

# uCertify

## Course Outline

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### CIW: Web Security Associate



Lesson



Practice test



Live-Lab

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## 1. Course Objective

Create new career opportunities by being CIW certified with the CIW: Web Security Associate course and lab. The lab provides a hands-on learning experience in a safe, online environment. The complete course provides skills for exam topics such as network security, firewalls, and much more.

## 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.

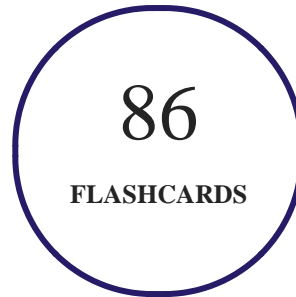
## 3. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.

230  
EXERCISES

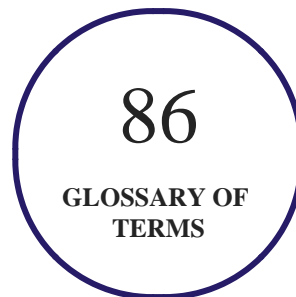
## 4. Flashcards

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: What Is Security?

- Network Security Background
  
- What Is Security?
  
- Hacker Statistics



- The Myth of 100-Percent Security
- Attributes of an Effective Security Matrix
- What You Are Trying to Protect
- Who Is the Threat?
- Security Standards
- Lesson Summary

## Chapter 2: Elements of Security

- Security Elements and Mechanisms
- The Security Policy
- Determining Backups
- Encryption
- Authentication
- Specific Authentication Techniques
- Access Control
- Auditing
- Security Tradeoffs and Drawbacks

- Lesson Summary
- Optional lab

### Chapter 3: Applied Encryption

- Reasons to Use Encryption
- Creating Trust Relationships
- Symmetric-Key Encryption
- Symmetric Algorithms
- Asymmetric-Key Encryption
- One-Way (Hash) Encryption
- Applied Encryption Processes
- Encryption Review
- Lesson Summary
- Optional Lab

### Chapter 4: Types of Attacks

- Network Attack Categories
- Brute-Force and Dictionary Attacks

- System Bugs and Back Doors
- Malware (Malicious Software)
- Social Engineering Attacks
- Denial-of-Service (DOS) Attacks
- Distributed Denial-of-Service (DDOS) Attacks
- Spoofing Attacks
- Scanning Attacks
- Man-in-the-Middle Attacks
- Bots and Botnets
- SQL Injection
- Auditing
- Lesson Summary
- Optional Lab

## Chapter 5: Recent Networking Vulnerability Considerations

- Networking Vulnerability Considerations
- Wireless Network Technologies and Security
- IEEE 802.11 Wireless Standards

- Wireless Networking Modes
- Wireless Application Protocol (WAP)
- Wireless Network Security Problems
- Wireless Network Security Solutions
- Site Surveys
- Convergence Networking and Security
- Web 2.0 Technologies
- Greynet Applications
- Vulnerabilities with Data at Rest
- Security Threats from Trusted Users
- Anonymous Downloads and Indiscriminate Link-Clicking
- Lesson Summary
- Optional Lab

## Chapter 6: General Security Principles

- Common Security Principles
- Be Paranoid

- You Must Have a Security Policy
- No System or Technique Stands Alone
- Minimize the Damage
- Deploy Companywide Enforcement
- Provide Training
- Use an Integrated Security Strategy
- Place Equipment According to Needs
- Identify Security Business Issues
- Consider Physical Security
- Lesson Summary
- Optional lab

## Chapter 7: Protocol Layers and Security

- TCP/IP Security Introduction
- OSI Reference Model Review
- Data Encapsulation
- The TCP/IP Stack and the OSI Reference Model
- Link/Network Access Layer

- Network/Internet Layer
- Transport Layer
- Application Layer
- Protocol Analyzers
- Lesson Summary
- Optional Lab

## Chapter 8: Securing Resources

- TCP/IP Security Vulnerabilities
- Implementing Security
- Resources and Services
- Protecting TCP/IP Services
- Simple Mail Transfer Protocol (SMTP)
- Physical Security
- Testing Systems
- Security Testing Software
- Security and Repetition

