Course Title: Computer and Peripherals, Maintenance Service & Repair Semester – III Subject Outline

1. Basics of Internet and Web Technologies
2. Computer Maintenance & System Troubleshooting
3. Advance in Computer Peripherals and Interfaces

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1. Basics of Internet and Web Technologies

Internet Basics- Specification and technical details for establishing Internet. Types and functions of modems, IP addressing, internet domains, domain name server, TCP/IP protocols, Internet service providers, Intranets.

Internet Connectivity- Telephone line, cable, leased line, ISDN, VSAT, RF link

World Wide Web (WWW)- World Wide Web and its evolution, web page, web server, HTTP protocol. Examples of web servers. Navigation Tools: Netscape and Internet Explorer to surf Internet, Uniform Resource Locator (URL). Hypertext, hyperlinks and hypermedia, URL, its registration, browsers.

Internet Security: Basics of authentication and authorization. Introduction to firewall, various techniques of encryption and decryption

2. Computer Maintenance & System Troubleshooting

Introduction -Hardware Basics: Basic terms, concepts, and functions of system modules (System board, firmware, storage devices, monitor, LCD and portable systems, boot process).

Popular CPU Chips and their Characteristics- Processor Terminology, Processor speed, Data bus, Address bus, Registers, Cache memory, Math co-processor, Chip types, Early Intel Processors.

Idea about faster microprocessor motherboard 80286, 80386, 80486, Pentium Idea about data flow Function of different chips in motherboard.

Performing Preventative Maintenance- Preventative Maintenance, Using Preventative Maintenance Tools, Materials and equipment, Software utilities, Maintaining Environmental Controls, Ventilation and airflow, Humidity and liquids, ESD, Dirt and dust EMI, Power, UPS, and suppressors, Completing Maintenance Tasks, Case and components, Power supplies Monitors, Keyboards and mice, Drives, Storage media, Laptops, Printers and scanners.

Troubleshooting Procedures and Guidelines- Identifying Troubleshooting Tools, Hardware tools, Diagnostic software, The Art of Troubleshooting, Troubleshooting basics, Physical environment, Audio and visual troubleshooting, CMOS and BIOS, Motherboard, Processor/memory, Floppy drive, Hard drives, CD/DVD-ROM, Keyboard and mouse, Sound card/audio, Monitor/video, Modem, Serial and parallel ports, USB, Power supplies and batteries, Laptops. Circuit diagrams and pin assignments, working of SMPS Input and load requirements, connecting a PC and peripherals to power supply.

Power Supply Maintenance: Cautions about opening power supply, over voltage and over current protection. Upgrading power supply, various test for fault tolerance.

3. Advance in Computer Peripherals and Interfaces

Overview- Interrupt, DMA Channel, I/O Port Addresses resolving and resolving the conflict of resources. I/O buses- ISA, EISA, Local bus, Local bus, PCI bus, PCI Express, Accelerated graphics port bus

IDE & SCSI Interfaces: IDE origin, IDE Interface ATA standards ATA1 to ATA7. ATA feature, ATA RAID and SCSI RAID, SCSI Cable and pin Connector pin outs SCSI V/s IDE Advantages and limitation

Input/ Output Driver software aspects- Role of device driver DOS and UNIX/ LINUX device drivers