Florida Department of Education
Curriculum Framework

Program Title: **Computer Systems & Information Technology (CSIT)**
Program Type: **Career Preparatory**
Career Cluster: **Information Technology**

Career Certificate Program		
Program Number	Y100200	
CIP Number	0511090107	
Grade Level	30, 31	
Program Length	900 hours	
Teacher Certification	Refer to the **Program Structure** section.	
CTSO	PBL, BPA, SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading Language Arts): 9

Purpose

The purpose of this program is to prepare students for employment or advanced training in a variety of occupations in the information technology industry.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the information technology industry; technical and product skills, underlying principles of technology, planning, management, finance, labor issues, community issues and health, safety, and environmental issues.

The content includes but is not limited to communication, leadership skills, human relations and employability skills; and safe, efficient work practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four occupational completion points. When the recommended sequence is followed, the structure is intended to prepare students to complete the CompTIA A+, Network+, and Security+ industry certifications. Sufficient

coverage of advanced networking concepts and competencies may also lead to Cisco's CCENT and CCNA industry certifications. A student who completes the applicable competencies at any occupational completion point may either continue with the training or become an occupational completer.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	CTS0082	Computer Systems Technician	BUS ED 1 @2 COMPU SCI 6 COMP SVC 7G INFO TECH 7 G CYBER TECH 7 G ELECTRONIC @7 7 G	300 hours
B	CTS0083	Computer Network Technician		150 hours
C	CTS0084	Computer Networking Specialist		150 hours
D	CTS0069	Computer Security Technician		300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.

2. Apply appropriate academic and technical skills.

3. Attend to personal health and financial well-being.

4. Communicate clearly, effectively and with reason.

5. Consider the environmental, social and economic impacts of decisions.

6. Demonstrate creativity and innovation.

7. Employ valid and reliable research strategies.

8. Utilize critical thinking to make sense of problems and persevere in solving them.

9. Model integrity, ethical leadership and effective management.

10. Plan education and career path aligned to personal goals.

11. Use technology to enhance productivity.

12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

01.0 Demonstrate proficiency with personal computer hardware.
02.0 Apply troubleshooting, repairing and maintenance techniques.
03.0 Understand operating systems and software.
04.0 Identify and construct a basic network.
05.0 Analyze and react to various security threats and vulnerabilities.
06.0 Explain the basic physical security elements of a network.
07.0 Demonstrate proficiency with operational procedure.
08.0 Demonstrate language arts knowledge and skills.
09.0 Demonstrate mathematics knowledge and skills.
10.0 Demonstrate proficiency with installing, configuring, and troubleshooting personal computer hardware.
11.0 Apply techniques to various operating systems.
12.0 Build, secure and troubleshoot medium to large.
13.0 Use oral and written communication skills in creating, expressing and interpreting information and ideas.
14.0 Solve problems using critical thinking skills, creating and innovation.
15.0 Use information technology tools.
16.0 Describe the roles within teams, work units, departments, organizations, interorganizational systems, and the larger environment.
17.0 Describe the importance of professional ethics and legal responsibilities.
18.0 Describe the operation of data networks.
19.0 Verify connectivity between two end devices.
20.0 Configure a Layer 3 switch.
21.0 Program a router with basic configurations
22.0 Explain how IPv6 address assignments are implemented in a business network.
23.0 Explain how data is moved across the network, from opening an application, to receiving data.
24.0 Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance.
25.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
26.0 Explain the importance of employability skill and entrepreneurship skills.
27.0 Describe a switched network a small-to-medium-sized business.
28.0 Describe a routing environment.
29.0 Explore the concept of switches and security.
30.0 Configure and troubleshoot a Layer 3 environment.
31.0 Configure, troubleshoot and implement ACLs.
32.0 Demonstrate knowledge of how network services and protocols interact to provide network communication in order to securely implement and use common protocols.
33.0 Demonstrate an understanding of cybersecurity concepts and research.
34.0 Recognize attacks and apply appropriate solutions.

35.0 Recognize and be able to differentiate and explain the following access control models.
36.0 Comprehend and develop an understanding of protocol security and associated risks.
37.0 Recognize and understand remote access technologies.
38.0 Identify and administer security fixes as defined by the appropriate OSI layers.
39.0 Recognize and understand the administration of the following directory security concepts.
40.0 Identify wireless technologies, concepts and vulnerabilities.
41.0 Apply advanced principles of security techniques.
42.0 Define concepts of Key Management and Certificate Lifecycles.
43.0 Understand the application of the following concepts of physical security.
44.0 Understand security concerns for types of network topologies and media.
45.0 Implement the process of network system hardening within a computer network.
46.0 Describe the security implications of the following topics of disaster recovery options.
47.0 Demonstrate proficiency in applying the concepts and uses of the following types of policies and procedures.
48.0 Understand different types of privilege management.
49.0 Understand the concepts of cybersecurity guidelines.
50.0 Understand training of end users, executives and human resources in security vulnerabilities.

Florida Department of Education
Student Performance Standards

Program Title: **Computer Systems & Information Technology**
Career Certificate Program Number: **Y100200**

Course Number: CTS0082 **Occupational Completion Point: A** **Computer Systems Technician – 300 Hours**	
01.0	Demonstrate proficiency with personal computer hardware. The student will be able to:
01.01	Categorize storage devices and backup media.
01.02	Explain motherboard components, types and features.
01.03	Classify power supplies types and characteristics.
01.04	Explain the purpose and characteristics of CPUs and their features.
01.05	Explain cooling methods and devices.
01.06	Compare and contrast memory types, characteristics and their purpose.
01.07	Distinguish between the different display devices and their characteristics.
01.08	Install and configure peripherals and input devices.
01.09	Summarize the function and types of adapter cards.
01.10	Install, configure and optimize laptop components and features.
01.11	Install and configure printers.
01.12	Explain advantages of using PCIe adapter cards.
01.13	Configure tablets and mobile phones.
01.14	Configure network printers using a static IP address.
02.0	Apply troubleshooting, repairing and maintenance techniques. The student will be able to:
02.01	Explain the troubleshooting theory.
02.02	Explain and interpret common hardware and operating system symptoms and their causes.
02.03	Explain and interpret common operating system symptoms and their causes.
02.04	Determine the troubleshooting methods and tools for printers.
02.05	Explain and interpret common laptop issues and determine the appropriate basic troubleshooting method.

	02.06 Integrate common preventative maintenance techniques.
	02.07 Explain and interpret common software symptoms and their causes.
03.0	Understand operating systems and software. The student will be able to:
	03.01 Compare and contrast the different Windows Operating Systems from Windows 7 up and their features.
	03.02 Explain the difference in features of the various Windows versions from Windows 7 through Windows 10.
	03.03 Explain the process and steps to install and configure the Windows OS.
	03.04 Explain the basics of boot sequences, methods and startup utilities, including msconfig.
04.0	Identify and construct a basic network. The student will be able to:
	04.01 Summarize the basics of networking fundamentals, including technologies and devices.
	04.02 Summarize the basics of networking fundamentals, including technologies and protocols.
	04.03 Categorize network cables and connectors and their implementations.
	04.04 Compare and contrast the different network types include SOHO networks.
05.0	Analyze and react to various security threats and vulnerabilities. The student will be able to:
	05.01 Explain the basic principles of security concepts and technologies (physical, software, social engineering).
	05.02 Explain and define security features.
06.0	Explain the basic physical security elements of a network. The student will be able to:
	06.01 Explain the basic software security elements of a network, including firewalls, IDS and IPS.
	06.02 Explain how the human element plays a major role in network security, including social engineering.
07.0	Demonstrate proficiency with operational procedure. The student will be able to:
	07.01 Outline the purpose of appropriate safety and environmental procedures and given a scenario apply them.
	07.02 Given a problem, demonstrate communication and technical skills to escalate the problem for a solution.
	07.03 Explain chain of custody for various scenarios.
08.0	Demonstrate language arts knowledge and skills. The student will be able to:
	08.01 Locate, comprehend and evaluate key elements of oral and written information.
	08.02 Draft, revise, and edit written documents using correct grammar, punctuation and vocabulary.
	08.03 Present information formally and informally for specific purposes and audiences.
09.0	Demonstrate mathematics knowledge and skills. The student will be able to:

