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 INFORMATION TECHNOLOGY
TEACHING PLAN

Course Code	Course Title	Semester	Branch	Contact Periods /Week	Academic Year	Date of commencement of Semester
20IT7E07	ADVANCED COMPUTER NETWORKS	VII	IT	6	2024-2025	05-06-2024

COURSE OUTCOMES

1	Identify the basic computer network technology and the different types of routing algorithms.(K3)
2	Compare IPV4 & IPV6 address, address space and types of addressing (K5)
3	Distinguish transport layer protocols TCP, UDP & SCTP and also process to process delivery. (K4)
4	Summarize the DNS, Architecture of World Wide Web, E-mail and different multimedia streaming protocols. (K2)
5	Distinguish functioning and services of Wireless Sensor and Wireless Mesh networks (K4)

UNIT	Out Comes / Bloom's Level	Topics No.	Topics/ Activity	Text Book/ Reference	Contact Hour	Delivery Method
I	CO – 1	1.1	Network layer: Design issues	T2	1	Chalk & Board Power point presentation Assignment Test
		1.2	Store and forward packet switching	T2	1	
		1.3	Services provided to transport layer	T2	1	
		1.4	Implementation of connectionless service	T2	1	
		1.5	Implementation of connection oriented service	T2	1	
		1.6	Comparison of virtual circuit and datagram subnets.	T2	1	
		1.7	Routing algorithm: Shortest path routing algorithm, Flooding	T2,T1	1	
		1.8	distance vector routing	T2,T1	1	
		1.9	link state routing , hierarchical routing	T2,T1	1	
		1.10	broadcast routing, multicast routing	T2,T1	1	
		1.11	routing for mobile hosts, routing in adhoc networks	T2,T1	1	
				Total	11	

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II	CO – 2	2.1	**IPV4 Address:** Address space, notations	T1	1	Chalk & Board
		2.2	Classful addressing	T1	1	
		2.3	Classless addressing	T1	1	
		2.4	network address translation(NAT)	T1	1	
		2.5	**IPV6 address:** structure address space	T1	1	
		2.6	**Internetworking:** need for network layer	T1	1	Power point presentation
		2.7	Internet as a datagram	T1	1	
		2.8	Internet as a connectionless network	T1	1	
		2.9	IPV4 datagram	T1	1	Assignment
		2.10	Fragmentation, checksum	T1	1	
		2.11	Options, Combiner	T1,R1	1	Test
		2.12	**IPV6:** advantages	T1,R1	1	
		2.13	packet format	T1,R1	1	
		2.14	extension headers	T1,R1	1	
		2.15	transition from IPV4 to IPV6	T1,R1	1	
Content beyond syllabus		2.16	Security protocols	R1	1	
				Total	16	
III	CO – 3	3.1	**Process to Process delivery:** client/server paradigm	T1,T2	1	Chalk & Board
		3.2	Multiplexing and demultiplexing	T1,T2	1	
		3.3	connectionless versus connection oriented	T1,T2	1	
		3.4	reliable versus unreliable	T1,T2	1	
		3.5	**UDP:** well-known ports for UDP	T1,T2	1	
		3.6	user datagram, checksum	T1,T2	1	
		3.7	UDP operation, uses of UDP	T1,T2	1	Power point presentation
		3.8	**TCP:** TCP services	T1,T2	1	
		3.9	TCP features	T1,T2	1	
		3.10	Segment, A TCP connection	T1,T2	1	Assignment
		3.11	flow control, error control, congestion control	T1,T2	1	Test
		3.12	**SCTP:** SCTP services	T1,T2	1	
		3.13	SCTP features	T1,T2	1	
		3.14	packet format	T1,T2	1	
		3.15	SCTP Association	T1,T2	1	
		3.16	flow control, error control	T1,T2	1	
				Total	16	

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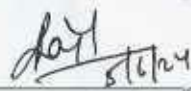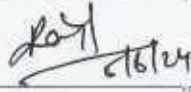|						
IV	CO – 4	4.1	Domain Name System: the name space	T1	1	Chalk & Board Power point presentation Assignment Test
		4.2	resource records, name servers	T1	1	
		4.3	E-mail: architecture and services, the user agent	T1	1	
		4.4	message formats, message transfer	T1	1	
		4.5	final delivery	T1	1	
		4.6	WWW: architecture overview, static web documents	T1	1	
		4.7	dynamic web documents, hypertext transfer protocol	T1	1	
		4.8	performance elements, wireless web	T1	1	
		4.9	Multimedia: introduction of digital audio, audio compression	T1	1	
		4.10	streaming audio, internet radio, voice over IP	T1	1	
		4.11	introduction to video	T1	1	
		4.12	video compression, voice on demand	T1	1	
Content beyond syllabus		4.13	The MBone-the multicast backbone	T1	1	
				Total	13	
V	CO – 5	5.1	Wireless Sensors networks: WSN functioning	T1,R1	1	Chalk & Board Power point presentation Assignment Test
		5.2	operation system support in sensor devices	T1,R1	1	
		5.3	WSN characteristics, sensor network operation	T1,R1	1	
		5.4	sensor architecture, cluster management.	T1,R1	1	
		5.5	Wireless Mesh networks: WMN design	T1,R1	1	
		5.6	issues in WMNs.	T1,R1	1	
		5.7	Computational Grids: grid features	T1,R1	1	
		5.8	issue in grid construction technology	T1,R1	1	
		5.9	P2P networks: characteristics and addressing	T1,R1	1	
		5.10	components of SIP, SIP session establishment	T1,R1	1	
		5.11	SIP security, HTMLS	T1,R1	1	
Content beyond syllabus		5.12	Technologies for wireless sensor networks	R1	1	
				Total	12	
			CUMULATIVE PROPOSED PERIODS		68	

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Text Books:

S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
1	Behrouz A. Forouzan, Data Communication and Networking, 6th Edition, McGrawHill Education, 2022.
2	Andrew S. Tanenbaum, David J Wetherall, Computer Networks, 5th Edition, Pearson Education, 2014.

Reference Books:

S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
1	William Stallings, Data and Computer Communication, 10th Edition, Pearson Education, 2017.
2	Kurose James F, Ross Keith W, Computer Networking – A top down approach, 6th Edition, Pearson, 2017.

Web Details:

1	https://www.javatpoint.com/computer-network-tutorial
2	https://www.geeksforgeeks.org/computer-network-tutorials/
3	https://www.tutorialspoint.com/data_communication_computer_network/index.htm
4	https://www.guru99.com/data-communication-computer-network-tutorial.html

		Name	Signature with Date
i.	Faculty	Mr. Ch Rama Krishna Raju	
ii.	Module Coordinator	Mr. Ch Rama Krishna Raju	
iii.	Programme Coordinator	Dr. RVVSV Prasad	

Principal

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