Health Informatics

(Course Code 8338/SCED Code 14157/36 weeks)

Suggested Grade Level: 10, 11, or 12

Teacher Endorsement Code: 8620, 6900

Students explore the importance of safeguarding electronic healthcare information by using various technologies and trends that affect the healthcare industry. In simulated problem-driven lab experiences, students will apply knowledge and skills related to: safeguarding the Electronic Health Record (EHR) and the Electronic Medical Record (EMR), ethical and privacy issues, and cybersecurity and data breaches.

YEAR 2

Cybersecurity Systems Technology

(Course Code 8628/SCED Code 10109/36 weeks)

Suggested Grade Level: 10, 11, or 12

Teacher Endorsement Code: 8425, 8485, 8490, 9010, 6900, 6630, 2004, 3010

Students will troubleshoot, install, configure, and secure various operating systems, computers, and peripherals. They will develop

skills in computer networking and resource sharing to explore the relationships between internal and external computer components.

YEAR 2

Cybersecurity in Manufacturing

(Course Code 8499/SCED Code 13002/36 weeks)

Suggested Grade Level: 10, 11, or 12

Teacher Endorsement Code: 7200

While connected technology drives innovation in the manufacturing sector, it also creates challenges in cybersecurity. Students will learn about manufacturing processes and the connections among manufacturing machines and computers for automation. Virtual labs will allow experiences with sophisticated security issues as teams design systems with risk management in mind.

YEAR 3

Cybersecurity Software Operations, Advanced

(Course Code 6306/SCED Code 10302/36 weeks)

Suggested Grade Level: 11 or 12

Teacher Endorsement Code: 6900, 6630, 2004, 3010

This course focuses on cybersecurity and the management and support of network users and systems. Students engage in experiences to apply their understanding in website management; training end users; evaluating new technology; developing system policies; troubleshooting workstations, systems and client-server networks; managing network services and protocols; implementing security plans; and effectively using electronic communications.

YEAR 3

Cybersecurity Systems Technology, Advanced

(Course Code 8629/SCED Code 10109/36 weeks)

Suggested Grade Level: 11 or 12

Teacher Endorsement Code: 8425, 8485, 8490, 9010, 6900, 6630, 2004, 3010

This advanced course provides training for optimizing and troubleshooting concepts for computer systems, subsystems, and networks. Students will gain an understanding of emerging technologies including unified communications, mobile, cloud and virtualization technologies.

YEAR 4

Cybersecurity Network Systems

(Course Code 8630/SCED Code 10108/36 weeks)

Suggested Grade Level: 12

Teacher Endorsement Code: 8425, 8485, 8490, 9010, 6900, 6630, 2004, 3010

Students gain competitive skills required to administer, analyze, and secure applications, networks, and devices. Students will understand

concepts that include threats, attacks, and vulnerabilities; exploring technology and tools; examining architecture and design; analyzing identity and access management; demonstrating risk management; and examining cryptography and public key management.

NEW Cybersecurity Career Pathway Courses COMING Fall 2018

YEAR 2

Cybersecurity in the Food and Agriculture Industry

(Code/SCED/36 weeks)

Suggested Grade Level: 10, 11, or 12

Teacher Endorsement Code: 8000

The cybersecurity course in agriculture will explore the safeguards and challenges related to keeping the U.S. agriculture industries safe. This course will also examine the areas of information assurance, cybercrime investigation, digital forensics, and cyber operations relate to the production, processing, marketing, and distribution sectors of the agricultural, food, and natural resources industries.

YEAR 2

Cybersecurity in Family and Work Life

(Code/SCED/36 weeks)

Suggested Grade Level: 10, 11, or 12

Teacher Endorsement Code: 8200

Students will examine how cybersecurity impacts work and family life. This course focuses on identifying emerging technologies in the home and work environments, examining threats and protective measures, and investigating cybersecurity in family and consumer sciences careers.

YEAR 2

Cybersecurity in Digital Marketing

(Code/SCED/36 weeks)

Suggested Grade Level: 10, 11, or 12

Teacher Endorsement Code: 8100

Students will gain knowledge of the tools and techniques used in Internet marketing and experience how to design a secure website. They will explore opportunities, threats, responsibilities, and ethical and legal constraints associated with operating in cyberspace.

For more information go to:
http://www.doe.virginia.gov/instruction/career_technical/cybersecurity/index.shtml