Department of Computer Science and Engineering

**Industry certified Value Added Course
On
"PC Essentials"
14.02.2025, 15.02.2025 and 19.02.2025 to 22.02.2025**

45 HOURS

Objectives

- To choose different components of a computer, their functions, and interactions.

- To apply gained knowledge of operating system functions, installation, and   troubleshooting.

- To experiment how to organize, manage, and secure files and folders efficiently.

- To identify common PC issues and perform basic troubleshooting steps.

- To experiment basic networking concepts, including connecting to the internet

- To identify different online security, antivirus software, and safe browsing practices.

UNIT I   Introduction to Computer Hardware and Software   9 Hours

Computer Fundamentals & Basics of Power System in a computer - Parts of Computer System - Components over view - System Case, Branded and Assembled - Introduction to SMPS & UPS - Trouble shoot - Switch mode Power supply - Introduction to Input output system – BIOS - CMOS.

UNIT II   Operating System Basics   9 Hours

Details about Central Processing Unit & Main board - Installing a Processor in a mother board- Compatibility - Form Factor - Bus-Manufacturer (ASUS) - Primary and Secondary Memory- Difference between RAM & ROM - Types of RAM - SSD & HDD - SATA & NVME - Cloud Storage - Computer Accessories - Optical Drive - Keyboard & Mouse - Monitor – Pendrive - Printer - Camera.

UNIT III   Basic Troubleshooting & Maintenance   9 Hours

Introduction to Operating system - Types of OS - Difference between OS from Microsoft, Linux and MAC- Configuring a bootable Device - CD / DVD-Flash Drive - Disk Partitioning - Storage Space - Application Installation   Space - Storage Space Expansion methods - computer Management - Manage the resource as per User Need - Drive Update Drive Update Mandatory Applications.

UNIT IV   Cyber security Awareness   9 Hours

Virus / Malwares - Virus Attack Awareness - Course of action to disinfect the system - Data Communication and Networking- LAN, CAN, MAN, WAN - Knowledge of Network Topologies, Networking Devices, Transmission Media , Sharing of resources -Topology - Bus, Ring, Mesh , Star - Devices - Switch, Router, firewall - Cables & connectors - UTP, Fiber optic - Crimping - Straight Through, Cross Over.

UNIT-V   Software Installation & Management   9 Hours

Knowledge of Internet & Internet Network Configuration - IP Address - Type - Class A –E - Mac Address-LAN Implementation- Configure IPV4 address - File sharing - remote Service - OSI M Network Monitoring using Wireshark Model & TCP/IP Model – Monitoring - Real Time / Business Tactics - Laptop / Desktop Service Format - Branded Vs Assembled PC - Refurbished PC Collection of Software - Installation - Offline Activation without payment (Free).

COURSE OUTCOMES (COs):

On successful completion of this course, the students will be able to:

CO. No	CO Statements
CO1	Choose different components of a computer and their functions with interactions.
CO2	Apply gained knowledge about operating system functions, installation, and troubleshooting.
CO3	Experiment basic networking concepts, including connecting to the internet
CO4	Organize, manage, and secure files and folders efficiently.
CO5	Identify different online security, antivirus software, and safe browsing practices.

CO's	PO'S												PSO's		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
1	-	2	-	-	-	-	-	-	-	-	-	-	3	-	-
2	-	1	-	-	2	-	-	-	-	-	-	2	-	2	-
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5	-	3	2	-	-	-	-	-	-	-	-	-	-	-	3
AVG.	-	1	-	-	1	-	-	-	-	1	-	-	-	1	1

1 - low, 2 - medium, 3 - high, '-"- no correlation