COURSE TITLE : COMPUTRE SYSTEM HARDWARE
COURSE CODE : 4131
COURSE CATEGORY : A
PERIODS/WEEK : 4
PERIODS/SEMESTER : 60
CREDITS : 4

TIME SCHEDULE

MODULE	TOPICS	PERIODS
1	Inside PC	15
2	Power supply & Storage devices	15
3	External Peripherals	15
4	Laptops and other Portable devices	15

Course General Outcomes:

Sl.	G.O	On completion of this course the student will be able :
1	1	To understand the working of Personal Computer
	2	To understand the working and the components of Motherboard
2	1	To understand Powering up of Computer
	2	To understand Secondary Storage Devices
3	1	To understand Different Peripherals and Expansion
	2	To understand Different custom configuration PCs and Workstations
	3	To understand the Installing and Configuring Printers
4	1	To understand Laptops
	2	Describe portable computing devices

Specific Outcomes:

MODULE –I   Inside PC

1.1 To understand the working of Personal Computer
　　　1.1.1 To describe the working of Personal Computer
　　　1.1.2 To list the major connectors and services of a typical PC
1.2 To understand the working and the components of Motherboard
　　　1.2.1 To explain how the motherboard works
　　　1.2.2 To explain the components of Motherboard
　　　1.2.3 To explain the characteristics of Memory
　　　1.2.4 To identify the different types of DRAM packaging
　　　1.2.5 To explain the varities of RAM
　　　1.2.6 To explain the varities of a modern CPU

1.2.7   To describe the relationship of CPU & Memory
1.2.8   To explain the function of BIOS
1.2.9   To distinguish among various CMOS setup utility options
1.2.10 To describe option ROM and device drivers

MODULE – II Power supply & Storage devices

2.1 To understand Powering up of Computer
2.1.1 To describe the Purpose and characteristics of Power Supplies
2.1.2 Toexplain the details about powering the PC

2.2 To understand Secondary Storage Devices
2.2.1 To describe the Purpose and characteristics of Storage Devices
2.2.2 To explain how hard drives work
2.2.3 To explain the PATA and SATA hard drive interfaces
2.2.4 To explain SCSI hard drive Interface
2.2.5 To describe how to protect data with RAID
2.2.6 To describe the procedure for partitioning and formatting HDD
2.2.7 To list the variations among flash drives and other tiny devices
2.2.8 Todescribe Disk mirroring and disk duplexing

MODULE – III   External Peripherals

3.1 To understand Different Peripherals and Expansion
3.1.1 To explain the Installing and Configuring Expansion Cards
3.1.2 To list the characteristics of Connectors and Cables
3.1.3 To explain the operation of various Input Devices
3.1.4 To explain the operation of various output Devices
3.1.5 To describe the Display types and its settings

3.2 To understand Different custom configuration PCs and Workstations
3.2.1 To explain the organisation of CAD/ CAM design Workstations, Audio Video editing Workstations, Virtualisation Workstations, Gaming PCs, Hometheatre PCs, Standard Thick clients, Thin clients, Home Server PCs, etc.

3.3 To understand the Installing and Configuring Printers
3.3.1 To list and explain the printer types and the process involved
3.3.2 To describe the installation and configuration of printers

MODULE –IV Laptops and other Portable devices

4.1 To understand Laptops
4.1.1 To describe the Laptop architecture
4.1.2 To explain the procedure for Disassembling and Reassembling of laptops
4.2 To Describe portable computing devices

<u>**CONTENT DETAILS**</u>

MODULE –I   Inside PC
Working of PC- Motherboard- Foam factors-Components of Motherboard- Bus Architecture- Chipsets- Expansion Slots- Memory slots and Cache- CPU and Processor socket- BIOS and POST- CMOS and CMOS Battery- Purpose and characteristics of

Processors- Characteristics of Memory- types of memory- different types of DRAM- varities of RAM- Memory packaging

MODULE – II   Power supply & Storage devices

Purpose and characteristics of Power Supplies- power connectors- Replacement of Power Supplies

Purpose and characteristics of Storage devices- HDD Systems- Solid state Drives- Optical storage drives-Drive interfaces and RAID- SCSI Drives- Removable storage and media- Flash memory- Externally attached drives- Installing, Removing, andconfiguring storage devices

MODULE – III   External Peripherals

Installing and Configuring Expansion Cards- Video- Multimedia- I/O- Communications- Characteristics of Connectors and Cables- Device connector types- Common peripheral Cables and their Interfaces- Video display Cables and connectors- Input devices- Mouse- Keyboard- scanner- Barcode reader-digitizer-Biometric devices- Touch screens- Gamepads and Joysticks- Multimedia input devices- Web cams- MIDI devices- Digital Cameras and Camcoders- Output devices- Printers- Speakers- Display devices- Display types and settings- Video display Types- Adhusting display settings- Video standards and Technologies- Advanced Video resolutions and concepts

CAD/ CAM design Workstations-Audio Video editing Workstations- Virtualisation Workstations- Gaming PCs- Hometheatre PCs- Standard Thick clients- Thin clients- Home Server PCs

Printer types- Impact Printers- Inkjet- Laser Priners-Installing and configuring printers

MODULE –IV   Laptops and other Portable devices

Laptop architecture- Laptop vs. Desktops- Motherboards and Processors- Memory- Input devices- Expansion Buses and Ports- Docking stations- Power systems- Laptop displays- Disassembling and Reassembling of laptops

Netbooks- Ultrabooks- Tablet PCs- Features and capabilities of Mobile Devices- Touchscreen technology- Enhancing Hardware- Configuration- Security

TEXT BOOK(S)

1. Computer Installation and Servicing D.Balasubramanian TataMc-Graw Hill, New Delhi 2010
2. Troubleshooting, Maintaining and Repairing PCs Stephen J.Bigelow TMH, New Delhi Fifth Edition

REFERENCES

1. PC Repair and Maintenance Joel Rosenthal- Fire wall Media,First Edition
2. Comdex Hardware and Networking Course Kit Vikas Gupta DreamTech Press -2011
3. Modern Computer Hardware Course Manahar Lotai,Pradeep Niar,BPB Publication ,2011
4. Troubleshooting, Maintaining and Repairing PCs Stephen J.Bigelow TMH, New Delhi Fifth Edition
5. PC Hardware in a nutshell Robert Bruce and Co O' Reilly, Shroff Publishers and Distributors -2008.