K L Deemed to be University
Department of Computer Science and Engineering-Honors -- KLVZA
Course Handout
2022-2023, Odd Sem

Course Title	:COMPUTER NETWORKS & SECURITY
Course Code	:21CS2212AA
L-T-P-S Structure	: 3-2-2-0
Pre-requisite	:
Credits	: 6
Course Coordinator	:Radhika Rani Chintala
Team of Instructors	:
Teaching Associates	:

Syllabus : Introduction: Overview of networking using the Internet as an example, Course Introduction & Explore the network, networks topologies, LANs and WANs, OSI reference model, Internet TCP/IP Protocol Stack. Configure a Network Operating System & Network Protocols and communications, Link layer: Link layer services, error detection, and correction, Network Access & Ethernet, Sliding Window, Stop and Wait protocols. MAC Layer: Aloha, CSMA, CSMA/CD, CSMA/CA protocols. Network layer: Network layer design issues. Introduction to Networks, Routing Concepts, static routing, Dynamic Routing, switch configuration, VLAN's, Access control list, DHCP Routing algorithms: Shortest path, Flooding, Distance vector, Link state, Hierarchical, broadcast and multicast routing, congestion control algorithms, QoS. switched networks, Internetworking, IPv4, Network Address Translation, ARP, OSPF, BGP. Network Layer & IP Addressing, Subnetting IP Networks & Transport Layer, Application Layer, Build a small network. Transport layer: Elements of Transmission protocols, UDP, TCP. Application layer: WWW, HTTP, electronic mail, DomainName System. Network Security: Introduction to Security: Security Concepts, Security Attacks, Security Services and Mechanisms, A Security Model, NAT for IPV4 Classical Encryption Techniques: Symmetric Cipher Model, Substitution Techniques, Transposition Techniques, Overview on DES, Asymmetric Encryption Algorithm-RSA. Device Discovery, management, and maintenance.

Text Books :1. Kurose, J and Ross, K Computer Networking: A Top-Down Approach Addison-Wesley- 6th edition-(2012) 2. A.S. Tanenbaum, David J. Wetheral "Computer Networks" Pearson, 5th –Edition-(2011).

Reference Books :1. Behrouz A. Forouzan , "Data Communication and Networking", TMH, 5th Edition , (2012). 2. William Stallings, "Cryptography and Network Security", Pearson Education, 6th Edition, 2015. 3. Peterson, LL and Davie BS "Computer Networks -- A Systems Approach", Morgan Kaufmann, Elsevier,-5th edition-(2012).

Web Links :1. https://www.udemy.com/computer-networks-course-networking-basics/ 2.https://lagunita.stanford.edu/register? course_id=Engineering%2FNetworkingSP%2FSelfPaced& enrollment_action=enrol 3. www.netacad.com

MOOCS :MOOCs for GUIDED ADVANCED (GA) Mode of Study: 1. Bits and Bytes of Computer Networking https://www.coursera.org/learn/computer-networking? 2. CCNA MODULE 1,2: https://www.netacad.com/portal/ 3. Packet Tracer: https://www.netacad.com/courses/packet-tracer 4. Linkedin-Become a Network Administrator: https://www.linkedin.com/learning/paths/become-a-network- administrator? u=89447330 5. CCNA Switching & Routing –Wireless Essentials: https://www.netacad.com /courses/networking/ccna-switching-routing-wireless-essentials MOOCs for SELF-LEARNING ADVANCED (SA) Mode of Study: 1. Bits and Bytes of Computer Networking https://www.coursera.org /learn/computer-networking? 2. CCNA MODULE 1,2: https://www.netacad.com/portal/ 3. Packet Tracer: https://www.netacad.com/courses/packet-tracer 4. Linkedin-Become a Network Administrator: https://www.linkedin.com/learning/paths/become-a-network-administrator?u=89447330 5. CCNA Switching &

Routing –Wireless Essentials: https://www.netacad.com/courses/networking/ccna-switching-routing- wireless-essentials 6. Computer Communications: https://www.coursera.org/specializations/computer- communications?

Course Rationale :A computer network is a network that allows computing nodes to get interconnected and exchange data. The connections between nodes are established using either cable media or wireless media. The best-known computer network is the Internet. Two such devices can be said to be networked together when one device is able to exchange information with the other device, whether they have a direct connection to each other or not. Computer network support applications such as access to the World Wide Web, shared use of application and storage servers, printers, and fax machines, and use of email and instant messaging applications. This course also introduces the fundamental principles of cryptography and its applications in the network security domain.

