

Certificate Course in Computer Hardware (CCCH)

Duration: 3 Months

Course Overview

The **Certificate Course in Computer Hardware (CCCH)** is designed to provide learners with fundamental knowledge and hands-on skills in computer hardware and system maintenance. This course introduces students to the basics of computer systems, operating systems, hardware components, input/output devices, storage devices, and add-on cards. Learners will also gain practical expertise in computer assembly, installation of operating systems and software, and troubleshooting common hardware and software issues. The course is ideal for students aspiring to build a career in **computer hardware servicing, IT support, and system administration**.

Course Objectives

1. To provide foundational knowledge of computers and operating systems.
 2. To introduce students to different computer hardware components and their functions.
 3. To train students in identifying and handling input, output, and storage devices.
 4. To provide practical exposure to computer assembly and configuration.
 5. To build skills in installing operating systems and various software applications.
 6. To train students in troubleshooting common hardware and software problems.
 7. To prepare learners for entry-level roles in **IT hardware support and maintenance**.
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Course Outcomes

After completing this course, students will be able to:

1. Understand the fundamentals of computer systems and Windows operating system.
2. Identify different parts of a computer, including input, output, storage devices, and add-on cards.
3. Assemble a personal computer with appropriate hardware components.
4. Install and configure operating systems and application software.
5. Diagnose and resolve common computer hardware and software issues.

6. Pursue careers as **Computer Hardware Technicians, IT Support Staff, or System Maintenance Executives.**
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Course Syllabus

Module 1: Computer Fundamentals (1 Week)

- Introduction to Computers
 - Generations of Computers
 - Classification of Computers
 - Basic Computer Terminology
 - Number System (Binary, Decimal, Hexadecimal basics)
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Module 2: Windows Operating System (1 Week)

- Introduction to Windows OS
 - Desktop, Icons, and Taskbar
 - File & Folder Management
 - Control Panel and System Tools
 - Basic Troubleshooting in Windows
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Module 3: Computer Hardware Components (3 Weeks)

- **Different Parts of Computers** – CPU, Motherboard, RAM, SMPS, Cooling Systems
 - **Input Devices** – Keyboard, Mouse, Scanner, MICR, OMR, OCR, Joystick
 - **Output Devices** – Monitor, Printer, Plotter, Speaker, Projector
 - **Storage Devices** – HDD, SSD, Optical Drives, Flash Drives
 - **Add-on Cards** – Graphics Cards, Sound Cards, Network Interface Cards
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Module 4: Computer Assembly (2 Weeks)

- Precautions Before Assembly
- Identifying Ports & Connectors

- Step-by-Step Computer Assembly
 - BIOS/UEFI Settings
 - Testing & Verification of Hardware
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Module 5: Installation of Operating System & Software (2 Weeks)

- Installing Windows / Linux Operating Systems
 - Partitioning Hard Disk & File Systems
 - Device Drivers – Importance & Installation
 - Installing Application Software (Office, Antivirus, Multimedia Tools, etc.)
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Module 6: Troubleshooting & Maintenance (3 Weeks)

- Diagnosing Common Hardware Problems (RAM, Hard Disk, Display, Power Supply)
 - Software Troubleshooting (Slow System, OS Errors, Application Crashes)
 - Virus Removal & Security Practices
 - Preventive Maintenance – Cleaning & Handling Hardware
 - Backup & Restore Procedures
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Module 7: Final Project & Assessment (1 Week)

- Complete PC Assembly & OS Installation Project
 - Troubleshooting Case Study
 - Viva & Assessment
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☒ By the end of 3 months, learners will be confident in **assembling, configuring, maintaining, and troubleshooting computer systems** – making them job-ready for IT hardware support roles.