



# Welcome to Cybersecurity

<b>Instructor</b>	Cari Heizer she/her	cari.heizer@washk12.org
<b>Room</b>	253	
<b>Course Description</b>	“Principles of Cyber Defense and Ethics” will provide a comprehensive view of Cybersecurity across an organization. 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. As a prerequisite to advanced topics in ethical hacking, incident response and digital forensics, you will also learn about Cybersecurity career paths and how to further develop your skills in these areas.	
<b>State Standards</b>	<a href="https://www.schools.utah.gov/cte/_cte/strands/PrinciplesCyberDefenseEthics.pdf">https://www.schools.utah.gov/cte/_cte/strands/PrinciplesCyberDefenseEthics.pdf</a>	
<b>Credits</b>	.5 credits, 1 semester	
<b>Fines</b>	Fines will be assessed to student accounts if an incident involving a student results in the repair or replacement of equipment due to deliberate destruction.	
<b>Classroom Policies</b>		
<b>Attendance</b>	Communication, problem solving, teamwork, and critical thinking are the workplace skills practiced in this class. Regular attendance and participation are essential to build these skills. <b>Please come to class every day ready to learn and participate.</b> WCSD attendance policy: <a href="https://procedure.washk12.org/policy/2000/2900">https://procedure.washk12.org/policy/2000/2900</a>	
<b>Communicate</b>	<div>➔ Life happens and sometimes we cannot do all of the things.</div> <div>➔ Being a teen is challenging and sometimes we get stressed/anxious/upset/etc.</div> <div>➔ Sometimes people get sick and can’t go to “work”.</div> <p>When this happens to you, please let me know as soon as possible. Just send me an email, write a note, or pull me aside and let me know that you’re ok (or not) and we’ll figure it out.</p> <p><b>Do</b> email me in the morning to let me know you will be missing class and ask if there is anything you can do to make up for missed work. All due dates will be listed in Canvas.</p> <p><b>Do</b> let me know if you are not 100% at the beginning of class so I don’t wonder why you are not fully participating.</p> <p><b>Do not</b> interrupt me during class to ask if you “missed anything important yesterday”.</p>	
<b>Phone / ECD Policy</b>	<p>Phones, smartwatches, and personal computing devices cause classroom disruption. Please leave phones at home or in a backpack, not in pockets or face down on the desk.</p> <p><b>Please read the student handbook policy on Technology and Electronic Communication Devices (ECDS).</b></p>	

	There may be classroom activities where students are permitted to use their phones. You will be given instruction when it is appropriate to take out and use their devices.
<b>Internet/ Computer Use</b>	<p>All students must familiarize themselves with the WCSD Acceptable Use Policy.  <a href="https://procedure.washk12.org/policy/3000/3700">https://procedure.washk12.org/policy/3000/3700</a></p> <p>To maintain a secure and productive learning environment,</p> <ul style="list-style-type: none"> <li>• Always use the computers for their intended educational purposes.</li> <li>• Students are not permitted to make any changes to the school computer systems. This includes, but is not limited to, modifying system settings, installing or uninstalling software, and altering computer configurations.*</li> <li>• Students may not attempt to change or tamper with access or administrative rights on any school computer. These settings are in place to protect both the system and its users.</li> <li>• Hacking or attempting to gain unauthorized access to any part of the school's network or external systems is strictly prohibited.</li> <li>• Gaming is not allowed during class unless the teacher gives direct permission to play games for educational purposes e.g. study of gaming history, evaluation of game design, etc. FPS games are never permitted.</li> </ul> <p>Failure to comply with these policies related to computer and internet use may result in revocation of internet and computer privileges and may result in removal from the class and/or disciplinary action.</p> <p>* Students will be able to practice new skills on Computer Systems lab machines and in virtual sandboxes. These machines provide a safe environment in which to try new things and practice learned skills without compromising the integrity of the network.</p>
<b>Safe Space</b>	In order to have a safe classroom environment where all students feel comfortable and welcome, put downs, swear words, or slang words with demeaning connotations will not be tolerated. More information is available in the student handbook > Prevention of Bullying and Hazing
<b>Classroom Procedures</b>	
<b>In class</b>	<ol style="list-style-type: none"> <li>1. Put phones away before entering the classroom.</li> <li>2. Ms. Heizer will greet you at the door with a handshake.</li> <li>3. Pick up a bellwork/exit ticket sheet and start working. Bellwork</li> <li>4. Learn - lecture / video / discussion</li> <li>5. Do - practice / group-work / presentations</li> <li>6. Review - demonstrations / quizzes / assessments</li> <li>7. Exit ticket (deposit in the bin on the way out)</li> </ol> <p>Daily active learning and journaling activities are completed both on and off-line. Students work individually and with small groups. We follow the Cyber.org curriculum, which is aligned with the Security+ exam material.</p> <p><b>Students should wait for instruction before logging on to the computer.</b> Most days will begin with offline activities, discussion, or video instruction.</p>
<b>Weekly</b>	<p>Weekly assignments are due on Fridays through Canvas.</p> <p>Assignments in the guided notes booklet must be passed off on the last day of class for the week.</p>
<b>Homework</b>	0-1 hours weekly
<b>Grading</b>	We use a standard grading scale: A (93–100), A- (90–92), B+ (87–89), B (83–86), B- (80–82), C+ (77–79), C (73–76), C- (70–72), D+ (67–69), D (65–66), D- (below 65).

