

# Computer Maintenance and Upgrading (30-assignment)



This is an integrated instructional module designed specifically to operate within a Modular Program environment. It is ideal for use with our Scantek Technology or IT2020 Information Technology programs. It includes a 10-assignment exploratory curriculum and a further 20-assignment in-depth curriculum. The exploratory curriculum and the in-depth curriculum are each split into two parts. Each part includes a pre-test and post test. The module includes software and curriculum materials sufficient to provide a complete learning experience.

The curriculum incorporates continuous assessment through questions. When used in conjunction with a ClassAct networked management system, this provides instant feedback of student performance. The assessments begin with a comprehensive pre-test. This quiz includes questions for each subsequent assignment, together with questions that will specifically test math and reading ability.

Every assignment starts with a series of questions designed to track inventory. These ensure that any missing items are located before they are needed.

Each assignment is divided into a series of tasks. Hands-on tasks introduce students to computer maintenance and upgrading, and are accompanied by research tasks based upon illustrated textbooks and on-screen applications. Assessment questions are incorporated into each task.

## **Exploratory Phase Topics:**

- Evolution and generations of computers
- Basic internal and external computer components
- Advanced internal and external computer components
- Disk drives
- Expanding the computer system
- Capturing text and images
- Printers
- Video conferencing
- ISDN
- TV and radio adapters
- Game devices
- Speech recognition
- Connectors
- Keyboards and pointing devices
- Computer cases
- CD-ROM and DVD technologies
- Installing devices
- Computer component selection

## **Exploratory Phase activities:**

- Exploring the evolution of computers.
- Awareness of computer hazards and safety.
- Backing-up and restoring data.
- Preventative maintenance methods.
- Connecting and installing a range of devices.
- Expanding the computer system.
- Exploring the uses of a range of components.
- Capturing text and images.
- Building a virtual computer system to meet new specifications.
- Investigating multimedia components.

## **Advanced Specialization Phase topics:**

- Computer assembly and disassembly
- Power and power supplies
- Motherboards, CPUs and chipsets
- Memory and memory upgrades
- The BIOS and CMOS settings
- Expansion buses and slots
- Windows startup and shutdown modes
- Windows desktop and Control Panel
- Windows folders and files
- System Restore and data backup
- Windows registry
- Antivirus software
- Monitors and display technologies
- Printers and print technologies
- Hard drive installation and configuration
- Multimedia devices
- Wireless technologies
- Optical storage devices
- Modems and connection to the Internet
- Network models
- Computer hazards and safety
- Troubleshooting devices

## **Advanced Specialization Phase activities:**

- Working safely inside the computer
- Working with Windows start up and shutdown modes
- Creating a "Forgotten password" disk
- Exploring computer assembly and disassembly
- Examining and recording internal components and connections
- Configuring the Windows XP user interface
- Investigating device drivers
- Working with POST and the CMOS Setup Utility
- Working with the command line interface.
- Exploring the CPU and chipsets
- Investigating CPU removal and installation
- Investigating and recording memory performance
- Installing a memory module
- Working with monitors
- Investigating CRT and LCD technologies
- Managing folders, files and software
- Installing antivirus software
- Examining viruses and virus prevention

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**Advanced Specialization Phase activities (continued):**

- Configuring the Windows XP operating system
- Working with multiple users
- Installing and configuring a hard drive
- Working with the Windows Registry
- Installing and using a USB printer
- Installing a PCI modem
- Installing and using a CD-RW drive
- Working with Windows disk management tools
- Exploring multimedia
- Installing, configuring and using a wireless device
- Installing and using speakers

Each assignment is designed around a list of performance objectives. These lists include academic, technical and occupational objectives. The assignments are written in such a way as to enable a student to attain the performance objectives, with the assessment questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct management system to generate a comprehensive portfolio of student competency reports. Default reports supplied with this module include:

- Entry report
- Technical/Occupational Exit report
- Basic Skills report based upon the federal SCAN's report.

**The items supplied with this instructional module include:**

- 10-assignment On-Screen Student Assignment Guide CD
- 10-assignment Student Workbook
- 10-assignment Instructor's Guide
- 20-assignment On-Screen Student Assignment Guide CD
- 20-assignment Instructor's Guide
- PC Upgrading and Troubleshooting Quicksteps textbook
- A+ Certification textbook
- A+ Theory Software
- Windows XP PC and monitor
- Printer
- Accessory Kit comprising hardware components and upgrade and maintenance items.
- Antivirus Software

**Additional items required:**

- Computer

**Module Facts**

For Technology Program, order as: ST660/30 Computer Maintenance and Upgrading

For IT Program, order as: ISSIC Computer Maintenance and Upgrading

	No.	Average time
Assignments	10	45 minutes
	20	90 minutes
Extension Activities	4	45 minutes
<b>Total</b>		<b>40 hours</b>



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