Course Objectives : This course provides students an overview of the concepts and fundamentals of computer networks. Internet is a computer network that millions of people use every day. This course examines some of the important concepts related to computer networks like OSI, TCP/IP reference models for networking protocols. Students learn what happens to the data in the computer before it is prepared for transmission, how protocols work to transmit the data and how it is received at other computers. Error control and recovery methods for lost or corrupted data are also investigated. A layered model for computer communications is thoroughly examined. This course is to make the students understand basic concepts in Computer Networks & Security and their mathematical models

COURSE OUTCOMES (COs):

CO NO	Course Outcome (CO)	PO/PSO	Blooms Taxonomy Level (BTL)
CO1	Apply error detection and correction mechanisms to compute codewords for the source code and outline the working of OSI & TCP/IP reference models.	PO1,PO2	3
CO2	Infer Channel allocation problem and algorithms to avoid it and compute the optimal path in a network using various static and dynamic routing algorithms.	PO1,PSO1	2
CO3	Identify the IP addresses of a network using IPV4 classful & classless addressing schemes and outline the functionalities of the transport layer like TCP Connection management and congestion control.	PO1,PO2	3
CO4	Apply different symmetric and asymmetric encryption algorithms to compute ciphertext and identify the functionality of application layer protocols.	PO1,PO2	3
CO5	To Analyze error detection and error correction methods, Routing Algorithms and Cryptographic algorithms	PSO2,PO1	4

COURSE OUTCOME INDICATORS (COIs)::

Outcome No.	Highest BTL	COI-1	COI-2	COI-3	COI-4
CO1	3	**Btl-1** Relate Computer Networks Hardware, software and History	**Btl-2** Illustrate reference models OSI and TCP/IP, Protocol	**Btl-3** Apply error control mechanisms to compute codewords	

		of the computer networks	Stack, Error control mechanisms		
CO2	2	**Btl-1** List Sliding window protocols and algorithms for avoiding problem of channel allocation	**Btl-2** Illustrate Routing algorithms in network layer.		
CO3	3	**Btl-1** List Congestion control algorithms and Quality of services in network layer.	**Btl-2** Infer Connection less transport layer protocol (UDP), Connection oriented transport layer protocol(TCP) and working principle of congestion control algorithm	**Btl-3** Apply problems on IPV4 addressing	
CO4	3	**Btl-1** List the performance issues and working principles of Domain name, Electronic mail systems	**Btl-2** Outline the goals, services and mechanisms of Security, Compare and Contrast all possible passive and active attacks	**Btl-3** Apply different Symmetric and Asymmetric encryption algorithms to compute ciphertext	
CO5	4				**Btl-4** Analyze error detection and error correction methods, Routing Algorithms, Cryptographic algorithms

PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES (POs/PSOs)

Po No.	Program Outcome
PO1	Engineering Knowledge:Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
PO3	Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
PO4	Conduct Investigations of Complex Problems:Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems that cannot be solved by straightforward application of knowledge, theories and techniques applicable to the engineering discipline.

PO5	Modern Tool Usage:Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer and Society:Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and Sustainability:Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
PO9	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication:Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO11	Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.
PSO1	An ability to design and develop software projects as well as Analyze and test user requirements.
PSO2	An Ability to gain working Knowledge on emerging software tools and technologies.

Lecture Course DELIVERY Plan:

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
1	CO1	COI-2	Course Handout, Overview of Computer Networks	R Book [1] Chapter 1.1,1.2,1.3 pg. No. 2-34 , R BOOK [2]CH1.1, Page no 11.	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM1,Tutorial
2	CO1	COI-2	Course Introduction & Explore the network	R Book [1] Chapter 1.1,1.2,1.3 pg. No. 2-34 , R BOOK [2] CH1.1, Page no 11.	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
3	CO1	COI-2	Uses of Computer networks: Business Applications, Home, Mobile and Social Issues	Book [1] Chapter 1.1,1.2,1.3 pg. No. 2-34 , R BOOK [2] CH 1.1, Page no 11.	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
4	CO1	COI-	Network Hardware &	R Book [1]	Chalk,LTC,PPT,Talk	End Semester