	09.01 Demonstrate knowledge of arithmetic operations.
	09.02 Analyze and apply data and measurements to solve problems and interpret documents.
	09.03 Construct charts/tables/graphs using functions and data.
10.0	Demonstrate proficiency with installing, configuring, and troubleshooting personal computer hardware. The student will be able to:
	10.01 Install, configure and maintain personal computer components.
	10.02 Detect problems, troubleshoot and repair/replace personal computer components.
	10.03 Install, configure, detect problems, troubleshoot and repair/replace laptop components.
	10.04 Explain and demonstrate the use of computer tools.
11.0	Apply techniques to various operating systems. The student will be able to:
	11.01 Select the appropriate commands and options to troubleshoot and resolve problems.
	11.02 Differentiate between Operating System file structures.
	11.03 Given a scenario, select and use system utilities/tools and evaluate the results.
	11.04 Evaluate and resolve common issues.
12.0	Build, secure and troubleshoot medium to large. The student will be able to:
	12.01 Troubleshoot client-side connectivity issues using appropriate tools.
	12.02 Install and configure a small office home office (SOHO) network.
	12.03 Given a scenario, prevent, troubleshoot and remove viruses and malware.
	12.04 Implement security and troubleshoot common issues.
13.0	Use oral and written communication skills in creating, expressing and interpreting information and ideas. The student will be able to:
	13.01 Select and employ appropriate communication concepts and strategies to enhance oral and written communication in the workplace.
	13.02 Locate, organize and reference written information from various sources.
	13.03 Design, develop and deliver formal and informal presentations using appropriate media to engage and inform diverse audiences.
	13.04 Interpret verbal and nonverbal cues/behaviors that enhance communication.
	13.05 Apply active listening skills to obtain and clarify information.
	13.06 Develop and interpret tables and charts to support written and oral communications.
	13.07 Exhibit public relations skills that aid in achieving customer satisfaction.
14.0	Solve problems using critical thinking skills, creativity and innovation. The student will be able to:

	14.01 Employ critical thinking skills independently and in teams to solve problems and make decisions.
	14.02 Employ critical thinking and interpersonal skills to resolve conflicts.
	14.03 Identify and document workplace performance goals and monitor progress toward those goals.
	14.04 Conduct technical research to gather information necessary for decision-making.
15.0	Use information technology tools. The student will be able to:
	15.01 Use personal information management (PIM) applications to increase workplace efficiency.
	15.02 Employ technological tools to expedite workflow including word processing, databases, reports, spreadsheets, multimedia presentations, electronic calendar, contacts, email, and internet applications.
	15.03 Employ computer operations applications to access, create, manage, integrate, and store information.
	15.04 Employ collaborative/groupware applications to facilitate group work.
16.0	Describe the roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. The student will be able to:
	16.01 Describe the nature and types of business organizations.
	16.02 Explain the effect of key organizational systems on performance and quality.
	16.03 List and describe quality control systems and/or practices common to the workplace.
	16.04 Explain the impact of the global economy on business organizations.
17.0	Describe the importance of professional ethics and legal responsibilities. The student will be able to:
	17.01 Evaluate and justify decisions based on ethical reasoning.
	17.02 Evaluate alternative responses to workplace situations based on personal, professional, ethical, legal responsibilities, and employer policies.
	17.03 Identify and explain personal and long-term consequences of unethical or illegal behaviors in the workplace.
	17.04 Interpret and explain written organizational policies and procedures.
	17.05 Explain various types of software licensing.
Course Number: CTS0083 Occupational Completion Point: B Computer Network Technician – 150 Hours	
18.0	Describe the operation of data networks. The student will be able to:
	18.01 Explain how multiple networks are used in everyday life.
	18.02 Explain the topologies and devices used in a small-to-medium-sized business network.

18.03	Explain the basic characteristics of a network that supports communication in a small-to-medium-sized business.
18.04	Explain trends in networking that will affect the use of networks in small-to-medium-sized businesses.
18.05	Explain the purpose of the IOS.
18.06	Explain how to access and navigate the IOS to configure network devices.
18.07	Describe the command structure of the IOS software.
18.08	Configure hostnames on an IOS device using the CLI.
18.09	Use IOS commands to limit access to device configurations.
18.10	Use IOS commands to save the running configuration.
18.11	Explain how devices communicate across network media.
18.12	Configure a host device with an IP address.
19.0	Verify connectivity between two end devices. The student will be able to:
19.01	Explain how rules are used to facilitate communication.
19.02	Explain the role of protocols and standards organizations in facilitating interoperability in network communications.
19.03	Explain how devices on a LAN access resources in a small to medium-sized business network.
19.04	Identify device connectivity options.
19.05	Describe the purpose and functions of the physical layer in the network.
19.06	Describe basic principles of the physical layer standards.
19.07	Identify the basic characteristics of network cables and connector types.
19.08	Build and terminate UTP cable used in Ethernet networks.
19.09	Describe, build and terminate fiber-optic cabling and its main advantages over other media.
19.10	Describe wireless media.
19.11	Select the appropriate media for a given requirement and connect devices.
19.12	Describe the operation of the Ethernet sub layers.
19.13	Identify the major fields of the Ethernet frame.
19.14	Describe the purpose and characteristics of the Ethernet MAC address.
19.15	Describe the purpose of ARP.
19.16	Explain how ARP requests impact network and host performance.

