Syracuse City School District
Career and Technical Education Program
Course Syllabus
CSS 100: Cyber Security 100

Program Overview

Cyber Security is the study of information technology security and focuses on protecting computers, networks, programs, and data from unintended or unauthorized access, change, or destruction. The Cyber Security Program is designed to help students explore the process of securing computers and computer networks, and conducting investigations of cybercrimes and forensic analysis of digital devices. Students will be equipped with the knowledge and skills to manage helpdesk functions and small to medium business IT operations as well as continue on to post-secondary training for careers in computer and network security, cybercrime investigation and computer forensics. Throughout the program, students gain mastery of these skills by performing simulated hands-on exercises Students who successfully complete the program will earn up to nine college credits and obtain CompTIA A+ Certification, a fundamental accreditation for work in many IT fields.

Course Description

This course will introduce students to the fundamentals of computers and computer systems. Through hands-on experience, students will learn the basics of computers, hardware, peripherals, and networking. This course will give students the foundational knowledge and skills for the Cyber Security sequence.

Pre-Requisites

N/A

Course Objectives

1. Students will understand the historical and societal context of cyber security.
2. Students will understand computer operations and how it relates to cyber security.
3. Students will be able to assemble and troubleshoot computers.
4. Students will understand the relation between the physical and virtual worlds.

Integrated Academics

- **Concurrent Enrollment College Credit:** Upon successful completion of Cyber Security 100, students who earn a grade of B or higher will earn 3 college credits for CRJ 107 Computer Hardware and Peripherals from Utica College.

Equipment and Supplies

- **School will provide:** All necessary lab and classroom equipment.
- **Student will provide:** N/A

Textbook

TBD

Grading

10% Class Attendance and Participation
10% Oral Presentation
25% Assignments
25% Mid-Term Exam
30% Final Exam

All work is due at the time and day specified when the assignment is given. Submission details for work to be graded will be given at the time the work is assigned.

Quizzes will be given throughout the semester. The lowest quiz score (one score only) will be dropped when calculating the final course grade.

Additional Course Policies

Students are required to follow all safety procedures.

Course Calendar

Quarter	Units of Study
1	• Introduction to Computer Components • Lab Safety and Tools • Computer Memory • Storage Devices • Computer Assembly
2	• System Configuration • Windows Setup • Windows Operating System • Internet of Things (IoT) • Network Connections
3	• LAN and WAN • IP Addresses and Network Protocols • Network Media and Cables • Network Security • Computer Security: Threats and Prevention
4	• Computer Security: Virus Removal • Printers and Scanners • Communication Skills • Review and Final Exam

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
CSS 100: Cyber Security 100

