uCertify

Course Outline

Computer Security Fundamentals

13 Jun 2025

1. Course Objective
2. Pre-Assessment
3. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions
4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
7. Award Winning Learning Platform (LMS)
8. Chapter & Lessons

   Syllabus

   Chapter 1: Introduction to Computer Security

   Chapter 2: Networks and the Internet

   Chapter 3: Cyber Stalking, Fraud, and Abuse

   Chapter 4: Denial of Service Attacks

   Chapter 5: Malware

   Chapter 6: Techniques Used by Hackers

   Chapter 7: Industrial Espionage in Cyberspace

   Chapter 8: Encryption

   Chapter 9: Computer Security Technology

   Chapter 10: Security Policies

   Chapter 11: Network Scanning and Vulnerability Scanning

   Chapter 12: Cyber Terrorism and Information Warfare

   Chapter 13: Cyber Detective

   Chapter 14: Introduction to Forensics

   Chapter 15: Cybersecurity Engineering

   Chapter 16: Appendix A: Resources

   Videos and How To
9. Practice Test

1. Course Objective

Use the Pearson Computer Security Fundamentals 4th Edition course and lab to gain hands-on expertise in the technologies and methodologies of computer security. The lab is cloud-based, device-enabled, and can easily be integrated with an LMS. The IT security course and lab completely cover the Web security concepts and principles that help you improve your ability to prevent a network from threats. This Cybersecurity online course is for System Administrators who want to know more about information and IT security.

2. Pre-Assessment

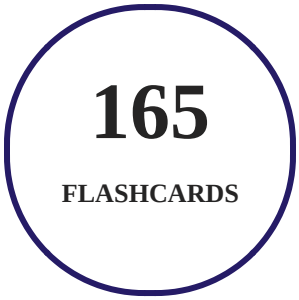
Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

3. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.

4. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



5. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.

6. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

7. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

8. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

9. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution

2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform
    2. Best Instructional Solution in Other Curriculum Areas
    3. Best Learning Relationship Management Solution

- **2019**
    1. Best Virtual Learning Solution
    2. Best Content Authoring Development or Curation Solution
    3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

10. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Introduction to Computer Security

- Introduction
- How Seriously Should You Take Threats to Network Security?
- Identifying Types of Threats
- Assessing the Likelihood of an Attack on Your Network
- Basic Security Terminology
- Concepts and Approaches
- How Do Legal Issues Impact Network Security?

- Summary

Chapter 4: Denial of Service Attacks

- Introduction
- DoS Attacks
- Illustrating an Attack
- Common Tools Used for DoS Attacks
- DoS Weaknesses
- Specific DoS Attacks
- Real-World Examples of DoS Attacks
- How to Defend Against DoS Attacks
- Summary

Chapter 5: Malware

- Introduction
- Viruses
- Trojan Horses
- The Buffer-Overflow Attack

- Spyware
- Other Forms of Malware
- Detecting and Eliminating Viruses and Spyware
- Summary

Chapter 6: Techniques Used by Hackers

- Introduction
- Basic Terminology
- The Reconnaissance Phase
- Actual Attacks
- Malware Creation
- Penetration Testing
- The Dark Web
- Summary

Chapter 7: Industrial Espionage in Cyberspace

- Introduction
- What Is Industrial Espionage?
- Information as an Asset

Chapter 8: Encryption

- Steganography
- Cryptanalysis
- Cryptography Used on the Internet
- Quantum Computing Cryptography
- Summary

Chapter 9: Computer Security Technology

- Introduction
- Virus Scanners
- Firewalls
- Antispyware
- IDSs
- Digital Certificates
- SSL/TLS
- Virtual Private Networks
- Wi-Fi Security
- Summary

Chapter 10: Security Policies

- Introduction
- What Is a Policy?
- Defining User Policies
- Defining System Administration Policies
- Defining Access Control
- Development Policies
- Standards, Guidelines, and Procedures
- Disaster Recovery
- Important Laws
- Summary

Chapter 11: Network Scanning and Vulnerability Scanning

- Introduction
- Basics of Assessing a System
- Securing Computer Systems
- Scanning Your Network
- Getting Professional Help
- Summary

Chapter 12: Cyber Terrorism and Information Warfare

- Introduction
- Actual Cases of Cyber Terrorism
- Weapons of Cyber Warfare
- Economic Attacks
- Military Operations Attacks
- General Attacks
- Supervisory Control and Data Acquisitions (SCADA)
- Information Warfare
- Actual Cases
- Future Trends
- Defense Against Cyber Terrorism
- Terrorist Recruiting and Communication
- TOR and the Dark Web
- Summary

Chapter 13: Cyber Detective

- Introduction
- General Searches
- Court Records and Criminal Checks
- Usenet
- Summary

Chapter 14: Introduction to Forensics

- Introduction
- General Guidelines
- Finding Evidence on the PC
- Finding Evidence in System Logs
- Getting Back Deleted Files
- Operating System Utilities
- The Windows Registry
- Mobile Forensics: Cell Phone Concepts
- The Need for Forensic Certification
- Expert Witnesses
- Additional Types of Forensics

- Summary

Chapter 15: Cybersecurity Engineering

- Introduction
- Defining Cybersecurity Engineering
- SecML
- Summary

Chapter 16: Appendix A: Resources

11. Practice Test

Here's what you get

100	100
PRE-ASSESSMENTS QUESTIONS	POST-ASSESSMENTS QUESTIONS

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

12.  Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Networks and the Internet

- Using nslookup for Passive Reconnaissance
- Using the ipconfig Command
- Using arp
- Using netstat

- Using Routes
- Using the ping Command
- Using tracert

Cyber Stalking, Fraud, and Abuse

- Performing a Phishing Attack
- Configuring Pop-up Blocker Settings

Denial of Service Attacks

- Performing DoS Attacks with a SYN Flood
- Performing a DHCP Starvation Attack
- Simulating the DDoS Attack with a SYN Flood
- Protecting from the DOS Attack

Malware

- Detecting Viruses Using Windows Defender
- Creating a Remote Access Trojan (RAT)
- Using eLiTeWrap

Techniques Used by Hackers

- Using nmap for Network Enumeration
- Using the Zenmap GUI
- Exploiting the Cross-site Request Forgery (CSRF or XSRF) Attacks
- Exploiting a Website using SQL Injection
- Attacking a Website using XSS Injection
- Cracking a Password using John the Ripper

Encryption

- Creating PGP Certification
- Observing the SHA-Generated Hash Value
- Using Rainbow Tables to Crack Passwords
- Using Steganography

Computer Security Technology

- Configuring Iptables to Block ICMP Packets
- Configuring Snort
- Configuring an IPsec Policy

Security Policies

- Creating a Policy for Restricting Installations

Network Scanning and Vulnerability Scanning

- Disabling a Service
- Performing an MBSA Scan
- Using OWASP ZAP

Introduction to Forensics

- Observing the Security Event log
- Using openfiles and net sessions
- Using the fc command
- Exporting the Registry Keys

Here's what you get

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LIVE LABS

13. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

You can’t stay away! Get in touch with our team to

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