	19.17 Explain basic switching concepts.
	19.18 Compare fixed configuration and modular switches.
20.0	Configure a Layer 3 switch. The student will be able to:
	20.01 Explain how network layer protocols and services support communications across data networks.
	20.02 Explain how routers enable end-to-end connectivity in a small to medium-sized business network.
	20.03 Determine the appropriate device to route traffic in a small to medium-sized business network.
21.0	Program a router with basic configurations. The student will be able to:
	21.01 Describe the purpose of the transport layer in managing the transportation of data in end-to-end communication.
	21.02 Describe characteristics of the TCP and UDP protocols, including port numbers and their uses.
	21.03 Explain how TCP session establishment and termination processes facilitate reliable communication.
	21.04 Explain how TCP protocol data units are transmitted and acknowledged to guarantee delivery.
	21.05 Explain the UDP client processes to establish communication with a server.
	21.06 Determine whether high-reliability TCP transmissions, or non-guaranteed UDP transmissions, are best suited for common applications.
	21.07 Describe the structure of an IPv4 address.
	21.08 Describe the purpose of the subnet mask.
	21.09 Compare the characteristics and uses of the unicast, broadcast, and multicast IPv4 addresses.
	21.10 Compare the use of public address space and private address space.
	21.11 Explain the need for IPv6 addressing.
	21.12 Describe the representation of an IPv6 address.
	21.13 Describe types of IPv6 network addresses.
	21.14 Configure global unicast addresses.
	21.15 Describe multicast addresses.
	21.16 Describe the role of ICMP in an IP network. (Include IPv4 and IPv6).
	21.17 Use ping and trace route utilities to test network connectivity.
	21.18 Explain why routing is necessary for hosts on different networks to communicate.
	21.19 Describe IP as a communication protocol used to identify a single device on a network.
	21.20 Given a network and a subnet mask, calculate the number of host addresses available.

	21.21 Calculate the necessary subnet mask in order to accommodate the requirements of a network.
	21.22 Describe the benefits of variable length subnet masking (VLSM).
22.0	Explain how IPv6 address assignments are implemented in a business network. The student will be able to:
	22.01 Explain how the functions of the application layer, session layer, and presentation layer work together to provide network services to end user applications.
	22.02 Describe how common application layer protocols interact with end user applications.
	22.03 Describe, at a high level, common application layer protocols that provide Internet services to end-users, including WWW services and email.
	22.04 Describe application layer protocols that provide IP addressing services.
	22.05 Describe the features and operation of well-known application layer protocols that allow for file sharing services.
23.0	Explain how data is moved across the network, from opening an application, to receiving data. The student will be able to:
	23.01 Identify the devices and protocols used in a small network.
	23.02 Explain how a small network serves as the basis of larger networks.
	23.03 Describe the need for basic security measures on network devices.
	23.04 Identify security vulnerabilities and general mitigation techniques.
	23.05 Configure network devices with device hardening features to mitigate security threats.
	23.06 Use the output of ping and trace commands to establish relative network performance.
24.0	Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. The student will be able to:
	24.01 Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.
	24.02 Explain emergency procedures to follow in response to workplace accidents.
	24.03 Create a disaster and/or emergency response plan.
25.0	Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. The student will be able to:
	25.01 Employ leadership skills to accomplish organizational goals and objectives.
	25.02 Establish and maintain effective working relationships with others in order to accomplish objectives and tasks.
	25.03 Conduct and participate in meetings to accomplish work tasks.
	25.04 Employ mentoring skills to inspire and teach others.
26.0	Explain the importance of employability skill and entrepreneurship skills. The student will be able to:
	26.01 Identify and demonstrate positive work behaviors needed to be employable.