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Weeks 1-2 **Unit 1** **Introduction to Computer Components**	• What are the many types of computer hardware involved in a computer? • What are motherboards, cases, and power supplies? • What is a central processing unit?	• Locate the North Bridge and the South Bridge. • Explain which motherboards and processors are compatible. • Match different form factors together to produce a complete computer system.	• Quiz: Computer Components • Processor Lab • Performance Assessment: Identification of Computer Components	**Career Ready Practices** CRP 2,4,7,11,12	**ELA** RI.9-10.1-4,6,7 W.9-10.1-6,8,9,10
				Cluster Standards IT 2,5,11	**Literacy** RST.9-10.2,3,4 WHST.9-10.2,4
				Pathway Standards IT-SUP 1,9,10	**Math**
				Industry Standards	**Science**
Weeks 3-4 **Unit 2** **Lab Safety and Tools**	• What are the proper tools needed for working on computer systems? • What are the proper safety procedures when working on electronics?	• Demonstrate how to properly use different tools that relate to computers. • Demonstrate how to prevent electrostatic discharge.	• Quiz: Safety and Tools • Performance Assessment: Tool Use for Assembling and Disassembling a Computer	**Career Ready Practices** CRP 2,4,6,7,11	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,8
				Pathway Standards IT-SUP 3,8	**Math**
				Industry Standards	**Science**
Weeks 5-6 **Unit 3** **Computer Memory**	• What is the function of Random Access Memory (RAM)? • What type of RAM should be purchased for a computer?	• Understand RAM and how it helps a computer function. • Distinguish between volatile and non-volatile memory. • Distinguish between the different types of RAM and how they relate to desktops and laptops.	• Quiz: RAM	**Career Ready Practices** CRP 1,2,3,5,12	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 1,3	**Math**
				Industry Standards	**Science**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Weeks 7-8 **Unit 4** **Storage Devices**	• What is the function of different storage devices? • What are the differences between hard drives, floppy drives, and removable devices?	• Explain the advantages and disadvantages of different storage devices and different storage sizes. • Explain the difference between a Hard Disk Drive and a Solid State Drive.	• Quiz: Computer Memory • Research Paper: Difference Between RAM, ROM, and Hard Drive	**Career Ready Practices** CRP 2,4,8,12	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 1,3,11	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 3,10	**Math**
				Industry Standards	**Science**
Weeks 9-10 **Unit 5** **Computer Assembly**	• How is a computer safely assembled and disassembled? • How do all the computer components tie together?	• Demonstrate how to successfully assemble and disassemble a computer. • Demonstrate how to make proper connections between computer components.	• Quiz: Computer Assembly • Worksheets • Performance Assessment: Computer Assembly	**Career Ready Practices** CRP 2,4,12	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 6,11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,9
				Pathway Standards IT-SUP 2,3	**Math**
				Industry Standards	**Science**
Weeks 11-12 **Unit 6** **System Configuration**	• How is a system configured? • What is the BIOS? • How are PC cards, USB devices, and other computer peripherals configured?	• Demonstrate how to boot a computer into the BIOS. • Demonstrate how to create a bootable USB drive. • Demonstrate how to change the boot order and other BIOS functions.	• Quiz: System Configuration • Worksheets • Performance Assessment: System Configuration	**Career Ready Practices** CRP 2,4,12	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 6,11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 1,3	**Math**
				Industry Standards	**Science**
Weeks 13-14 **Unit 7**	• What is an operating system (OS)? • How is a Windows	• Distinguish between Windows, Linux, and Mac OS. • Demonstrate how to install	• Quiz: Operating Systems • Worksheets • Performance	**Career Ready Practices** CRP 2,4,11,12	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Windows Setup	Operating System installed on a computer?	Windows on a computer.	Assessment: Windows Setup		L.9-10.1-6
				Cluster Standards IT 6,11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 1,3	**Math**
				Industry Standards	**Science**
Weeks 15-16 **Unit 8** **Windows Operating System**	• What are the basics of the Windows operating system? • How are user accounts created? • What is the function of the Windows Command Prompt?	• Demonstrate how to create administrator, standard, and guest accounts. • Demonstrate how to use the command prompt to navigate through a computer system.	• Quiz: Windows OS • Worksheets • Performance Assessment: Windows OS	**Career Ready Practices** CRP 2,4,11,12	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 6,10,11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 1,3	**Math**
				Industry Standards	**Science**
Weeks 17-18 **Unit 9** **Internet of Things (IoT)**	• What is the internet? • How does a computer connect to the internet? • What is the internet of things? • How do modems connect computers to the internet?	• Explain how the internet was created. • Explain the evolution of the internet and the progress that has been made. • Explain how current devices are interconnected.	• Quiz: Internet • Worksheets • Performance Assessment: Modems and Connecting to the Internet	**Career Ready Practices** CRP 1,2,5,11,12	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 4,6,9	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 5 IT-NET 1,2,3,4,5	**Math**
				Industry Standards	**Science**
Weeks 19-20 **Unit 10** **Network Connections**	• What are different types of network connectors? • Why are Telecommunications Industry Association	• Demonstrate how to use different types of network connectors. • Explain the differences between TIA and EIA standards.	• Quiz: TIA/EIA Standards • Worksheets • Performance Assessment: Network Connectors	**Career Ready Practices** CRP 7,8,11	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 1,3,5,6	**Literacy** RST.9-10.2,3,4,9

