Course Title	**Computer Networks**		
Course Code	**CC-214N**		
Credit Hours	3 (2,1)		
Category	Computing Core		
Prerequisite	None		
Co-Requisite	None		
Follow-up	None		
Course Introduction	This course provides fundamental concepts related to computer networks. After completion of the course, the students will be able to understand Computer Networks basics, network types, layered communication models and protocols. The students will be familiar with networking, routing, switching, and Setting up of networks from scratch, major protocols involved in communication and their configurations. Students will also be made aware of the state-of-the-art areas in case they would like to pursue this course in future.		
Course Learning Outcomes (CLOs)	At the end of the course, the students will be able to:	**BT**	**PLO**
	CLO1: Describe the key terminologies and technologies of computer networks	C2 (Describe)	1
	CLO2: Explain the services and functions provided by each layer in the Internet protocol stack	C2 (Explain)	1
	CLO3: Identify various internetworking devices and protocols and their functions in a networking	C4 (Identify)	1,2
	CLO4: Analyze working and performance of key technologies, algorithms and protocols	C4 (Analyze)	3
	CLO5: Build Computer Network on various Topologies.	C5 (Build)	4,5
Syllabus	**Introduction**: Protocols architecture, basic concepts of networking, network topologies. **Layered Architecture**: Physical layer functionality, data link layer functionality, multiple access techniques, circuit switching and packet switching, LAN technologies, wireless networks, MAC addressing, networking devices, network layer protocols**,** IPv4 and IPv6, IP addressing, subnetting, CIDR, routing protocols, transport layer protocols, ports and sockets, connection establishment, flow and congestion control, application layer protocols, latest trends in computer networks. Introduction to Wireshark, HTTP GET/response interaction, DNS role in the Internet infrastructure, TCP segments sent and received in transferring, UDP transport protocol IP investigate the IP protocol, NAT behavior of the NAT protocol, DHCP examine the DHCP packets captured, ICMP capturing the packets generated by the Ping program, Ethernet and ARP investigate the Ethernet protocol and the ARP protocol, 802.11 Wireless investigate the 802.11 wireless network protocol, SSL investigate the Secure Sockets Layer (SSL) protocol		
Suggested Instructional/ Reading Material	1. James F. Kurose and Keith W. Ross, Computer Networking: A Top-Down Approach Featuring the Internet, 6th Edition, Pearson, 2012, ISBN: 0132856204. 2. T. Lammle, CCNA Cisco Certified Network Associate Deluxe Study Guide, 6th Edition, Sybex, 2011, ISBN: 978-0-470-90108-3. 3. Andrew S. Tanenbaum, David J. Wetherall, Computer Networks, 5th Edition, Prentice Hall, 2010, ISBN: 9332518742. 4. William Stallings, Data and Computer Communications, 10th Edition, Pearson, 2013, ISBN: 0133506487. 5. Behrouz A. Forouzan, Data Communication and Computer Networks, 5th Edition, McGraw-Hill, 2012, ISBN: 0073376221. 6. R. Perlman, Interconnections: Bridges, Routers, Switches, and Internetworking Protocols, 2nd Edition, Addison-Wesley, 1999, ISBN: 0201634481.		