Course Type	Course Code	Name of the Course	L	T	P	Credits
DP	NECC516	**Communication Networks Lab**	0	0	3	1.5

Course Objective
To design and develop the knowledge on communication networks and simulate different routing protocols.
Learning Outcomes
Upon successful completion of the course, students will: • be able to have hands-on experience on network components and connectivity • be able to implement channel allocation at data link layer • be able to implement routing at network layer.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Implementation of ALOHA protocol and Observe its throughput.	3	To acquire the knowledge in ALOHA protocols
2	Implementation of CSMA protocol and Observe its throughput.	3	To understand the channel allocation using CSMA techniques
3	Implementation of different types of Line coding schemes.	6	To acquire the knowledge on implementation of line coding techniques
4	Hands on experiments on cabling and network accessories	3	To acquire the hand-son experience in the network components and its working.
5	Implementation of Voice over Ethernet over IP network	3	To acquire the knowledge in implementing different networks.
6	A) Perform the following using Cisco Packet Tracer : 1) Point to Point communication. 2) Study of file transfer protocol. 3) Study of different topology. B) Switches and router configuration.	3	To understand different communication protocols and network topology.
7	Study of Static Routing Algorithm using Cisco Packet Tracer and D-link Switch (DGS-3130).	3	To get the knowledge in routing protocols
8	Creation of Vlan and its configuration using cisco packet tracer and D-link Switch (DGS-3130).	3	To know the creation and implementation of VLAN
9	Configuration of wired and wireless network devices	3	To acquire the knowledge on wires and wireless network devices
10	Implementation of Spanning Tree using Kruskal's Algorithm and Prim's Algorithm.	6	To acquire the knowledge in minimum spanning tree and its implementation
11	Implementation of Dijkstra shortest path Algorithm. And Bellman Ford Algorithm	6	To acquire the knowledge in implementing shortest path algorithms
	Total	**42**	

Text Books:

1. Nader F. Mir, "Computer and Communication Networks", Pearson Education, 2007.
2. William Stallings, "Data and Computer Communications", tenth edition, Pearson Education, 2017.
3. Todd Lammle, Jon Buhagiar, "CompTIA Network+ Study Guide: Exam N10-009 (Sybex Study Guide)" Wiley Press, 2024.

Reference Books:

1. Communication Networks Lab Manual