

# CompTIA IT Fundamentals (Exam FC0-U61), Skill Labs

## Course Specifications

Course Number: ACI76-015SL\_rev1.0

Lab Length: Approximately 32 hours

## Manage Operating System Tools

### Introduction

#### Objective

Welcome to the Manage Operating System 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:

After completing this lab, you will be able to:

- Add and share a printer
- Connect to a shared printer
- Create and format partitions
- Create an extended volume
- Convert basic disk to dynamic disk
- Download a tool to illustrate application hangs
- Use Task Manager to end a process
- View application log in Event Viewer

#### Exam Objectives:

The following exam objective is covered in this lab:

- 3.1 Manage applications and software

## Installing Windows

### Introduction

#### Objective

Welcome to the Installing 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 exercise:

- Exercise 1 - Manual Installation of Windows 10

## Course Outline

After completing this lab, you will be able to:

- Manually install Windows 10

### Exam Objectives:

The following exam objective is covered in this lab:

- 3.1 Manage applications and software

## Run Linux from a Live CD

### Introduction

#### Objective

Welcome to the Run Linux from a Live CD 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 - Create and Configure a Linux Virtual Machine

After completing this lab, you will be able to:

- Prepare requirements for the virtual machine
- Run Kali Linux live on the virtual machine

### Exam Objectives:

The following exam objective is covered in this lab:

- 3.1 Manage applications and software

## Configure Mobile Devices

### Introduction

#### Objective

Welcome to the Configure Mobile Devices 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 - Configure Windows Mobile Phone Settings

After completing this lab, you will be able to:

- Launch applications to specify common mobile phone settings

- Set common mobile phone settings

### Exam Objectives:

The following exam objective is covered in this lab:

- 3.1 Manage applications and software

## Manage File System Security (FC0-U61)

### Introduction

#### Objective

Welcome to the Manage File System 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 exercise:

- Exercise 1 - Manage Share and NTFS Permissions

After completing this lab, you will be able to:

- Create folders and configure share permissions
- Manage NTFS permissions
- Verify permissions

### Exam Objectives:

The following exam objectives are covered in this lab:

- 3.2 Compare and contrast components of an operating system.
- 6.4 Compare and contrast authentication, authorization, accounting, and non-repudiation concepts.

## Configure Network-Based Anti-Malware

### Introduction

#### Objective

Welcome to the Configure Network-based Anti-Malware 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 System Requirements for Kaspersky Security Center
- Exercise 2 - Install and Configure Kaspersky Security Center

## Course Outline

- Exercise 3 - Deploy Kaspersky Anti-Malware to Clients

After completing this lab, you will be able to:

- Install SQL Server Express
- Enable file and print sharing on PLABWIN10
- Install Kaspersky Security Center
- Initialize the Kaspersky Security Admin Center
- Create and deploy the Kaspersky network agent
- Monitor installation of Kaspersky network agent
- Download Kaspersky Endpoint Security
- Deploy Kaspersky Endpoint Security package
- Verify Kaspersky Endpoint Security on Windows 10

### Exam Objectives:

The following exam objective is covered in this lab:

- 6.2 Explain methods to secure devices and best practices.

## Manage Operating System Updates

### Introduction

#### Objective

Welcome to the Manage Operating System Updates 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 - Install Windows Update

After completing this lab, you will be able to:

- Perform manual installation of an update
- Open the Remote Server Administration Tools
- Manually run Windows Update
- Examine other Windows Update options
- Uninstall an update

### Exam Objectives:

The following exam objective is covered in this lab:

- 6.2 Explain methods to secure devices and best practices.

## Password Policies

### Introduction

#### Objective

Welcome to the Password Policies 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 - Configure Local Password Policy
- Exercise 2 - Enforce Domain Password Policy

After completing this lab, you will be able to:

- Remove a Windows computer from a domain
- Modify local security policy
- Create a local user for testing local password policy
- Allow log on via remote desktop
- Verify local password and security policy
- Modify domain security policy
- Verify domain security policy
- Unlock the user account

#### Exam Objectives:

The following exam objectives are covered in this lab:

- 6.2 Methods to secure devices and best practices.
- 6.5 Password best practices.

