

CompTIA Security+ Certification

Course Overview

In this course, students will build on their knowledge of and professional experience with security fundamentals, networks, and organizational security as you acquire the specific skills required to implement basic security services on any type of computer network.

Who Should Attend

This course is designed for information technology (IT) professionals who have networking and administrative skills in Windows®-based Transmission Control Protocol/Internet Protocol (TCP/IP) networks; familiarity with other operating systems, such as macOS®, Unix®, or Linux®; and who want to further a career in IT by acquiring foundational knowledge of security topics or using CompTIA Security+ as the foundation for advanced security certifications or career roles. This course is also designed for students who are seeking the CompTIA Security+ certification and who want to prepare for the CompTIA Security+ SY0-501 Certification Exam.

Course Objectives

In this course, students will use fundamental security principles to install and configure cybersecurity controls and participate in incident response and risk mitigation. Students will:

- Compare and contrast attacks.
- Compare and contrast security controls.
- Use security assessment tools.
- Explain basic cryptography concepts.
- Implement a public key infrastructure.
- Implement identity and access management controls.
- Manage access services and accounts.
- Implement a secure network architecture.
- Install and configure security appliances.
- Install and configure wireless and physical access security.
- Deploy secure host, mobile, and embedded systems.
- Implement secure network access protocols.
- Implement secure network applications.
- Explain risk management and disaster recovery concepts.
- Describe secure application development concepts.
- Explain organizational security concepts.

Course Outline

1 - COMPARING AND CONTRASTING ATTACKS

- Compare and Contrast Information Security Roles
- Explain Threat Actor Types
- Compare and Contrast Social Engineering Attack Types
- Determine Malware Types

2 - COMPARING AND CONTRASTING SECURITY CONTROLS

- Compare and Contrast Security Control and Framework Types

- Follow Incident Response Procedures

3 - ASSESSING SECURITY POSTURE WITH SOFTWARE TOOLS

- Explain Penetration Testing Concepts
- Assess Security Posture with Topology Discovery Software Tools
- Assess Security Posture with Fingerprinting and Sniffing Software Tools
- Assess Security Posture with Vulnerability Scanning Software Tools

4 - EXPLAINING BASIC CRYPTOGRAPHY CONCEPTS

- Compare and Contrast Basic Concepts of Cryptography
- Explain Hashing and Symmetric Cryptographic Algorithms
- Explain Asymmetric Cryptographic Algorithms

5 - IMPLEMENTING A PUBLIC KEY INFRASTRUCTURE

- Implement Certificates and Certificate Authorities
- Implement PKI Management

6 - IMPLEMENTING IDENTITY AND ACCESS MANAGEMENT CONTROLS

- Compare and Contrast Identity and Authentication Concepts
- Install and Configure Authentication Protocols
- Implement Multifactor Authentication

7 - MANAGING ACCESS SERVICES AND ACCOUNTS

- Install and Configure Authorization and Directory Services
- Implement Access Management Controls
- Differentiate Account Management Practices
- Implement Account Auditing and Recertification

8 - IMPLEMENTING A SECURE NETWORK ARCHITECTURE

- Implement Secure Network Architecture Concepts
- Install and Configure a Secure Switching Infrastructure

- Install and Configure Network Access Control
- Install and Configure a Secure Routing and NAT Infrastructure

9 - INSTALLING AND CONFIGURING SECURITY APPLIANCES

- Install and Configure Firewalls and Proxies
- Install and Configure Load Balancers
- Install and Configure Intrusion Detection/Prevention Systems
- Install and Configure Data Loss Prevention (DLP) Systems
- Install and Configure Logging and SIEM Systems

10 - INSTALLING AND CONFIGURING WIRELESS AND PHYSICAL ACCESS SECURITY

- Install and Configure a Wireless Infrastructure
- Install and Configure Wireless Security Settings
- Explain the Importance of Physical Security Controls

11 - DEPLOYING SECURE HOST, MOBILE, AND EMBEDDED SYSTEMS

- Implement Secure Hardware Systems Design
- Implement Secure Host Systems Design
- Implement Secure Mobile Device Systems Design
- Implement Secure Embedded Systems Design

12 - IMPLEMENTING SECURE NETWORK ACCESS PROTOCOLS

- Implement Secure Network Operations Protocols
- Implement Secure Remote Access Protocols
- Implement Secure Remote Administration Protocols

13 - IMPLEMENTING SECURE NETWORK APPLICATIONS

- Implement Secure Web Services
- Implement Secure Communications Services
- Summarize Secure Virtualization Infrastructure

- Summarize Secure Cloud Services

14 - EXPLAINING RISK MANAGEMENT AND DISASTER RECOVERY CONCEPTS

- Explain Risk Management Processes and Concepts
- Explain Resiliency and Automation Strategies
- Explain Disaster Recovery and Continuity of Operation Concepts
- Summarize Basic Concepts of Forensics

15 - SUMMARIZING SECURE APPLICATION DEVELOPMENT CONCEPTS

- Explain the Impact of Vulnerability Types
- Summarize Secure Application Development Concepts

16 - EXPLAINING ORGANIZATIONAL SECURITY CONCEPTS

- Explain the Importance of Security Policies
- Implement Data Security and Privacy Practices
- Explain the Importance of Personnel Management