

Course Code	18CSS202J	Course Name	COMPUTER COMMUNICATIONS	Course Category	C	Professional Core	L	T	P	C
							3	0	2	4

Pre-requisite Courses	NIL	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Science and Engineering			Data Book / Codes/Standards	Nil

Course Objective:		The purpose of learning this course is to:			Learning			Program Learning Outcomes (PLO)																		
					1-6																					
1		Understand the basic services and concepts related to Internetwork			Level of Thinking	Expected Proficiency (%)	Expected Attainment (%)	Engineering Knowledge	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
2		Understand the layered network architecture							2	3	4	5	6	7	8	9	10	11	12	13	14	15				
3		Acquire knowledge in IP addressing							3	4	5	6	7	8	9	10	11	12	13	14	15					
4		Exploring the services and techniques in physical layer							4	5	6	7	8	9	10	11	12	13	14	15						
5		Understand the functions of Data Link layer							5	6	7	8	9	10	11	12	13	14	15							
6		Implement and analyze the different Routing Protocols							6	7	8	9	10	11	12	13	14	15								
Course Outcomes (CO):		At the end of this course, learners will be able to:																								
CO-1		Apply the knowledge of communication			2	80	70	3	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
CO-2		Identify and design the network topologies			3	85	75	3	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
CO-3		Design the network using addressing schemes			3	75	70	3	3	4	5	6	7	8	9	10	11	12	13	14	15					
CO-4		Identify and correct the errors in transmission			3	85	80	3	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
CO-5		Identify the guided and unguided transmission media			2	85	75	3	-	-	-	-	-	-	-	-	-	-	2	-	-	-				
CO-6		Implement the various Routing Protocols			4	80	70	3	3	4	5	6	7	8	9	10	11	12	13	14	15					

Duration (hour)	12	12	12	12	12
S-1	SLO-1	Evolution of Computer Networks, Network categories	IPv4 Addressing, Address space	Line coding: Unipolar scheme	Framing, Flow Control Mechanisms
	SLO-2	Data Transmission Modes, Network topologies	Dotted Decimal Notation. Classful Addressing	Polar schemes, Bipolar schemes	Sender side Stop and Wait Protocol, Receiver side Stop and Wait Protocol
S-2	SLO-1	Circuit Switching and Packet Switching	Subnet Mask	Amplitude shift keying, Frequency shift keying	Goback N ARQ, Selective Reject ARQ
	SLO-2	Protocols and standards	Subnetting	Phase shift keying, Pulse code Modulation, Delta Modulation	CRC, Checksum
S-3	SLO-1	Lab 1: IP Addressing	Lab 4:Router Configuration (Creating Passwords, Configuring Interfaces)	Lab 7: RIP v1	Lab 10: EIGRP Authentication and Timers
	SLO-2				
S-5	SLO-1	Layers in the OSI model, Functions of Physical layer, data link layer	Special Addresses	Multiplexing: FDM	Types of Errors
	SLO-2	Functions of Network layer, Transport layer	Special Addresses	Multiplexing: FDM	Types of Errors
S-6	SLO-1	Functions of Session, Presentation layer and Application layer	Classless Addressing	TDM	Forward Error correction
	SLO-2	TCP/IP protocol suite, Link layer protocols	Problem Solving	WDM	CSMA, CSMA/CD
S-7	SLO-1	Lab 2: Subnetting (VLSM)	Lab 5: Basic Switch Configuration: Vlan	Lab 8: RIP v2	Lab 11: Single-Area OSPF Link Costs and Interface
	SLO-2				
					Lab 14: BGP Configuration

S-9	SLO-1	Network layer protocols	Private Address, NAT, Supernetting	Guided Media: Twisted Pair, Coaxial Cable Fiber optic cable	Hamming Distance	RIP v1,RIP v2
	SLO-2	Transport layer protocols	Hub, Repeaters, Switch	Unguided media: Radio waves	Correction Vs Detection	OSPF
S-10	SLO-1	Serial and Parallel Transmissions	Bridge	Microwaves	HDLC	EIGRP
	SLO-2	Addressing	Structure of Router	Infrared	PPP	BGP
S 11-12	SLO-1	Lab 3: LAN Configuration using straight through and cross over cables	Lab 6: Static and Default Routing	Lab 9: EIGRP Configuration, Bandwidth, and Adjacencies	Lab 12: Multi-Area OSPF with Stub Areas and Authentication	Lab 15: Configuring Static and Default Routes

Learning Resources	1. Behrouz A. Forouzan, "Data Communications and Networking" 5th ed., 2010	3. William Stallings, Data and Computer Communications, 9th ed., 2010
	2. Bhushan Trivedi, "Data Communication and Networks" 2016	4. Todd Lammle, CCNA Study Guide, 7th ed. 2011

Learning Assessment											
	Bloom's Level of Thinking	Continuous Learning Assessment (50% weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (15%)		CLA – 3 (15%)		CLA – 4 (10%)			
		Theory (5%)	Practice (5%)	Theory (7.5%)	Practice (7.5%)	Theory (7.5%)	Practice (7.5%)	Theory (5%)	Practice (5%)	Theory (25%)	Practice (25%)
Level 1	Remember	15%									
Level 2	Understand	20%		10%	15%	25%		15%		15%	
Level 3	Apply	15%	20%	30%	20%	15%	20%	15%	20%	20%	20%
Level 4	Analyze			10%	15%	10%	20%	10%	10%	15%	20%
Level 5	Evaluate		10%				10%	10%	20%		10%
Level 6	Create										
	Total	100 %		100 %		100 %		100%		100%	

CLA – 4 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

Course Designers			
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