Appendix A: Objectives and Courseware Locations

ICT Computing Essentials

The ICT Computing Essentials course and this appendix are designed to help students prepare for the ICT Computing Essentials digital certificate exam. Students can use this appendix as a study guide to locate content within the ICT Computing Essentials courseware that corresponds to the specific skills objectives of the ICT Computing Essentials digital certificate exam.

Learning objectives for all courses in the ICT Essentials series are based on the Florida Department of Education's Curriculum Framework for Secondary–Middle School Information and Communications Technology skills, and align to National Assessment of Educational Progress (NAEP) frameworks for Technology and Engineering Literacy.

For more information about the ICT Essentials Suite of courses and certificates, visit the ICT pages at *www.ICTcertified.com*.

ICT Domain 1: Computing Essentials **Learning Objective**	***ICT Computing Essentials* Course** **Courseware Lesson, Topics and Activities**
Sub-Domain 1.1 **Demonstrate fundamental knowledge of computers and their uses.**	
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).	***ICT Computing Essentials*** **Lesson 1: Introduction to Computers** - What Is a Computer? - Activity: Reviewing the Computing Cycle - Activity: Finding Computer Terms - Activity: Listing the Ways Computers Are Used - Activity: Comparing the Ways Computers Are Used
1.1.3 Describe how people use computers at home, school and work.	**Lesson 1: Introduction to Computers** - How Computers Are Used
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).	**Lesson 1: Introduction to Computers** - Types of Computers - Computer Systems - Activity: Finding Computer Terms - Activity: Listing the Ways Computers Are Used - Activity: Researching Computer Types - Activity: Comparing the Ways Computers Are Used

ICT Domain 1: Computing Essentials **Learning Objective**	***ICT Computing Essentials* Course** **Courseware Lesson, Topics and Activities**
Sub-Domain 1.2 **Identify computer hardware components and their functions, and demonstrate proficiency using common computer peripherals.**	
1.2.1 Identify internal components of a computer, including case, CPU, RAM, motherboard, power supply, hard drive, expansion cards.	***ICT Computing Essentials*** **Lesson 2: Computer Hardware** - System Components - Activity: Identifying Computer Parts - Activity: Identifying and Describing Computer Parts - Activity: Shopping for Computer Parts - Case Study: Understanding Computer Specifications
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.	**Lesson 2: Computer Hardware** - Input Devices - Activity: Identifying and Connecting Input and Output Devices - Activity: Identifying Input, Output and Storage Devices - Activity: Classifying Input, Output and Storage Devices - Case Study: Understanding Computer Specifications
1.2.4 List various computer output devices (including monitor, printer, projector, speakers) and describe their uses.	**Lesson 2: Computer Hardware** - Output Devices - Activity: Identifying and Connecting Input and Output Devices - Activity: Identifying Input, Output and Storage Devices - Activity: Classifying Input, Output and Storage Devices - Case Study: Understanding Computer Specifications
1.2.5 Compare various data storage devices, including flash drive, external hard drive, memory card, discs.	**Lesson 2: Computer Hardware** - Data Storage Devices - Activity: Identifying Input, Output and Storage Devices - Activity: Classifying Input, Output and Storage Devices - Case Study: Understanding Computer Specifications
1.2.6 Identify various computer connection ports, including USB, FireWire, parallel, serial, Ethernet (RJ-45), RJ-11, HDMI, audio.	**Lesson 2: Computer Hardware** - Input/Output (I/O) Ports - Case Study: Understanding Computer Specifications

ICT Domain 1: Computing Essentials **Learning Objective**	***ICT Computing Essentials* Course** **Courseware Lesson, Topics and Activities**
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.	**Lesson 2: Computer Hardware** - Activity: Identifying and Connecting Input and Output Devices - Activity: Identifying Input, Output and Storage Devices - Activity: Classifying Input, Output and Storage Devices
Subdomain 1.3 **Describe various types of computer software, and manage files in an operating system.**	
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 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."	***ICT Computing Essentials*** **Lesson 3: Computer Software** - Software Essentials - System Software - Application Software - Activity: Finding Software Terms - Activity: Matching Software Terms - Activity: Is Your Software Up-to-Date? - Activity: Cleaning Up Your System - Case Study: Evaluating Software Needs
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.	**Lesson 3: Computer Software** - File Management - Activity: Identifying File Types - Activity: Creating and Moving Files and Folders - Activity: Cleaning Up Your System - Case Study: Evaluating Software Needs

ICT Domain 1: Computing Essentials **Learning Objective**	***ICT Computing Essentials* Course** **Courseware Lesson, Topics and Activities**
Subdomain 1.4 **Demonstrate knowledge of computer networking.**	
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.	***ICT Computing Essentials*** **Lesson 4: Computer Networking** - What Is a Network? - Activity: Identifying Networking Terms (Crossword) - Activity: Drawing Network Model Cartoons - Activity: Diagramming Network Topologies - Activity: Comparing Network Topologies - Case Study: Evaluating Software Needs
1.4.4 Compare various network models and their advantages, including client/server, mainframe/terminal, peer-to-peer.	**Lesson 4: Computer Networking** - Network Models - Activity: Identifying Networking Terms (Crossword) - Activity: Drawing Network Model Cartoons - Case Study: Choosing a Network Model
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.	**Lesson 4: Computer Networking** - Connecting to a Network - Activity: What's Your IP Address? - Case Study: Evaluating Software Needs
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.	**Lesson 4: Computer Networking** - The OSI Reference Model - Activity: Diagramming the OSI Model