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
		2	Software	Chapter 1.1,1.2,1.3 pg. No. 2-34 ,R BOOK [2]CH 1.1, Page no 28		Exam,SEM-EXAM1
5	CO1	COI-2	Reference model- OSI	R BOOK [1], CH 1, Page no 49-53, R BOOK [2], CH 1.4, Page no 37-45	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
6	CO1	COI-2	Reference model-TCP/IP	R BOOK [1], CH 1, Page no 49-53, R BOOK [2], CH 1.4, Page no 37-50	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
7	CO1	COI-2	Configure a Network Operating System & Network Protocols and communications	Configure a Network Operating System & Network Protocols and communications	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
8	CO1	COI-2	Data link layer design issues, Framing	R BOOK [2], CH 3.1, Page no.138	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
9	CO1	COI-3	Error Detection Methods	R BOOK [2],CH 10, Page no.267	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
10	CO1	COI-3	Error Correction Methods	R BOOK [2], CH 10, Page no.267	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
11	CO2	COI-2	Network Access & Ethernet	R BOOK [2], CH10, Page no.285	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM1,Tutorial
12	CO2	COI-2	Sliding Window Protocols	R BOOK [3], CH 10, Page no.307	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
13	CO2	COI-2	MAC Layer- Channel Allocation, ALOHA	R BOOK [3], CH 12, Page no.363	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
14	CO2	COI-2	Random Access Protocols- CSMA,	R BOOK [3], CH 12, Page no.400	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
			CSMA/CD, CSMA/CA			
15	CO2	COI-2	Network Layer Design Issues	R BOOK [2], CH 5.1.3, Page no.261-269	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
16	CO2	COI-2	Introduction to Networks, Routing Concepts	R BOOK [2], CH 5.1.3, Page no.261-269	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
17	CO2	COI-2	static routing, Dynamic Routing	R BOOK [2], CH 5.1.3, Page no.261-269	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
18	CO2	COI-2	Switch configuration, VLAN's, Access control list, DHCP	R BOOK [2], CH 5.1.3, Page no.261-269	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
19	CO2	COI-2	Routing Algorithms - Optimality principle, Flooding, Shortest path Routing Algorithm	R BOOK [2], CH 5.1.3, Page no.261-269	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
20	CO2	COI-2	Routing Algorithms – Distance Vector, Link State	R BOOK [2],CH 5.2.3, Page no.269-271	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
21	CO2	COI-2	Routing Algorithms – Hierarchical, Broadcast and Multicast Routing	R BOOK [2], CH 5.2.5, Page no.272-281	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM1
22	CO3	COI-2	Congestion control algorithms	R BOOK [2], CH5.5, Page no317	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Review,SEM-EXAM2,Tutorial
23	CO3	COI-2	Quality of service, Internetworking	R BOOK [3], CH 20, Page no570	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
24	CO3	COI-2	Network Layer in the Internet, IPv4	R BOOK [3], CH 20, Page no570.	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
25	CO3	COI-2	IPv4 Classful Addressing, IPv6	R BOOK [2], CH 5.6.4, Page no.346	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
26	CO3	COI-2	Internet Control Protocols, OSPF, BGP	R BOOK [2], CH 5.6.4, Page no.346	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
27	CO3	COI-3	Network Layer & IP Addressing	R BOOK [2], CH 5.6.4, Page no.346	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
28	CO3	COI-3	Subnetting IP Networks	R BOOK [2], CH 5.6.4, Page no.346	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
29	CO3	COI-2	Build a small network.	R BOOK [2], CH 5.6.4, Page no.372	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
30	CO3	COI-2	Elements of Transport Protocols: Connection Establishment & Release	R BOOK [3], CH 23, Page no.703	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
31	CO3	COI-2	UDP & TCP Headers	R BOOK [2], CH 6.2.2, Page no.379	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
32	CO3	COI-2	TCP Congestion Control	R BOOK [2], CH 6.5.9, Page no.418	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
33	CO4	COI-2	Domain Name System	R BOOK [3],CH6, Page no.797	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,MOOCs Evaluation (Certificate + Test),MOOCs Review,SEM-EXAM2,Tutorial
34	CO4	COI-2	E-mail, WWW, HTTP	R BOOK [3], CH 6, Page no.797	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
35	CO4	COI-2	Introduction to Security	RB-4 Chapter 1.4,1.5,pageno.19 to 25	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
36	CO4	COI-2	Security Attacks	RB-4 Chapter 1.4,1.5,pageno.19 to 25	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
37	CO4	COI-3	Introduction to Substitution Techniques and Transposition Techniques	RB-4 Chapter 2.3,pageno. 53	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
38	CO4	COI-2	Overview on DES	RB-4 Chapter 3.1,pageno. 68	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
39	CO4	COI-3	S-DES	RB-4 Chapter 3.1,pageno. 68	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
40	CO4	COI-3	Asymmetric Encryption Algorithm-RSA	RB-4 Chapter 9.2,pageno. 277	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2
41	CO4	COI-2	Device Discovery, management, and maintenance	RB-4 Chapter 9.2,pageno. 352	Chalk,LTC,PPT,Talk	End Semester Exam,SEM-EXAM2

