

Computer Networks					
Credit Hours:	2	Course Code:	INFT-2113	Prerequisites:	None
Course Learning Outcomes (CLOs):					
At the end of the course, the students will be able to:				Domain	BT Level**
1. <i>Understand</i> the key terminologies and fundamental principles of communication and networking.				C	1
2. <i>Explain</i> the services and functions provided by each layer in the internet protocol stack.				C	2
3. <i>Identify</i> various internetworking devices and protocols, and their functions in a network.				C	3
4. <i>Analyze</i> working and performance of key technologies, algorithms and protocols.				C	3
5. <i>Evaluating</i> student's knowledge and skills in computer networks				C	4
* BT= Bloom's Taxonomy, C=Cognitive Domain, P=Psychomotor Domain, A=Affective Domain					
#	SDG	Relevant CLOs			
1	SDG 4: Quality Education	CLO 2: Explain the services and functions provided by each layer in the internet protocol stack.			
2	SDG 17: Partnerships for the Goals	CLO 4: Install network for small scale organizations			
3	SDG 9: Industry, Innovation and Infrastructure	CLO 3: Identify various internetworking devices and protocols, and their functions in a network. CLO 4: Install network for small scale organizations.			
Course Contents:					
Introduction to Data Communications & Networks, Communication Components, Transmission Modes, Standards, Protocols, Basic Networking Concepts, Network Topologies, Effectiveness of Communication, Types of Networks, Network Devices, Layered Network Models (OSI Reference Model, TCP/IP Architecture), Physical Layer Functionality, Data Link Layer Functionality, Network Layer Functionality, Transport Layer Functionality, Application Layer Functionality, Network Servers, LAN Technologies, MAC Addressing (ARP, RARP), IPv4 and IPv6, IP Addressing, Subnetting, CIDR, Routing Protocols, Transport Layer Protocols, Ports and Sockets, Connection Establishment, Flow and Congestion Control, Application Layer Protocols, Network Address Translation, Virtual Networks, Circuit Switched Networks, Packet Switched Networks, Network Security, Cryptography, Mobile Networks, Latest Trends in Computer Networks and Internet of Things (IoT).					
Teaching Methodology:					
Lectures, Written Assignments, Practical labs, Semester Project, Presentations.					
Course Assessment:					
Mid Term Exams, Final Term Exams, Assignments, Quizzes, Project, Presentations, Practical Exam					
Reference Material:					
1. Data Communications and Networking with TCP/IP Protocol Suite ISE by Behrouz A. Forouzan, McGraw-Hill Science, 6 th Edition, Year 2021, ISBN-13: 978-1260597820					
2. Data and Computer Communications by William Stallings, Prentice Hall, 10 th Edition, Year 2013; ISBN-13: 978-0133506488					
3. Computer Networking: A Top-Down Approach, 7th edition, by James Kurose and Keith Ross, Year 2016, ISBN-13: 978-0133594140					
4. Computer Networks by Andrew S. Tanenbaum and David Wetherall, 6 th Edition, Year 2021, ISBN-13: 978-1292374062					