EE357 Computer and Communication Networks (CCN)/ CCN Labs			
Credit Hours:	3-1-4	**Prerequisites**	CS114

Course Learning Outcomes:

S No	**CLO**	**Domain**	**Taxonomy Level**	**PLO**
1.	**Explain** the TCP/IP protocol suite and the working of the Internet.	Cognitive	2,4	1
2.	**Demonstrate** and complete basic computer networking operations and configuring devices usingnetwork simulators and user interfaces of actual networking devices.	Psychomotor	5	4
3.	**Demonstrate** a basic understanding of the principles and latest protocols which run in today's computer and communication networks.	Cognitive	3	2
4.	**Design** a corporate network with desired specifications.	Cognitive	4	3

Course Content:

Fundamental concepts of networking, network models and topologies, network layering concepts and protocols, OSI and Internet Protocol (IP) reference model and associated control protocols (TCP/UDP). Physical layer functionality, data link layer functionality, addressing schemes at link layer, network and transport layer, channel access/ multiple access techniques, transmission media and its characteristics, switching techniques, circuit switching and packet switching, LAN technologies, wireless networks, MAC addressing, MAC routing protocols and multicast, overview of application layer protocols (HTTP, FTP, SMTP etc.), multimedia protocols (RTP, RTSP, RTCP). Networking devices, network layer protocols, IPv4 and IPv6, IP addressing, sub netting, CIDR, routing protocols, transport layer protocols, ports and sockets, connection establishment, flow and congestion control, application layer protocols, latest trends in computer networks. Security Mechanisms and Services, network vulnerability, concepts of symmetric and asymmetric cryptography, digital signature, convergence of communication networks.

Teaching Methodology:

Lectures, Written Assignments, Semester Project, Presentations

Course Assessment:
Midterm Exam, Home Assignments, Quizzes, Project, Presentations, Final Exam
Reference Materials:
1. Computer Networking: A Top-Down Approach Featuring the Internet, 6th edition by James F. Kurose and Keith W. Ross 2. Computer Networks, 5th Edition by Andrew S. Tanenbaum 3. Data and Computer Communications, 10th Edition by William Stallings 4. Data Communication and Computer Networks, 5th Edition by Behrouz A. Forouzan