- Lesson Summary
- Optional Lab

## Chapter 9: Firewalls and Virtual Private Networks

- Access Control Overview
- Definition and Description of a Firewall
- The Role of a Firewall
- Firewall Terminology
- Firewall Configuration Defaults
- Creating Packet Filter Rules
- Packet Filter Advantages and Disadvantages
- Configuring Proxy Servers
- URL Filtering
- Remote Access and Virtual Private Networks (VPNs)
- Public Key Infrastructure (PKI)
- Lesson Summary
- Optional Lab

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## Chapter 10: Levels of Firewall Protection

- Designing a Firewall
- Types of Bastion Hosts
- Hardware Issues
- Common Firewall Designs
- Putting It All Together
- Lesson Summary
- Optional Lab

## Chapter 11: Detecting and Distracting Hackers

- Proactive Detection
- Distracting the Hacker
- Deterring the Hacker
- Lesson Summary

## Chapter 12: Incident Response

- Creating an Incident Response Policy
- Determining If an Attack Has Occurred



- Executing the Response Plan
- Analyzing and Learning
- Lesson Summary

Chapter 13: Appendix A: Web Security Associate Objectives and Locations

Chapter 14: Appendix B: Internet Security Resources

- General
- UNIX
- Windows Server 2003

Chapter 15: Appendix C: Commercial Products Used in This Course

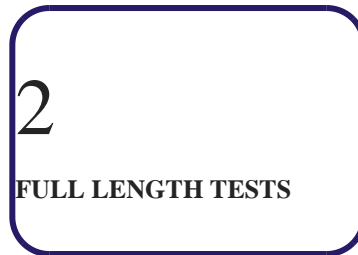
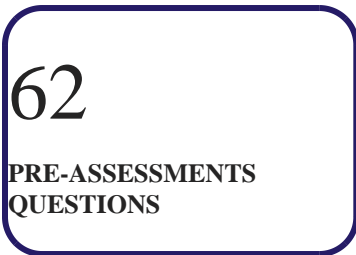
- Microsoft Windows Server 2003
- Ubuntu Linux

Chapter 16: Appendix D: Works Consulted

## 11. Practice Test

uCertify provides full length practice tests. These tests closely follow the exam objectives and are designed to simulate real exam conditions. Each course has a number of test sets consisting of hundreds of items to ensure that learners are prepared for the certification exam.

## Here's what you get



## Features

### Full Remediation

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.

### Learn, Test and Review Mode

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

Live-Lab is a real computer equipment, networked together and conveniently accessible over the internet using virtualization. A live-lab has equipments such as a computer, server, switch or router in it that a user is free to configure.

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

### What Is Security?

- Causing a Darkcomet trojan infection

### Elements of Security

- Viewing and modifying default access control settings
- Viewing the effects of hostile JavaScript in Browser
- Configuring execution control lists in Windows Server 2016
- Creating an execution control list for the su command in Linux
- Creating an access control list for Apache Server

### Applied Encryption

- Encrypting File with AES Algorithm
- Installing GPG4win on Windows Server 2016

- Generating a keypair using Kleopatra
- Exporting and Importing public keys using Kleopatra
- Encrypting and Decrypting messages using Kleopatra
- Using MD5sum to create checksums in Ubuntu Linux
- Generating a key pair using GPG for Ubuntu Linux
- Signing the shared public keys in Linux
- Encrypting and decrypting files using GPG
- Creating a signature file
- Signing files with GPG

### **Types of Attacks**

- Using John the Ripper in Windows Server 2016
- Conducting a virus scan in Windows to help thwart attacks
- Analyzing a SYN flood in a packet sniffer
- Identifying network-based attacks
- Using Nmap to scan a system in Windows Server 2016
- Analyzing a SYN flood using Linux and Windows Server 2016
- Identifying and analyzing Land and Teardrop attacks
- Analyzing a Smurf attack

### **Recent Networking Vulnerability Considerations**

- Installing a war-driving application and analyzing a site survey capture
- Analyzing traffic captured from site survey software

### **General Security Principles**

- Increasing physical security using the Syskey utility

### **Protocol Layers and Security**

- Examining a packet capture in Wireshark

### Securing Resources

- Securing an Apache Web server
- Securing the FTP service
- Scanning systems in Ubuntu Linux

### Firewalls and Virtual Private Networks

- Using the iptables command to create a personal firewall in Linux

### Detecting and Distracting Hackers

- Setting a logon tripwire script in Windows Server 2016
- Using Tripwire for Linux

## Here's what you get



## 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.

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