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
	(TIA) and Electronic Industries Alliance (EIA) Standards important?				WHST.9-10.2,4,8
				Pathway Standards IT-SUP 3,4,7	**Math**
				Industry Standards	**Science**
Weeks 21-22 **Unit 11** **LAN and WAN**	• What is the difference between a Local Area Network (LAN) and a Wide Area Network (WAN)?	• Explain the difference between a LAN and WAN and where to implement them.	• Quiz: LAN and WAN • Performance Assessment: LAN and WAN	**Career Ready Practices** CRP 2,7,8,10	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 7	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 3,4,7	**Math**
				Industry Standards	**Science**
Weeks 23-24 **Unit 12** **IP Addresses and Network Protocols**	• What is the Open Systems Interconnection (OSI) model? • What is involved in setting up IP addresses?	• Demonstrate an understanding of the OSI model. • Demonstrate the difference between IPV4 and IPV6.	• Quiz: IP Addresses and Network Protocols • Quiz: OSI Model • Performance Assessment: IP Addresses and Network Protocols	**Career Ready Practices** CRP 2,7,8	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 1,2,5,10,11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 5 IT-NET 1,2,3,4,5	**Math**
				Industry Standards	**Science**
Weeks 25-26 **Unit 13** **Network Media and Cables**	• What are the different types of networking cables? • How does a technician create an Ethernet cable? • What are the different network media?	• Demonstrate the difference between cat5, cat5e, and cat6 cables. • Demonstrate how to successfully create an Ethernet cable. • Demonstrate how to test Ethernet cable connectivity. • Demonstrate the different network media the internet runs	• Quiz: Networking Cables • Worksheets • Performance Assessment: Creating cat5e Cable	**Career Ready Practices** CRP 2,4,7,8	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 2,11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,8
				Pathway Standards IT-SUP 4,5,6,9	**Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
		on.		IT-NET 1,2,3	
				Industry Standards	**Science**
Weeks 27-28 **Unit 14** **Network Security**	• What are the basics of network security? • What is physical security?	• Demonstrate the difference between physical security and network security.	• Quiz: Network Security and Perimeter Protection • Performance Assessment: Securing a Network	**Career Ready Practices** CRP 2,8,11	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 2,6,11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 1,3,9 IT-NET 1	**Math**
				Industry Standards	**Science**
Weeks 29-30 **Unit 15** **Computer Security: Threats and Prevention**	• What are some common security threats? • What are several important security prevention methods?	• Explain the different types of security threats that could affect a computer system. • Demonstrate how to analyze and prevent security threats.	• Quiz: Computer Threats • Performance Assessment: Incident Response	**Career Ready Practices** CRP 2,7,11	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 4,6,11	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 2,3,5,9 IT-NET 4,5	**Math**
				Industry Standards	**Science**
Weeks 31-32 **Unit 16** **Computer Security: Virus Removal**	• Why is security awareness important? • What are the best practices for virus prevention and removal?	• Demonstrate safety and security when working with computers. • Explain the function of a firewall. • Demonstrate how to identify and remove viruses.	• Quiz: Computer Viruses • Video/PowerPoint Presentation on Security Awareness • Performance Assessment: Firewalls and Viruses	**Career Ready Practices** CRP 2,7,11	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 2,3,6,11	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 2,3,5,9 IT-NET 4,5	**Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
				Industry Standards	**Science**
Weeks 33-34 **Unit 17** **Printers and Scanners**	• What are the different types of printers? • What are the proper ways to setup and maintain a printer?	• Demonstrate the difference between inkjet printers and laser printers. • Demonstrate how to set up and connect a printer to a computer.	• Quiz: Printers and Scanners • Performance Assessment: Printer Installation and Repair	**Career Ready Practices** CRP 2,8,11	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 2,6,11,12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 1,3,9 IT-NET 1,4	**Math**
				Industry Standards	**Science**
Weeks 35-36 **Unit 18** **Communication Skills**	• What are the proper ways to communicate effectively in the technical field?	• Demonstrate professional phone etiquette. • Demonstrate how to communicate effectively with clients and employees.	• Quiz: Professional Communication Skills • Performance Assessment: Communication Skills	**Career Ready Practices** CRP 2,4,9,11	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 1	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 3,9 IT-NET 1	**Math**
				Industry Standards	**Science**
Weeks 37-40 **Review and Final Exam**	• How can knowledge and skills be applied? • What was the learning outcome of the year?	• Review and apply previous learning and skills.	• Performance Assessment: Application of Skills to Authentic Tasks • Final Exam	**Career Ready Practices** CRP 1-12	**ELA** RI.9-10.2,3,4 W.9-10.2,4 SL.9-10.1-6 L.9-10.1-6
				Cluster Standards IT 1-12	**Literacy** RST.9-10.2,3,4,9 WHST.9-10.2,4,8
				Pathway Standards IT-SUP 1-10 IT-NET 1-5	**Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
				Industry Standards	**Science**

Syracuse City School District
Career and Technical Education Program
Course Syllabus
CSS 200: Cyber Security 200

Program Overview

Cyber Security is the study of information technology security and focuses on protecting computers, networks, programs, and data from unintended or unauthorized access, change, or destruction. The Cyber Security Program is designed to help students explore the process of securing computers and computer networks, and conducting investigations of cybercrimes and forensic analysis of digital devices. Students will be equipped with the knowledge and skills to manage helpdesk functions and small to medium business IT operations as well as continue on to post-secondary training for careers in computer and network security, cybercrime investigation and computer forensics. Throughout the program, students gain mastery of these skills by performing simulated hands-on exercises Students who successfully complete the program will earn up to nine college credits and obtain CompTIA A+ Certification, a fundamental accreditation for work in many IT fields.

Course Description

This course provides an overview and exploration of software and technology foundations for cyber security. The course emphasizes practical hands-on labs and exercises that will be used by students to gain an understanding of software technologies that are relevant to cyber security. By writing lab reports that document their findings and results, students will implement knowledge and skills in authentic situations. Students who successfully complete the course will have the opportunity to obtain CompTIA A+ Certification.

