

# Tech+ CertMaster Learn Course Outline

The logo for CompTIA, featuring the word "CompTIA" in a bold, red, sans-serif font. The "T" is significantly larger than the other letters, and a registered trademark symbol (®) is located at the end of the word.

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# 1.0 Understanding Tech Basics

- 1.1 Use Technology Effectively
  - 1.1.1 Technology as a Resource
  - 1.1.2 Digital Citizenship
  - 1.1.3 When Tech Goes Wrong
- 1.2 Explore the Computing Cycle
  - 1.2.1 Input, Processing, Storage and Output
  - 1.2.2 What is Input?
  - 1.2.3 What is Processing?
  - 1.2.4 What is Storage?
  - 1.2.5 What is Output?
  - 1.2.6 Lesson Review
- 1.3 Recognize Computing Devices
  - 1.3.1 Computers
  - 1.3.2 Mobile Devices
  - 1.3.3 Gaming Devices
  - 1.3.4 The Internet of Things
  - 1.3.5 Lesson Review
- 1.4 Careers in Tech
- 1.5 Module Quiz

# 2.0 Data and Privacy

- 2.1 Understand Your Data
  - 2.1.1 The Importance of Your Data
  - 2.1.2 Types of Personal Data
  - 2.1.3 How Companies Use Your Data
  - 2.1.4 Cookies
  - 2.1.5 Monetizing Data
  - 2.1.6 Lesson Review
- 2.2 Data Privacy
  - 2.2.1 Privacy in Social Media
  - 2.2.2 Privacy in Communications
  - 2.2.3 Privacy Settings
  - 2.2.4 Privacy in Artificial Intelligence (AI)
  - 2.2.5 Privacy Regulations
  - 2.2.6 Lesson Review
- 2.3 Passwords and Encryption
  - 2.3.1 Encryption Basics
  - 2.3.2 Encrypting Data
  - 2.3.3 What Needs a Password?
  - 2.3.4 Password Management
  - 2.3.5 Should I Change My Password?
  - 2.3.6 Resetting a Password
  - 2.3.7 Lab: Resetting a Password
  - 2.3.8 Lesson Review
- 2.4 Careers in Data and Privacy
- 2.5 Module Quiz

# 3.0 Internet Technologies

- 3.1 Identify Internet Basics
  - 3.1.1 Internet is Everywhere
  - 3.1.2 What is the Internet?
  - 3.1.3 Web Pages and Web Sites
  - 3.1.4 Web Browsers
  - 3.1.5 Safe Internet Browsing
  - 3.1.6 Lab: Safe Browsing Best Practices
  - 3.1.7 Lesson Review
- 3.2 Using a Web Browser
  - 3.2.1 Personalize the Browser
  - 3.2.2 Customize the Browser Appearance
  - 3.2.3 Understand Browser Add-ons
  - 3.2.4 Use Browser Privacy Features
  - 3.2.5 Maintain the Browser
  - 3.2.6 Clear Browser Cache
  - 3.2.7 Lab: Clear Browser Cache
  - 3.2.8 Lab: Use the Browser
  - 3.2.9 Lesson Review
- 3.3 Internet Service Providers
  - 3.3.1 What is an Internet Service Provider (ISP)?
  - 3.3.2 Understand ISP Equipment and Performance
  - 3.3.3 Cable Internet
  - 3.3.4 Lab: Introduction to the Lab Environment
  - 3.3.5 Set Up a Small Office or Home Office Network
  - 3.3.6 Lab: Connect a Cable Modem
  - 3.3.7 Digital Subscriber Line (DSL) Internet
  - 3.3.8 Lab: Connect to a DSL Network
  - 3.3.9 Fiber Internet
  - 3.3.10 Lab: Connect Fiber Optic Cables
  - 3.3.11 Wireless Internet
  - 3.3.12 Other Wireless Connections
  - 3.3.13 Lab: Place Outdoor Wireless Antennas
  - 3.3.14 Lesson Review
- 3.4 Careers in Internet Technologies
- 3.5 Module Quiz

