

# uCertify

## Course Outline

### PC Expert



21 May 2024

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Here's what you get

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Here's what you get

## 1. Course Objective

The PC Expert course offers comprehensive training in PC hardware, software, and troubleshooting, preparing individuals for careers in computer support and maintenance. Covering topics such as hardware installation, operating systems, networking, and security, this course equips participants with the skills needed to diagnose and resolve common PC issues effectively. Through hands-on labs and practical exercises, students gain practical experience in building, configuring, and troubleshooting personal computer systems, enabling them to excel in various IT support roles.

## 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.

**433**  
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.

**432**

**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.

**692**

**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.

**131**

**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: Introduction

- What Is PC Expert Certification?
- What Is A+ Certification?



## Chapter 2: Motherboards, Processors, and Memory

- Understanding Motherboards
- Understanding Processors
- Understanding Memory
- Understanding Cooling Systems
- Summary
- Exam Essentials

## Chapter 3: Expansion Cards, Storage Devices, and Power Supplies

- Installing and Configuring Expansion Cards
- Understanding Storage Devices
- Understanding Power Supplies
- Summary
- Exam Essentials

## Chapter 4: Peripherals, Cables, and Connectors

- Understanding Cables and Connectors
- Understanding Cables and Connectors

- Summary
- Exam Essentials

## Chapter 5: Printers and Multifunction Devices

- Understanding Print Technologies and Imaging Processes
- Installing and Maintaining Printers
- Summary
- Exam Essentials

## Chapter 6: Networking Fundamentals

- Understanding Networking Principles
- Identifying Common Network Hardware
- Summary
- Exam Essentials

## Chapter 7: Introduction to TCP/IP

- Understanding TCP/IP
- Understanding Virtual Networks
- Summary

- Exam Essentials

## Chapter 8: Wireless and SOHO Networks

- Understanding Wireless Networking Technologies
- Installing and Configuring SOHO Networks
- Summary
- Exam Essentials

## Chapter 9: Network Services, Virtualization, and Cloud Computing

- Understanding Network Services
- Understanding Virtualization and Cloud Computing
- Summary
- Exam Essentials

## Chapter 10: Laptop and Mobile Device Hardware

- Working with Laptop and Mobile Device Hardware
- Summary
- Exam Essentials

## Chapter 11: Mobile Connectivity and Application Support

- Understanding Mobile Connectivity
- Understanding Mobile App Support
- Summary
- Exam Essentials

## Chapter 12: Troubleshooting Methodology and Resolving Core Hardware Problems

- Using the Troubleshooting Best Practice Methodology
- Troubleshooting Motherboards, CPUs, RAM, and Power Problems
- Summary
- Exam Essentials

## Chapter 13: Hardware and Network Troubleshooting

- Troubleshooting Storage Drives and RAID Arrays
- Troubleshooting Video, Projector, and Display Issues
- Troubleshooting Common Mobile Device Issues
- Troubleshooting Printer Problems
- Troubleshooting Networking Problems
- Summary

- Exam Essentials

## Chapter 14: Operating System Basics

- Understanding Operating Systems
- Understanding Applications
- Introduction to Windows 10
- Preparing for the Exam
- Summary
- Exam Essentials

## Chapter 15: Windows Configuration

- Interacting with Operating Systems
- The Windows Registry
- Disk Management
- Summary
- Exam Essentials

## Chapter 16: Windows Administration

- Installing and Upgrading Windows

- Command-Line Tools
- Networking in Windows
- Summary
- Exam Essentials

## Chapter 17: Working with macOS and Linux

- macOS and Linux
- Applications on macOS
- Best Practices
- Tools
- System Preferences
- Features
- Basic Linux Commands
- Linux and Windows
- Summary
- Exam Essentials

## Chapter 18: Security Concepts

- Physical Security Concepts

- Physical Security for Staff
- Logical Security
- Malware
- Mitigating Software Threats
- Social Engineering Attacks, Threats, and Vulnerabilities
- Common Security Threats
- Exploits and Vulnerabilities
- Security Best Practices
- Destruction and Disposal Methods
- Summary
- Exam Essentials

## Chapter 19: Securing Operating Systems

- Working with Windows OS Security Settings
- Web Browser Security
- Securing a SOHO Network (Wireless)
- Securing a SOHO Network (Wired)
- Mobile Device Security

- Summary
- Exam Essentials

## Chapter 20: Troubleshooting Operating Systems and Security

- Troubleshooting Common Microsoft Windows OS Problems
- Troubleshooting Security Issues
- Best Practices for Malware Removal
- Troubleshooting Mobile OS Issues
- Troubleshooting Mobile Security Issues
- Summary
- Exam Essentials

## Chapter 21: Scripting and Remote Access

- Scripting
- Remote Access
- Summary
- Exam Essentials

## Chapter 22: Safety and Environmental Concerns



- Understanding Safety Procedures
- Understanding Environmental Controls
- Understanding Policies, Licensing, and Privacy
- Summary
- Exam Essentials

## Chapter 23: Documentation and Professionalism

- Documentation and Support
- Change Management Best Practices
- Disaster Prevention and Recovery
- Demonstrating Professionalism
- Summary
- Exam Essentials

## Chapter 24: Appendix A

- 3D Objects

## Videos and How To

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

**268**

VIDEOS

**13:28**

HOURS

## 12. Practice Test

**Here's what you get**

**100**

PRE-ASSESSMENTS QUESTIONS

**4**

FULL LENGTH TESTS

## 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

### **Motherboards, Processors, and Memory**

- Setting Up a Boot Device Priority
- Accessing the BIOS Setup in Windows 10
- Installing Motherboard Components
- Installing a CR 2032 CMOS Battery on a Motherboard
- Installing a Riser Cable and Graphics Card on a Motherboard
- Identifying a PCI Bus Slot
- Viewing the Processor Information
- Working with the Task Manager
- Enabling Hardware Virtualization
- Installing an i7 Processor on a Motherboard
- Verifying the RAM Usage
- Installing DDR5 RAM on a Motherboard