## Multifactor Authentication and Run As

### Introduction

#### Objective

Welcome to the Multifactor Authentication and Run As 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 - Enabling Multifactor Authentication
- Exercise 2 - Configuring Run As to Perform Administrative Tasks

## Course Outline

After completing this lab, you will be able to:

- Enable smart card logon
- Verify smart card logon capability
- Move a computer to another OU
- Edit the local policy to enable Run as a different user
- Verify availability of the Run as different user policy
- Create a policy to disable secondary logon
- Test the secondary logon functionality

### Exam Objectives:

The following exam objective is covered in this lab:

- 6.4 Compare and contrast authentication, authorization, accounting, and non-repudiation concepts

## Manage Backup and Restore

### Introduction

#### Objective

Welcome to the Manage Backup and Restore 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 - Create a System Image Backup
- Exercise 2 - Schedule a Server Backup

After completing this lab, you will be able to:

- Add an additional virtual hard disk
- Initialize and create a new simple volume
- Create a system image backup
- Change the virtual machine start-up settings
- Perform system image restore
- Install Windows Server Backup
- Allow File and Printer Sharing feature
- Schedule a backup

### Exam Objectives:

The following exam objective is covered in this lab:

- 6.7 Explain business continuity concepts.

## Manage User Authentication with RADIUS

### Introduction

#### Objective

Welcome to the Manage User Authentication with RADIUS 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 - Install and Configure NPS and RRAS
- Exercise 2 - Prepare VPN Server and Client
- Exercise 3 - Interpret NPS Logs

After completing this lab, you will be able to:

- Add Network Policy Server feature
- Configure Network Policy Server
- Modify Network Policy Server log type and frequency
- Address Windows Server 2019 NPS bug
- Add PLABSA01 to domain
- Prepare the VPN Interface
- Install VPN and Routing features
- Initialize Routing and Remote Access
- Modify the VPN ports properties
- Grant VPN dial-in permission
- Create a VPN client connection
- Test VPN connectivity
- Install IAS reader
- Examine NPS logs

#### Exam Objectives:

The following exam objective is covered in this lab:

- 6.4 Compare and contrast authentication, authorization, accounting, and non-repudiation concepts.

## Working with Basic HTML Tags

### Introduction

#### Objective

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

### Overview

#### Learning Outcomes:

## Course Outline

In this module, you will complete the following exercise:

- Exercise 1 - Working with Basic HTML Tags

After completing this lab, you will be able to:

- Create a Visual Studio code workspace
- Create a website home page

### Exam Objectives:

The following exam objective is covered in this lab:

- 4.1 Compare and contrast programming language categories

## Fundamentals of Software Programming

### Introduction

#### Objective

Welcome to the Fundamentals of Software Programming 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 - Using Different Data Types in a Console Application
- Exercise 2 - Demonstrating the Difference Between Compiled and Interpreted Languages

After completing this lab, you will be able to:

- Demonstrate different data types
- Demonstrate compiled language
- Demonstrate interpreted language

### Exam Objectives:

The following exam objective is covered in this lab:

- 1.2 Compare and contrast fundamental data types and their characteristics.
- 4.1 Compare and contrast programming language categories.
- 4.3 Explain the purpose and use of programming concepts.

## Working with Primitive Data Types in Javascript

### Introduction

#### Objective

Welcome to the Working with Primitive Data Types in JavaScript 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 - Working with Primitive Data Types in JavaScript

After completing this lab, you will be able to:

- Create a visual studio code workspace
- Write a script using primitive data types

#### Exam Objectives:

The following exam objective is covered in this lab:

- 1.2 Compare and contrast fundamental data types and their characteristics.
- 4.1 Compare and contrast programming language categories.

## Working with Primitive Data Types in Python

### Introduction

#### Objective

Welcome to the Working with Primitive Data Types in Python 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 - Working with Primitive Data Types in Python

After completing this lab, you will be able to:

- Write and execute a program in script mode
- Write and execute a program in interactive mode

#### Exam Objectives:

The following exam objective is covered in this lab:

## Course Outline

- 4.1 Compare and contrast programming language categories
- 4.3 Explain the purpose and use of programming concepts

### Converting Data Types in Python

#### Introduction

#### Objective

Welcome to the Converting Data Types in Python 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 Data Type Conversions in Python

After completing this lab, you will be able to:

- Identify data types
- Convert data types in Python

#### Exam Objectives:

The following exam objective is covered in this lab:

- 1.2 Compare and contrast fundamental data types and their characteristics.

### Core Database Concepts

#### Introduction

#### Objective

The Core Database Concepts practice lab provides you with the instruction and server hardware to develop your hands-on skills in the defined topics. This module includes the following exercises:

#### Overview

#### Learning Outcomes:

In this module, you will complete the following exercise:

- Exercise 1 - Relational Database Concepts
- Exercise 2 - Working with Data Manipulation Statements
- Exercise 3 - Working with Data Definition Language

After completing this lab, you will be able to:

- Create a table and establish table relationships
- Use data manipulation statements

## Course Outline

- Use data definition language

### Exam Objectives:

The following exam objective is covered in this lab:

- 5.1 Explain database concepts and the purpose of a database.
- 5.3 Summarize methods used to interface with databases.

## Data Storage

### Introduction

#### Objective

The Data Storage module provides you with the instruction and server hardware to develop your hands-on skills in the defined topics. This module includes the following exercises:

### Overview

#### Learning Outcomes:

In this module, you will complete the following exercise:

- Exercise 1 - Normalizing Data
- Exercise 2 - Creating Constraints
- Exercise 3 - Creating Indexes

After completing this lab, you will be able to:

- Normalize a table
- Create Primary Key and Foreign Key Constraints
- Create Composite Primary Keys
- Manage clustered and non-clustered indexes

### Exam Objectives:

The following exam objective is covered in this lab:

- 5.2 Compare and contrast various database structures.
- 5.3 Summarize methods used to interface with databases.

## Modify Data

### Introduction

#### Objective

Welcome to the Modify Data 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 - Modifying Data using INSERT, UPDATE, and DELETE Statements
- Exercise 2 - Performing Update Operations on Tables using T-SQL Statements
- Exercise 3 - Performing Delete Operations on Tables using T-SQL Statements

After completing this lab, you will be able to:

- Use the INSERT statement
- Modify a table using UPDATE
- Modify a table using DELETE

### Exam Objectives:

The following exam objective is covered in this lab:

- 5.3 Summarize methods used to interface with databases.

## Administering Databases

### Introduction

#### Objective

The Administering Databases Practice Lab provides you with the instruction and server hardware to develop your hands-on skills in the defined topics. This module includes the following exercises:

### Overview

#### Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Securing Databases
- Exercise 2 - Backup and Restore a Database

After completing this lab, you will be able to:

- Create logins and users for a database
- Assign roles to users and granting permissions
- Perform backup and restore using T-SQL
- Perform backup and restore using SSMS

### Exam Objectives:

The following exam objectives are covered in this lab:

- 5.3 Summarize methods used to interface with databases.
- 6.7 Explain business continuity concepts.

## Social Engineering Reconnaissance (FC0-U61)

### Introduction

#### Objective

The module Social Engineering Reconnaissance provides you with the instructions and devices to develop your hands-on skills on the topic.

### Overview

#### Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Understanding Social Engineering Reconnaissance

After completing this lab, you will be able to:

- Explore and Gather Information for Social Engineering

#### Exam Objectives:

The following exam objectives are covered in this lab:

- 6.1 Summarize confidentiality, integrity and availability concerns

## Install Productivity Software

### Introduction

#### Objective

Welcome to the Install Productivity Software 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 - Working with Productivity Applications
- Exercise 2 - Install and Configure an E-mail Client
- Exercise 3 - Create a Database with OpenOffice Base

After completing this lab, you will be able to:

- Download and install OpenOffice
- Open a Word document with OpenOffice Write
- Open an Excel spreadsheet with OpenOffice Calc
- Open a PowerPoint presentation with OpenOffice Impress
- Download and install Mozilla Thunderbird
- Install Java Runtime Environment
- Create a table

## Course Outline

- Create a form in design view
- Enter a record in the form

### Exam Objectives:

The following exam objectives are covered in this lab:

- 3.3 Explain the purpose and proper use of software.

## Working with Business Software - Desktop Publishing and PDF Creator

### Introduction

#### Objective

The Working with Business Software - Desktop Publishing and PDF Creator practice lab module provides you with the instruction and server hardware to develop your hands-on skills in the defined topics. This module includes the following exercises:

#### Overview

#### Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Working with Desktop Publishing Software
- Exercise 2 - Create PDF Files with Foxit

After completing this lab, you will be able to:

- Download and install Scribus
- Create a sample publication file
- Download and install Foxit PDF viewer
- Create a PDF with Foxit Reader

### Exam Objectives:

The following exam objectives are covered in this lab:

- 3.3 Explain the purpose and proper use of software.

## Manage Application Delivery Methods

### Introduction

#### Objective

Welcome to the Manage Application Delivery 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 - Install Local Applications
- Exercise 2 - Install Applications Unattended Using a Network
- Exercise 3 - Working with Cloud Hosted Apps
- Exercise 4 - Implement a Basic Application Architecture Model

After completing this lab, you will be able to:

- Install OpenOffice
- Create .DOC and .ODT document files
- Create shared folder
- Deploy an application with Group Policy Software Installation
- Verify application deployment
- Sign-in to Office Online
- Create and edit a document in Word Online
- View saved files in OneDrive
- Install Web Server security and enable authentication
- Connect to an internal website with Digest authentication enabled.

### Exam Objectives:

The following exam objectives are covered in this lab:

- 3.4 Explain methods of application architecture and delivery models.

## Troubleshoot Network Connectivity Issues

### Introduction

#### Objective

The Troubleshoot Network Connectivity Issues module provides you with the instruction and server hardware to develop your hands-on skills.

### Overview

#### Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Using the ipconfig Command
- Exercise 2 - Using the tracert Command
- Exercise 3 - Using the netstat Command
- Exercise 4 - Using the nslookup Command
- Exercise 5 - Using the pathping Command
- Exercise 6 - Using the arp Command
- Exercise 7 - Using the ping Command
- Exercise 8 - Using the nbtstat Command

## Course Outline

After completing this lab, you will be able to:

- Use the ipconfig tool.
- Modify network settings.
- Run tracert.
- Use graphical tracert.
- Run netstat.
- Verify zone transfers using nslookup.
- Enable zone transfer.
- View resource records using nslookup.
- Run nslookup in non-interactive mode.
- Test host reachability using pathping.
- View and update the arp cache.
- Use command line ping.
- Create a reverse lookup zone.
- Retry ping reverse lookup.
- Download, install, and use graphical ping.
- View the NetBIOS cache.
- Disable NetBIOS over TCP/IP.

### Exam Objectives:

The following exam objectives are covered in this lab:

- 1.6 Explain the troubleshooting methodology.

## Troubleshoot Windows Operating System Errors

### Introduction

#### Objective

The Troubleshoot Windows Operating System Errors module provides you with the instruction and Server hardware to develop your hands-on skills.

### Overview

#### Learning Outcomes:

In this module, you will complete the following exercises:

- Exercise 1 - Managing Faulty Registry Entries
- Exercise 2 - Creating a System Image Backup
- Exercise 3 - Restoring a Computer after a Kernel Error

After completing this lab, you will be able to:

- Introduce a problem in Windows Registry
- Rollback the registry change using last known good configuration
- Verify the effect of the last known good configuration feature
- Rollback configuration using the revert option
- Create a VHD
- Initialize and format a VHD

## Course Outline

- Install Windows Server Backup
- Create a system image backup
- Cause a BSOD error
- View the BSOD error
- Restore the server using System Image Backup

### Exam Objectives:

The following exam objectives are covered in this lab:

- 1.6 Explain the troubleshooting methodology.