# 4.0 Cybersecurity

- 4.1 Basic Security Concepts
  - 4.1.1 Security Strategies
  - 4.1.2 Device Security
  - 4.1.3 Authentication Factors
  - 4.1.4 Lab: Authenticating on a Device
  - 4.1.5 Authorization Factors
  - 4.1.6 Authorization Basics
  - 4.1.7 Lab: Authorization Basics
  - 4.1.8 Accounting and Tracking
  - 4.1.9 Clear Browser History
  - 4.1.10 Lab: Clear Browser History
  - 4.1.11 Lesson Review
- 4.2 Identify Common Security Threats
  - 4.2.1 Social Engineering Overview
  - 4.2.2 Types of Social Engineering
  - 4.2.3 Phishing and Smishing
  - 4.2.4 Malware and Spyware
  - 4.2.5 Lesson Review
- 4.3 Security Tools and Software
  - 4.3.1 Security Tools in Practice
  - 4.3.2 Firewalls
  - 4.3.3 Antivirus Software
  - 4.3.4 Check for Anti-Malware on a Machine
  - 4.3.5 Lab: Check for Anti-Malware on a Machine
  - 4.3.6 Software Patching and Updates
  - 4.3.7 Lab: Run an OS Patch or Update
  - 4.3.8 Lesson Review
- 4.4 Careers in Cybersecurity
- 4.5 Module Quiz
- 4.6 Checkpoint Review

# 5.0 Networking

- 5.1 Binary and Other Numbering Systems
  - 5.1.1 Binary Basics
  - 5.1.2 Binary as Storage
  - 5.1.3 Hexadecimal and Octal Systems
  - 5.1.4 Lesson Review
- 5.2 Basic Networking Concepts
  - 5.2.1 What is a Network to Me?
  - 5.2.2 What Does a Network Do?
  - 5.2.3 Network Ports
  - 5.2.4 Network Addresses
  - 5.2.5 Lab: Explore Network Identifiers
  - 5.2.6 Lesson Review
- 5.3 How Networks Work
  - 5.3.1 Networking Models
  - 5.3.2 Local Network Types
  - 5.3.3 Lab: Build a Small Office Network
  - 5.3.4 Wide Area Network Types
  - 5.3.5 Networking Devices
  - 5.3.6 Wired Network Connectors
  - 5.3.7 Wireless Network Connectors
  - 5.3.8 Connecting to a Wireless Network
  - 5.3.9 Lab: Explore Network Communications
  - 5.3.10 Lesson Review
- 5.4 Small Wireless Network Specifications
  - 5.4.1 Understanding Small Wireless Networks
  - 5.4.2 Wireless Network Standards
  - 5.4.3 Wireless Network Speed
  - 5.4.4 Wireless Band Options
  - 5.4.5 Securing Small Wireless Networks
  - 5.4.6 Secure a Small Wireless Network
  - 5.4.7 Lab: Secure a Small Wireless Network
  - 5.4.8 Lesson Review
- 5.5 Virtualization on the Network
  - 5.5.1 What is Virtualization?
  - 5.5.2 What is the Cloud?

- 5.5.3 Hypervisors and Guest Operating Systems
- 5.5.4 Hardware and Virtual Machines (VMs)
- 5.5.5 Lab: Explore Virtualization
- 5.5.6 Lesson Review
- 5.6 Careers in Networking
- 5.7 Module Quiz

# 6.0 Applications and Software

- 6.1 Common Applications
  - 6.1.1 What is Software?
  - 6.1.2 Web Browsing Software
  - 6.1.3 Email Software
  - 6.1.4 Use Microsoft Outlook
  - 6.1.5 Lab: Use Microsoft Outlook
  - 6.1.6 Messaging Software
  - 6.1.7 Lesson Review
- 6.2 Productivity Software
  - 6.2.1 What is Productivity Software?
  - 6.2.2 Collaboration Software
  - 6.2.3 Work Management Software
  - 6.2.4 Use File Sharing Software
  - 6.2.5 Lab: Use File Sharing Software
  - 6.2.6 Remote Assistance Software
  - 6.2.7 Word Processing Software
  - 6.2.8 Use Microsoft Word
  - 6.2.9 Lab: Use Microsoft Word
  - 6.2.10 Spreadsheet Software
  - 6.2.11 Lab: Use Microsoft Excel
  - 6.2.12 Presentation Software
  - 6.2.13 Use Microsoft PowerPoint
  - 6.2.14 Lab: Use Microsoft PowerPoint
  - 6.2.15 Diagramming and Graphics Software
  - 6.2.16 Software for Every Job
  - 6.2.17 Lesson Review
- 6.3 Safely Managing Software
  - 6.3.1 Where Do We Find Software?
  - 6.3.2 Trusted Sources for Software
  - 6.3.3 Software Licensing
  - 6.3.4 Installing Software
  - 6.3.5 Managing Applications
  - 6.3.6 Removing Software
  - 6.3.7 Practice Installing & Removing Software
  - 6.3.8 Lab: Practice Installing & Removing Software
  - 6.3.9 Lesson Review

- 6.4 The CompTIA Troubleshooting Methodology
  - 6.4.1 Standardize the Troubleshooting Process
  - 6.4.2 Identify the Problem
  - 6.4.3 Establish a Theory of Probable Cause
  - 6.4.4 Test the Theory
  - 6.4.5 Establish a Plan and Implement the Fix
  - 6.4.6 Confirm the Solution Works
  - 6.4.7 Document Your Findings
  - 6.4.8 Lesson Review
- 6.5 Careers in Apps and Software
- 6.6 Module Quiz

# 7.0 Operating Systems

- 7.1 What is an Operating System?
  - 7.1.1 Operating System Basics
  - 7.1.2 Types of Operating Systems
  - 7.1.3 Text-Based Operating Systems
  - 7.1.4 Lab: Explore Operating Systems - Linux
  - 7.1.5 Visual Operating Systems
  - 7.1.6 Lab: Explore Operating Systems - iOS
  - 7.1.7 Lab: Explore Operating Systems - Windows
  - 7.1.8 Configure Windows OS
  - 7.1.9 Lab: Configure Windows OS
  - 7.1.10 Lesson Review
- 7.2 What Does an Operating System Do?
  - 7.2.1 Drivers and Devices
  - 7.2.2 Lab: Update Drivers
  - 7.2.3 Application Management
  - 7.2.4 Lab: Manage Applications
  - 7.2.5 Task Management
  - 7.2.6 System Services
  - 7.2.7 Lab: Manage Services
  - 7.2.8 Lesson Review
- 7.3 File Management
  - 7.3.1 Disk Management and Files
  - 7.3.2 Working with Files
  - 7.3.3 Types of Files
  - 7.3.4 Managing Files
  - 7.3.5 Manage Files and Folders
  - 7.3.6 Lab: Manage Files and Folders
  - 7.3.7 Lesson Review
- 7.4 Data Backup
  - 7.4.1 What Data Should I Back Up?
  - 7.4.2 System Backups
  - 7.4.3 Create a Backup
  - 7.4.4 Lab: Create a Backup
  - 7.4.5 Local Backups
  - 7.4.6 Cloud Backups
  - 7.4.7 Restoring Data

- 7.4.8 Lesson Review
- 7.5 Careers in Operating Systems
- 7.6 Module Quiz

# 8.0 Hardware

- 8.1 Units of Speed and Capacity
  - 8.1.1 Storage Units
  - 8.1.2 Throughput Units
  - 8.1.3 Processing Speed
  - 8.1.4 Lesson Review
- 8.2 Whats Inside a Computer?
  - 8.2.1 The Motherboard
  - 8.2.2 The Firmware and BIOS
  - 8.2.3 The Central Processing Unit (CPU)
  - 8.2.4 The Memory
  - 8.2.5 The Graphics Processing Unit (GPU)
  - 8.2.6 The Network Interface Card (NIC)
  - 8.2.7 Lab: Explore the Inside of a Computer
  - 8.2.8 Lesson Review
- 8.3 Storage Types
  - 8.3.1 Computer Storage
  - 8.3.2 Network Storage
  - 8.3.3 Cloud Storage
  - 8.3.4 Lesson Review
- 8.4 What Can I Connect to My Device?
  - 8.4.1 Keyboard and Mouse
  - 8.4.2 Lab: Set Up a Computer
  - 8.4.3 Video and Audio Devices
  - 8.4.4 Printers and Scanners
  - 8.4.5 Uninterruptible Power Supplies
  - 8.4.6 Lab: Install a UPS
  - 8.4.7 Lesson Review
- 8.5 Installing Connected Devices
  - 8.5.1 Plug-and-Play Installation
  - 8.5.2 Driver Installation
  - 8.5.3 Updating Drivers
  - 8.5.4 Connect to a Printer
  - 8.5.5 Lab: Connect to a Printer
  - 8.5.6 Lesson Review
- 8.6 Careers in Computer Hardware