	Weekly work is due each Friday. Late work will not be accepted after the end of each quarter (per the school/district policy). Extra credit is not available.
<b>End of Term Assessment</b>	Cybersecurity state exam or final assessment optional Security+ certification exam
<b>Course Outline</b>	
<b>Module 1: Actors/Motivations, CIA &amp; Authentication</b> <ul style="list-style-type: none"> <li>- Threat Actors</li> <li>- CIA Triad &amp; AAA</li> <li>- Multifactor Authentication (MFA)</li> <li>- Passwords</li> </ul> <b>Module 2: Social Engineering &amp; Access Control</b> <ul style="list-style-type: none"> <li>- Social Engineering</li> <li>- Phishing &amp; Spam</li> <li>- Misinformation &amp; Impersonation</li> <li>- Watering Hole Attacks &amp; Typosquatting</li> <li>- Security Awareness</li> </ul> <b>Module 3: Threats &amp; Attack Surfaces</b> <ul style="list-style-type: none"> <li>- Malware</li> <li>- Ransomware</li> <li>- Trojans, Backdoors, and RATs</li> <li>- Viruses, Worms, Spyware &amp; Adware</li> <li>- Keyloggers</li> <li>- Logic Bombs &amp; Rootkits</li> <li>- Common Attack Surfaces</li> <li>- DoS and DDoS Attacks</li> <li>- DNS Attacks</li> <li>- Wireless, On-Path, and Replay Attacks</li> <li>- Endpoint - Protocol &amp; Email Security</li> <li>- Wireless Devices</li> <li>- Application Attacks</li> <li>- Application Security</li> <li>- OS and Web-based Vulnerabilities</li> <li>- Supply Chain, Zero-day, and Cryptographic Vulnerabilities</li> <li>- Mobile Solutions</li> <li>- Physical Attacks</li> <li>- Physical Security</li> </ul>	<b>Module 4: Cryptographic Solutions</b> <ul style="list-style-type: none"> <li>- Encryption</li> <li>- Obfuscation and Steganography</li> <li>- Hashing, Digital Signatures, and Blockchain</li> <li>- Public Key Infrastructure</li> <li>- Certificates</li> <li>- Cryptographic Tools</li> <li>- Cryptographic Attack</li> </ul> <b>Module 5: Vulnerability Analysis &amp; Remediation</b> <ul style="list-style-type: none"> <li>- Identifying Vulnerabilities</li> <li>- Pentesting</li> <li>- Monitoring Resources</li> <li>- Monitoring Tools</li> <li>- Deception and Disruption Technology</li> <li>- Vulnerability Management</li> </ul>

