

FOUNDATIONS OF CYBERSECURITY *Full Year*

Information Technology Education



Instructor: Ben Crenshaw

ben.crenshaw@canyonsdistrict.org

801-826-6653

PROGRAM DESCRIPTION: One of the fastest growing job sectors in the U.S. is cybersecurity. According to multiple media outlets, a projected 3.5 million vacancies are expected in 2021, which is a 350% growth since 2013. Opportunities within the field of cybersecurity are endless. All this industry needs are skilled and talented individuals. To meet their ever-evolving demands, companies are hiring students to fill these vacancies as more cybersecurity threats are recognized every day. Providing cybersecurity pathways at an earlier age is imperative for the industry, as it will enable you to achieve success in your personal and professional life. This multi-faceted course will bring students to the forefront of cyber technologies through daily Cyber Briefings, team activities, CTF competitions, and hands-on labs using a fully functional Cyber Range



High School Credit: CTE credit or elective credit: up to 4 credits

Industry Certifications: TestOut Pro Certifications

Skills Certification: Utah CTE Skill Certificates

Additional Opportunities: [National Cyber League](#), [CompTIA's Academic Partner Program](#), [CyberStart America](#), [PicoCTF](#)

Recommended: Keyboarding and Foundations of Technology

COURSE DESCRIPTIONS:

Computer Systems 1: Students will learn necessary competencies for an entry-level IT professional including installing, building, upgrading, repairing, configuring, troubleshooting, optimizing, diagnosing, and performing preventive maintenance of basic personal computer hardware.

Computer Systems 2: Students will expand on the skill gained in [Computer Systems 1](#). They discover and install common operating systems and their purposes. This course will introduce the importance of computer security including physical and cybersecurity measures. This course also focuses on software troubleshooting and operational procedures.

Principles of Cyber Defense and Ethics: In this course students will discover the importance of cybersecurity in information technology. The objective is to understand cyber-attacks and the techniques used to take control of an unsecure system. Students will learn how to use features of modern operating systems to enhance an organization's security, understand inherent weaknesses in wireless and wired networks, and be better equipped to protect your employer's and your own information.

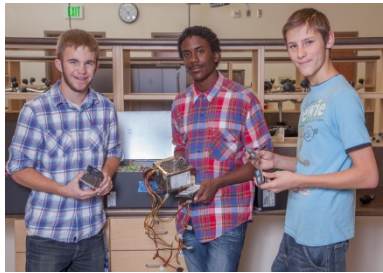
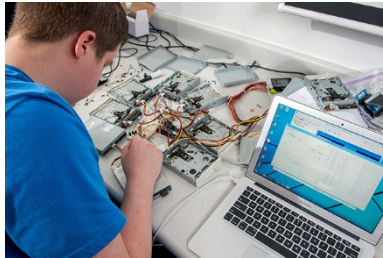
Network Fundamentals: Students will gain knowledge and skills required to implement a defined network architecture with basic network security. Furthermore, they will be able to configure, maintain, and troubleshoot network devices using appropriate network tools and understand the features and purpose of network technologies.

Cyber Forensics: This course will cover the fundamentals of computer forensics and investigations. Students will understand topics including historical and current computer forensic and investigative security issues, a systematic approach to computer investigations and cyber forensics tools. They will learn email, image, and file analysis including guidelines for investigation reporting. Various forensic tools will be used during the hands-on labs.

Costs/Fees for the 2022-2023 school year: Pending school board approval.

Career Possibilities:

Computer Forensics Analyst	Cryptanalysts	Service Desk Analyst
Security Administrator	Malware Analyst	Security Auditor
Cybercrime Investigator	Security Architect	Data Protection Officer
Security Incident Responder	Network Administrator	Wireless Network Engineer



*I have personally enjoyed learning and doing the ethical hacking labs in this program. I feel the labs give the most hands-on experience and I am more of a hands-on type of person. The TestOut certification modules are enjoyable and informative. I have earned several industry certifications already. Having the resources to do my own personal computer projects in class is nice and lets me learn more in class than what is in the syllabus. **James Farnsworth, 2021***

*My favorite lab in this program was building a computer. Even though I had a PC at home, I was not the one who put it together. My knowledge on computers only went as far as knowing the RAM existed. The program is fun and easy going while being very useful. The teacher has helped me study for the CompTIA Network+ exam, even though it is not in the program curriculum. So far, I have earned six certifications with my favorite ones being the TestOut exams because it emulates a real workplace. **Miriya Rossiter, 2021***

*I was able to participate in the cybersecurity program at CTEC and I enjoyed myself immensely. Mr. Crenshaw is a fantastic teacher who applies what we learn in class to real world events. Every morning we talk about an event or technology that recently happened or that was released, so everything we learn is always relevant. We have done lots of labs and hands on experiments and whenever we want to try something Mr. Crenshaw just asks us what we need him to do in order to accomplish the task. I would recommend this class to any and all students who want to learn more about cybersecurity. **Coleman Hone, 2021***

*I have liked learning about security breaches from our daily Cybersecurity Briefings. My favorite labs have been using Metasploit, a pen-testing framework, to execute basic attacks—it is a tool I wouldn't otherwise have learned how to use. I had the most fun learning about networking hands-on with Cisco routers and switches. I would recommend this class as a great way to get hands-on experience and general knowledge about computers, networking, and cybersecurity! As part of the class, I also earned several IT certifications to get me started in the industry. **Kyle Holland, 2021***

