

Subject Code: 1ET4040501	Subject Title: Computer Peripherals & Troubleshooting
Pre-Requisite	Fundamental knowledge of Hardware

RATIONALE:

For the smooth functioning of computer system it is frequently required to upkeep, maintain, repair, troubleshoot and take up preventive maintenance of the system and its peripheral devices. Therefore it is essential for the students to acquire skills in the area of computer maintenance and troubleshooting and its preventive maintenance.

This course is focused on developing skills in installation and configuration of Operating systems, loading and configuring various device drivers, diagnosing the faults and troubleshoots the computer at software level as well as component level. This course will be helpful for students to get employment in the computer maintenance industry as well as self-employment.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				Total (Marks)
Lecture	Tutorial	Practical	Credit	Theory		Practical		
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment	
3	0	2	4	60	40	20	30	150

DETAILS OF COURSE CONTENTS:

SR. NO.	Topic and Sub-Topics	Total Hrs.	Weightage %
Unit – I	INSIDE THE PC: CORE COMPONENTS 1.1. Definition of computer 1.2. Computer Hardware, Software and Firmware 1.3. Classification of computer 1.4. Difference between PC, PC-XT and PC-AT 1.5. Types of motherboard 1.6. Functional block diagram of Motherboard 1.7. BIOS 1.8. CMOS setup 1.9. Types of Buses on the motherboard 1.10. Battery on Motherboard 1.11. CPU 1.12. Expansion Buses (ISA, EISA, MCA, VESA Local), AGP 1.13. Chipsets: Definition, Advantage, North and South Bridge	09	22%
Unit – II	MEMORY & STORAGE DEVICES 2.1 Types of Memory: Temporary Memory, Permanent Memory, Read Only Memory, Cache Memory, Flash Memory (USB flash Drive) 2.2 Hard disk Drive 2.3 Physical Structure 2.4 Logical Structure (Heads, Tracks, Sectors, Cylinders, Cluster,	09	22%

	Landing zone, MBR, Zone bit recording) 2.5 Disk Interface: SCSI, IDE, SATA, USB 2.6 Disk performance Characteristics: Seeks and Latency, Data Transfer Rate 2.7 Optical Drives 2.8 DVD: Types, Recording, Construction 2.9 Blu Ray Disk: Specification 2.10 Difference between DVD & Blu Ray Disk		
Unit – III	INPUT DEVICES: KEY BOARD, MOUSE, SCANNER 3.1 Keyboard 3.2 Types of keyboard: Wired Keyboard, Wireless Keyboard 3.3 Types of Keyboard Switches 3.4 Keyboard interfaces 3.5 Mouse 3.6 Types- Mechanical, Opto Mechanical and Optical 3.7 Mouse interfaces 3.8 Scanner: Scanner Types, Image quality measurement, Working	07	16%
Unit – IV	OUTPUT DEVICES: MONITOR, PRINTER 4.1 Video Basics (CRT parameters) 4.2 Monitor 4.3 Types of Monitor: CRT Monitor, LCD Monitor, LED Monitor, Plasma Display 4.4 Graphics Cards: Components of a card, CGA, EGA, VGA 4.5 Printers, Classification of Printer: Impact Printer, non-Impact Printer, Difference between Impact and Non-Impact Printers	07	16%
Unit - V	POWER SUPPLY 5.1 SMPS 5.2 Working Principle of SMPS 5.3 Block Diagram of SMPS 5.4 Difference Between Linear power supply and SMPS 5.5 Output Connectors of SMPS 5.6 UPS 5.7 Stabilizer	04	09%
Unit - VI	TROUBLESHOOTING AND REPAIRING OF COMPUTER 5.1 Types of Computer Maintenance: Preventive Maintenance, Breakdown Maintenance 5.2 Types of Computer Faults 5.3 Nature of Computer Faults 5.4 Layman Checks 5.5 Diagnostic software 5.6 Testing and Measuring Instruments: Multimeter, C.R.O., Logic Probe, Logic Pulser, Current Tracer, Logic Analyser 5.7 POST: Functions, IPL Hardware, Test Sequence, Error messages 5.8 Troubleshooting, Motherboard, Keyboard, Hard Disk Drive, Printer	06	15%

COURSE OUTCOME:

A. Knowledge and Understanding):

Students will know how to define the implementation of hardware. Understand and explain the basic concepts associated with the different branches of hardware (motherboard, printer, memory etc) and Students will understand and be able to describe the differences between the various parts used in motherboard.

B. Intellectual (Cognitive/ Analytical) Skills:

Students will be able to identify the properties, analyze the system capability, analyze hardware requirements, analyze how to do implementation, troubleshoot the device. think critically about the Maintenance, which is very important.

C. Practical Skills Students will learn to:

Knowledge of motherboard, implementation of motherboard, Expansion slots system in motherboard, Bus system, Memory etc

D. Transferable Skills:

Students will be able to implementation at their level, learn to think more creatively as well as comparatively

SUGGESTED LIST OF EXERCISES/PRACTICAL/EXPERIMENTS:

Note: The experiment list provided beneath is for reference only. The course teacher may change/formulate it as per his / her methodology and requirement.

Sr. No.	Exercises
1	Introduction of Computer Peripherals
2	Disassembling Faulty Computer system
3	To demonstrate of motherboard and Components on Motherboard
4	Troubleshooting and Repairing of Keyboard and Scanner
5	To demonstrate the Printer
6	Troubleshooting and Repairing of Hard Disk Drive
7	Troubleshooting and Repairing of CD-ROM drive/CD-Writer/Combo Drive/DVD writer
8	Troubleshooting of Pen drive
9	Troubleshooting and Repairing of Mouse.
10	Troubleshooting and Repairing of SMPS
11	Identify the problem in the given PC, using the given troubleshooting sequence, fix the issue, record the given problem, and produce proper documentation of your work
12	Installation of Operating system (Windows and Linux)
13	Installation of Device drivers for different Hardware devices.
14	Assembling of Computer Systems

LIST OF REFERENCES:

Reference Books:

1. The complete PC Upgrade & Maintenance Guide
By Mark Minasi, BPB Publications
2. IBM PC and clones
By IBM PC and clones, Tata McGraw Hill Education Private Limited