Pre-Requisites

CSS 100: Cyber Security 100

Course Objectives

1. Students will know and understand computers and how they relate to cyber security.
2. Students will understand the historical and societal context of cyber security.
3. Students will understand the basics of computer system and network fundamentals.
4. Students will understand the basics of computer math and computer number systems.
5. Students will be able to troubleshoot and diagnose computers.
6. Students will understand the relation between the physical and virtual worlds.

Integrated Academics

- 1 Integrated Science Credit
- **Concurrent Enrollment College Credit:** Upon successful completion of Cyber Security 200, students who earn a grade of B or higher will earn 3 college credits for CRJ 205 Software Foundations for Cybersecurity.

Equipment and Supplies

- **School will provide:** All necessary lab and classroom equipment.
- **Student will provide:** N/A

Textbook

TBD

Grading

10% Class Attendance and Participation
10% Oral Presentation

25% Assignments
25% Mid-Term Exam
30% Final Exam

All work is due at the time and day specified when the assignment is given. Submission details for work to be graded will be given at the time the work is assigned.

Quizzes will be given throughout the semester. The lowest quiz score (one score only) will be dropped when calculating the final course grade.

Additional Course Policies

Students are required to follow all safety procedures.

Course Calendar

Quarter	Units of Study
1	• Course Introduction • Computer System and Network Fundamentals • Computer Math and Computer Number Systems • Virtual Machines: VMware, VirtualBox, Kali Linux • Command Line Interface: Windows
2	• Command Line Interface: Linux • File System Management • Open-Source Software Management • Host-Based Security Tools • Network-Based Security Tools
3	• Penetration Testing • Reconnaissance • Scanning
4	• Exploitation • Social Engineering • Web-Based Exploitation • Post-Exploitation and Maintaining Access • Penetration Testing Wrap-Up • Review • CompTIA A+ Certification Exam • Final Examination

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
CSS 200: Cyber Security 200

