



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

TEACHING PLAN

Course Code	Course Title	Semester	Branch	Contact Periods /Week	Academic Year	Date of commencement of Semester
20CS5T01	Computer Networks	V	AI&ML	6	2023-24	03-07-2023
Pre-requisites:						
COURSE OUTCOMES						
CO1	Differentiate network reference models such as OSI, TCP/IP (K2)					
CO2	Classify various Data Link Layer protocols such as Error Detection and correction (K2)					
CO3	Distinguish various MAC sub layer Protocols such as ALOHA, CSMA, CSMA/CD (K2)					
CO4	Differentiate various Network layer and Transport layer protocols and Its Applications (K2)					
CO5	Illustrate various application layer protocols such as WWW and HTTP etc. (K2)					
Unit	Out Comes / Bloom's Level	Topics No.	Topics/Activity	Text Book / Reference	Cont act Hour	Delivery Method
UNIT-I: Data Communication						
I	CO1: Differentiate network reference models such as OSI, TCP/IP (K2)	1.1.1	Components .	T1,T3	1	Chalk ,talk
		1.1.2	Data Representation	T1,T3	1	Chalk ,talk
		1.1.3	Data flow (Simplex, Half- duplex and Full-Duplex)	T1,T3	1	Chalk ,talk
		1.1.4	Types of connections: Point to Point and Multipoint	T1,T3	1	Chalk ,talk
		1.1.5	Various Categories of Topologies	T1,T3	1	Chalk ,talk
		1.1.6	Categories of Networks	T1,T3	1	Chalk ,Talk
		1.1.7	Protocols and Standards	T1,T3	1	Chalk, Talk
		1.1.8	OSI network model	T1,T3	2	Chalk, Talk
		1.2.1	TCP/IP Protocol Suite	T1,T3	2	Chalk, Talk
		1.2.2	Transmission Media (Twisted pair cable, Coaxial cable and Fiber-optic cable)	T1,T3	1	Chalk, Talk
Revision of Data communication					1	Chalk ,talk, ppt
Total					13	



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UNIT-II: Data Link Layer						
II	CO2: Classify various Data Link Layer protocols such as Error Detection and correction (K2)	2.1.1	Error Detection and Error Correction -Introduction	T2,R1	1	Chalk ,talk
		2.1.2	Block coding	T2	1	Chalk ,talk
		2.2.1	Er- ror Detection	T2	1	Chalk ,talk
		2.2.2	Error Correction	T2	1	Chalk ,talk
		2.2.3	Hamming Distance	T2	1	Chalk ,talk
		2.3.1	Minimum Hamming Distance	T2	1	Chalk ,talk
		2.3.2	Cyclic Codes	T2,R1	1	Chalk ,talk
		2.3.3	Cyclic Redundancy check (CRC)	T2,R1	1	Chalk ,talk
		2.3.4	Checksum	T2,R1	1	Chalk ,talk
		2.3.5	Framing	T2,R1	1	Chalk ,talk
		2.3.6	Flow control and Error control	T2	2	Chalk ,talk
		Revision of Data Link Layer				
Total					13	
UNIT-III: Medium Access Sub Layer & Network Layer						
III	CO3: Distinguish various MAC sub layer Protocols such as ALOHA, CSMA, CSMA/CD (K2)	3.1.1	Random Access protocols – ALOHA, Pure ALOHA, Slotted ALOHA	T2,R1	2	Chalk ,talk
		3.1.2	Carrier Sense Multiple Access (CSMA)	T2,R1	1	Chalk ,talk
		3.1.3	1-persistent CSMA, Nonpersistent CSMA	T2,R1	1	Chalk ,talk
		3.1.4	p-Persistent CSMA, CSMA/CD,	T2,R1	2	Chalk ,talk
		3.1.5	CDMA/CA	T2,R1	1	Chalk ,talk
		3.2.1	Logical addressing	T2,R1	1	Chalk ,talk
		3.2.2	IPV4 Addresses	T2,R1	1	Chalk ,talk
		3.2.3	Classful and Classless Addressing, Subnetting	T2,R1	1	Chalk ,talk
			Network Address Translation (NAT)	T2	1	Chalk ,talk
			IPV6 Addresses-Structure and Address space	T2	1	Chalk ,talk
			Address Mapping: ARP, RARP, BOOTP and DHCP	T2	1	Chalk ,talk
		Revision of MAC sub layer protocols				
Total					14	



