Draft Syllabus of Diploma in Computer Application and Network Administration (DCA&NA) (200 Hrs)

Sl.no	Topic	No. of Theory classes	No. of Practical classes
1.	Introduction to Computer Application	20	30
2.	Computer Hardware and Peripherals	14	12
3.	Networking Fundamentals	14	10
4.	Network Components and Hardware	15	17
5.	Network Configuration and Setup	9	16
6.	Servers and Network Security	18	25
	Total	90	110
Total number of Classes Theory + Practical		200	

UNIT 1: AN INTRODUCTION TO COMPUTER APPLICATION

1.1 Definition of Computer

       1.1.1 Basics of Computer

       1.1.2 I/O devices

       1.1.3 Organization of Computer

       1.1.4 Software and Hardware

1.2 Getting familiar with Microsoft Office 2016

1.3 Software Installation

       1.3.1 Installation of Operating System

       1.3.2 Installation of Application Software

       1.3.2 Installation of Anti-virus and other utility Software

UNIT 2: COMPUTER HARDWARE AND PERIPHERALS

2.1 Introduction to different parts of a PC

2.2 Inside the PC

       2.2.1 Opening the PC

       2.2.2 De-assemble the PC

       2.2.3 Assemble the PC

       2.3 BIOS Configuration

2.4 Study of Peripherals

       2.4.1 Printers, Scanners

       2.4.2 SMPS

       2.4.3 CD ROM, Hard Disk

2.5 Diagnostic & Troubleshooting

UNIT 3: NETWORKING FUNDAMENTALS

2.1 Network Topologies and Types

2.1.1 Bus, Ring, Star, Mesh, Hybrid

2.1.2 LAN, MAN, WAN, PAN, CAN

2.2 Networking Models

2.2.1 OSI Model

2.2.2 TCP/IP Model

2.3 Network Adapters

2.4 Introduction to Protocols

UNIT 3: NETWORK COMPONENTS AND HARDWARE

3.1 Networking Devices

3.2 Characteristics of Cables

3.2 Copper Media

3.2.1 Co-Axial

3.2.2 Twisted Pair

3.2.3 Crimping

3.3 Optical Media

3.3.1 SMF

3.3.2 MMF

3.4 Signaling

3.4.1 Baseband

3.4.2 Broadband

3.5 Structured Cabling

3.6 Cabling and Troubleshooting

UNIT 4 NETWORK CONFIGURATION AND SETUP

4.1 IP Address

       5.2.1 IP Versions

       5.3 IPv4 Classes

4.2 Static and Dynamic IP Address

       4.2.1 Setting IP address

4.3 Use of Ping, ipconfig and tracert commands

4.4 Installing of Servers

UNIT 5: SERVERS AND NETWORK SECURITY

5.1 Types of Servers

       5.1.1 File Server

       5.1.2 Print Server

       5.1.3 Web Server

       5.1.4 Mail Server

       5.1.5 Database Server

       5.1.6 FTP Server

       5.1.7 DNS Server

       5.1.8 DHCP Server

       5.1.9 Proxy Server

       5.1.10 Antivirus Server

5.2 Features of NAT

       9.1.2 Advantages of NAT

       9.1.3 Disadvantages of NAT

5.3 Recovery and Backup

5.4 Understanding threats

5.4.1 Internal Threats

5.4.2 External Threats

5.4.3 Security Attacks

5.5 Implementing Network Security

5.5.1 Encryption

5.5.2 Digital Signature

5.5.3 Authentication Protocol

5.5.4 Kerberos

5.5.5 Firewall

Suggested Practical:

1. Recognizing different Topologies

2. Recognizing different Cables and Connectors

3. Crimping

4. Check MAC address

5. Subnet Calculation

6. Static IP Addressing

7. Dynamic IP Addressing

8. Use Ping, ioconfigg and Tracert

9. Connecting systems to the Switches

10. Checking Status LED on Switches

11. Checking Patch Panel

12. Verifying Digital Signature

13. Check authentication protocols

14. Check Kerberos