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Weeks 1-2 **Unit 1** **Course Introduction** **Computer System and Network Fundamentals**	• What knowledge and skills are developed in this course? • What is a computer system and how does it relate to a network?	• Configure a computer system and its software. • Explain how a computer is attached to the network. • Define and explain the Internet of Things (IoT).	• Computer System Review • Lab: IoT	**Career Ready Practices** CRP 1,2,3,4,8,9	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 1,2,3,4	**Literacy** RST.11-12.1,2,3,4 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2,3,4,5 IT-PRG 3,7,9	**Math**
				Industry Standards	**Science**
Weeks 3-6 **Unit 2** **Computer Math and Computer Number Systems**	• How do computers store data? • How are numbers converted between binary and decimal systems?	• Describe how computers store data. • Explain decimal, binary, octal, and hexadecimal number systems. • Perform binary addition. • Convert numbers from binary to decimal and decimal to binary forms.	• Assignment #2: Computer Math and Computer Number Systems • Quiz: Number Systems	**Career Ready Practices** CRP 2,4,8,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 12	**Literacy** RST.11-12.1,2,3,4 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 6,9	**Math**
				Industry Standards	**Science**
Weeks 7-8 **Unit 3** **Virtual Machines: VMware, VirtualBox, Kali Linux**	• What is a virtual machine? • How is a virtual machine implemented?	• Define a virtual machine and describe its function. • Set up and maintain a virtual machine. • Compare and contrast different virtualization software. • Install Windows and Kali VM software.	• Assignment #3: Virtual Machines • Quiz: Virtual Machine Functions • Lab: VMware	**Career Ready Practices** CRP 2,7,8,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 4,5,7,12	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
				Pathway Standards IT-SUP 1,2,4,7,8,9 IT-NET 3,4 IT-PRG 1,3,7,9	**Math**
				Industry Standards	**Science**
Weeks 9-10 **Unit 4** **Command Line Interface: Windows**	• What is the Windows Command line (CMD)? • What are the advantages of the CMD?	• Explain and use basic Windows commands. • Navigate through a Windows system via CMD.	• Assignment #4: Windows CMD • Lab: Navigating Through Windows CMD	**Career Ready Practices** CRP 2,4,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 1	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 11-12 **Unit 5** **Command Line Interface: Linux**	• What is the Linux Terminal? • What are the advantages of the Terminal?	• Explain and use basic Linux commands. • Navigate through a Linux system via Terminal.	• Assignment #5: Linux Terminal • Lab: Navigating Through Terminal	**Career Ready Practices** CRP 2,4,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 12	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 13-15 **Unit 6** **File System Management**	• Why are different file system structures used to manage files? • What is open source software?	• Compare and contrast different file types. • Explain how files are saved using different file systems including Fat32, NTFS, and EXT.	• Assignment #6: File Structures • Lab: Viewing File Structures	**Career Ready Practices** CRP 2,4,7,8,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards	**Literacy**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Open-Source Software Management		• Use different file systems to manage files. • Describe open source software and its uses.		IT 7,9	RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 2,4,9,10 IT-NET 1	**Math**
				Industry Standards	**Science**
Weeks 16-18 **Unit 7** **Host-Based Security Tools**	• How can security measures be implemented on a computer?	• Describe host-based security tools including antivirus software and firewalls. • Use host-based security tools to improve computer security.	• Assignment #7: Antivirus Setup • Lab: Firewall • Quiz: Types of Malware	**Career Ready Practices** CRP 2,3,4,5,7,8,9,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6,9,8	**Math**
				Industry Standards	**Science**
Weeks 19-20 **Unit 8** **Network-Based Security Tools**	• How do network-based security tools protect computer systems? • How are network security tools implemented on a system?	• Describe network-based security tools including intrusion detection systems (IDS) and intrusion prevention systems (IPS). • Explain the function of Network Access Controls and Demilitarized Zone (DMZ) in computer security.	• Assignment #8: Intrusion Detection • Lab: IDS and IPS • Quiz: Network Security Functions	**Career Ready Practices** CRP 2,4,7,8,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6,9,8 IT-NET 1,4,5	**Math**
				Industry Standards	**Science**
Weeks 21-24 **Unit 9** **Penetration**	• What is penetration testing (pentesting)? • What are the benefits of conducting a	• Describe penetration testing tools. • Use penetration testing to find vulnerabilities in a computer	• Assignment #9: Linux Pentesting • Lab: Vulnerable Mary	**Career Ready Practices** CRP 1,2,4,5,7,8,9,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Testing	penetration test?	system.		**Cluster Standards** IT 5,8,9	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 2,5,6,9,10 IT-NET 1,4,5	**Math**
				Industry Standards	**Science**
Weeks 25-28 **Unit 10** **Reconnaissance**	• How can outsiders obtain information about a computer system?	• Define reconnaissance. • Explain the connection between reconnaissance and control panel. • Explain the connection between reconnaissance and computer systems information.	• Assignment #10: Source Code • Lab: HTML View	**Career Ready Practices** CRP 2,4,7,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 9,10	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 29-30 **Unit 11** **Scanning**	• What is the purpose of doing a port scan? • What information does a port scan reveal?	• Define open ports in a computer system. • Check for open ports in a computer system using the Command line.	• Assignment #11: Nmap • Lab: Nmap Linux	**Career Ready Practices** CRP 1,2,7,8,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 31-33 **Unit 12**	• How can a computer system be exploited?	• Define exploitation of a computer system.	• Assignment #12: Open Ports	**Career Ready Practices** CRP 1,2,3,5,7,8,9,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Exploitation		• Gain access into a computer system.	• Lab: Exploitation		SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9,10	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 34-36 **Unit 13** **Social Engineering** **Web-Based Exploitation**	• How can someone use social engineering to exploit a computer user?	• Define social engineering and explain methods for preventing it. • Compare and contrast exploitation and social engineering.	• Assignment #13: Social Engineering • Lab: Methods of Social Engineering	**Career Ready Practices** CRP 1,2,3,5,7,8,9,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 4,5,8,9,10	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 37-39 **Unit 14** **Post Exploitation and Maintaining Access** **Penetration Testing Wrap-Up**	• What is a backdoor and how is it used to access computer information?	• Explain how access into a system is maintained after exploitation. • Describe and use Backdoor Trojan software.	• Assignment #14: Maintaining Access • Lab: Backdoor Access	**Career Ready Practices** CRP 1,2,3,5,7,8,9,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,3,4,9,10 IT-NET 1,5 IT-PRG 3	**Math**
				Industry Standards	**Science**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Week 40 **Unit 15** **Review** **CompTIA A+ Certification Exam** **Final Examination**	• How can the knowledge and skills learned in this course be applied?	• Apply knowledge and skills to solve problems. • Complete the CompTIA A+ Certification Exam, if eligible. • Complete the Final Examination.	• Assignment #15: Review • CompTIA A+ Certification Exam (if eligible) • Final Examination: NOCTI	**Career Ready Practices** CRP 1,2,4,5,6,10,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 1-12	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 9	**Math**
				Industry Standards	**Science**

Syracuse City School District
Career and Technical Education Program
Course Syllabus
CSS 300: Cyber Security 300

Program Overview

Cyber Security is the study of information technology security and focuses on protecting computers, networks, programs, and data from unintended or unauthorized access, change, or destruction. The Cyber Security Program is designed to help students explore the process of securing computers and computer networks, and conducting investigations of cybercrimes and forensic analysis of digital devices. Students will be equipped with the knowledge and skills to manage helpdesk functions and small to medium business IT operations as well as continue on to post-secondary training for careers in computer and network security, cybercrime investigation and computer forensics. Throughout the program, students gain mastery of these skills by performing simulated hands-on exercises Students who successfully complete the program will earn up to nine college credits and obtain CompTIA A+ Certification, a fundamental accreditation for work in many IT fields.

