

**uCertify**

# Course Outline

## Penetration Testing Essentials



04 May 2024

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Chapter 20: Building a Test Lab for Penetration Testing

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Here's what you get

Features

10. Post-Assessment

## 1. Course Objective

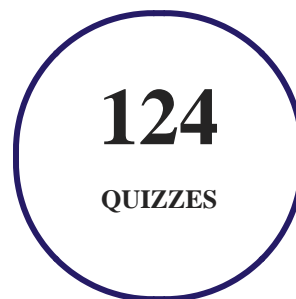
Master the concepts of IT penetration testing with the Penetration Testing Essentials course. The Penetration Testing Training offers an understanding of topics such as scanning and enumeration, intelligence gathering, cracking password, cryptography, reporting, retaining access with backdoors and malware, working with defensive and detecting sections, and many more. This penetration testing course will help you learn about the various ethical hacking methods currently being used on the front lines.

## 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.

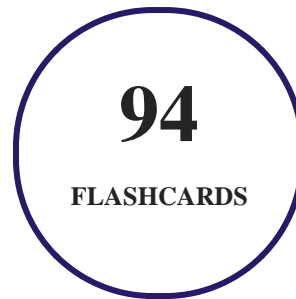
## 3. Quizzes

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

#### Chapter 2: Introduction to Penetration Testing

- Defining Penetration Testing
- Preserving Confidentiality, Integrity, and Availability
- Appreciating the Evolution of Hacking

#### Chapter 3: Introduction to Operating Systems and Networking

- Comparing Common Operating Systems



- Exploring Networking Concepts

## Chapter 4: Introduction to Cryptography

- Recognizing the Four Goals of Cryptography
- The History of Encryption
- Speaking Intelligently About Cryptography
- Comparing Symmetric and Asymmetric Cryptography
- Transforming Data via Hashing
- A Hybrid System: Using Digital Signatures
- Working with PKI

## Chapter 5: Outlining the Pen Testing Methodology

- Determining the Objective and Scope of the Job
- Choosing the Type of Test to Perform
- Gaining Permission via a Contract
- Following the Law While Testing

## Chapter 6: Gathering Intelligence

- Introduction to Intelligence Gathering

- Examining a Company's Web Presence
- Finding Websites That Don't Exist Anymore
- Gathering Information with Search Engines
- Targeting Employees with People Searches
- Discovering Location
- Do Some Social Networking
- Looking via Financial Services
- Investigating Job Boards
- Searching Email
- Extracting Technical Information

## Chapter 7: Scanning and Enumeration

- Introduction to Scanning
- Checking for Live Systems
- Performing Port Scanning
- Identifying an Operating System
- Scanning for Vulnerabilities
- Using Proxies (Or Keeping Your Head Down)

- Performing Enumeration

## Chapter 8: Conducting Vulnerability Scanning

- Introduction to Vulnerability Scanning
- Recognizing the Limitations of Vulnerability Scanning
- Outlining the Vulnerability Scanning Process
- Types of Scans That Can Be Performed

## Chapter 9: Cracking Passwords

- Recognizing Strong Passwords
- Choosing a Password-Cracking Technique
- Executing a Passive Online Attack
- Executing an Active Online Attack
- Executing an Offline Attack
- Using Nontechnical Methods
- Escalating Privileges

## Chapter 10: Retaining Access with Backdoors and Malware

- Deciding How to Attack

- Installing a Backdoor with PsTools
- Opening a Shell with LAN Turtle
- Recognizing Types of Malware
- Launching Viruses
- Launching Worms
- Launching Spyware
- Inserting Trojans
- Installing Rootkits

## Chapter 11: Reporting

- Reporting the Test Parameters
- Collecting Information
- Highlighting the Important Information
- Adding Supporting Documentation
- Conducting Quality Assurance

## Chapter 12: Working with Defensive and Detection Systems

- Detecting Intrusions
- Recognizing the Signs of an Intrusion

- Evading an IDS
- Breaching a Firewall
- Using Honeypots: The Wolf in Sheep's Clothing

## Chapter 13: Covering Your Tracks and Evading Detection

- Recognizing the Motivations for Evasion
- Getting Rid of Log Files
- Hiding Files
- Evading Antivirus Software
- Evading Defenses by Entering Through a Backdoor
- Using Rootkits for Evasion

## Chapter 14: Detecting and Targeting Wireless

- An Introduction to Wireless
- Breaking Wireless Encryption Technologies
- Conducting a Wardriving Attack
- Conducting Other Types of Attack
- Choosing Tools to Attack Wireless

- Knocking Out Bluetooth
- Hacking the Internet of Things (IoT)

## Chapter 15: Dealing with Mobile Device Security

- Recognizing Current-Generation Mobile Devices
- Working with Android OS
- Working with Apple iOS
- Finding Security Holes in Mobile Devices
- Encountering Bring Your Own Device (BYOD)
- Choosing Tools to Test Mobile Devices

## Chapter 16: Performing Social Engineering

- Introduction to Social Engineering
- Exploiting Human Traits
- Acting Like a Social Engineer
- Targeting Specific Victims
- Leveraging Social Networking
- Conducting Safer Social Networking

## Chapter 17: Hardening a Host System

- Introduction to Hardening
- Three Tenets of Defense
- Creating a Security Baseline
- Hardening with Group Policy
- Hardening Desktop Security
- Backing Up a System

## Chapter 18: Hardening Your Network

- Introduction to Network Hardening
- Intrusion Detection Systems
- Firewalls
- Physical Security Controls

## Chapter 19: Navigating the Path to Job Success

- Choosing Your Career Path
- Build a Library
- Practice Technical Writing

- Display Your Skills

## Chapter 20: Building a Test Lab for Penetration Testing

- Deciding to Build a Lab
- Considering Virtualization
- Getting Starting and What You Will Need
- Installing Software

## 11. Practice Test

### Here's what you get

**50**  
PRE-ASSESSMENTS  
QUESTIONS

**1**  
FULL LENGTH TESTS

**50**  
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. 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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