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UNIT-IV: Transport Layer						
IV	CO4: Differentiate various Network layer and Transport layer protocols and its Applications	4.1.1	Process to Process Communication	T2	1	Chalk ,talk
		4.1.2	User Datagram Protocol (UDP)	T2	1	Chalk ,talk
		4.1.3	UDP Format, uses of UDP	T2	1	Chalk ,talk
		4.1.4	Transmission Control Protocol (TCP)	T2	1	Chalk ,talk
		4.1.5	TCP Services, TCP Features	T2,R2	1	Chalk ,talk
		4.1.6	TCP Segment	T2,R2	1	Chalk ,talk
		4.1.7	Quality of Service	T2,R2	1	Chalk ,talk
		4.1.8	QoS improving techniques	T2,R2	1	Chalk ,talk
		4.1.9	Leaky Bucket and Token Bucket algorithm	T2,R2	2	Chalk ,talk
Revision of Transport Layer				T2	1	Chalk ,talk, ppt
Total					11	
UNIT-V: Application Layer						
V	CO5: Demonstrate the implementation of Advanced Behavioral Modeling. (K2 ,K3)	5.1.1	Domain Name System (DNS)	T2	1	Chalk ,talk
		5.1.2	Domain Name Space	T2	1	Chalk ,talk
		5.1.3	Distribution of Name Space	T2	1	Chalk ,talk
		5.2.1	Remote Logging	T2	1	Chalk ,talk
		5.2.2	TELNET	T2	2	Chalk ,talk
		5.2.3	ELECTRONIC MAIL	T2	2	Chalk ,talk
		5.3.1	SMTP	T2	1	Chalk ,talk
			File Transfer Protocol (FTP)	T2	1	Chalk ,talk
		5.3.2	WWW, HTTP	T2	2	Chalk ,talk
Revision of Application Layer					1	Chalk ,talk, ppt
Discussion of previous year question papers					1	
Discussion of previous year question papers					1	
Discussion of previous year question papers					1	
Discussion of previous year question papers					1	
Discussion of previous year question papers					1	
Total					18	
CUMULATIVE PROPOSED PERIODS					69	
Text Books:						
S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
1	Data Communication and Networking, 5th Edition, Behrouz A. Forouzan, McGrawHill, 2017					
2	Computer Networks, 6th Edition, Andrew S. Tanenbaum, Pearson New International Edition, 2021.					
3	Data and Computer Communication, 8th Edition, William Stallings, Pearson Prentice Hall India, 2017					



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Reference Books:	
S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
1	Internetworking with TCP/IP, Volume 1, 6th Edition Douglas Comer, Prentice Hall of India.
2	TCP/IP Illustrated, Volume 1, W. Richard Stevens, Addison-Wesley, United States of America.
Web Details	
1	https://www.unacademy.com/networks
2	https://www.tutorialspoint.com/computer_networks/cn_tutorial.pdf
3	https://www.geeksforgeeks.org/layers-osi-model/
4	https://www.wikilectures.eu/w/Computer_Network
5	https://technet.microsoft.com/en-us/network/default.aspx
Activities planned for achievement of outcomes:	
Activities to be selected from following list (Partial list, more activities can be added by faculty)	
1.	Assignments
2.	Quizzes
3.	Internal Assessment Tests
4.	Crossword
5.	Role Play
6.	Mini Project
Assignments:	
A-1	Categories of Topologies, Categories of Networks, OSI reference Model
A-2	Error Detection and Error Correction, Block Coding
A-3	Random Access Protocols, Addressing
A-4	UDP, TCP
A-5	DNS, Remote Logging



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	Name	Signature with Date
i. Faculty	V Subrahmanyam	
ii. Course Coordinator	Dr. G. Sudhakar	
iii. Module Coordinator	K Jai Prakash	
iv. Programme Coordinator	Dr B Rama Krishna	



Principal

