
 <p>NAGARJUNA COLLEGE OF ENGINEERING AND TECHNOLOGY</p>	<p>NAGARJUNA COLLEGE OF ENGINEERING AND TECHNOLOGY NAAC Accredited with “A⁺” grade (An ISO 9001–2008 Certified Institution) Affiliated to Visvesvaraya Technological University (VTU) Recognized by Govt. of Karnataka & Approved by A.I.C.T.E. New Delhi DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING</p>	 <p>DEPARTMENT OF ECE NCET</p>
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COURSE PLAN

Course Title: Data Communication	Course Code: 20ECI72
Course Credit: 4	Semester: 7 th
Course Teacher's: Dr. Murthy M	Academic Year: 2023-24
Lab. Instructor:	Date of Commencement of Class: 19-10-2023

SUBJECT DESCRIPTION:

This Course covers the basic concepts of layered tasks and OSI model and its functions. Telephone networks, Dial up modem, DSL Cable TV for data transmission. It covers the fundamentals of Data link control and its protocols followed by Interpreting the concepts of Wired LAN and Ethernet standards. The concepts of Virtual LANs and connecting devices are elaborated. It also facilitates to gain the knowledge on applications of Network layer. The purpose of this course is to understand and analyze the basic principles in data communication

PREREQUISITES:

1. Digital and Analog Communications

LECTURE PLAN:

Topic	Topic Details	Number of Lectures	Prediction	Unit/Chapter Reference	Percentage of Module coverage
Module -I	Layered tasks, OSI Model	1	Week 1	T1 2.1	
	Layers in OSI model	2		T1 2.3	

Network Models	TCP/IP Suite	3	Week2	T1 2.4	20%
	Addressing	4		T1 2.5	
	Telephone networks	5		T1 9.1	
	Dialup modem	6		T1 9.2	
	DSL	7	Week3	T1 9.3	
	Cable TV for data transmission	8		T1 9.5	
	Cumulative Coverage				20%
Module II Data Link Control	Framing	9	Week4	T1 11.1	20%
	Flow and error control	10		T1 11.2	
	Protocols	11		T1 11.3	
	Noiseless channels protocols	12	Week5	T1 11.4	
	Noisy channels protocols	13		T1 11.5	
	Selective repeat ARQ	14	Week6	T1 11.5	
	HDLC	15		T1 11.6	
	Types of HDLC	16		T1 11.6	
	Cumulative Coverage				40%
AAT1		17			
	Wired LAN	18	Week7	T1 13.1	20%

Module III Wired LANs: Ethernet					
	Ethernet	19		T1 13.1.2	
	IEEE standards	20	Week8	T1 13.1.3	
	Standard Ethernet	21		T1 13.2	
	changes in the standards	22		T1 13.3	
	Fast Ethernet	23	Week9	T1 13.4	
	Gigabit Ethernet	24		T1 13.5	
	Ten Gigabit Ethernet	25		T1 13.5	
	Cumulative Coverage				60%
Module IV Connecting LANs, Backbone Network and Virtual LANs	Connecting LANs	26	Week10	T1 15.1	20%
	Bridges, Transparent Bridges	27		T1 15.1	
	Spanning Tree	28		T1 15.1	
	Rooters	29	Week11	T1 15.1	
	Backbone Networks	30		T1 15.2	
	Connecting LANs	31		T1 15.2	
	Virtual LANs	32	Week12	T1 15.3	
	Configuration and advantages	33		T1 15.3	
Revision	34				
	Cumulative Coverage				80%

AAT2		35			
Module V Network Layer	Ipv4 addresses, classful addressing	36	Week13	T1 19.1	20%
	Ipv4 addresses, classless addressing	37		T1 19.1	
	Ipv6 addresses, structure	38	Week14	T1 19.2	
	Ipv6 addresses, address space	39		T1 19.2	
	Ipv4	40		T1 20.2	
	Ipv6	41	Week15	T1 20.3	
	Transition from Ipv4 to Ipv6	42		T1 20.4	
	Tunneling and Header Translation	43		T1 20.4	
	Revision	44			
	Cumulative Coverage				100%

TEXTBOOKS AND REFERENCE BOOKS:

Book Type	Code	Title & Author	Publication Information		
			Edition	Publisher	Year
Text Books	T1	“Data Communication and Networking”, B Forouzan	4 th	TMH, 2006, ISBN: 978 0070634145	2020
Reference Books	R1	“Computer Networks” James F. Kurose, Keith W. Ross:	2 nd	Pearson education	2003
	R2	“Introduction to Data Communication and Networking”	2 nd	Pearson Education	2007

COURSE OUTCOMES:

At the end of the course the student will be able to:

CO1	Gain the basics of wireless communication techniques.
CO2	Apply the statistical characterization of urban mobile channel to compute the performance for simple modulation schemes.
CO3	Test and validate voice and data call handling for various scenarios in GSM and CDMA systems.
CO4	Analyze the call process procedure between a calling number and called number for all scenarios in GSM or CDMA based systems.
CO5	Illustrate the limitations of GSM, GPRS and CDMA to meet high data rate requirements and limited improvements that are needed.

CO-POMAPPING:

POS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C303.C.1	2	2	1	1	-	2	2	2	-	3	1	1
C303.C.2	3	3	3	2	1	1	1	1	-	2	1	1
C303.C.3	2	2	2	2	1	1	1	1	-	2	-	1
C303.C.4	2	1	1	1	1	2	1	1	-	2	-	1
C303.C.5	2	1	2	1	2	2	1	2	1	3	1	1

EVALUATIONSCHEME:

Component		Weightage(%)		
CIE's	CIE15 th week	40	60	
	CIE210 th week	40		
	CIE315 th week	40		
AAT's	AAT1(Quiz)	10	20	
	AAT2(Surprisetest)	10		
ContinuousInternalEvaluationTotalMarks:100.Reducedto50Marks				
TheminimumpassingmarkfortheCIEis40%ofthemaximummarks(20marksoutof50)				
SemesterEndExamination(SEE)TotalMarks:100.Reducedto50Marks				
TheminimumpassingmarkfortheSEEis40%ofthemaximummarks(20marksoutof50)				

Signatureof theCourse Co-Ordinator

Signatureofthe HOD

Date:

Note:

1. TheCourseplanis anattempt to ensure**continuous improvement** intheTLPofthecourse.
2. TheproposedCoursePlanissubmittedto **DAC**beforethecommencement ofthesemester.
3. Attheendofthesemester,thefacultys shallsubmitthe**actualimplementedplan**.
4. CalendarofEvents included.