

Course Name:	Enterprise Network Administration and Management
Course Code:	BUC3229
Course Level:	3
Credit Units:	4
Credit Hours:	60

COURSE DESCRIPTION

The course aims to expose students to essential networking concepts, design, Implementation and administration of computer networks so as to implement effective computer networks for a modern organization.

Course Objectives

The objective of this course are to:

- Explain to student how to Design and Implement a Corporate network through definition of requirements, selection of suitable hardware and software, physical and logical assembly
- Provide an analysis and definition of network requirements, media, transmission media, IP address and sub netting schemes

Learning outcomes

At the end of the course students will be able to:

- Design and Implement a Corporate network through definition of requirements, selection of suitable hardware and software, physical and logical assembly.
- Analyze and define network requirements, media, transmission media, IP address and sub netting schemes.

Detailed Course Content

No.	Topic	Lesson Details	Hours
1.	Networking fundamentals & analysis	• Basic networking concepts, • Computers & communications Data communications, Terms, process, concepts • Telecommunications systems, networking basics computer networks clarification and design technical considerations client, server , workgroup models LANs, MAN, VWANs Common Topologies, LAN services	4
2.	Network design	• LAN Concepts • Identifying LAN Components • Basic hardware, software different network methods, capacity planning	6
3.	Transmission media & Network connectivity.	• Guided and unguided media (wire, coax, fibre, terrestrial, and satellite microwave)	6
4.	Network protocols and models	overview of OSI Model, TCP/IP SLIP, PPP, and IEEE protocols FDDI,ISDN, and ATM	4
5.	Operations of the ISO Physical layer	The data link layer , net work layer, transport layer, session layer, the presentation and application layers	6
6.	Network Administration	• Network administration, setting up user/ group	4

		accounts, administering user/group accounts, securing setting up net work peripherals, auditing and monitoring network resources, achieving fault tolerance	
		• Windows user and network environment, IP address allocation, configuring network access	
7.	IP Addressing	• IP Addressing • Classes • Sub netting • Address resolution and routing	4
8.	Web Technologies.	• Internet & Intranets Management • Design issues, and implementation of a Corporate Intranet Site	6
9.	Network security and maintenance	• Understand basic terminology and concepts related to security • Explain common attacks against network assets, the associated threats and vulnerabilities, and what network security personnel do to secure assets	6
10.	Practical demonstration	• Analysis requirements planning, design and implementation of network protocols • TCP/IP Architecture • IP Addressing Scheme • IP Sub netting • Media Connectivity	14
	Total Hours		60

Mode of Delivery

- Lectures
- Group and class discussions
- Tutorials

Mode of Assessment

- Course work 30%
- End of semester examination 70%

Reading List

1. Karris Steven (2008), Networks, design and Management, Orchard Publications
2. Mir F. Nader, (2006), Computer and Communication Networks, Prentice Hall
3. Dennis, (2002), Networking in the Internet Age, John Wileys and Sons
4. Haykin, Simon,(2000) Communication Systems, Third Edition, John Wiley & Sons, N.Y
5. Andrew S. Tanenbaurn, Computer Networks, 4th Edition