uCertify

Course Outline

Penetration Testing Fundamentals



27 Mar 2024

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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

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   Chapter 2: Standards

   Chapter 3: Cryptography

   Chapter 4: Reconnaissance

   Chapter 5: Malware

   Chapter 6: Hacking Windows

   Chapter 7: Web Hacking

   Chapter 8: Vulnerability Scanning

   Chapter 9: Introduction to Linux

   Chapter 10: Linux Hacking

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   Chapter 12: General Hacking Techniques

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1. Course Objective

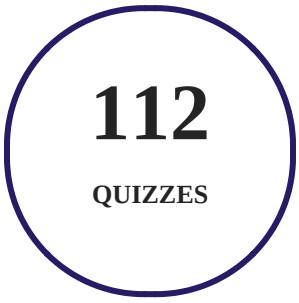
Know everything about IT penetration testing with the Penetration Testing Fundamentals course and lab. The lab is cloud-based, device-enabled, and can easily be integrated with an LMS. The course and lab cover all the concepts, terminology, and challenges in Metasploit, provide skills required to write or customize sophisticated Metasploit exploits, general hacking techniques and knowledge, and some additional penetration testing concepts.

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 to Penetration Testing

- What Is Penetration Testing?
- Terminology
- Methodologies
- Ethical Issues
- Legal Issues
- Certifications
- Careers in Penetration Testing

- Building Your Skillset
- Summary
- Test Your Skills

Chapter 2: Standards

- PCI DSS
- NIST 800-115
- National Security Agency InfoSec Assessment Methodology (NSA-IAM)
- PTES
- CREST (UK)
- A Synthesis (Putting Standards Together into a Single Unified Approach)
- Related Standards
- Other Standards
- Summary
- Test Your Skills

Chapter 3: Cryptography

- Cryptography Basics
- History of Encryption

- Modern Methods
- Public Key (Asymmetric) Encryption
- Digital Signatures
- Hashing
- MAC and HMAC
- Password Crackers
- Steganography
- Cryptanalysis
- Learning More
- Summary
- Test Your Skills

Chapter 4: Reconnaissance

- Passive Scanning Techniques
- Active Scanning Techniques
- Wireshark
- Maltego
- Other OSINT Tools

- Summary
- Test Your Skills

Chapter 5: Malware

- Viruses
- Trojan Horses
- Other Forms of Malware
- Creating Malware
- Summary
- Test Your Skills

Chapter 6: Hacking Windows

- Windows Details
- Windows Password Hashing
- Windows Hacking Techniques
- Windows Scripting
- Windows Password Cracking
- Detecting Malware in Windows

- Cain and Abel
- Summary
- Test Your Skills

Chapter 7: Web Hacking

- Web Technology
- Specific Attacks on Websites
- Tools
- Summary
- Test Your Skills

Chapter 8: Vulnerability Scanning

- Vulnerabilities
- Packet Capture
- Network Scanners
- Wireless Scanners/Crackers
- General Scanners
- Web Application Scanners
- Cyber Threat Intelligence

- Summary
- Test Your Skills

Chapter 9: Introduction to Linux

- Linux History
- Linux Commands
- Directories
- Graphical User Interface
- Summary
- Test Your Skills

Chapter 10: Linux Hacking

- More on the Linux OS
- Linux Firewall
- Syslogd
- Scripting
- Linux Passwords
- Linux Hacking Tricks

- Summary
- Test Your Skills

Chapter 11: Introduction to Kali Linux

- Kali Linux History
- Kali Basics
- Kali Tools
- Summary
- Test Your Skills

Chapter 12: General Hacking Techniques

- Wi-Fi Testing
- Social Engineering
- DoS
- Summary
- Test Your Skills

Chapter 13: Introduction to Metasploit

- Background on Metasploit

- Getting Started with Metasploit
- Basic Usage of msfconsole
- Scanning with Metasploit
- How to Use Exploits
- Exploit Examples
- Post Exploits
- Summary
- Test Your Skills

Chapter 14: More with Metasploit

- Meterpreter and Post Exploits
- msfvenom
- More Metasploit Attacks
- Summary
- Test Your Skills