- 8.7 Module Quiz
- 8.8 Checkpoint Review

# 9.0 Databases

- 9.1 Database Basics
  - 9.1.1 What is a Database?
  - 9.1.2 Explore an Access Database
  - 9.1.3 Lab: Explore an Access Database
  - 9.1.4 Database vs. Spreadsheet
  - 9.1.5 Add a Record
  - 9.1.6 Lab: Add a Record
  - 9.1.7 Working With a Database
  - 9.1.8 Lab: Run a Report in a Database
  - 9.1.9 Database Location and Access
  - 9.1.10 Lesson Review
- 9.2 Types of Databases
  - 9.2.1 Database Structure
  - 9.2.2 Relational and Non-Relational Databases
  - 9.2.3 Key-Value Databases
  - 9.2.4 Document Databases
  - 9.2.5 Lesson Review
- 9.3 Relational Databases
  - 9.3.1 Schema in a Relational Database
  - 9.3.2 Tables in a Relational Database
  - 9.3.3 Primary and Foreign Keys
  - 9.3.4 Lab: Ensure Valid Input
  - 9.3.5 Lesson Review
- 9.4 Careers in Databases
- 9.5 Module Quiz

# 10.0 Coding

- 10.1 What is Coding?
  - 10.1.1 Coding Overview
  - 10.1.2 What is a Programming Language?
  - 10.1.3 Compiled Languages
  - 10.1.4 Interpreted Languages
  - 10.1.5 Assembly Language
  - 10.1.6 Query Languages
  - 10.1.7 Lesson Review
- 10.2 Planning a Coding Project
  - 10.2.1 Define What the Program Should Do
  - 10.2.2 Map Out the Program Sequence
  - 10.2.3 Pseudocode
  - 10.2.4 Lesson Review
- 10.3 Variables and Data Types
  - 10.3.1 What is a Variable in Program Code?
  - 10.3.2 Variable Types
  - 10.3.3 Number Types
  - 10.3.4 Characters and Text
  - 10.3.5 Encoding Characters
  - 10.3.6 Booleans and Logic
  - 10.3.7 Arrays
  - 10.3.8 Lesson Review
- 10.4 Coding Principles
  - 10.4.1 Simple Program Flow
  - 10.4.2 Code Documentation
  - 10.4.3 Branching
  - 10.4.4 Code Visualizer Lab: If...Else Statement
  - 10.4.5 Looping
  - 10.4.6 Code Visualizer Lab: For Loop
  - 10.4.7 Code Visualizer Lab: For Loop with Array
  - 10.4.8 Code Visualizer Lab: While Loop
  - 10.4.9 Functions
  - 10.4.10 Code Visualizer Lab: Function
  - 10.4.11 Object-Oriented Programming
  - 10.4.12 Troubleshooting and Debugging
  - 10.4.13 Lesson Review

- 10.5 Careers in Coding
- 10.6 Module Quiz

# 11.0 The Future of Tech

- 11.1 Leading Technologies
  - 11.1.1 What is AI?
  - 11.1.2 Using Generative AI
  - 11.1.3 Quantum Computing
  - 11.1.4 Storage
  - 11.1.5 Automation
  - 11.1.6 Robotics
  - 11.1.7 Virtual Reality
  - 11.1.8 Your Place in the Future of Tech
  - 11.1.9 Lesson Review

# A.0 CompTIA Tech+ FC0-U71 Exam Practice

- A.1 Prepare for CompTIA Tech+ Certification
  - A.1.1 Why Should I Take a Certification Exam?
  - A.1.2 Exam Details for CompTIA Tech+ FC0-U71
  - A.1.3 Exam Objectives for CompTIA Tech+ FC0-U71
  - A.1.4 Course Mapping with CompTIA Tech+ FC0-U71 Objectives
  - A.1.5 How to Take the Certification Exam
  - A.1.6 Tips for Taking the Certification Exam
- A.2 CompTIA Tech+ FC0-U71 Practice Exams
  - A.2.1 Exam Practice 1: IT Concepts and Terminology
  - A.2.2 Exam Practice 2: Infrastructure
  - A.2.3 Exam Practice 3: Applications and Software
  - A.2.4 Exam Practice 4: Software Development Concepts
  - A.2.5 Exam Practice 5: Data and Database Fundamentals
  - A.2.6 Exam Practice 6: Security
  - A.2.7 Skills Practice: Competency in Technology Fundamentals
  - A.2.8 Practice Test: CompTIA Tech+ FC0-U71