

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**SESSION : 2014-15**

**SEMESTER : 5<sup>th</sup>**

**SUBJECT : Computer Hardware and Networking**

**TEACHERS : SATABDI SAHA DHAR(SSD), ANTARA GHOSH(AG), MRINAL MAITI(MM)**

<b>UNIT</b>	<b>Hrs/Unit</b>	<b>TOPICS</b>	<b>SUBJECT CONTENTS</b>
1	02	Introduction	PC system units – Front Panel / Rear side connectors, switches and indicators -specification parameters - Lap top PCs – Palm top PCs.
2	12	Inside PC	2.1 Inside PC – functional blocks of mother board – CPU, RAM, BIOS, Cache RAM, BUS extension slots, on-board I/O and IDE connectors PCI, AGP & PCI express. 2.2 BIOS, services, organization and interaction. 2.3 CMOS, CMOS setup utilities, CMOS setup program. 2.4 Motherboard types. 2.5 Processors – CISC and RISC. 2.6 Features of Pentium 4 processor, Pentium Celeron processor, CYRIX series processors, AMD series processors. 2.7 Chipsets – features of Intel 854, 915 series chipset motherboards 2.8 Bus standard and Bus architecture 2.9 Power supplies –SMPS for Computers, Power requirements in PCs.
3	05	On board memory, I/O interface and storage device	3.1 PC's memory organization 3.2 ROM, RAM, distinguish between static and dynamic RAM 3.3 DRAM, Synchronous DRAM, Cache Memory, Extended/ Expanded/Virtual memory. 3.4 I/O port – Serial port, Parallel port, USB port 3.5 Hard disk drives : Functional block diagram, SATA technology. 3.6 CD-ROM drive – Principle of operation, block diagram. 3.7 DVD technology – DVD disks, DVD drive, block diagram. 3.8 Pen drives.
4	05	Input and Output Devices	4.1 Keyboard – types, operation, and keyboard signals, interface logic, keyboard functions. 4.2 Mouse – principle of operation, mouse signals, optical mouse, mouse installation. 4.3 Scanner – principle of operation, types. 4.4 Digital display technology (thin displays) – Liquid crystal displays, Plasma displays, TFT monitors. 4.5 Modem: Introduction – functional block of modem – working principle – types – installation. 4.6 Dot matrix printer – principle of operation. 4.7 LASER printer – principle of operation 4.8 Ink-jet printer- principle of operation, 4.9 Plotter – types, functional block diagram.

5	12	Computer Network Basics	<p>Introduction – OSI layer model – Function of each layer network types – LAN- WAN– MAN – internet – intranet – extranet – Blue tooth Technology.</p> <p>TCP/IP: Introduction, History of TCP/IP, Function of each layer of TCP/IP, User Datagram Protocol, Comparison of OSI and TCP/IP.</p> <p>IP Addressing, IP address classes, Subnet Addressing, Domain Name System, Email – SMTP, POP,IMAP; FTP, HTTP, Overview of IP version 6.</p>
6	08	Network Media& Hardware	<p>Twisted wire - Coaxial cable - fiber optic cable, VSAT</p> <p>Local Area Network: Introduction to LANs, Features of LANs, Components of LANs, Usage of LANs, LAN topologies – star – ring – mesh – bus – Client/Server – peer to peer. IEEE 802 standards, Ethernet, LAN interconnecting devices: Hubs, Switches, Bridges, Routers, Gateways.</p>
7	04	Cryptography	<p>Encryption, Decryption, Asymmetric Key and Symmetric Key Cryptography, Digital Signature.</p>