	26.02 Develop personal career plan that includes goals, objectives, and strategies.
	26.03 Examine licensing, certification, and industry credentialing requirements.
	26.04 Maintain a career portfolio to document knowledge, skills, and experience.
	26.05 Evaluate and compare employment opportunities that match career goals.
	26.06 Identify and exhibit traits for retaining employment.
	26.07 Identify opportunities and research requirements for career advancement.
	26.08 Research the benefits of ongoing professional development.
	26.09 Examine and describe entrepreneurship opportunities as a career planning option.

Course Number: CTS0084 **Occupational Completion Point: C** **Computer Networking Specialist – 150 Hours**	
27.0	Describe a switched network a small-to-medium-sized business. The student will be able to:
	27.01 Describe convergence of data, voice, and video in the context of switched networks.
	27.02 Setup and configure a switched environment.
	27.03 Troubleshoot and diagnose a switched environment.
28.0	Describe a routing environment. The student will be able to:
	28.01 Configure a router to route between multiple directly connected networks.
	28.02 Describe the primary functions and features of a router.
	28.03 Explain how routers use information in data packets to make forwarding decisions in a small-to medium-sized business network.
	28.04 Describe configure and troubleshoot VLAN routing environment.
29.0	Explore the concept of switches and security. The student will be able to:
	29.01 Explain the advantages and disadvantages of static routing.
	29.02 Configure switch ports and security.
	29.03 Describe security best practices in a switch environment.
	29.04 Explain, configure and troubleshoot VLAN in a switch network.
30.0	Configure and troubleshoot a Layer 3 environment. The student will be able to:
	30.01 Explain the advantages and disadvantages of Layer 3 ~~of static~~ routing.

	30.02 Define, compare and configure the different categories of routing protocols
31.0	Configure, troubleshoot and implement ACLs. The student will be able to:
	31.01 Explain, configure and modify ACL's
	31.02 Apply ACLs to filter traffic.
32.0	Demonstrate knowledge of how network services and protocols interact to provide network communication in order to securely implement and use common protocols. The student will be able to:
	32.01 Describe and configure protocols (i.e., SMTP, TCP-IP, MAC, DNS, FTP and DHCP).
	32.02 Identify commonly used default network ports.
	32.03 Troubleshoot configure protocols within a switched network.
Course Number: CTS0069 Occupational Completion Point: D Computer Security Technician – 300 Hours	
33.0	Demonstrate an understanding of cybersecurity concepts and research. The student will be able to:
	33.01 Describe the history of cybersecurity, including the evolution of a hacker culture.
	33.02 Discuss the trends and national initiatives related to cybersecurity.
	33.03 Distinguish between information assurance and cybersecurity.
	33.04 Describe the concepts of confidentiality as it relates to user and data impact.
	33.05 Explain authentication and the concept of non-repudiation.
34.0	Recognize attacks and apply appropriate solutions. The student will be able to:
	34.01 Recognize and define network susceptibilities and attacks. (i.e., DOS/DDOS (Denial of Service/Distributed Denial of Service)).
	34.02 Recognize and define Password Guessing (e.g., Brute Force, Dictionary).
	34.03 Recognize and define Software Exploitation.
	34.04 Define email vulnerabilities apply appropriate security measures.
35.0	Recognize and be able to differentiate and explain the following access control models. The student will be able to:
	35.01 Recognize and define MAC (Mandatory Access Control).
	35.02 Recognize and define DAC (Discretionary Access Control).
	35.03 Recognize and define RBAC (Role Based Access Control).
36.0	Comprehend and develop an understanding of protocol security and associated risks. The student will be able to:

	36.01 Identify non-essential services and protocols running on hosts and network devices and know what actions to take to reduce the risks of those services and protocols.
	36.02 Understand the concept of and know how reduce the risks of social engineering.
	36.03 Understand the concept and significance of auditing, logging and system scanning.
	36.04 Identify and be able to differentiate different cryptographic standards and protocols.
37.0	Recognize and understand remote access technologies. The student will be able to:
	37.01 Recognize and define 802.1x.
	37.02 Recognize and define RADIUS (Remote Authentication Dial-In User Service).
	37.03 Recognize and define TACACS (Terminal Access Controller Access Control System) and TACTCs+.
	37.04 Recognize and define L2TP/PPTP (Layer Two Tunneling Protocol/Point to Point Tunneling Protocol).
	37.05 Recognize and define SSH (Secure Shell).
	37.06 Recognize and define IPSEC (Internet Protocol Security).
38.0	Identify and administer security fixes as defined by the appropriate OSI layers. The student will be able to:
	38.01 Recognize and define SSL/TLS (Secure Sockets Layer/Transport Layer Security).
	38.02 Recognize and define LDAP (Lightweight Directory Access Protocol).
39.0	Recognize and understand the administration of the following directory security concepts. The student will be able to:
	39.01 Identify the different types of application layer protocol (POP3, SMTP, DNS and FTP).
	39.02 Recognize and define File Sharing.
	39.03 Recognize and define Vulnerabilities (i.e., packet sniffing, naming conventions).
40.0	Identify wireless technologies, concepts and vulnerabilities. The student will be able to:
	40.01 Recognize and define WTLS (Wireless Transport Layer Security).
	40.02 Differentiate Wi-Fi threats.
	40.03 Apply encryption protocols for wireless networks.
41.0	Apply advanced principles of security techniques. The student will be able to:
	41.01 Compare and contrast Host and Network Based security techniques.
	41.02 Be able to identify and explain cryptographic algorithms
	41.03 Understand how cryptography and digital signatures address the following security concepts.
	41.04 Identify authentication tools (e.g. PKI Public Key Infrastructure, Certificates, Renocation and Trust Models).

42.0	Define concepts of Key Management and Certificate Lifecycles. The student will be able to:
	42.01 Identify various security CA requirements.
	42.02 Understand Hardware versus software key storage, Private key storage, Escrow, Expiration, Revocation, Renewal, Destruction, Key Usage, Multiple Key Pairs.
	42.03 Create key management and procedures.
43.0	Understand the application of the following concepts of physical security. The student will be able to:
	43.01 Define Access Control (e.g., physical barriers, biometrics).
	43.02 Define Social Engineering.
	43.03 Defines issues related to Environment (e.g., wireless cells, location, shielding, fire suppression).
44.0	Understand security concerns for types of network topologies and media. The student will be able to:
	44.01 Recognize, define, and configure network hardware, appliances and handheld devices.
	44.02 Define, and configure Network Monitoring/Diagnostics tools.
	44.03 Understand the security concerns for the following types of media.
45.0	Implement the process of network system hardening within a computer network. The student will be able to:
	45.01 Install and configure Updates (Firmware & Software).
	45.02 Install and configure Operating System and ACL's.
	45.03 Enable and Disable Services and Protocols.
	45.04 Setup and configure a server hardening within a computer network.
46.0	Describe the security implications of the following topics of disaster recovery options and utilities. The student will be able to:
	46.01 Define and use Backups Secure Recovery, Recovery Plan and Alternative sites. (On-site versus off-site storage).
	46.02 Recognize and define Backup Utilities and High Availability/Fault Tolerance.
47.0	Demonstrate proficiency in applying the concepts and uses of the following types of policies and procedures. The student will be able to:
	47.01 Demonstrate proficiency and understanding of Security Policy Acceptable Use, Privacy, Separation of Duties, Need to Know, Password Management and SLA's.
	47.02 Demonstrate proficiency and understanding of Disposal/Destruction.
	47.03 Demonstrate proficiency and understanding of HR policies related to passwords, privileges, and Code of Ethics in hiring and termination situations.
	47.04 Demonstrate proficiency and understanding of Incident Response Policy.
48.0	Understand different types of privilege management. The student will be able to:

	48.01 Identify User/Group/Role Management and Single Sign-on.
	48.02 Define Centralized vs. Decentralized.
	48.03 Understand the importance of Auditing (Privilege, Usage, Escalation).
	48.04 Define MAC/DAC/RBAC (Mandatory Access Control/Discretionary Access Control/Role Based Access Control).
49.0	Understand the concepts of cybersecurity guidelines. The student will be able to:
	49.01 Demonstrate an understanding of the concepts of forensics guidelines.
	49.02 Explain Systems Architecture and documentation.
	49.03 Explain Change Logs and Inventories.
	49.04 Explain Classification/Notification, Schema, Retention/Storage, and Destruction.
	49.05 Understand and be able to explain the following concepts of risk identification.
	49.06 Explain Asset Identification and Risk Assessment.
	49.07 Define threat identification and vulnerabilities.
50.0	Understand training of end users, executives and human resources in security vulnerabilities. The student will be able to:
	50.01 Identify effective training strategies and education resources.
	50.02 Create appropriate methods of security Information awareness strategies.
	50.03 Understand importance of On-line Resources.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

Phi Beta Lambda (PBL), Business Professionals of America (BPA) and SkillsUSA are the co-curricular student organizations providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as

instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.