Course Description

This course presents the student with foundational concepts and processes to achieve better information security in a modern organization. The student will develop an appreciation for the threat and risk of information exposure, as well as risk management and mitigation techniques to limit losses. Students will explore the essential elements of an information security policy and the importance of incident response, reporting, and containment in the context of timely restoration of information. Students will also learn procedures for notification of appropriate authorities leading to potential prosecution. Modern information security technologies and their limitations will be explored as well as legal, ethical, and privacy issues.

Pre-Requisites

CSS 100: Cyber Security 100 and CSS 200: Cyber Security 200

Course Objectives

Students will:

1. Understand the role of information and the need for security in a modern organization.
2. Identify general classes of security threats and vulnerabilities in an organization.
3. Understand how to create and critically evaluate an information security policy to ensure that critical functions are sustainable while addressing the greatest information security risks.
4. Apply the security management process to mitigate threats of information disclosure for core processes.
5. Understand the fundamentals behind currently-employed computer security technologies.
6. Understand the legal, ethical, and privacy-related issues pertaining to information security.
7. Develop an incident response and recovery plan for first responders as well as the entire organization.
8. Realize that there is no such thing as perfect security.

Integrated Academics

- 1 Integrated ELA Credit
- **Concurrent Enrollment College Credit**: Upon successful completion of Computer Forensics 300, students who earn a grade of B or higher will earn 3 college credits for CRJ 355 Cyber Crime Investigations and Forensics I at Utica College

Equipment and Supplies

- **School will provide:** All necessary lab and classroom equipment.
- **Student will provide:** Outside access to the Internet, preferably broadband hi-speed, to complete readings, assignments, and communicate with the teacher and other students.

Textbook

TBD

Grading

Grading will be on the following system:

93%-100%	= A
90 %– 92.9%	= A-
87%-89.9%	= B+
83%-86.9%	= B
80%-82.9%	= B-
77% – 79.9%	= C+
73%-76.9%	= C
70%-72.9%	= C-
67%-69.9%	= D+
60-66.9%	= D
Below 60	= F

Course components are evaluated as follows:

Quizzes	30%
Labs	20%
Classroom Participation Assignments	10%
Final Project	20%
Final Exam	20%

Assignments:

- **Quizzes:** Quizzes will consist of T/F, multiple choice, fill-in-the-blank, and short essay questions.
- **Labs:** Labs will be assigned to address topics related to information security and cybersecurity. Labs will typically consist of hands-on assignments. The output of each lab will be a 2-3 page lab report. The lab report will consist of an introduction section, a results section, and a conclusion. The lab report must be cited using APA format. Lab assignments will be done in groups.
- **Classroom Participation Assignments:** Classroom participation assignments will range from answering questions at the end of each chapter to addressing contemporary topics. The output of these assignments will be either written material or PowerPoint slides. All work must be cited in APA format. These assignments will be done in groups.

- **Final Project:** The final project will be a hands-on lab project of the student's choice. The topic must be approved by the instructor. The output of this project will be a 10 to 20 minute PowerPoint presentation. Work must be cited using APA format.
- **Final Exam:** The final exam will be comprehensive and will consist of T/F, multiple choice, fill-in-the-blank, and short essay questions.

Group work is a very important part of the cyber security field. Many class assignments will be done in groups. It is important that every group member participate in group assignments and activities. The instructor reserves the right to adjust individual grades for group projects based on participation, frequency of communication, and feedback from group members.

Course Calendar

Quarter	Units of Study
1	• Course Introduction • Introduction to Cyber Security • Computer Number Systems • Cyber Conflict • Measuring and Weighing the Risks • Security Policies • Auditing and Accountability
2	• Access Control, Authentication, and Authorizations • Cryptography • Data Hiding and Steganography • Monitoring and Diagnosing Networks • Understanding Devices and Infrastructures
3	• Protecting Wireless Networks • Securing the Cloud • Host, Data, and Application Security • Malware, Vulnerabilities, and Threats • Social Engineering and Other Foes • Operations Security (OPSEC) • Security Administrations
4	• Computer Forensics and Digital Evidence • Disaster Recovery and Incident Response • SANS Top 20 Security Controls • Internship • Review for Final • CompTIA A+ Certification Exam • Final Examination

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
CSS 300: Cyber Security 300

