

# uCertify

## Course Outline

Learn Penetration Testing with Python 3.x



26 Apr 2025

1. Pre-Assessment
2. Exercises, Quizzes, Flashcards & Glossary  
Number of Questions
3. Expert Instructor-Led Training
4. ADA Compliant & JAWS Compatible Platform
5. State of the Art Educator Tools
6. Award Winning Learning Platform (LMS)
7. Chapter & Lessons

Syllabus

Chapter 1: Preface

Chapter 2: Start with Penetration Testing and Basic Python

Chapter 3: Cracking with Python

Chapter 4: Service and Applications Brute Forcing with Python

Chapter 5: Python Services Identifications - Ports and Banner

Chapter 6: Python Network Modules and Nmap

Chapter 7: Network Monitoring with Python

Chapter 8: Attacking Wireless with Python

Chapter 9: Analyze Web Applications with Python

Chapter 10: Attack Web Application with Python

Chapter 11: Exploitation Development with Python

Videos and How To

8. Practice Test

Here's what you get

Features

9. Performance Based labs

Lab Tasks

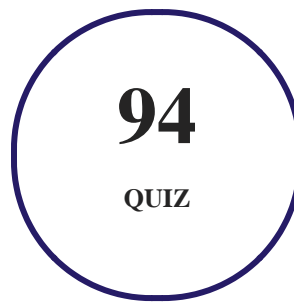
Here's what you get

## 1. 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.

## 2. 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.



## 3. 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.

## 4. 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.

## 5. 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.

## 6. 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

## 7. 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: Preface

### Chapter 2: Start with Penetration Testing and Basic Python

- Introducing Penetration Testing
- Different Assessment Methodologies
- Penetration Testing Phases
- Penetration Testing Types
- Mobile Application Penetration Testing
- Common Mobile Application VAPT Tools
- Penetration Testing Tools
- The Basics of Python 3
- Setting up Your Environment
- Setting up Third-Party Libraries

- Statements in Python 3
- Operators in Python 3
- Functions in Python 3
- Comments
- Classes, Self, and Detractors in Python 3
- Threading in Python 3
- Conclusion

### Chapter 3: Cracking with Python

- Types of Crypto World
- Types of Credential Attacks
- Attack Passwords with Python
- Summary

### Chapter 4: Service and Applications Brute Forcing with Python

- Services Brute Forcing
- SMTP Brute Forcing
- FTP Brute Force Attack
- SSH Brute Force Attack

- Web Broken Authentication
- Summary

## Chapter 5: Python Services Identifications - Ports and Banner

- Deeper Inside Systems Communication
- Ethernet Networks
- Ethernet Frames Architecture
- Wireless Networks
- IP Packet Architecture
- TCP Packet Header
- UDP Packet Header
- TCP Three-Way Handshake
- Wireless Four-Way Handshake
- Services Uncover by Python
- Socket Library
- Python Port Scanner
- Python DNS
- Summary



## Chapter 6: Python Network Modules and Nmap

- Python Nmap
- Python Network Modules
- Understanding Scapy
- Network Discovery with Scapy
- TCP SYN-ACK Ping Methods
- ARP Ping Method
- Scapy UDP Ping
- Scapy Traceroute
- Scapy Port Scanner
- Create Custom Packet
- Summary

## Chapter 7: Network Monitoring with Python

- Understanding Network Monitoring
- Network Monitoring and Importance
- Understanding Network Tools

- Security Operation Center (Soc)
- Network Monitoring Using Socket Library
- Scapy HTTP Monitoring
- Scapy DNS Monitoring
- Conclusion

## Chapter 8: Attacking Wireless with Python

- Deeper into the 802.11 Packet Headers
- Wireless Frequency and Channels
- Wireless Encryption Family
- Wireless (SSID) Using Python
- Death Authentication Using Python
- Summary

## Chapter 9: Analyze Web Applications with Python

- HTTP Methods with Python
- Python Modules (BeautifulSoup and Requests)
- Parsing URL's
- Extracting images and documents

- Hidden Web Directories
- Scrapy Module
- Conclusion

## Chapter 10: Attack Web Application with Python

- Information Gathering with Shodan
- Cross-Site Trace (XST)
- Identify Web Application Firewalls
- Cross-Site Scripting (XSS)
- Open Redirect with Python
- Bypass Web Application Firewalls
- Encode Your Payload
- Business Logic Vulnerabilities
- Conclusion

## Chapter 11: Exploitation Development with Python

- Intel CPU Architecture (x86)
- General Purpose Registers

- Special Purpose Registers
- Segment Registers
- Windows Memory Structure
- Big and Little Endian
- Playing with the Stack
- Immunity Debugger
- Writing a Buffer Overflow Exploit
- Exploit Development Protections
- Conclusion

## 8. Practice Test

**Here's what you get**

### **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.

## 9. Performance Based Labs

uCertify's performance-based labs are simulators that provides virtual environment. Labs deliver hands on experience with minimal risk and thus replace expensive physical labs. uCertify Labs are cloud-based, device-enabled and can be easily integrated with an LMS. Features of uCertify labs:

- Provide hands-on experience in a safe, online environment
- Labs simulate real world, hardware, software & CLI environment
- Flexible and inexpensive alternative to physical Labs
- Comes with well-organized component library for every task
- Highly interactive - learn by doing
- Explanations and remediation available
- Videos on how to perform

### Lab Tasks

### Here's what you get

You can't stay away! Get

know how we can work



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