Florida Department of Education
Curriculum Framework

Program Title: **Network Security**
Career Cluster: **Information Technology**

CCC	
CIP Number	0511100118
Program Type	College Credit Certificate (CCC)
Program Length	Primary: 30 credit hours; Secondary: 20 credit hours
CTSO	Phi Beta Lambda, BPA
SOC Codes (all applicable)	15-1122 – Information Security Analysts
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Network Systems Technology AS degree program (1511100112).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Information Technology career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Information Technology career cluster.

The content includes but is not limited to instruction in computer literacy; software application support; basic hardware configuration and troubleshooting; networking technologies, troubleshooting, security, and administration; and customer service and human relations skills.

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

Standards

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

01.0   Demonstrate proficiency in securing network infrastructures and protecting data.
02.0   Demonstrate proficiency in performing security penetration testing.
03.0   Demonstrate proficiency in responding to cybersecurity incidents.
04.0   Demonstrate proficiency in the essential elements of forensic analysis.
05.0   Demonstrate employability skills.

Florida Department of Education
Student Performance Standards

Program Title: Network Security
CIP Number: 0511100118
Program Length: Primary: 30 credit hours; Secondary: 20 credit hours
SOC Code(s): 15-1122

This certificate program is part of the Network Systems Technology AS degree program (1511100112). At the completion of this program, the student will be able to:
01.0 Demonstrate proficiency in securing network infrastructures and protecting data. The student will be able to:
01.01 Explain the major categories of computer crimes and attacks.
01.02 Identify vulnerabilities inherent in network devices, protocols and services.
01.03 Develop institutional security policies and practices in compliance with relevant governmental standards and regulations.
01.04 Implement protective measures in securing critical information assets.
01.05 Deploy various network security related equipment including, firewalls, intrusion prevention systems, and proxies.
01.06 Secure critical network services such as Directory Services, Domain Name Service (DNS), Dynamic Host Configuration Protocol (DHCP), and File Transfer Protocol (FTP).
01.07 Secure desktop client operating systems against viruses, malware and other malicious attacks.
01.08 Detect malicious and abnormal activities through logs, intrusion detection systems and other utilities and appliances.
02.0 Demonstrate proficiency in performing security penetration testing. The student will be able to:
02.01 Identify organizational compliance with regulatory and legislative Information Assurance (IA) requirements.
02.02 Identify physical and logical weaknesses in computers and networks as well as physical weaknesses and weaknesses in policies, procedures and practices relating to the network and the organization.
02.03 Test the network perimeter defense mechanisms to ensure boundaries.
02.04 Simulate methods that intruders use to gain unauthorized access to an organization's networked systems and attempted to compromise them.
02.05 Deploy proprietary and/or open source tools to test known technical vulnerabilities in networked systems.
02.06 Determine which vulnerabilities are exploitable and the degree of information exposure or network control that the organization could expect an attacker to achieve after successfully exploiting vulnerability.
02.07 Recommend procedures to mitigate against discovered vulnerabilities and security gaps.

	02.08	Prepare penetration testing deliverables including reports, documentations.
	02.09	Describe the ethics of a licensed Penetration Tester.
03.0	Demonstrate proficiency in responding to cybersecurity incidents. The student will be able to:	
	03.01	Explain contingency planning and its components.
	03.02	Collect data from logs and other resources to aid in detecting security incidents.
	03.03	Assemble an incidence response plan.
	03.04	Recover from incidents by restoring services and processes.
	03.05	Manage evidentiary data in an electronic environment.
04.0	Demonstrate proficiency in the essential elements of forensic analysis. The student will be able to:	
	04.01	Describe the four phases of forensic analysis and discuss the activities performed in each phase.
	04.02	Describe the forensic and evidentiary considerations when determining containment.
	04.03	Describe the types and sources of data collected for forensic analysis.
	04.04	Explain the various forms of data and associated collection/retrieval tools for the application transport, IP, and link layers.
	04.05	Explain the processes by which data is collected for analysis.
	04.06	Describe the role of system event logs in data collection.
	04.07	Describe the role of the process log in data collection.
	04.08	Describe the processes associated with preserving evidence collected for forensic purposes.
	04.09	Describe how the chain of custody can be maintained for evidence collected during a forensic analysis effort.
05.0	Demonstrate employability skills. The student will be able to:	
	05.01	Conduct a job search.
	05.02	Secure information about a job.
	05.03	Identify documents that may be required when applying for a job.
	05.04	Complete a job application form correctly.
	05.05	Demonstrate competence in job interview techniques.
	05.06	Demonstrate knowledge of how to make appropriate decisions.
	05.07	Demonstrate appropriate work/behavioral habits.

05.08   Demonstrate acceptable employee personal hygiene and health.

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 and Business Professionals of America (BPA) are the intercurricular career and technical 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.

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.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml