



IT SECURITY

About the IT Security Program

This certificate will give students additional understanding of Cybersecurity fundamentals, Cybersecurity operations and implementing network security.* This certificate will allow a student to identify the threats, monitor and analyze those threats, and configure network solutions to eliminate and avoid network security threats. Topics discussed will be Threat analysis, Network Intrusion analysis, Incident response, security concepts, Secure access, Virtual Private Network access (VPN), secure routing and switching techniques, Firewall concepts and Intrusion prevention.

*Pre-requisite: Students need to have completed the [IT Computer Support Specialist associate degree](#) or the Cisco CCENT certification to enroll in this certificate.

PROGRAM OUTLINE

COURSE #	COURSE TITLE	CREDITS
1010712800	Introduction to Security	3.00

COURSE #	COURSE TITLE	CREDITS
	Gives the student an introduction to computer security. It focuses on what security is, and why it is important in business today. The student will investigate different aspects of security from email security to denial of service attacks on a system. The student will gain practical skills necessary to protect against such attacks. Prerequisite: 1015011400 Networking 1 (C or better).	
	Competencies	
10107128C01	Introduction to Security A This course will introduce the basic concepts IT Security to include attacks, defense planning, access control, Basic cryptography, Network monitoring, and incident response. Prerequisite: 10150114C06 Networking 1F (B or better).	0.75
10107128C02	Introduction to Security B This course will investigate policies and procedures as related to IT security, and a in-depth look at physical security and how that affects IT security. Prerequisite: 10150114C06 Networking 1F (B or better).	0.50
10107128C03	Introduction to Security C This course will identify common attacks and what measures can be take to mitigate there affect on a network. This will include wireless defense, configuring routers and switches to be more secure and different network configurations to help with defeating attacks. Prerequisite: 10150114C06 Networking 1F (B or better).	0.50
10107128C04	Introduction to Security D This course will take and in-depth look at the various Access control methods, the kind of attacks the target the application such as the web, internet browsers, and in application development. It will also look at how to harden authentication and application. Data is also a key concept in this course, how to protect it using encryption techniques, redundancy, and backup and restore to ensure data integrity and availability. Prerequisite: 10150114C06 Networking 1F (B or better).	0.75
10107128C05	Introduction to Security E This course explores the topic of Payment Card Industry (PCI) awareness and will take a look at the criteria that has to be met in order to handle credit cards and personal information in business today. Prerequisite: 10150114c06 Networking 1F (B or better).	0.50
1015011400	Networking 1	3.00

COURSE #	COURSE TITLE	CREDITS
	<p>This course is designed as an introduction to data network technology. It is the first in a series of two courses leading toward Cisco Certified Entry Network Technician (CCENT). Students will gain a basic understanding of routers and switches, their function and how to perform initial configurations in the Internetwork Operating System (IOS) of these devices. Students will setup various LAN hardware to implement a workable local area network to include, subnetting and variable length subnetting. Student will gain a solid foundation in network standards using both the OSI and TCP/IP reference models.</p> <p>Competencies</p>	
10150114C01	<p>Networking 1A</p> <p>This course will explore what a network is in today's world, identify the various networking equipment needed to allow devices to communicate, and introduce the student to how data travels across the network.</p>	0.50
10150114C02	<p>Networking 1B</p> <p>This course will investigate how devices access a network to include the topologies that they use and the network media required to access the network. You will also understand how Ethernet works, what the function is of switches on the network and how the ARP process works to ensure communications on the network.</p>	0.50
10150114C03	<p>Networking 1C</p> <p>This course will explore the Cisco IOS and basic commands, it will look in depth at the network layer of the OSI model and the protocols that reside there. The student will learn initial router and switch commands for configuring interfaces, the boot process of the IOS and the routing process for routers for internetwork communication.</p>	0.50
10150114C04	<p>Networking 1D</p> <p>This course take an in depth look at IP addressing on the Network using both classful and classless (VLSM) addressing Schemes. It explores both IPv4 and IPv6 address schemes.</p>	0.75
10150114C05	<p>Networking 1E</p> <p>This course will explore the Transport, Session, Presentation and Application layers of the OSI model and the protocols that reside at each layer.</p>	0.25
10150114C06	<p>Networking 1F</p> <p>This course will explore network design, Basic Network Security, Network testing and verification tools, and Network troubleshooting tools and techniques.</p>	0.50
1015013000	Networking 2	3.00

COURSE #	COURSE TITLE	CREDITS
	<p>This course is the second course in the Cisco Certified Entry Network Technician (CCENT) series. It will look at more indepth configuration of routers to include routing protocols, network address translation, and access control lists. Students will look at switch configuration to include virtual LANs and standard security features within the switch IOS. Sudents will also gain an understanding of device discovery, management and maintenance of the network. Prerequisite: 1015011400 Networking 1 (C or better).</p>	
	Competencies	
10150130C01	<p>Networking 2A</p> <p>This course will configure routers, routing protocols, and investigate the routing tables and how to understand them. Prerequisite: 10150114C06 Networking 1F (B or better).</p>	1.00
10150130C02	<p>Networking 2B</p> <p>This course will configure switches to include the concept of VLANs. The students will configure VLANs and implement VLAN routing in the network. Prerequisite: 10150114C06 Networking 1F (B or better).</p>	1.00
10150130C04	<p>Networking 2D</p> <p>This course will investigate the Dynamic Hostr control Protocol (DHCP), and Network Address Translation)NAT) and how to configure and mange them on a router. Prerequisite: 10150114C06 Networking 1F (B or better).</p>	0.25
10150130C05	<p>Networking 2E</p> <p>This course will investigate common concepts for managing and maintaining network devices on the LAN. Prerequisite: 10150114C06 Networking 1F (B or better).</p>	0.25
10150130C06	<p>Networking 2C</p> <p>This course will understand the concepts of LAN Security and how to secure network devices. Prerequisite: 10150114C06 Networking 1F (B or better).</p>	0.50
1015014500	Networking 3	3.00

COURSE #	COURSE TITLE	CREDITS
	This is the third course in the Cisco Certified Network Associate certification series. This course will cover advanced routing protocols, WAN concepts, VPN and IPsec concepts, Network design and management, and Network virtualization and automation. Prerequisite: 1015013000 Networking 2 (B or better).	
	Competencies	
10150145C01	Networking 3A This course will introduce the student to advanced routing protocols to include Single Area- OSPFv2 and various WAN configurations. Prerequisite: 10150130C05 Networking 2E (B or better).	1.00
10150145C02	Networking 3B This course will look at advanced security concepts to control traffic into and out of the network. It will have a high concentration on the use of Access Control Lists and how and where to implement them. Prerequisite: 10150130C05 Networking 2E (B or better).	0.50
10150145C03	Networking 3C This course will look at Virtual Private Networks (VPN), IP Security (IPsec), and Quality of Service (QoS) and how to configure and implement these services. Prerequisite: 10150130C05 Networking 2E (B or better).	0.50
10150145C04	Networking 3D In this course students will investigate how to design, manage and troubleshoot an enterprise network infrastructure. Prerequisite: 10150130C05 Networking 2E (B or better).	0.50
10150145C05	Networking 3E This course will investigate network virtualization and automation and how they can be utilized in an enterprise network infrastructure. Prerequisite: 10150130C05 Networking 2E (B or better).	0.50
1015019000	CyberSecurity Operations This course will focus on the endpoint threat analysis and computer forensics. It will also teach a student how to analyze a network intrusion, analysis of the data and events, and proper response and handling of a security incident on the network. This course will prepare the student for the Implementing Cisco Cybersecurity Operations (SECOPS) exam. Prerequisite: 1010712800 Introduction to Security (C or better) or 10107128C05 Introduction to Security E (B or better).	3.00
1015019100	Implement Network Security This course will focus on security principles and technologies. The student will describe network security concepts, secure routers and switches to secure the infrastructure, implement authentication and accounting services, and implement firewall services to secure the network infrastructure. This course will prepare the student for the CCNA Security Exam (IINS). Prerequisite: 1015019000 CyberSecurity Operations (B or better).	3.00
Total Credits:		18.00

Talk with an Academic Advisor about the program outline. Together, you will determine if credits you've already earned satisfy any requirements, discuss possible alternative courses, and choose the best classes if you're thinking of transferring.

AT A GLANCE

How You'll Learn



ONLINE CLASSES MULTIPLE START DATES FLEXIBLE PACE

2021 Start Dates

January 6	May 7	September 1
February 1	June 7	October 4
March 1	July 5	November 1

2022 Start Dates

January 5	March 1	June 6
February 7	May 2	July 11

[VIEW FULL ACADEMIC CALENDAR](#)

What is Competency-Based Education?

Competency-Based Education (CBE) is learning at your own pace by mastering competencies through demonstration. Once all competencies for a program have been assessed and mastered, students will earn a certificate, diploma, or degree.

[LEARN MORE ABOUT CBE](#)

Approximate Cost

\$2,724*

*Based on 10-level courses—materials, books, and fees may be additional

What You'll Learn

- Implement Cybersecurity Operations
- Implement a secure network infrastructure

Your Potential Careers

- Info Security Analyst
- Computer Network Support Specialist
- Computer Systems Analyst
- Information Assurance Analyst
- Security Systems Administrator
- Security Analyst
- Security Specialist

Median Annual Salary

\$66,375	\$75,384	\$83,183
Local	State	National

EMSI 2020.1

Get Started

Your application can be submitted online, it takes just a few minutes to complete.

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