## Manage Web Browser Settings Part 1

### Introduction

#### Objective

Welcome to the Manage Web Browser Settings Part 1 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 - Manage Web Browser Cache
- Exercise 2 - Manage Client Side Scripting

After completing this lab, you will be able to:

- Modify user account control policy
- Populate the web browser cache of Chrome and Edge
- View and delete browser cache data
- Disable and enable client-side scripting in Google Chrome
- View popup blocker settings and add popup blocker extension in Chrome

### Exam Objectives:

The following exam objectives are covered in this lab:

- 3.5 Given a scenario, configure and use web browsers

## Manage Web Browser Settings Part 2

### Introduction

#### Objective

Welcome to the Manage Web Browser Settings Part 2 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 - Configure Browser Add-ons, Privacy, Proxy Settings
- Exercise 2 - Manage Browser Certificates

After completing this lab, you will be able to:

- View and add extensions in Google Chrome and Microsoft Edge
- Enable private browsing
- Install a Certification Authority
- Export the CA certificate
- Configure web services to use a certificate
- Connect to a website with an untrusted certificate
- Import the certificate in Trusted Certification Root authorities store
- Verify that the Certification Authority is trusted

### Exam Objectives:

The following exam objectives are covered in this lab:

- 3.5 Given a scenario, configure and use web browsers

## Managing Units of Measure - Disks, Network Throughput and Processor

### Introduction

#### Objective

Welcome to the Managing Units of Measure - Disks, Network Throughput and Processor 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 - Create Disk Volumes with Different Sizes
- Exercise 2 - Measure Network Throughput
- Exercise 3 - Retrieve Processor System Information

After completing this lab, you will be able to:

- Shrink a disk volume
- Create and format partitions
- Create virtual hard disks with Disk Management
- Download and install Wireshark
- Collect information on network throughput

## Course Outline

- Download and install CPU-Z
- Access system information
- Verify system information

### Exam Objectives:

The following exam objectives are covered in this lab:

- 1.5 Compare and contrast common units of measure.

## Implement Device Security with Anti-Malware Apps

### Introduction

#### Objective

Welcome to the Implement Device Security with Anti-Malware Apps 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 - Securing a Workstation with Anti-Malware

After completing this lab, you will be able to:

- Turn off real-time protection and modify scan exclusion settings
- Download a sample anti-virus file and Windows 10 MSRT
- Using MSRT to detect malware
- Edit eicar.txt text file
- Turn on real-time protection

### Exam Objectives:

The following exam objectives are covered in this lab:

- 6.2 Explain methods to secure devices and best practices.

## Implement Device Security with Host-Based Firewall and Password Policy

### Introduction

#### Objective

Welcome to the Implement Device Security with Host-Based Firewall and Password Policy Practice Lab. In this module, you will be provided with the instructions and devices needed to develop your hands-on skills.

### Overview

#### Learning Outcomes:

## Course Outline

In this module, you will complete the following exercises:

- Exercise 1 - Create Firewall Rules
- Exercise 2 - Implement Password Policy

After completing this lab, you will be able to:

- Configure a sample website and a secure website
- Verify firewall rules on PLABDM01
- Test firewall rules
- Change a firewall rule
- Create an outbound rule
- Modify password policy
- Verify application of password policy

### Exam Objectives:

The following exam objectives are covered in this lab:

- 6.2 Explain methods to secure devices and best practices.

## Implement Device Security with Signed Software, Trusted Sites and Application Control

### Introduction

#### Objective

Welcome to the Implement Device Security with Signed Software, Trusted Sites and Application Control 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 - Verify Software Source and Signature
- Exercise 2 - Verify Browser Security and Website Reputation
- Exercise 3 - Control Unwanted Software with Software Restriction Policies

After completing this lab, you will be able to:

- Download exe file, standalone installer and sigcheck
- View executable file properties
- Use sigcheck to verify digital signatures
- View Google Chrome browser security settings
- Using an online tool to check website reputation
- Create a sample batch file
- Create a local software restriction policy

## Course Outline

### Exam Objectives:

The following exam objectives are covered in this lab:

- 6.2 Explain methods to secure devices and best practices.