Lecture Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Understand Course Handout, Overview of Computer Networks

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Course Handout	2	PPT	--- NOT APPLICABLE ---
20	Overview of Computer Networks	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 2

Session Outcome: 1 Explore the network

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

20	Course Introduction	2	PPT	--- NOT APPLICABLE ---
20	Explore the network	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 3

Session Outcome: 1 Understand Uses of Computer networks

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Business Applications	2	PPT	--- NOT APPLICABLE ---
20	Home, Mobile and Social Issues	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 4

Session Outcome: 1 Understand Network Hardware & Software

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Network Hardware	2	PPT	--- NOT APPLICABLE ---
20	Network Software	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 5

Session Outcome: 1 Understand OSI reference model

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

10	Understand Layered architecture	2	PPT	--- NOT APPLICABLE ---
30	OSI architecture	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 6

Session Outcome: 1 Understand Reference model- TCP/IP

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
30	Reference model- TCP/IP	2	PPT	--- NOT APPLICABLE ---
10	Comparison of OSI and TCP/IP	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 7

Session Outcome: 1 Configure a Network Operating System & Network Protocols and communications

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Network Operating System	2	PPT	--- NOT APPLICABLE ---
20	Network Protocols and communications	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 8

Session Outcome: 1 Understand Data link layer design issues, Framing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

10	Data link layer design issues	2	PPT	--- NOT APPLICABLE ---
30	Framing Methods	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 9

Session Outcome: 1 Apply Error Detection Methods

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Parity method	3	Chalk	Quiz/Test Questions
10	Checksum Method	3	Chalk	Quiz/Test Questions
20	CRC	3	Chalk	Quiz/Test Questions
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 10

Session Outcome: 1 Apply Error Correction Methods

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Understand Hamming code	2	Chalk	--- NOT APPLICABLE ---
20	Hamming code problem	3	Chalk	Quiz/Test Questions
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 11

Session Outcome: 1 Understand Network Access & Ethernet

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

20	Network Access	2	PPT	--- NOT APPLICABLE ---
20	Ethernet	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 12

Session Outcome: 1 Understand Sliding Window Protocols

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Introduction to Flow control	2	PPT	--- NOT APPLICABLE ---
30	Sliding Window Protocols	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 13

Session Outcome: 1 Understand MAC Layer- Channel Allocation, ALOHA

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Channel Allocation Problem	2	PPT	--- NOT APPLICABLE ---
30	Aloha Protocols	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 14

Session Outcome: 1 Understand Random Access Protocols

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

20	CSMA	2	PPT	--- NOT APPLICABLE ---
20	CSMA/CD, CSMA/CA	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 15

Session Outcome: 1 Understand Network Layer Design Issues

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Introduction to Network Layer	2	PPT	--- NOT APPLICABLE ---
20	Network Layer Design Issues	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 16

Session Outcome: 1 Introduction to Networks, Routing Concepts

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Introduction to Networks	2	PPT	--- NOT APPLICABLE ---
20	Routing Concepts	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 17

Session Outcome: 1 Understand static routing, Dynamic Routing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

20	Static routing	2	PPT	--- NOT APPLICABLE ---
20	Dynamic Routing	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 18

Session Outcome: 1 Understand Switch configuration, VLAN's, Access control list, DHCP

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Switch configuration, VLAN's	2	PPT	--- NOT APPLICABLE ---
20	Access control list, DHCP	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 19

Session Outcome: 1 Understand Optimality principle, Flooding, Shortest path Routing Algorithm

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Optimality Principle	2	PPT	--- NOT APPLICABLE ---
10	Flooding	2	PPT	--- NOT APPLICABLE ---
20	Shortest path Routing Algorithm	2	Chalk	Quiz/Test Questions
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 20

