ICT Computing Essentials v3

Exam Objectives

The ICT Computing Essentials courseware is written to the following Exam Objectives:

Domain 1.1: Demonstrate fundamental knowledge of computers and their uses, including functions of the computing cycle, types of computers and parts of a computer system

1.1.1: Define "computer," and explain why it is important to have a basic understanding of how computers work.
1.1.2: Describe the four functions of the computing cycle (i.e., input, processing, output, storage).
1.1.3: Describe how people use computers at home, school and work.
1.1.4: Identify the main types of computers, including supercomputer, mainframe, microcomputer, notebook, tablet, handheld.
1.1.5: Describe the four parts of a computer system (i.e., hardware, software, data, user).

Domain 1.2: Identify internal computer hardware components and their functions, and demonstrate proficiency using common computer peripherals including input devices, output devices, storage devices and connection ports.

1.2.1: Identify internal components of a computer, including case, CPU, RAM, motherboard, power supply, hard drive, expansion cards.
1.2.2: List various computer input devices (including mouse, keyboard, scanner, camera, microphone) and describe their uses.
1.2.3: Identify the types and purposes of specialized input devices, including game controller, stylus, barcode reader, fingerprint scanner, GPS device.
1.2.4: List various computer output devices (including monitor, printer, projector, speakers) and describe their uses.
1.2.5: Compare various data storage devices, including flash drive, external hard drive, memory card, discs.
1.2.6: Identify various computer connection ports, including USB, FireWire, parallel, serial, Ethernet (RJ-45), RJ-11, HDMI, audio.
1.2.7: Connect an input device (e.g., mouse, keyboard, mobile phone, camera) and verify proper operation.
1.2.8: Connect an output device (e.g., printer, monitor, projector) and verify proper operation.

Domain 1.3: Describe various types of computer software (including software types, interfaces, licenses, operating systems vs. applications, and cloud computing), and manage files in an operating system (including file name extensions, and file and folder naming conventions).

1.3.1: Define "software," including software types (system vs. application), software interfaces (GUI vs. command-line) and software licenses (commercial vs. open).
1.3.2: Compare the most common computer operating systems (i.e., Windows, Apple, UNIX).
1.3.3: Compare the most common operating systems used in mobile devices (i.e., iOS, Android, Windows Phone).
1.3.4: Compare common types of application software, including browser, e-mail client, word processor, presentation, spreadsheet.
1.3.5: Define the term "cloud computing."
1.3.6: Describe and use common file-naming conventions.
1.3.7: Identify file types by file name extension, including .doc, .txt, .wav, xls.
1.3.8: Perform file management tasks, including folder creation, file creation, backup, copy, delete, open, save.

Domain 1.4: Demonstrate knowledge of computer networking, including network types, network topologies, network models, connection media, hardware devices, protocols, IP addressing and the OSI reference model.

1.4.1: Define "network," and give examples of networks used at home, school and work.
1.4.2: Compare types of networks, including LAN, WAN, MAN, VPN, intranet, extranet, the Internet.
1.4.3: Compare common network topologies, including bus, star, ring, mesh.
1.4.4: Compare various network models and their advantages, including client/server, mainframe/terminal, peer-to-peer.
1.4.5: Compare various methods and media for network connections, including broadband, wireless, Bluetooth, cellular, satellite.

1.4.6: Describe the functions of various network hardware devices, including NIC, hub, switch, router, bridge, gateway, access point.
1.4.7: Describe the purpose of protocols, and identify the protocols commonly used in networks, including TCP/IP, DHCP, DNS, HTTP, FTP, IMAP, POP, SMTP.
1.4.8: Describe the purpose and function of IP addressing, and distinguish between public and private IP addresses.
1.4.9: Describe the OSI reference model and its layers, including tracing the flow of data between two network nodes through the OSI layers.

