

Cybersecurity Fundamentals, Skill Labs

Course Specifications

Course Number: ACI76-032SL_rev1.0

Lab Length: Approximately 20 hours

Introduction to Data Security

Introduction

Objective

Welcome to the Introduction to Data Security practice lab. In this module, you will be provided with the information needed to develop your knowledge on data security.

Data security is an essential for ensuring that a user or a company's data is kept secure. In this module, different techniques will be discussed to ensure the integrity of the data.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Data-Digital Building Blocks
- Exercise 2 - Types of Data
- Exercise 3 - Threats to Data
- Exercise 4 - Data Breach Consequences
- Exercise 5 - Data Security Fundamentals

After completing this module, you will have further knowledge of:

- What is data?
- How often do we generate data?
- Data versus information
- Personal data
- Organizational data
- Types of threats
- Threats to organizational data
- Threats to your data from you
- Financial loss
- Unavailability of resources
- Identity theft
- Loss of trust

Course Outline

- Data loss/theft
- Misuse of computer resources
- What is data security?
- Personal data precautions
- Organization data precautions

Configuring Endpoint Security

Introduction

Objective

Welcome to the Configuring Endpoint Security practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills on configuring Endpoint Security on a Windows device to protect it from malware and virus infections.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Introduction to Malware
- Exercise 2 - Symptoms of Malware Infection
- Exercise 3 - Antivirus Applications
- Exercise 4 - Securing a Workstation with an Antimalware Application
- Exercise 5 - Use an Antivirus Application
- Exercise 6 - Install and Configure an Antispyware Application

After completing this module, you will be able to:

- Use Avast antivirus.
- Uninstall Avast Free Antivirus.
- Turn off real-time protection.
- Copy the tools folder to a local drive.
- Turn on real-time protection.
- Activate the sample virus.
- Use Windows Defender.
- Use an online antimalware scanner.
- Explore Internet Explorer browser security features.
- Install antispyware.
- Run SUPERAntiSpyware.

Course Outline

After completing this module, you will have further knowledge of:

- Malware basics.
- Types of malware.
- Common symptoms of malware infection
- What is an antivirus application?
- How does an antivirus application work?
- How does an antivirus application deal with an infected file?
- How to choose the right antivirus application?
- Limitations of antivirus applications

Common Threats to a Wireless Network

Introduction

Objective

Welcome to the Common Threats to a Wireless Network practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills to configure and protect a wireless network.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Hacking Wireless Network Techniques
- Exercise 2 - Hardening a Wireless Network

After completing this module, you will be able to:

- Configure a wireless access point.

After completing this module, you will have further knowledge of:

- Wireless threats
- Wireless hacking methodology
- Methods to safeguard a wireless network.

Configuring a Web Browser

Introduction

Objective

Welcome to the Configuring a Web Browser practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills on configuring different types of web browsers to ensure safe internet browsing.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Configuring Web Browser Security
- Exercise 2 - Securing the Mozilla Firefox Web Browser
- Exercise 3 - Securing the Google Chrome Web Browser
- Exercise 4 - Securing the Microsoft Edge Web Browser

After completing this module, you will be able to:

- Secure the Mozilla Firefox web browser.
- Secure the Google Chrome web browser.
- Secure the Microsoft Edge web browser.

After completing this module, you will have further knowledge of:

- Internet security

Email Security Concepts

Introduction

Objective

Welcome to the Email Security Concepts practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills to configure email clients and ensure safe email practices.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Email Concepts
- Exercise 2 - Email Security Threats
- Exercise 3 - Email Security Procedures
- Exercise 4 - Email Security Settings

After completing this module, you will be able to:

- Use an HTTPS-enabled email service provider.
- Turn off the preview feature.
- Disable "Keep me signed in"/"Stay signed in" functions.
- Provide a recovery email address for mail recovery.
- Avoid unwanted emails using filters.
- Scan email attachments for malware.

Course Outline

- Block spam accounts.
- Check for last account activity.
- Configure account settings.
- Configure security settings.
- Configure password settings.
- Configure privacy settings.
- Configure email notifications.