Chapter 15: Introduction to Scripting with Ruby

- Getting Started
- Basic Ruby Scripting

- Summary
- Test Your Skills

Chapter 16: Write Your Own Metasploit Exploits with Ruby

- The API
- Getting Started
- Examine an Existing Exploit
- Extending Existing Exploits
- Writing Your First Exploit
- Summary
- Test Your Skills

Chapter 17: General Hacking Knowledge

- Conferences
- Dark Web
- Certification and Training
- Cyber Warfare and Terrorism
- Nation State Actors

- Summary
- Test Your Skills

Chapter 18: Additional Pen Testing Topics

- Wireless Pen Testing
- Mainframe and SCADA
- Mobile Pen Testing
- Summary
- Test Your Skills

Chapter 19: A Sample Pen Test Project

- Pen Test Outline
- Report Outline
- Summary

Videos and How To

uCertify course includes videos to help understand concepts. It also includes How Tos that help learners in accomplishing certain tasks.

109	12:10
VIDEOS	HOURS

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

100	100
PRE-ASSESSMENTS QUESTIONS	POST-ASSESSMENTS QUESTIONS

Features

uCertify provides video training courses that contain videos and test set questions based on the exam. These courses are interactive and engaging and the learners can view the content at their own pace, in their own time, and on any device. Learners can easily track the engagement levels so they immediately know which course components are easy to understand and which are more difficult. Test set in the courses closely follow the exam objectives and are designed to simulate real exam conditions.

Each pre and post assessment comes with interactive questions which help users in better understanding of the subject matter.

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

Introduction to Penetration Testing

- Reviewing an Authorization Letter for Penetration Testing
- Reviewing a Confidential Penetration Report

Cryptography

- Using OpenSSL to Create a Public/Private Key Pair
- Observing an SHA-Generated Hash Value
- Observing an MD5-Generated Hash Value
- Using Cain and Abel
- Using DeepSound

Reconnaissance

- Detecting a Phishing Site Using Netcraft
- Searching with builtwith.com
- Observing a Website Using archive.org
- Using Shodan
- Scanning Live Systems Using Nmap
- Scanning an OS Using Nmap
- Scanning a Port Using nmap
- Enumerating Data Using enum4linux
- Capturing Packets Using Wireshark
- Using Maltego

Malware

- Causing a DarkComet Trojan Infection
- Creating a Trojan File
- Scanning Malware Using Antivirus

Hacking Windows

- Covering Tracks
- Using the net Command
- Cracking Windows Password Using Ophcrack
- Cracking a Linux Password Using John the Ripper

Web Hacking

- Exploiting a Website Using SQL Injection
- Attacking a Website Using XSS Injection

- Using Burp Suite
- Using BeEF

Vulnerability Scanning

- Reviewing the Top 10 OWASP Attacks
- Consulting a Vulnerability Database
- Capturing Network Packets Using tcpdump
- Grabbing User Credentials Using Wireshark
- Scanning a Network using LanHelper
- Using MBSA
- Conducting Vulnerability Scanning Using Nessus
- Conducting Web Application Vulnerability Scanning Using OWASP ZAP

Introduction to Linux

- Using Basic Linux Commands

Linux Hacking

- Creating a Personal Linux Firewall Using iptables
- Writing Bash Shell Script

Introduction to Kali Linux

- Installing Kali Linux
- Using Sparta

General Hacking Techniques

- Performing a DoS Attack with the SYN Flood
- Simulating DDoS Attack
- Exploiting Windows 7 Using Metasploit

Introduction to Metasploit

- Searching Vulnerability Using Metasploit

- Grabbing a Screenshot of a Target Machine Using Metasploit
- Scanning Ports Using Metasploit
- Create Unlimited Folders in a Victim Machine using Metasploit
- Hiding a Remote Machine Disk Using Metasploit

More with Metasploit

- Hacking Windows Using Metasploit
- Enabling a Keylogger in a Target Machine
- Enabling Payload on a Target Machine Using Metasploit
- Getting a Persistence Session of Metasploit

Introduction to Scripting with Ruby

- Creating Ruby Script
- Creating Ruby Script for Arithmetic Operations
- Creating Ruby Script for Loops

Write Your Own Metasploit Exploits with Ruby

- Creating Ruby Script to Run Commands

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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