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|----------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Subject Code : 2CS1010105</b> | <b>Subject Title: Workshop-I (Introduction to Computer Hardware,Peripherals &amp; Networking Devices)</b> |
| <b>Pre-requisite :</b>           | -                                                                                                         |

**Course Objective:**

This course aims to make the students familiar with basic hardware components and functions of computer system parts. Students are expected to learn various basic concepts of internet connectivity, CCTV camera, router, switch, and network cable and virus detection terminology.

| Teaching Scheme (Hours per week) |          |           |        | Evaluation Scheme (Marks) |                       |                       |                       |       |
|----------------------------------|----------|-----------|--------|---------------------------|-----------------------|-----------------------|-----------------------|-------|
| Lecture                          | Tutorial | Practical | Credit | Theory                    |                       | Practical             |                       | Total |
|                                  |          |           |        | University Assessment     | Continuous Assessment | University Assessment | Continuous Assessment |       |
| -                                | 1        | 4         | 3      | -                         | -                     | 60                    | 40                    | 100   |

| Subject Contents |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |            |  |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|--|
| Sr. No           | Topics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Total Hours | Weight (%) |  |
| 1                | <b>Hardware Fundamentals.</b><br>To identify the different parts of computer and peripherals. Function of various parts of Computer. Power Supply Unit, Motherboard, Central Processing Unit with heat sink, Other Chipset, RAM – Random Access Memory & ROM – Read Only Memory, BIOS – Basic Input / Output System, CMOS IC, Different types of Buses (ISA & PCI) and Connectors, Different types of I/O Ports, Jumpers, Display Card. HDD – Hard Disk Drive, CD-ROM Disk & Disk Drive, DVD – Digital Versatile Disk. NIC – Network Interface Card, Sound Card, Other Add-ON Cards, Keyboard & Mouse, MODEM, Printers & Plotters, Scanner, PDA and gadgets | 3           | 22         |  |
| 2                | <b>Overview Of Network Concept</b><br>Network Cable. Ethernet/cat 6, Fiber optic, Straight Cable / Crossover Cable. Switches. Layer 2, Layer 3, Fiber Switches<br>Routers. Home Router, Enterprise Router                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2           | 14         |  |
| 3                | <b>Overview of Internet Connectivity</b><br>Different types of Internet connections, Gateway Access, Dial-up Connection, Radio-link connectivity, Leased line, VSAT, Types of Servers. Distributing Internet bandwidth.                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3           | 22         |  |
| 4                | <b>Surveillance Systems:</b> CCTV camera, types of Camera, cabling, console management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2           | 14         |  |
| 5                | <b>Computer Assembling:</b> Collect the proper/required computer parts and tools. Sequence steps to assemble a computer as per guidelines provided by the expert. Steps to upgrading a computer system.                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4           | 28         |  |

**Course outcomes:**

**After completion of this course students would be able:**

- To have fundamental knowledge on computer hardware.
- To understand the basic terminology used in computer peripheral devices.
- To assemble and disassemble various peripheral devices of a Computer System.
- To troubleshoot and repair various Operating Systems.
- To get the knowledge of working of different hardware components.

**List of reference: -**

1. Computer today -By Donald (Mc Graw Hill)
2. Servicing personal computers- By Michael H Tooley.
3. PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govinda rajalu, Tata McGraw- Hill Publication
4. PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

**E-Resource / Web Links:**

- <http://williamstallings.com/ComputerOrganization/>
- <https://www.pearsonhighered.com/cs-resources/products/product.html#product,isbn=0132916525>

**List of 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.

1. To implement POST (power on self test) operation.
2. Identify various input and output devices and connect the same with cabinet.
3. Identify various components within the cabinet (on the motherboard) and learn the interconnections among them.
4. Identify various components within the cabinet (off the motherboard) and learn the interconnections among them.
5. Connect various computer parts to SMPS (Switch mode power supply).
6. Connect and Configure RAM, ROM and HDD on mother board.
7. Identify various components used in networking in your laboratory. Learn the interconnection between the component, computer and server.
8. Connect and Configure processor on motherboard.
9. Connect and Configure NIC CARD, VGA CARD, SOUND CARD and all DATABUS cable on mother board.
10. Connect and Configure printer and Scanner to CPU.
11. Connect and Configure MODEM to CPU.
12. Assembling and Disassembling of a Computer System