



Network and Security - Applications Course Syllabus

WESTERN GOVERNORS UNIVERSITY

Network and Security – Applications

Hello, and welcome!

As an IT security professional, you are expected to implement techniques that secure networks and computers. Security attacks are on the rise and continue to be a concern for organizations worldwide. As a result, competent security professionals are in high demand. A career as an IT security professional will provide you with many opportunities in a variety of industries and organizational environments. This course will prepare you to successfully take the CompTIA Security+ (SY0-701) certification exam.

Through this course, you will learn fundamental security concepts and gain the ability to compare and contrast different security controls. You will explore the security implications of proper hardware, software, and data asset management. You will also dig into vulnerability management and enhancing security capabilities. All of these skills and more will better equip you as a cybersecurity professional in today's increasingly technological world.

We invite you to take a minute to learn about the course by reviewing the information that follows. This way, you will be better able to understand the expectations of the course as a whole. Then you can determine how to manage your time and efforts as you navigate through it.

You are in the right place. You belong here. You can do this!

Course Description and Competencies

WHAT TO EXPECT

This course employs learning resources from CompTIA that contain all the necessary reading materials and videos needed to prepare you for the course assessment.

Access your learning resources through the links in the course lessons. This course uses three separate platforms:

CompTIA. (n.d.). *CertMaster Labs for Security+ (Exam SY0-701)*.

CompTIA. (n.d.). *CertMaster Learn for Security+ (Exam SY0-701)*.

CompTIA. (n.d.). *CertMaster Practice for Security+ (Exam SY0-701)*.

Make sure to engage in all the course materials and seek to score 90% or better on all practice sets, performance-based questions (PBQs), assessments, and labs before continuing to the next lesson.

It is important to note that while the performance questions and labs integrated within the main learning resource from CompTIA offer valuable contextualization and practice for project management concepts, they do not directly mirror the format of those encountered on the certification exam. The questions on the certification exam will primarily utilize drag-and-drop, matching, or answer resequencing mechanics.

You must pass the certification exam to earn your 4 competency units. Details on preparing, registering for, and completing the exam are in the 5 Steps to Completion module at the end of this course. If you require further attempts, please contact your Course Instructor or Student Experience Specialist.

Prerequisites:

You should have already completed both CompTIA A+ and CompTIA Network+ certifications, or the equivalent, before beginning this course.

This course covers the following competencies:

1. **Identifies Threats, Attacks, and Vulnerabilities:** The learner identifies threats, attacks, and vulnerabilities to organizational security.
2. **Designs Secure Architectures:** The learner designs security solutions for enterprise infrastructures and architectures.
3. **Implements Security Solutions:** The learner implements security solutions across hardware, applications, and network services.
4. **Executes Operations and Incident Response:** The learner executes operations and incident response with tools, policies, forensics, and mitigation techniques.
5. **Analyzes Controls, Governance, Risk, and Compliance:** The learner analyzes information security controls, governance, risk, and compliance.

Assessment

Working through the course modules and practice activities will prepare you for your certification exam. You must pass this exam to earn your 4 competency units. Details on preparing, registering for, and completing the exam are in the 5 Steps to Completion module at the end of this course. If you require further attempts, please contact your Course Instructor or Student Experience Specialist.

◆ 1 industry certification ◆ 4 competency units

Course Outline

Module	Upon completion of this module, you will be able to:
Network Security	<ul style="list-style-type: none"> A. Compare and contrast various types of security controls. B. Summarize fundamental security concepts. C. Compare and contrast common threat actors and motivations. D. Explain common threat vectors and attack surfaces.
Securing Information	<ul style="list-style-type: none"> A. Explain the importance of using appropriate cryptographic solutions. B. Compare and contrast security implications of different architecture models. C. Given a scenario, apply security principles to secure enterprise infrastructure. D. Given a scenario, implement and maintain identity and access management.
Vulnerabilities	<ul style="list-style-type: none"> A. Summarize fundamental security concepts. B. Explain various types of vulnerabilities. C. Explain the importance of resilience and recovery in security architecture. D. Explain the security implications of proper hardware, software, and data asset management. E. Explain various activities associated with vulnerability management.
Capabilities	<ul style="list-style-type: none"> A. Given a scenario, apply common security techniques to computing resources. B. Given a scenario, modify enterprise capabilities to enhance security.
Security Incidents	<ul style="list-style-type: none"> A. Given a scenario, analyze indicators of malicious activity. B. Explain security alerting and monitoring concepts and tools. C. Explain appropriate incident response activities.

	D. Given a scenario, use data sources to support an investigation.
Security Management and Policy	<ul style="list-style-type: none"> A. Explain the importance of change management processes and the impact to security. B. Compare and contrast concepts and strategies to protect data. C. Explain the importance of automation and orchestration related to secure operations. D. Summarize elements of effective security governance. E. Explain elements of the risk management process. F. Explain the processes associated with third-party risk assessment and management. G. Summarize elements of effective security compliance. H. Explain types and purposes of audits and assessments. I. Given a scenario, implement security awareness practices.

Technology Requirements

We want you to have the tools to succeed! Since this course includes at least one proctored test, please be sure to have a working microphone, speakers, and an external webcam.

Unfortunately, an internal webcam (built into many laptops) is not acceptable. (Note: The external webcam is required only for exams that have proctors. You do not need one for practice tests and other non-proctored assessments.)

If you haven't already, be sure to download the [Meazure Learning Guardian](#) browser, which you will need for the proctoring system.

For other details about the technology you'll need, review the [Computer System and Technology Requirements](#). If you have questions about your setup, contact support@academy.wgu.edu.

You will need Adobe Acrobat Reader DC. If you haven't already, [download this free software](#). You may encounter an interactive form that contains fields that you can select or fill in. Review [how to fill in a PDF form](#).

Key Contacts

Certificate Connect

Check out this online community to take advantage of course resources, including videos and tips from your educators. You can ask and answer questions, provide feedback on your progress, and interact with fellow students. You will find this platform in the Student Resources section of the course. Log on and do some exploring!

Technical Support

If you encounter technical issues, be sure to contact the Help Desk. Just [submit a Support Request for assistance](#).

Program Support

Do you have questions about your account? Student Support has answers. They can help with billing, switching courses, and other requests. You can contact them at (888) 320-0540 or support@academy.wgu.edu.

Accommodations

WGU provides compliant and accessible learning experiences. If you require accommodation, please contact us at the start of the course. You can email support@academy.wgu.edu or call (888) 320-0540. We are committed to ensuring that all students with disabilities have equal access to WGU's services and materials. We strive to use best practices for accessibility. Our goal is to conform to existing U.S. laws. These include the Americans with Disabilities Act and Section 504 and Section 508 of the Rehabilitation Act. Our learning management system (LMS) platform is Open edX. Open edX's commitment to accessible content is published on their [Website Accessibility Policy](#).