Session Outcome: 1 Understand Distance Vector, Link State Routing Algorithms – Hierarchical, Broadcast and Multicast Routing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Distance Vector routing	2	Chalk	Quiz/Test Questions
20	Link State routing	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 21

Session Outcome: 1 Understand Hierarchical, Broadcast and Multicast Routing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Hierarchical Routing	2	PPT	--- NOT APPLICABLE ---
20	Broadcast and Multicast Routing	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 22

Session Outcome: 1 Understand Congestion control algorithms

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Introduction to Congestion	2	PPT	--- NOT APPLICABLE ---
30	Congestion control algorithms	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 23

Session Outcome: 1 Understand Quality of service, Internetworking

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Quality of service	2	PPT	--- NOT APPLICABLE ---
20	Internetworking	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 24

Session Outcome: 1 Understand Network Layer in the Internet, IPv4

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Network Layer in the Internet	2	PPT	--- NOT APPLICABLE ---
20	IPv4	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 25

Session Outcome: 1 Apply IPv4 Classful Addressing, IPv6

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
30	IPv4 Classful Addressing	3	Chalk	Quiz/Test Questions
10	IPv6	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 26

Session Outcome: 1 Understand Internet Control Protocols, OSPF, BGP

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Internet Control Protocols	2	PPT	--- NOT APPLICABLE ---
20	OSPF, BGP	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 27

Session Outcome: 1 Apply Network Layer IP Addressing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	IPv4 Classful Addressing	2	PPT	--- NOT APPLICABLE ---
20	IPv4 addressing Problems	3	Chalk	Quiz/Test Questions
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 28

Session Outcome: 1 Subnetting IP Networks

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Subnetting IP Networks	2	PPT	--- NOT APPLICABLE ---
20	Subnetting problems	3	Chalk	Quiz/Test Questions
5	Summary	1	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 29

Session Outcome: 1 Build a small network.

Time(min)	Topic	BTL	Teaching-Learning	Active Learning

			Methods	Methods
20	Understand concept of networking	2	PPT	--- NOT APPLICABLE ---
20	Build a small network.	2	Chalk	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 30

Session Outcome: 1 Understand Elements of Transport Protocols: Connection Establishment & Release

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Elements of Transport Protocols	2	PPT	--- NOT APPLICABLE ---
20	Connection Establishment & Release	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 31

Session Outcome: 1 Understand UDP & TCP Headers

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	UDP header	2	PPT	--- NOT APPLICABLE ---
20	TCP Header	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 32

Session Outcome: 1 Understand TCP Congestion Control

Time(min)	Topic	BTL	Teaching-Learning	Active Learning

			Methods	Methods
20	Introduction to Congestion	2	PPT	--- NOT APPLICABLE ---
20	TCP Congestion Control	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 33

Session Outcome: 1 Understand Domain Name System

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Introduction to Application layer	2	PPT	--- NOT APPLICABLE ---
30	Domain Name System	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 34

Session Outcome: 1 Understand E-mail, WWW, HTTP

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	E-mail	2	PPT	--- NOT APPLICABLE ---
20	WWW, HTTP	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 35

Session Outcome: 1 Understand need for Security

Time(min)	Topic	BTL	Teaching-Learning	Active Learning

			Methods	Methods
20	Introduction to Security	2	PPT	--- NOT APPLICABLE ---
20	Need for security	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 36

Session Outcome: 1 Understand Security Attacks

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Understand Security Attacks	2	PPT	--- NOT APPLICABLE ---
20	Types of Security Attacks	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 37

Session Outcome: 1 Apply Substitution Techniques and Transposition Techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Substitution Techniques	3	Chalk	Quiz/Test Questions
20	Transposition Techniques	3	Chalk	Quiz/Test Questions
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 38

Session Outcome: 1 Understand DES

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

20	Key Scheduling	2	PPT	--- NOT APPLICABLE ---
20	DES Encryption	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 39

Session Outcome: 1 Apply S-DES

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	S-DES	2	PPT	--- NOT APPLICABLE ---
20	S-DES problem	3	Chalk	Quiz/Test Questions
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 40

Session Outcome: 1 Apply Asymmetric Encryption Algorithm-RSA

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Understand RSA algorithm	2	PPT	--- NOT APPLICABLE ---
20	RSA problem	3	Chalk	Quiz/Test Questions
5	Summary	1	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 41

Session Outcome: 1 Understand Device Discovery, management, and maintenance

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
20	Device Discovery	2	PPT	--- NOT APPLICABLE

