

## Somerset County Vo-Tech Program Overview

# Computer Science



Employment in computer and information technology occupations is projected to grow 15 percent over the next 10 years, much faster than the average for all occupations. These occupations are projected to add about 682,800 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security.

The median annual wage for computer and information technology occupations was \$97,430 in May 2021. The median annual wage for information security occupations was \$102,600 in May 2021.

(Source: United States Bureau of Labor Statistics)

*Computer Science Essentials introduces students to coding fundamentals through an approachable, block-based programming language where they will have early success in creating usable apps. As students sharpen their computational thinking skills, they will transition to programming environments that reinforce coding fundamentals by displaying block programming and text based programming side-by-side. Finally, students will learn the power of text-based programming as they are introduced to the Python® programming language. Students will learn about professional opportunities in computer science and how computing can be an integral part of all careers today.*

*Cybersecurity gives students a broad exposure to the many aspects of digital and information security, while encouraging socially responsible choices and ethical behavior. It inspires algorithmic thinking, computational thinking, and especially, “outside-the-box” thinking. Students explore the many educational and career paths available to cybersecurity experts, as well as other careers that comprise the field of information security.*

Curriculum:

Year 1 & Year 2:

**Computer Science Essentials:** Students will use visual, block-based programming and seamlessly transition to text-based programming with languages such as Python to create apps and develop websites.

**Cybersecurity:** Nationally, computational resources are vulnerable and frequently attacked; in Cybersecurity, students solve problems by understanding and closing these vulnerabilities.

Year 3: **Computer Science Principles:** Using Python® as a primary tool, students learn the fundamentals of coding, data processing, data security, and task automation.

Year 4: **Computer Science A:** Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures.

Classes meet for 2 periods/80 min per day, 5 days a week

Average number of new students accepted per year: 7

Opportunity for professional certifications: YES

Opportunity to earn college credits: NO

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### Future Careers

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Computer Programmers	Information Security Analyst
Security Systems Administrator	Software Developers
Information Security Analysts	Cyber Security Consultant
Database Administrators	Security Engineer

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All SCVTHS students have the opportunity to compete for state and national recognition in the annual SkillsUSA competitions.

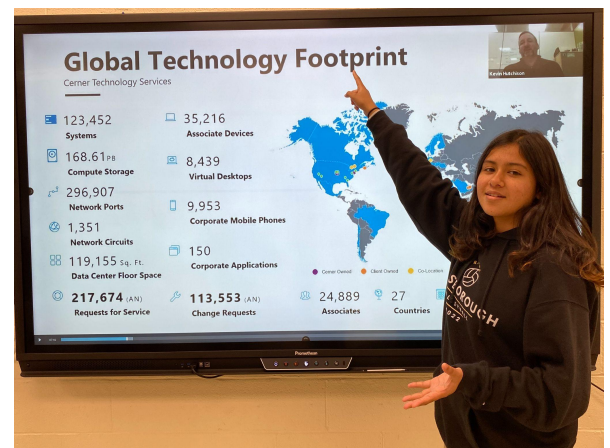
SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. SkillsUSA helps each student excel by providing educational programs, events and competitions that support career and technical education (CTE) in the nation's classrooms.

- 2023 Bronze Medal State Informational Technology Competition
- 2023 Silver Medal State Web Design Competition



Students meet in a technical classroom. They learn how to become app creators using both block based and text based coding.

Working both individually and as a team, students create problem solving apps that address real world problems. Which allows students to use many different skills such as collaborating with others, interviewing the community, presenting their ideas and contributing to the solution.



SkillsUSA contestants demonstrate knowledge of computer programming, describe how programs and programming languages work and describe the purposes and practices of structured programming. The contest may include a computer programming problem consisting of background information and program specifications. An appropriate (successfully executable) computer program from design notes and instructions will be developed.

All Somerset County Vocational & Technical School programs are supported by a community advisory panel. The Computer Science advisory panel members include:

Jason Joyce  
Christian Wigley

Manager, Data Engineering & Analytics Predictive Innovation Colgate-Palmolive  
Outsource my I.T. LLC

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