After completing this module, you will have further knowledge of:

- Introduction to email
- Email clients
- Email service providers
- Email messaging
- Malicious email attachments
- Malicious user misdirection
- Phishing
- Hoax mail
- Nigerian scam
- Spamming
- Anti-spamming tool: SPAMfighter
- Creating and using strong passwords
- App settings

Securing Mobile Platforms

Introduction

Objective

Welcome to the Securing Mobile Platforms practice lab. In this module, you will be provided with the information needed to develop your knowledge to configure mobile devices to ensure it is secure against potential exploits.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Mobile Device Security Concepts
- Exercise 2 - Mobile Hacking Methods
- Exercise 3 - Threats to a Mobile Device
- Exercise 4 - Mobile Security Procedures

Course Outline

- Exercise 5 - Mobile Security Tools

After completing this module, you will have further knowledge of:

- Mobile operating systems
- IMEI numbers
- Importance of IMEI numbers
- OWASP top 10 mobile threats
- Mobile Device Management (MDM)
- Mobile malware
- Mobile application vulnerabilities
- Threats to Bluetooth devices
- Updating mobile operating systems
- Installing mobile phone antivirus
- Securing Bluetooth connectivity
- Mobile device encryption
- Securing mobile devices
- The Importance of mobile device security
- Methods to prevent mobile device exploitation
- Lookout mobile security
- Snap secure mobile security

Securing the Cloud

Introduction

Objective

Welcome to the Securing the Cloud practice lab. In this module, you will be provided with the information needed to develop your knowledge of a cloud infrastructure and the potential risks associated with storing information in the cloud.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Introducing the Cloud
- Exercise 2 - Threats to Cloud Security
- Exercise 3 - Safeguarding against Cloud Security Threats
- Exercise 4 - Cloud Privacy Issues
- Exercise 5 - Addressing Cloud Privacy Issues
- Exercise 6 - Choosing a Cloud Service Provider

Course Outline

After completing this module, you will have further knowledge of:

- Types of clouds
- Cloud services
- Benefits of cloud
- Data breaches
- Data loss
- Account hacking
- Technology loopholes
- Disgruntled insiders
- Shared space
- Backing up data
- Updating backups regularly
- Strong passwords
- Two-step authentication
- Data ownership
- Data location
- Data migration
- Data permanency
- Encryption
- Reading terms and conditions carefully
- Avoiding the share feature on cloud
- Avoiding storing sensitive data on the cloud
- Questions to ask before choosing a service provider

Securing Network Connections

Introduction

Objective

Welcome to the Securing Network Connections practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes

In this module, you will complete the following exercises:

- Exercise 1 - Networking Concepts
- Exercise 2 - Working with Windows 10 Networking

Course Outline

After completing this module, you will be able to:

- Enable IPv6 on a network interface.
- Remove Windows 10 from the domain.
- Verify the open network connections.

After completing this module, you will have further knowledge of:

- Types of networks
- Connecting to a network
- Home networking and its security
- Types of wireless networks

Using Data Destruction and Disposal Methods (PLAB-CS-FUND)

Introduction

Objective

Welcome to the Using Data Destruction and Disposal Methods practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Using Data Destruction and Disposal Methods

After completing this module, you will be able to:

- Create a partition.
- Perform a high-level format.
- Perform a data wipe.

After completing this module, you will have further knowledge of:

- Low-level vs. high-level format

Configuring File System Security

Introduction

Objective

Welcome to the Configuring File System Security practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills to configure file system security on a Windows device.

Overview

Learning Outcomes:

Course Outline

In this module, you will complete the following exercises:

- Exercise 1 - Configuring File System Security

After completing this lab, you will be able to:

- Create a sample folder
- View default share permissions on the new folder
- Configure share permissions and advanced share permissions
- Assign remote access permissions
- Determine effective permissions
- Explore a shared folder and its permission
- Lock a system when not in use

Administering User and Group Accounts

Introduction

Objective

Welcome to the Administering User and Group Accounts practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills to administer local and domain users.

Overview

Learning Outcomes

In this module, you will complete the following exercises:

- Exercise 1 - User and Group Account Management

After completing this module, you will be able to:

- Create a local user.
- Manage a user account permissions.
- Create a domain user account.
- Add a domain user to a domain group.

Securing Windows

Introduction

Objective

Welcome to the Securing Windows practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills to secure a Windows 10 operating system.

Overview

Learning Outcomes

Course Outline

In this module, you will complete the following exercises:

- Exercise 1 - Guidelines to Secure Windows

After completing this module, you will be able to:

- Lock Out unwanted guests.
- Verify the guest account.
- Rename the administrator account.
- Disable jump lists.
- Disable unnecessary services.
- Kill unwanted processes.
- Hide files and folders.
- Disable simple file sharing.
- Raise the User Account Control (UAC) slide bar.