20	management, and maintenance	2	PPT	--- NOT APPLICABLE ---
5	Summary	1	Talk	--- NOT APPLICABLE ---

Tutorial Course DELIVERY Plan:

List of Experiments supposed to finish in Open Lab Sessions:

Lab session no	List of Experiments	CO-Mapping
1	Framing methods	CO1
2	Error Detection	CO1
3	Error-Correcting Codes	CO1
4	Routing Algorithms	CO2
5	IPv4 addressing	CO3
6	Subnetting	CO3
7	Classic Encryption Techniques	CO4
8	DES and RSA encryption Algorithms	CO4

Tutorial Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Understand framing methods

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
30	Character Count	2	Talk	Quiz/Test Questions
30	Character Stuffing	2	Talk	Quiz/Test Questions

30	Bit Stuffing	2	Talk	Quiz/Test Questions

SESSION NUMBER : 2

Session Outcome: 1 Understand Error Detection

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Error Detection-Parity	2	Talk	Quiz/Test Questions
30	2D Parity	3	Chalk	Quiz/Test Questions
40	CRC	3	Talk	Quiz/Test Questions

SESSION NUMBER : 3

Session Outcome: 1 Understand Error Correcting Codes

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Understand Hamming Code	2	Chalk	--- NOT APPLICABLE ---
50	Problems on Hamming code	3	Talk	Quiz/Test Questions

SESSION NUMBER : 4

Session Outcome: 1 Understand Various Routing Algorithms

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
30	ROuting Algorithm Problems-Dijkstra's	2	Chalk	Quiz/Test Questions
30	Distance Vector Routing	2	Chalk	Quiz/Test Questions

30	Other routing algorithms	2	Chalk	Quiz/Test Questions

SESSION NUMBER : 5

Session Outcome: 1 Apply Problems on IPv4 addressing Scheme

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Understand IPV4 addressing	2	Chalk	Quiz/Test Questions
50	Apply Problems on IPv4 addressing Scheme	3	Chalk	Quiz/Test Questions

SESSION NUMBER : 6

Session Outcome: 1 Apply IPv4 Addressing and Subnetting

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Understand concept of Subnetting	2	Chalk	Quiz/Test Questions
50	Problems on subnetting	3	Chalk	Quiz/Test Questions

SESSION NUMBER : 7

Session Outcome: 1 Apply Classic Encryption Techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Substitution Techniques	3	Chalk	Quiz/Test Questions
50	Transposition Techniques	3	Chalk	Quiz/Test Questions

SESSION NUMBER : 8

Session Outcome: 1 Apply DES and RSA encryption Algorithms

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
50	DES	3	Chalk	Quiz/Test Questions
40	RSA	3	Chalk	Quiz/Test Questions

Practical Course DELIVERY Plan:

Tutorial Session no	Topics	CO-Mapping
1	Framing Methods(Character count and Character stuffing)	CO5
2	Framing methods(Bit Stuffing)	CO5
3	Error Detection Technique	CO5
4	Error Correcting Techniques	CO5
5	Error Detecting Technique - 2D Parity	CO5
6	Routing algorithm	CO5
7	Distance vector routing algorithm	CO5
8	Substitution Techniques	CO5
9	Transposition Techniques	CO5
10	Asymmetric Encryption Algorithm	CO5

Practical Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 student will Implement Framing Methods(Character count and Character stuffing)

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---

40	Implementation of Character Count	4	Talk	--- NOT APPLICABLE ---
40	Implementation of Character Stuffing	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 2

Session Outcome: 1 Student will Implement Framing Methods(Bit Stuffing)

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
50	Implementation of Bit Stuffing	4	Talk	--- NOT APPLICABLE ---
30	Testing with different data	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 3

Session Outcome: 1 Student will Implement Error Detection Technique

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
30	Understanding the concept of CRC	2	Talk	--- NOT APPLICABLE ---
50	Implementation of CRC	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 4

Session Outcome: 1 Student will implement Error Correcting Techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
30	Understand the implementation of Hamming code	2	Talk	--- NOT APPLICABLE ---
50	Implementation of Hamming code	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 5

Session Outcome: 1 Student will Implement Error Detecting Techniques(2D Parity)

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
30	Understand the concept of 2D Parity	2	Talk	--- NOT APPLICABLE ---
50	Implementation of 2D parity (Multidimensional parity)	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 6

