



COURSE PLAN – PART I			
Name of the programme and specialization	M.Tech. CSE		
Course Title	Advanced Network Principles and Protocols		
Course Code	CS610	No. of Credits	3
Course Code of Pre-requisite subject(s)	NIL		
Session	July 2023	Section (if, applicable)	NA
Name of Faculty	R. LEELA VELUSAMY	Department	CSE
Official Email	leela@nitt.edu	Telephone No.	7598603413
Name of Course Coordinator(s) (if, applicable)	NA		
Course Type (please tick appropriately)	<input type="checkbox"/> Core course	<input checked="" type="checkbox"/> Elective course	
Syllabus (approved in BoS)			
UNIT-I Introduction Introduction to Networks - Application of Networks - Architecture Topology Switching - SLIP, PPP -ALOHA protocols, CSMA/CD, IEEE 802.3, 802.4, 802.5 UNIT-II Network Layer Network Layer Issues- Routing, Congestion control- Internetworking - Issues, Address Learning Bridges, Spanning tree, Source routing, Bridges, Routers, Gateway. UNIT-III Network Protocol Network Protocol- IP datagram - hop by hop routing, ARP, RARP, DHCP -Sub net Addressing, Address Masking, ICMP, RIP, RIPV2, OSPF, DNS, LAN and WAN Multicast. UNIT-IV Transport Layer Transport Layer- Design issues, Connection Management, Transmission Control Protocol (TCP) User Datagram Protocol (UDP). UNIT-V Application Layer Application Layer Protocol- Telnet - TFTP - FTP - SMTP - Ping Finger, Bootstrap Network Time Protocol- SNMP.			

Text Book	
<ul style="list-style-type: none"> • Andrew S Tanenbaum and Daviv J Wetherall, “Computer Networks”, 5th edition, Pearson, 2011 • William Stallings, “Data and Computer Communications”, 9th edition, Pearson, 2011 	
COURSE OBJECTIVES	
<ul style="list-style-type: none"> • To understand the architecture of the Internet protocols as a layered model • To understand the fundamentals of data transmission, encoding and multiplexing • To understand how the various components of wide area networks and local area networks work together • To understand the concept of application layer 	
MAPPING OF COs with POs	
Course Outcomes	Programme Outcomes (PO) (Enter Numbers only)
1. Familiarize the different layers of TCP/IP protocol stack	PO1-3, PO5, PO8-9, PO12
2. Understand the working principle of different protocols at different layers	PO1-3, PO5 - 6, PO8-12
3. Apply networking concepts to real life problems	PO1, PO4, PO10-12

COURSE PLAN – PART II			
COURSE OVERVIEW			
This course has 3 main goals: To teach students 1. the architecture of the Internet protocols as a layered model 2. the various components of wide area networks and local area networks work 3. the working principle of different protocols at different layers			
COURSE TEACHING AND LEARNING ACTIVITIES			(Add more rows)
S.No.	Week	Topic	Mode of Delivery
1	1	Introduction to Networks - Application of Networks - Architecture Topology Switching -	PPT
2	2	SLIP, PPP -ALOHA protocols, CSMA/CD	PPT
3	3	IEEE 802.3, 802.4, 802.5	PPT
4	4	Network Layer Issues- Routing, Congestion control	PPT
5	5	Internetworking - Issues, Address Learning Bridges, Spanning tree	PPT
6	6	Source routing, Bridges, Routers, Gateway	PPT
7	7	Network Protocol- IP datagram - hop by hop routing, ARP, RARP	PPT

8	8	DHCP -Sub net Addressing, Address Masking	PPT
9	9	ICMP, RIP, RIPV2, OSPF, DNS, LAN and WAN Multicast.	PPT
10	10	Transport Layer- Design issues, Connection Management	PPT
11	11	Transmission Control Protocol (TCP).	PPT
12	12	User Datagram Protocol (UDP).	PPT
13	13	Application Layer Protocol- Telnet - TFTP - FTP - SMTP - Ping	PPT
14	14	Bootstrap Network Time Protocol- SNMP	PPT

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Written Test - 1	As per dept. schedule	1 hour	20
2	Problem solving assignments	Week 3, 6, and 8	offline	10
3	Written Test - 2	As per dept. schedule	1 hour	20
4	Programming assignment	Week 12	demo	10
CPA	Compensation Assessment*	As per dept. schedule	1 hour	20
5	Final Assessment *	As per institute schedule	3 hours	40

***mandatory; refer to guidelines on page 5**

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

Feedback through online mode after Written test -1 and later through MIS

COURSE POLICY (including compensation assessment to be specified)

Students should not be absent for the written test 1 and 2. If the reason for absence is genuine, the student can appear for compensation assessment. The medical certificate/on duty certificate should be submitted within one week after rejoining. The portions for the compensation assessment will be the entire portions covering test 1 and 2.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.
- The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION, IF ANY

Students can approach me through mobile or in person to clarify any doubt during the working hours

FOR APPROVAL

Course Faculty  CC- Chairperson  HOD 

Guidelines

- a) The number of assessments for any theory course shall range from 4 to 6.
- b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.
- c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.
- d) The passing minimum shall be as per the B.Tech.regulations.
35% or (Class Average/2) whichever is greater
- e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.
- f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.
- g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.