CALVERT™ HOMESCHOOL

Fundamentals of Computer Systems

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Fundamentals of Computer Systems Course Overview

The Computer Fundamentals course will provide students with an understanding of computers and how they operate as well as a basic understanding of how to manage and maintain computers and computer systems. These skills will provide students with the ability to configure computers and solve computer problems.

Students will learn details about the different elements of computers and computer systems. They will learn to identify hardware devices and their functions. They will be instructed on the role of operating systems as well as how to install and customize the Windows operating system. Students will learn about networking and the Internet. They will also be introduced to security issues in order to protect themselves and their computers and data.

Students will also learn about some of the software applications typically used on computers today, such as Microsoft Office. In addition, students will learn specifics about maintaining and troubleshooting computers, including managing files, backing up systems, and using the administrative tools in the Windows operating system. Lastly, the students will learn the basics of customer service and working as a help desk support technician.

Objectives

- After completing this course, the student will understand computers and their functions, as well as develop basic customer service skills, and be able to effectively meet customer needs.
- Students will be able to implement problem-solving techniques to understand the nature of computer problems. They will also understand hardware components, software, and the Internet, so they are able to develop, maintain, and update computer systems.
- After this course, students also will be able to use the Internet to update computer systems and complete other IT service-related tasks. They will be able to install, configure, or modify software and operating systems to ensure optimal system function.
- Students will be able to perform computer backup procedures to protect information. They also will be able to recognize potential security threats and understand the procedures for maintaining security.
- After this course students will be able to provide IT support and training for computers and networks.

For topics in this course, it is helpful for students to be familiar with the basics of using desktop or laptop computers as well as accessing Web sites over the Internet.

If students are not familiar with these topics, it is recommended, though not required, that they familiarize themselves with the operating system and Web browser they will be using for this course. This includes turning on a computer and logging into an account, if necessary, exploring the different types of software available, navigating through some of the operating system menus to understand the available tools, and doing a basic search on the Internet.

Unit 1: Computer Hardware and Operating Systems	
Assignments	
1. Course Overview	10. The Boot Sequence–Command Prompt and BIOS
2. The Motherboard and the CPU	11. Installation, Upgrades, and Maintenance of Operating Systems
3. Storage Systems and Memory	
4. Project: Semiconductor Chips	12. Project: Installing an Operating System
5. Graphic Devices and Peripherals	13. Quiz 2: The Operating System
6. Project: Building a Computer	14. Special Project*
7. Quiz 1: Computer Hardware	15. Unit 1 Test
8. Operating Systems Basics	16. Course Project Part 1: Operating System*
9. Project: Testing Operating Systems	17. Glossary and Credits

Unit 2: Configuring the Computer

Assignments

1. Windows Desktop, Start Menu, and Task Bar, Including Windows Task Manager
2. The Control Panel
3. Project: Help Desk Solutions
4. Windows Accessories and Built-in Applications
5. Project: Scavenger Hunt
6. Quiz 1: Windows 101
7. Basic Networking Concepts
8. Connecting to a Network or Domain
9. Project: Setting Up an Internal Network
10. Troubleshooting Internet Connectivity
11. Project: Creating a Strategy Using Available Resources
12. Quiz 2: Networking
13. Special Project*
14. Unit 2 Test
15. Course Project Part 2: Networking*
16. Glossary and Credits

Unit 3: Computer Programs

Assignments

1. Internet Uses and Abilities
2. Project: Researching the History of the Internet
3. Comparing Internet Browsers
4. Configuring Internet Options
5. Project: Determining Browser Controls
6. Quiz 1: The Internet
7. Microsoft Word
8. Project: Support Tech
9. Microsoft Excel
10. Project: Developing a Spreadsheet
11. Microsoft PowerPoint/Outlook
12. Quiz 2: Microsoft Office
13. Special Project*
14. Unit 3 Test
15. Course Project Part 3: Microsoft Office*
16. Glossary and Credits

Unit 4: Protecting Yourself, the Computer, and Your Data

Assignments

1. Staying Safe on the Web
2. Project: Be Secure
3. Security Threats to Your Computer
4. Security Threat Removal Tools
5. Project: Putting Your Computer Skills to the Test
6. Quiz 1: Virus Protection
7. Managing Your File System
8. Backing Up Your Computer
9. Project: Creating a Data Security Plan
10. Using the Cloud
11. Project: Using Cloud Computing Services
12. Quiz 2: Data Protection
13. Special Project*
14. Unit 4 Test
15. Course Project Part 4: Security*
16. Glossary and Credits

Unit 5: Troubleshooting

Assignments

1. The Computer Management Console
2. Built-in Tools from Windows – Troubleshooting, Help and Support, Remote Assistance
3. Project: Troubleshooting Computers
4. Using the Internet as a Resource
5. Project: Researching Computer Issues and Solutions
6. Quiz 1: Troubleshooting Tools and Resources
7. Preventive Maintenance
8. Project: Preventive Maintenance
9. Computers and the Environment
10. Supporting the Computer User
11. Project: Providing Good Customer Service
12. Quiz 2: The Role of the Help Desk
13. Special Project*
14. Unit 5 Test
15. Course Project Part 5: Preventive Maintenance*
16. Glossary and Credits

Unit 6: Course Review and Exam

Assignments

1. Course Project Part 6: Help Desk Policies and Procedures*
2. Review
3. Exam

(*) Indicates alternative assignment