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Weeks 1-2 **Unit 1** **Course Introduction** **Introduction to Cyber Security**	• What knowledge and skills are developed in this course? • What is cyber security? • Why is cyber security important? • How does cyber security affect individuals and organizations?	• Explain what cyber security is and how it affects the world. • Create an argument on the importance of cyber security and its effects. • Define and explain key vocabulary terms.	• Syllabus • Assignment #1: Cyber Security • Cyber Lab • Cyber Terms Bingo	**Career Ready Practices** CRP 2,3,4,5,9,10	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 4,5,6,	**Literacy** RST.11-12.1,2,3,4 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,6	**Math**
				Industry Standards	**Science**
Weeks 3-6 **Unit 2** **Computer Number Systems**	• How do computers store data? • How are different number conversions used to solve problems? • How are number systems related to computers?	• Describe how computers store data. • Explain decimal, binary, octal, and hexadecimal number systems. • Perform binary addition. • Convert numbers to different number systems.	• Assignment #2: Conversions • Assignment #3: Addition • Assignment #4: Subtraction • Quiz	**Career Ready Practice** CRP 2,4,8,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 11,12	**Literacy** RST.11-12.1,2,3,4 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 6,9	**Math**
				Industry Standards	**Science**
Weeks 7-8 **Unit 3** **Cyber Conflict** **Measuring and Weighing the Risks**	• What is cyber conflict? • What are potential solutions for cyber conflict? • How can risks be measured and weighed? • What can be done to minimize risks?	• Explain what a cyber conflict is and analyze how it can impact businesses and people. • Weigh and measure different risks and explain the impact they each have.	• Assignment #5: Cyber Conflicts • Security Lab • Quiz	**Career Ready Practice** CRP 2,7,8,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 4,5,7,12	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,4,7,8,9	**Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
				IT-NET 3,4 IT-PRG 1,3,7,9	
				Industry Standards	**Science**
Weeks 9-10 **Unit 4** **Security Policies** **Auditing and Accountability**	• What are security policies and what is their purpose? • Why might security policies be crucial to have? • How is an audit and what is its significance? • What accountability do individuals and organizations have for cyber security?	• Develop security policies for cyber security. • Demonstrate how an audit is conducted through example.	• Assignment #6: Creating Policies • Assignment #7: Audit of Policies • Security Policy Lab	**Career Ready Practice** CRP 2,4,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 1	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 11-12 **Unit 5** **Access Control, Authentication, and Authorizations**	• What are access control, authentication, and authorization and what purpose do they serve?	• Explain access control, authentication, and authorization. • Develop examples and scenarios that illustrate access control, authentication, and authorization.	• Assignment #8: Access Control • Assignment #9: Authentication and Authorization • Password Lab	**Career Ready Practice** CRP 2,4,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 12	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 13-15 **Unit 6** **Cryptography**	• What is the main purpose of cryptography? • What significance does cryptography have in the cyber field?	• Explain how cryptography is used. • Create a secret message using cryptographic principles. • Decrypt encrypted emails and passwords.	• Assignment #10: Caesar Cipher Wheel • Assignment #11: Encrypting Secret Messages • Assignment #12: Decrypting Secret	**Career Ready Practice** CRP 2,4,7,8,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 7,9	**Literacy** RST.11-12.1,2,3,4,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
			Messages • Cryptography Lab		WHST.11-12.2,4,6
				Pathway Standards IT-SUP 2,4,9,10 IT-NET 1	**Math**
				Industry Standards	**Science**
Weeks 16-18 **Unit 7** **Data Hiding and Steganography**	• What purpose does steganography serve and why is it important to someone in the cyber field? • How can steganography be used both ethically and unethically?	• Describe steganography and its purpose. • Explain how criminals use steganography. • Hide data within an image.	• Assignment #13: Hiding and Finding Data within images • Data Hiding Lab • Quiz: Date Hiding and Steganography	**Career Ready Practice** CRP 1,2,4,7,8,9,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 2,3,4,5,8,10	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 6,8,10	**Math**
				Industry Standards	**Science**
Week 19-20 **Unit 8** **Monitoring and Diagnosing Networks** **Understanding Devices and Infrastructures**	• What are some different network-based security tools? • How are network security tools implemented on a system? • What devices are needed in building a network?	• Describe network-based security tools including intrusion detection and prevention systems. • Explain the function of Network Access Controls and demilitarized zone (DMZ) in computer security. • Create a network working collaboratively in a team.	• Assignment #14: Diagnosing Networks • Assignment #15: Devices • Network Security Tools Lab	**Career Ready Practice** CRP 2,4,5,7,8,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 2,3,4,8,9	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6,9,8 IT-NET 1,4,5	**Math**
				Industry Standards	**Science**
Weeks 21-24 **Unit 9** **Protecting Wireless Networks**	• Why is it important to protect wireless networks? • What is “The Cloud” and what data can be used to support its	• Describe penetration testing tools • Use penetration testing to find vulnerabilities in a computer system. • Understand WEP, WPA, and WPA2.	• Assignment #16: Protecting Wireless • Assignment #17: Creating a Cloud • Application Security Lab	**Career Ready Practice** CRP 1,2,4,5,7,8,9,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9	**Literacy** RST.11-