Session Outcome: 1 Student will Implement Routing algorithm

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
30	Understand Shortest path algorithm	2	Talk	--- NOT APPLICABLE ---
50	Implementation of Shortest path algorithm	4	Talk	--- NOT APPLICABLE ---

10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 7

Session Outcome: 1 Student will Implement Distance vector routing algorithm

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
30	Understand Distance vector routing algorithm	2	Talk	--- NOT APPLICABLE ---
50	Implementation of Distance vector routing algorithm	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 8

Session Outcome: 1 Student will Implement Substitution Techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Implementation of Substitution techniques like Ceaser	4	Talk	--- NOT APPLICABLE ---
40	Implementation of Substitution techniques like Playfair	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 9

Session Outcome: 1 Student will Implement Transposition Techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---

30	Understand Transposition Techniques	2	Talk	--- NOT APPLICABLE ---
50	Implementation of Transposition Techniques	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

SESSION NUMBER : 10

Session Outcome: 1 Student will Implement Asymmetric Encryption Algorithm

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance	1	Talk	--- NOT APPLICABLE ---
30	Understand Asymmetric Encryption Algorithm	2	Talk	--- NOT APPLICABLE ---
50	Implementation of RSA Algorithm	4	Talk	--- NOT APPLICABLE ---
10	Viva-voce	2	Talk	Quiz/Test Questions

Skilling Course DELIVERY Plan: NO Delivery Plan Exists

Skilling Session wise Teaching – Learning Plan

No Session Plans Exists

WEEKLY HOMEWORK ASSIGNMENTS/ PROBLEM SETS/OPEN ENDEDED PROBLEM-SOLVING EXERCISES etc:

Week	Assignment Type	Assignment No	Topic	Details	co

COURSE TIME TABLE:

	Hour	1	2	3	4	5	6	7	8	9
Day	Component									
Mon	Theory	--	--	--	--	--	--	--	--	--
	Tutorial	--	--	--	--	--	--	--	--	--
	Lab	--	--	--	--	--	--	--	--	--
	Skilling	--	--	--	--	--	--	--	--	--

Tue	Theory	---	---	---	---	---	---	---	---	---
	Tutorial	---	---	---	---	---	---	---	---	---
	Lab	---	---	---	---	---	---	---	---	---
	Skilling	---	---	---	---	---	---	---	---	---
Wed	Theory	V-S8,V-S9,V-S10	V-S8,V-S9,V-S10	---	---	---	---	---	---	---
	Tutorial	--	--	---	---	---	---	---	---	---
	Lab	--	--	---	---	---	---	---	---	---
	Skilling	--	--	---	---	---	---	---	---	---
Thu	Theory	---	---	---	---	---	---	---	--	--
	Tutorial	---	---	---	---	---	---	---	V-S15,V-S16,V-S17	V-S15,V-S16,V-S17
	Lab	---	---	---	---	---	---	---	--	--
	Skilling	---	---	---	---	---	---	---	--	--
Fri	Theory	---	---	V-S1,V-S2,V-S3	V-S1,V-S2,V-S3	--	--	---	---	---
	Tutorial	---	---	--	--	V-S1,V-S2,V-S3	V-S1,V-S2,V-S3	---	---	---
	Lab	---	---	--	--	--	--	---	---	---
	Skilling	---	---	--	--	--	--	---	---	---
Sat	Theory	---	---	--	--	---	---	---	---	---
	Tutorial	---	---	V-S8,V-S9,V-S10	V-S8,V-S9,V-S10	---	---	---	---	---
	Lab	---	---	--	--	---	---	---	---	---
	Skilling	---	---	--	--	---	---	---	---	---
Sun	Theory	--	--	--	--	--	--	--	--	--
	Tutorial	--	--	--	--	--	--	--	--	--
	Lab	--	--	--	--	--	--	--	--	--
	Skilling	--	--	--	--	--	--	--	--	--

REMEDIAL CLASSES:

Supplement course handout, which may perhaps include special lectures and discussions that would be planned, and schedule notified according

SELF-LEARNING:

Assignments to promote self-learning, survey of contents from multiple sources.

S.no	Topics	CO	ALM	References/MOOCS

DELIVERY DETAILS OF CONTENT BEYOND SYLLABUS:

Content beyond syllabus covered (if any) should be delivered to all students that would be planned, and schedule notified accordingly.