## Heizer 2024-25 General Course Disclosure

**Parent/Guardian:** Please complete the following form and return by the second class period

<b>Student's Full Name:</b>				
Student's Year in School (circle one)	9	10	11	12
Student's Birthday				
Student's Pathway				
Course(s) Enrolled in for 2024-25	<input type="checkbox"/> Cloud Computing <input type="checkbox"/> Cybersecurity <input type="checkbox"/> Database Dev <input type="checkbox"/> Intro to IT <input type="checkbox"/> Network Fundamentals		<input type="checkbox"/> Python 1 <input type="checkbox"/> Python 2 <input type="checkbox"/> Web Dev 1 <input type="checkbox"/> Web Dev 2	
How can I help your child be successful in school?				
Please list any planned absences.				
Parent/Guardian Name(s):				
Parent/Guardian preferred contact information (e.g. text 435-000-0000)				

### Photograph and Video Release Form for WCSD Students

I hereby grant permission for my child to be interviewed, photographed or published publicly. I understand that my child's image may be edited, copied, exhibited, published or distributed for educational or district/school promotional and/or news/public relations purposes. I understand that this material may be used in diverse educational settings within an unrestricted geographical area.

Photographic, audio or video recordings may be used for the following purposes: Educational presentations or courses, Social media/stories, News stories, School/District promotional purposes.

By signing this release I understand this permission signifies the photographic or video recordings of my child may be used electronically in the public educational setting. There is no time limit on the validity of this release nor is there any geographical limitation on where these materials may be distributed.

### Parent/Guardian signature:

The software below has been evaluated by Washington County School District and is conditionally approved for use "with parent/guardian permission". If the software is used for a certain assignment and permission is not granted, the teacher and student will agree on alternative software/offline methods to achieve our outcomes. If the software is marked as "required" for a class and permission is not granted, the student should consider registering for a different course with their counselor.

Software	Purpose	Parent Signature
<b>AWS Academy</b> <a href="https://aws.amazon.com/compliance/data-privacy-faq/">https://aws.amazon.com/compliance/data-privacy-faq/</a>	Cloud Computing curriculum - required for Cloud Computing 1 & 2	
<b>Trello</b> <a href="https://trello.com/trust">https://trello.com/trust</a>	Group project workspace and project planning	
<b>Canva</b> <a href="https://www.canva.com/trust/legal/">https://www.canva.com/trust/legal/</a>	Quick infographic builder for classwork and review	
<b>ChatGPT</b> <a href="https://openai.com/policies/privacy-policy/">https://openai.com/policies/privacy-policy/</a>	Learn appropriate use of AI technologies	

<b>GitHub</b> <a href="https://docs.github.com/en/site-policy/privacy-policies/github-general-privacy-statement">https://docs.github.com/en/site-policy/privacy-policies/github-general-privacy-statement</a>	Group project workspace and project sharing	
<b>Justinmind</b> <a href="https://www.justinmind.com/privacy">https://www.justinmind.com/privacy</a>	Prototyping, UI/UX, and group collaboration. Required for Web Dev 1 & 2	
<b>Micro:bit</b> <a href="https://microbit.org/privacy/">https://microbit.org/privacy/</a>	Physical computing projects, coding practice, fun activities.	
<b>Thonny</b> <a href="https://thonny.org/">https://thonny.org/</a>	Python IDE for code tracing visualization. Required for Python, CS 1030, CS 1400	
<b>Cyber.org Range</b> <a href="https://cyber.org/terms-and-conditions">https://cyber.org/terms-and-conditions</a>	Cybersecurity practice and certification prep. Required for Cyber Defense and Ethics	

### Disclosure Acknowledgement

I understand, and will comply with all of the items contained in this Disclosure Statement.

The instructor reserves the right to change the schedule, assignments, assignment details, etc. as required for the betterment of the class. Changes will be announced in a timely manner during class instruction periods.

**Student signature:**

**Parent/Guardian signature:**

**Questions or Concerns**