



Course Name: Network Operations, Design, Optimization Management

(UG/PG): PG

Number of Credits: 3

Level: 5

Learning Objective(s): To access designing of LANs and WANs and propose an optimized design
To evaluate functionalities, standards and applications associated with Computer networks.
To be able to use standard network management tools to monitor networks operations

Pedagogy:

Extensive use of case studies.
Lecture and class discussions- clarification with Quiz
Write up assignments.
Mini Project and presentations

Pre-learning:

Basic knowledge of Computer Network and broader aspects of NW management

Course Outline:

Sr.No.	Topic	Hours
1	Network Design Process Design Objectives Analyzing business goals and objectives Analyzing technical goals and objectives Characterizing existing n/w Characterizing n/w traffic flow	3
2	Logical Network Design – I Design objectives for LAN, Understanding your Campus n/w, Designing LAN topology, Hierarchical n/w design	3
3	Logical Network Design – II VLAN Planning, Spanning tree protocol, IP multi cast, QoS & RSVP, Developing security strategy, Security tools & firewalls	3
4	Physical Network Design Selecting technology & devices For campus For Enterprise	3

5	Designing WAN Designing Topology, Flat Vs Hierarchical design, WAN design parameters, Choosing WAN technology Case Study of WAN design	3
6	Overview of Network Management Goals, Organization and Functions. FCAPS Current status and future of network management	3
7	Basic Foundations of Network Management Concept of a Managed Network Network Management Model (NMS) Organization Model Information Model. Communication Model. Functional Model.	4.5
8	SNMP SNMP Architecture and Model Applications in e-mail management SNMPv2 major changes System Architecture Structure of Mgmt. Information SNMPv2 MIB SNMPv2 Protocol Compatibility with SNMPv1 Overview of SNMPv3	6
9	Network Mgmt. Tools Network Configuration Management Network Statistics Measurement Systems Network Management Systems Management of QoS Management of physical components in a network	6
	Total	45

Books Recommended:

1. Network Management – Principles and Practices, M. Subramanian, Pearson Education, 2002.
2. IP Network Design, Cormac Long, Tata McGraw Hill
3. Top-Down Network Design – Oppenheimer, Cisco Press
4. SNMP, SNMPv2, SNMPv3 & RMON1 & 2, William Stallings, 3rd Ed
5. Guide to Network Essentials- Greg Tomsho, et al

Suggested Evaluation Methods:

Parallel/Similar courses the existing curriculum:

S.No.	Name of the course	Institute where it was offered

Name of Member					
Designation					
Org. / Inst.					
Signature					

Name of the Expert:

Signature:

Date: