

# Computing Essentials v3



## Certification Exam: ICT Computing Essentials v3 Certificate Test

The ICT Computing Essentials course focuses on the fundamentals of computers and their functionality. Students will define the functions and uses of computers and learn about various types of computers. They will study the basic computer system components and their roles. They will learn about computer hardware, including storage, processing, and input and output devices. They will also study software to learn about the various types and functions of applications, including operating systems, user interfaces, and open source vs. commercial licenses. Students will learn techniques for efficient file management, including the use of file name extensions. Finally, they will study the basics of computer networking, including network topologies and models, protocols, connectivity, IP addressing and the OSI reference model.

## Candidate Profile

The ICT Computing Essentials v3 certification and courseware serve a wide range of learners seeking practical, industry-relevant skills, including:

### Middle School Students

- Grades 5-8th.
- Curious about how computers and devices work.
- Enjoy exploring technology tools, software, or digital applications.

### High School Students

- Grades 9-12th.
- Has an interest in computer technology, information systems, or technical problem-solving.
- Demonstrates curiosity about networks, the Internet, and technology infrastructure.

### Adults

- Individuals seeking to develop or strengthen digital literacy and foundational IT knowledge.
- Transitioning into information technology or technical careers.
- Has a desire to develop a stronger understanding of how computer systems work.

## Career Profile

This course aligns with the Department of Labor Standard Occupational Classification for the following:

### SOC: 13-0000 Business and Financial Operations Occupations

Business and financial operations occupations encompass roles that support the strategic, operational, and financial management of organizations. These professionals analyze data, manage resources, ensure regulatory compliance, and improve organizational efficiency.

### SOC 43-0000 Office and Administrative Support Occupations

Office and Administrative Support Occupations include professionals who perform clerical, organizational, and administrative tasks that help businesses and organizations operate efficiently. These workers manage information, coordinate office activities, maintain records, and support communication within organizations.

### SOC: 15-1212 Information Security Analysts

Plan, implement, upgrade, or monitor security measures to protect computer networks and information. Assess system vulnerabilities for security risks and propose and implement risk mitigation strategies. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.

## Topics

### Lesson 1: Introduction to Computers

- Points to Ponder
- What Is a Computer?
- How Computers Are Used
- Types of Computers
- Computer Systems

### Lesson 2: Computer Hardware

- Points to Ponder
- System Components
- Input Devices
- Output Devices
- Data Storage Devices
- Input/Output (I/O) Ports

### Lesson 3: Computer Software

- Points to Ponder
- Software Essentials
- Operating Systems
- Application Software
- File Management

### Lesson 4: Computer Networking

- Points to Ponder
- What Is a Network?
- Network Topologies
- Network Models
- Connecting to a Network
- The OSI Reference Model