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

1. Computer Programming I-Programming in C

2. Basics of Windows and Server Administration

3. Advance Network Devices

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STRUCTURE TABLE

S. No.	Paper Title	Paper Category Skill Compulsory (SC) Skill Elective (SE)	Credits			Total Credits	EoSE Duration (Hrs.)		
			Theory	Practical	Self/Project /Industry		T	P	S
1	Computer Programming I-Programming in C	SC	3	3	0	6	3	2	
2	Basics of Windows and Server Administration	SC	3	3	0	6	3	2	
3	Advance Network Devices	SC	3	3	0	6	3	2	
	Total					18			

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Semester - IV

DETAILED SYLLABUS

1. Computer Programming I-Programming in C

Overview of C- History of C, Importance of C, Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant, Structure of a C Program, printf(),

scanf() Functions, Operators & Expression: Arithmetic, relational, logical, BITwise, unary, assignment, shorthand assignment operators, conditional operators and increment and decrement operators, Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity.

Decision making and branching- Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement. Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement, Nested loops.

Functions- Standard Mathematical functions, Input/output: Unformatted & formatted I/O function in C, Input functions viz. getch(), getche(), getchar(), gets(), output functions viz., putch(), putchar(), puts(), string manipulation functions.User defined functions: Introduction/Definition, prototype, Local and global variables, passing parameters, recursion.

Arrays, strings and pointers- Definition, types, initialization, processing an array, passing arrays to functions, Array of Strings. String constant and variables, Declaration and initialization of string, Input/output of string data, Introduction to pointers.

Storage classes in C- Auto, extern, register and static storage class, their scope, storage, & lifetime.

2. Basics of Windows and Server Administration

Understanding Windows Programming Basics- Identify Windows application types, Implement user interface design. Install a Windows Services application. Accessing Data in a Windows Forms Application: Understand data access methods for a Windows Application, Understand databound controls. Deploying a Windows Application: Understand windows application deployment methods, integrating data.

Windows 7/8- Installing, upgrading and migrating to Window 7/8, Deploying Windows 7/8, Configuring disk and device drivers, Configuring, file access and printers on Window 7/8 client, Installation Server 2008, Drivers, Working with windows 2008 Devices, Troubleshooting Devices & Drivers, Managing system updates.

Working with Disk Storage- Type of Disk Storage, Type of volumes, Implementing fault tolerance, Use disk management tools, Disk Quota, Troubleshooting disk management, Shadow copy.

Domain Controller- Install Active Directory, Manage Active Directory Component, Working with OU Structure, Working with Domain User account, working with Domain Groups.

Domain Name Services (DNS)- Define Name resolution, Install DNS, Configure DNS Client, Manage and Troubleshoot DNS. Dynamic Host Configuration Protocol: Configure DNS Server, Backup and Recovery, Steps for Backup and Recovery

3. Advance Network Devices

Switch- Introduction, roles of switches in network, types of switches: managed and unmanaged switch. Working of switch in different layers. Configuration of Switch: Command Mode, Setting Host Names, Setting Passwords, Setting IP Addresses and Default Gateways, Setting Operational Speed, Switch Port Security, Sticky MAC Addresses.

Switching- Introduction, Switching Services, Bridging vs LAN Switching, Switch Functions at Layer 2, Definition of Spanning Tree Protocol (STP), Operations of STP, STP Port States, Definition of VLAN, Typing of VLAN: Static and Dynamic, VLAN Identification Methods, VLAN Trunking Protocol (VTP), VTP Modes of Operation, Routing between VLANs, Configuring Inter- VLAN Routing

Router- Introduction, components of routers, Types of Routers: Broadband Routers, Wireless Routers, Edge Router, Subscriber Edge Router, Inter-provider Border Router, Core Router, Wired and Wireless Routers. Functions of routers, router modes, Configuration of Router: names, passwords, password encryption, interfaces name, creating a login banner, saving configuration and erasing configuration.

Routing- Introduction, Types of routing: static and dynamic routing, Static routing: Configuring a static route, permanent keyword, static routes and administrative distance, configuring default route. Dynamic routing: Dynamic Routing Protocols: RIPv1, RIPv2, IGRP, EIGRP and OSPF.