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Securing the Cloud **Host, Data and Application Security**	description? • How are host, data, and application security evaluated?	• Create a Cloud application.			12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 2,5,6,9,10 IT-NET 1,4,5	**Math**
				Industry Standards	**Science**
Weeks 25-28 **Unit 10** **Malware, Vulnerabilities and Threats**	• How can outsiders obtain information about a computer system? • What steps should be taken to secure a personal computer?	• Explain how access into a system is maintained after exploitation. • Describe and use Backdoor Trojan software. • Secure a system from vulnerabilities. • Securely remove malware and document procedures.	• Assignment #18: Malware • Keylogger Lab • Phishing Email Review Game	**Career Ready Practice** CRP 2,4,7,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 9,10	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,8,9
				Pathway Standards IT-SUP 5,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 29-30 **Unit 11** **Social Engineering and Other Foes** **Operations Security (OPSEC)** **Security Administrations**	• How does social engineering compare to other foes? • What does available data indicate about social engineering and phishing? • What is OPSEC? • What is the purpose of security administrations?	• Define social engineering and explain methods for preventing it. • Compare and contrast exploitation and social engineering. • Define and explain OPSEC. • Demonstrate the role of security administrations. • Create and compare security admin accounts and non admin accounts.	• Assignment #19: Social Engineering Scenarios • Social Engineering Lab	**Career Ready Practice** CRP 1,2,7,8,11	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 31-32 **Unit 12**	• What are the similarities and differences	• Explain the differences between cyber security and computer	• Assignment #20: Computer Forensics	**Career Ready Practice** CRP 1,2,3,5,7,8,9,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Computer Forensics and Digital Evidence	between cyber security and computer forensics? • What is the relationship between cyber security and computer forensics?	forensics. • Analyze the similarities between cyber security and computer forensics. • Demonstrate knowledge of computer forensics through examining files and hard drives. • Demonstrate how to secure an area.	• Assignment #21: What is Digital Evidence? • Digital Investigation Lab • Quiz: Computer Forensics and Digital Evidence		SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9,10	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 33-34 **Unit 13** **Disaster Recovery and Incident Response** **SANS Top 20 Security Controls**	• What is the impact of a major incident on a company? • How would a cyber team would handle a major incident?	• Explain chain of custody. • Demonstrate how an incident is properly handled using chain of custody form. • Create a scenario of an incident and how it would be handled.	• Assignment #22: SANS Top Twenty • Incident Response Report • Data Breach Project • Quiz: Disaster Recovery and Incident Response	**Career Ready Practice** CRP 1,2,3,5,7,8,9,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 4,5,8,9,10	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 5,6 IT-NET 2	**Math**
				Industry Standards	**Science**
Weeks 35-39 **Unit 14** **Internship**	• What purpose does the internship serve? • What is the benefit of an internship activity log? • How does an internship help a student determine possible career paths? • How might a student impact the internship organization?	• Explain and demonstrate professionalism and ethics in the workplace. • Perform and complete a variety of real world activities. • Apply the knowledge and skills learned in the classroom to working in a professional setting. • Explain how various professionals work together toward the common goal of solving problems. • Explain how the demands of a job can change according to the setting and the needs of the employer or client.	• Final Project Based on Internship • Internship Evaluation	**Career Ready Practice** CRP 1,2,3,5,7,8,9,11,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 5,8,9	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 1,2,3,4,9,10 IT-NET 1,5 IT-PRG 3	**Math**
				Industry Standards	**Science**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Related Standards	CCLS ELA, Literacy, Math, Science
Week 40 **Unit 15** **Review for Final** **CompTIA A+ Certification Exam** **Final Examination**	• How can the knowledge and skills learned in this course be applied?	• Apply knowledge and skills to solve problems. • Complete the CompTIA A+ Certification Exam, if eligible. • Complete the Final Examination.	• Presentation • CompTIA A+ Certification Exam (if eligible) • Final Examination	**Career Ready Practice** CRP 1,2,4,5,6,10,12	**ELA** RI.11-12.2,3,4 W.11-12.2,4 SL.11-12.1,2,4,5,6 L.11-12.1-6
				Cluster Standards IT 1-12	**Literacy** RST.11-12.1,2,3,4,7 WHST.11-12.2,4,6
				Pathway Standards IT-SUP 6,8,9,10 IT-NET 5 IT-PRG 3	**Math**
				Industry Standards	**Science**