- Installing Memory Modules on a Motherboard
- Installing a CPU Fan on a Motherboard

### **Expansion Cards, Storage Devices, and Power Supplies**

- Configuring NIC Teaming
- Connecting a PCIe Gaming Sound Card
- Installing an Expansion Card on a Motherboard
- Inserting a USB Flash Drive into a Laptop
- Connecting a NIC on a Motherboard
- Creating a Swap Partition
- Installing an Internal Storage Device
- Removing an Internal Storage Device from a Laptop
- Connecting the ATX, ATX12V, and EPS12V Connectors on a Motherboard
- Connecting a Computer to a Power Source
- Replacing the Power Supply

### **Peripherals, Cables, and Connectors**

- Adding a Keyboard Layout
- Configuring the Mouse Settings
- Installing a Printer
- Installing Input and Output Devices
- Connecting a USB Type A to C Cable to a Computer
- Connecting a VGA Connector to its Port

### **Printers and Multifunction Devices**

- Inserting Ink Cartridges in an Inkjet Printer
- Connecting a USB Printer

### **Networking Fundamentals**

- Connecting a New Workstation to the Internet
- Disabling a Device Driver
- Enabling a Device Driver
- Configuring a Router

- Configuring Port Security on an Access Port
- Connecting a Router to the Laptop

### **Introduction to TCP/IP**

- Configuring a DHCP Server
- Configuring an IPv6 Address
- Understanding the IPv4 Header
- Configuring Network Address Translation
- Establishing a VPN Connection
- Creating a VLAN and Viewing its Assignment to Port Mapping

### **Wireless and SOHO Networks**

- Configuring a SOHO Network - Packet Tracer Lab
- Creating a Dial-up Connection
- Configuring an IPv4 Address and a DNS Server

### **Network Services, Virtualization, and Cloud Computing**

- Scanning a Network Interface Using Wireshark

### **Laptop and Mobile Device Hardware**

- Replacing Laptop Memory
- Replacing a CMOS Battery
- Removing an Internal Laptop Battery
- Removing the CPU Heat Sink
- Installing a Laptop Heatsink Fan
- Removing the Display Assembly of a Laptop
- Replacing an M.2 SSD from a Laptop
- Removing a Laptop Keyboard
- Removing the Wireless NIC
- Removing Speakers from the Laptop

### **Mobile Connectivity and Application Support**

- Pairing an iPhone with a Vehicle's Sound System

- Disabling Mobile Data on an iPhone
- Setting Up a VPN in Android
- Configuring a Mobile Hotspot
- Disabling Cellular Data in Android
- Connecting an iPhone to a Wi-Fi Network
- Connecting an Android Phone to a Wi-Fi Network
- Enabling ActiveSync in iOS
- Email Account Configuration in Android
- Configuring an Email Account on an iPhone
- Configuring Location Services in iOS

### **Hardware and Network Troubleshooting**

- Configuring the Screen Resolution Setting
- Configuring a Power Plan

### **Operating System Basics**

- Configuring Screen Savers
- Enabling BranchCache
- Creating a Restore Point

### **Windows Configuration**

- Configuring a Default Domain Password Policy
- Configuring an Audit Group Policy
- Observing the Control Panel Options from Different Views
- Uninstalling a Program
- Creating a Variable
- Setting Automatic Windows Updates
- Using the Task Manager to Start an Application
- Configuring Computer Management Services
- Disabling a Service
- Using Windows Event Viewer
- Displaying Windows PowerShell Snap-ins
- Adding an MMC Snap-in
- Managing NTFS Permissions

- Editing a Drive Letter
- Converting a Basic Disk to a Dynamic Disk
- Converting a FAT32 Partition to NTFS
- Mounting a Drive to a Folder
- Working With the Command Prompt

### **Windows Administration**

- Tracing Route Using the tracert Command
- Using the nslookup Command
- Using the ping Command
- Using the netstat Command
- Viewing the Status of a Disk

### **Working with macOS and Linux**

- Restoring Files
- Backing Up Files
- Performing a Text Search
- Working with Directories
- Verifying the Working Directory
- Listing Files in a Directory
- Using Basic Linux Commands

### **Security Concepts**

- Configuring Windows Defender Firewall
- Conducting a DoS Attack Using Smurf Attack
- Conducting IP Spoofing
- Using an Asymmetric Encryption Algorithm
- Using a Symmetric Encryption Algorithm
- Disabling the AutoPlay Feature
- Using Windows Security in Windows Defender Settings

### **Securing Operating Systems**

- Creating a New User

- Using BitLocker
- Propagating Permissions
- Stopping Permission Inheritance
- Implementing EFS File Sharing
- Setting the Passcode Lock on an iPhone

### **Troubleshooting Operating Systems and Security**

- Creating and Binding an SSL Certificate to a Website
- Adding a Digital Certificate

### **Scripting and Remote Access**

- Running an if-else script in PowerShell
- Running a while loop script in PowerShell
- Creating and Running a ps1 File
- Executing the Basic Commands Through a ps1 File
- Creating a Loop in PowerShell
- Configuring an SSH Server

### **Safety and Environmental Concerns**

- Protecting a Computer Using a UPS
- Setting Up a Surge Protected Computer System

### **Documentation and Professionalism**

- Enabling the Shadow Copies feature in Windows

## **Here's what you get**

**129**

LIVE LABS

**124**

VIDEO TUTORIALS

**05:40**

HOURS



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