Configuring and Running Windows Update

Introduction

Objective

Welcome to the Configuring and Running Windows Update practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills to be able to update a Windows operating system.

Overview

Learning Outcomes

In this module, you will complete the following exercises:

- Exercise 1 - Configure and Run Windows Update
- Exercise 2 - Work with Windows Server Updates

After completing this module, you will be able to:

- Enable Windows Update service.
- Perform manual installation of an update.
- Manually run Windows update.
- Examine other Windows update options.
- Uninstall an update.
- Run Windows Update on Windows Server 2019.
- Configure Windows Update settings and perform the download.

Configuring Firewall on Windows

Introduction

Objective

Welcome to the Configuring Firewall on Windows practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes

In this module, you will complete the following exercises:

- Exercise 1 - Prepare Lab for Windows Firewall
- Exercise 2 - Manage Inbound and Outbound Rules
- Exercise 3 - Manage Windows Firewall Logging
- Exercise 4 - Manage Static Packet Filters

After completing this module, you will be able to:

- Install a Web Server.
- Configure a sample website and secure the website.
- Verify firewall rules on PLABDC01.
- Test firewall rules.
- Change a firewall rule.
- Create an outbound rule.
- Install an FTP server.
- Configure a sample FTP site.
- Test FTP port connectivity.
- Configure firewall logging.
- Capture network traffic with Wireshark.
- Interpret Windows firewall logs.
- Install Routing and Remote Access Service.
- Configure RRAS on a Windows 2019 Server.
- Create a static rule.
- Test ICMP connectivity.

Encryption

Introduction

Objective

Course Outline

Welcome to the Encryption practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes:

In this module, you will complete the following exercise:

- Exercise 1 - Configuring BitLocker on Data Drives

After completing this module, you will be able to:

- Shrink a volume and create a secondary volume.
- Enable the group policy setting for BitLocker.
- Encrypt the fixed drive using BitLocker.
- Manage a BitLocker-enabled drive using command prompt.

Data Backup and Disaster Recovery

Introduction

Objective

Welcome to the Data Backup and Disaster Recovery Practice Lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Creating a System Image Backup
- Exercise 2 - Configuring System Restore Point
- Exercise 3 - Enabling Windows Advanced Options
- Exercise 4 - Performing Backup and Restore in Windows

After completing this module, you will be able to:

- Create a system image backup
- Enable system restore point
- Create a system restore point
- Rollback to an earlier state using system restore
- Enable advanced startup
- Perform a full backup in windows
- Perform an incremental backup in windows
- Restore backed up data

After completing this module, you will have further knowledge of:

- Types of data backup

Implementing Basic Disaster Prevention and Recovery Methods

Introduction

Objective

Welcome to the Implementing Basic Disaster Prevention and Recovery Methods practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Performing Backup and Recovery
- Exercise 2 - Using Cloud Storage as a Backup
- Exercise 3 - Performing an Online Account Recovery
- Exercise 4 - UPS
- Exercise 5 - Surge Protectors

After completing this module, you will be able to:

- Perform an image-level backup.
- Use cloud storage for backup.
- Perform an online account recovery.

After completing this module, you will have further knowledge of:

- UPS
- Surge protectors

Managing System Maintenance Tools

Introduction

Objective

Welcome to the Managing System Maintenance Tools practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes:

In this module, you will complete the following exercise:

- Exercise 1 - Managing System Maintenance Tools

Course Outline

After completing this lab, you will be able to:

- Use Clean Manager.
- Use ipconfig for DNS cache.
- Use Disk Defrag.
- Use chkdsk.

Social Networking Security

Introduction

Objective

Welcome to the Social Networking Security practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Understanding Social Networking
- Exercise 2 - Understanding Various Social Networking Security Threats

After completing this module, you will have further knowledge of:

- Social networking
- Top social networking sites
- What is a profile?
- Information available on social networking sites
- Security risks associated with social networking sites
- Geotagging

Instant Messaging Security

Introduction

Objective

Welcome to the Instant Messaging Security practice lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

Overview

Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - IM Security

Course Outline

After completing this module, you will have further knowledge of:

- Instant messaging (IMing)
- Instant messaging security issues
- Instant messaging security measures