



# monarch

Curriculum Catalog

Career and Technical Education Series

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			
Fundamentals of Computer Systems	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> <li>1. Course Overview</li> <li>2. The Motherboard and the CPU</li> <li>3. Storage Systems and Memory</li> <li>4. Project: Semiconductor Chips</li> <li>5. Graphic Devices and Peripherals</li> <li>6. Project: Building a Computer</li> <li>7. Quiz 1: Computer Hardware</li> <li>8. Operating Systems Basics</li> <li>9. Project: Testing Operating Systems</li> </ol> </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> <li>10. The Boot Sequence–Command Prompt and BIOS</li> <li>11. Installation, Upgrades, and Maintenance of Operating Systems</li> <li>12. Project: Installing an Operating System</li> <li>13. Quiz 2: The Operating System</li> <li>14. Special Project*</li> <li>15. Unit 1 Test</li> <li>16. Course Project Part 1: Operating System*</li> <li>17. Glossary and Credits</li> </ol> </td> </tr> </table>	<ol style="list-style-type: none"> <li>1. Course Overview</li> <li>2. The Motherboard and the CPU</li> <li>3. Storage Systems and Memory</li> <li>4. Project: Semiconductor Chips</li> <li>5. Graphic Devices and Peripherals</li> <li>6. Project: Building a Computer</li> <li>7. Quiz 1: Computer Hardware</li> <li>8. Operating Systems Basics</li> <li>9. Project: Testing Operating Systems</li> </ol>	<ol style="list-style-type: none"> <li>10. The Boot Sequence–Command Prompt and BIOS</li> <li>11. Installation, Upgrades, and Maintenance of Operating Systems</li> <li>12. Project: Installing an Operating System</li> <li>13. Quiz 2: The Operating System</li> <li>14. Special Project*</li> <li>15. Unit 1 Test</li> <li>16. Course Project Part 1: Operating System*</li> <li>17. Glossary and Credits</li> </ol>
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Fundamentals of Computer Systems	<b>Unit 2: Configuring the Computer</b>	
	<b>Assignments</b>	
	1. Windows Desktop, Start Menu, and Task Bar, Including Windows Task Manager	9. Project: Setting Up an Internal Network
	2. The Control Panel	10. Troubleshooting Internet Connectivity
	3. Project: Help Desk Solutions	11. Project: Creating a Strategy Using Available Resources
	4. Windows Accessories and Built-in Applications	12. Quiz 2: Networking
	5. Project: Scavenger Hunt	13. Special Project*
	6. Quiz 1: Windows 101	14. Unit 2 Test
	7. Basic Networking Concepts	15. Course Project Part 2: Networking*
	8. Connecting to a Network or Domain	16. Glossary and Credits

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

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

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

FCS	<b>Unit 6: Course Review and Exam</b>	
	<b>Assignments</b>	
	1. Course Project Part 6: Help Desk Policies and Procedures*	2. Review
		3. Exam

(\*) Indicates alternative assignment