uCertify

Course Outline

Network Defense and Counter Measure 4e

18 May 2024

1. Course Objective

Gain a solid understanding of the principles and concepts that form the foundation of network security and explore the anatomy of common cyber threats and the evolving landscape of digital attacks with uCertify's Network Defense and CounterMeasure 4e course. This course will give you In-depth knowledge of network security principles and countermeasure strategies and Practical skills in implementing security measures to protect against cyber threats.

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.

443

EXERCISES

4. 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.

260

QUIZ

5. 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.

179

FLASHCARDS

6. 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.

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GLOSSARY OF TERMS

7. 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.

8. 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.

9. 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.

10. 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

11. 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

- Audience

- Overview of the Course

Chapter 2: Introduction to Network Security

Chapter 3: Types of Attacks

- Understanding Denial of Service Attacks
- Defending Against Buffer Overflow Attacks
- Defending Against IP Spoofing
- Defending Against Session Hijacking
- Blocking Virus and Trojan Horse Attacks
- Summary

Chapter 4: Fundamentals of Firewalls

- Introduction
- What Is a Firewall?
- Implementing Firewalls
- Firewall Deployment
- Selecting and Using a Firewall
- Using Proxy Servers
- Summary

Chapter 5: Firewall Practical Applications

- Introduction

- Using Single Machine Firewalls
- Windows 10 Firewall
- User Account Control
- Linux Firewalls
- Using Small Office/Home Office Firewalls
- Using Medium-Sized Network Firewalls
- Using Enterprise Firewalls
- Summary

Chapter 6: Intrusion-Detection Systems

- Introduction
- Understanding IDS Concepts
- IDS Components and Processes
- SIEM
- Evasion Techniques
- Understanding and Implementing IDSs
- Understanding and Implementing Honeypots
- Summary

- Additional Methods for Defending Your System
- What to Do If Your System Is Infected by a Virus
- Summary

Chapter 11: Defending Against Trojan Horses and Phishing

- Introduction
- Trojan Horses
- Phishing
- Summary

Chapter 12: Security Policies

- Introduction
- ISO 27002
- Important Standards
- Defining User Policies
- Defining System Administration Policies
- Defining Access Control
- Defining Developmental Policies
- Disaster Recovery

Chapter 13: Assessing System Security

Chapter 14: Security Standards

- Bluetooth Hacking
- Summary

Chapter 17: Introduction to Forensics

- Introduction
- General Forensics Guidelines
- FBI Forensics Guidelines
- Imaging a Drive
- Finding Evidence on the PC
- Gathering Evidence from a Cell Phone
- Forensic Tools to Use
- Forensic Science
- To Certify or Not to Certify?
- Expert Witnesses
- Additional Types of Forensics
- Summary

Chapter 18: Cyber Warfare and Terrorism

- Introduction
- Defending Against Computer-Based Espionage
- Defending Against Computer-Based Terrorism
- Choosing Defense Strategies
- Summary

12. Practice Test

Here's what you get

90 **PRE-ASSESSMENTS QUESTIONS**	**2** **FULL LENGTH TESTS**	**90** **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.

13. 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 Network Security

- Viewing the MAC Address on Different Interfaces
- Configuring a Class C IP Address
- Configuring a Class B IP Address
- Configuring a Class A IP Address
- Using Command-Line Tools
- Analyzing Malware

Types of Attacks

- Conducting a DoS Attack Using a Smurf Attack
- Performing DoS Attacks with an SYN Flood

- Defending Against a Buffer Overflow Attack
- Defending Against IP Spoofing
- Performing Session Hijacking Using Burp Suite

Fundamentals of Firewalls

- Creating a DMZ Zone
- Using Windows Firewall
- Configuring a Proxy Server

Firewall Practical Applications

- Configure User Access Control Settings
- Configuring a Linux Firewall Using iptables

Intrusion-Detection Systems

- Performing IDS Configuration with Snort
- Setting up a Honeypot

Encryption Fundamentals

- Examining Asymmetric Encryption
- Performing Symmetric Information
- Creating PGP Certification
- Observing an MD5-Generated Hash Value
- Observing a SHA256-Generated Hash Value
- Adding a Digital Certificate
- Cracking a Password using John the Ripper Tool
- Using Rainbow Tables
- Hiding Text using Steganography

Virtual Private Networks

- Configuring a VPN
- Setting Up a VPN Server with Windows Server 2016
- Creating an L2TP VPN Using Openswan

- Configuring IPSec

Operating System Hardening

- Shutting Down a Service in Windows
- Restricting the Null Session
- Using Registry Editor
- Configuring a Account Lockout Policy
- Configuring a User Account
- Setting Security Policies
- Configuring the Security Setting in a Popular Browser

Defending Against Virus Attacks

- Creating a Remote Access Trojan (RAT)

Defending Against Trojan Horses and Phishing

- Using eLiTeWrap
- Using the NetBus Application
- Performing a Phishing Attack

Security Policies

- Managing a User Using an Existing Security Policy

Assessing System Security

- Filtering Ports Using Windows Firewall
- Performing Vulnerability Scanning Using OpenVAS
- Using Shodan to Find Webcams
- Using OWASP ZAP
- Conducting Vulnerability Scanning Using Nessus
- Using the Advanced IP Scanner
- Examining Open Source Security Testing Methodology Manual

Physical Security and Disaster Recovery

- Taking a Full Backup
- Taking an Incremental Backup

Techniques Used by Attackers

- Conducting Passive Scanning Using Netcraft
- Attacking a Website Using XSS Injection
- Exploiting a Website Using SQL Injection
- Cracking Windows Password Using Ophcrack

Introduction to Forensics

- Using FTK Imager
- Using Operating System Utilities in Windows

Cyber Warfare and Terrorism

- Using BitLocker
- Using EtherDetect
- Capturing a Packet Using Wireshark

Here's what you get

61	60	02:16
LIVE LABS	VIDEO TUTORIALS	HOURS

14. 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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