S.no	Advanced Topics, Additional Reading, Research papers and any	CO	ALM	References/MOOCS

EVALUATION PLAN:

Evaluation Type	Evaluation Component	Weightage/Marks		Assessment Dates	Duration (Hours)	CO1	CO2	CO3	CO4	CO5
End Semester Summative Evaluation Total= 40 %	End Semester Exam	Weightage	30		180	7.5	7.5	7.5	7.5	
		Max Marks	100			25	25	25	25	
	Lab End Semester Exam	Weightage	10		120					10
		Max Marks	50							50
In Semester Formative Evaluation Total= 30 %	MOOCs Review	Weightage	10		60	2.5	2.5	2.5	2.5	
		Max Marks	40			10	10	10	10	
	ALM	Weightage	5		60	1.25	1.25	1.25	1.25	
		Max Marks	40			10	10	10	10	
	Tutorial	Weightage	10		120	2.5	2.5	2.5	2.5	
		Max Marks	80			20	20	20	20	
	Continuous Evaluation - Lab Exercise	Weightage	5		120					5
		Max Marks	100							100
In Semester Summative Evaluation Total= 30 %	Semester in Exam-I	Weightage	7.5		120	3.75	3.75			
		Max Marks	50			25	25			
	Semester in Exam-II	Weightage	7.5		120			3.75	3.75	
		Max Marks	50					25	25	
	Lab In Semester Exam	Weightage	5		120					5
		Max Marks	50							50
	MOOCs Evaluation (Certificate + Test)	Weightage	10		60				10	
		Max Marks	40						40	

ATTENDANCE POLICY:

Every student is expected to be responsible for regularity of his/her attendance in class rooms and laboratories, to appear in scheduled tests and examinations and fulfill all other tasks assigned to him/her in every course
In every course, student has to maintain a minimum of 85% attendance to be eligible for appearing in Semester end examination of the course, for cases of medical issues and other unavoidable circumstances the students will be condoned if their attendance is between 75% to 85% in every course, subjected to submission of medical certificates, medical case file and other needful documental proof to the concerned departments

DETENTION POLICY :

In any course, a student has to maintain a minimum of 85% attendance and In-Semester Examinations to be eligible for appearing to the Semester End Examination, failing to fulfill these conditions will deem such student to have been detained in that course.

PLAGIARISM POLICY :

Supplement course handout, which may perhaps include special lectures and discussions

COURSE TEAM MEMBERS, CHAMBER CONSULTATION HOURS AND CHAMBER VENUE DETAILS:

Supplement course handout, which may perhaps include special lectures and discussions

Name of Faculty	Delivery Component of Faculty	Sections of Faculty	Chamber Consultation Day (s)	Chamber Consultation Timings for each day	Chamber Consultation Room No:	Signature of Course faculty:
Radhika Chintala	L	2-MA,8-MA	-	-	-	-
Radhika Chintala	P	8-MA,2-MA	-	-	-	-
Radhika Chintala	T	8-MA,2-MA	-	-	-	-
Pavan Kumar Thummala	L	1-MA	-	-	-	-
Pavan Kumar Thummala	P	1-MA	-	-	-	-
Pavan Kumar Thummala	T	1-MA	-	-	-	-
Venkata Praveen Krishna Anne	L	9-MA	-	-	-	-
Venkata Praveen Krishna Anne	P	9-MA	-	-	-	-
Venkata Praveen Krishna Anne	T	9-MA	-	-	-	-
Chandol Mohan	L	16-MA,3-MA	-	-	-	-

Kumar						
Chandol Mohan Kumar	P	3-MA,16-MA	-	-	-	-
Chandol Mohan Kumar	T	16-MA,3-MA	-	-	-	-
Sathish Kumar K	L	10-MA,17-MA	-	-	-	-
Sathish Kumar K	P	10-MA,17-MA	-	-	-	-
Sathish Kumar K	T	10-MA,17-MA	-	-	-	-
Yogesh Tripathi	L	15-MA	-	-	-	-
Yogesh Tripathi	P	15-MA	-	-	-	-
Yogesh Tripathi	T	15-MA	-	-	-	-

GENERAL INSTRUCTIONS

Students should come prepared for classes and carry the text book(s) or material(s) as prescribed by the Course Faculty to the class.

NOTICES

Most of the notices are available on the LMS platform.

All notices will be communicated through the institution email.

All notices concerning the course will be displayed on the respective Notice Boards.

Signature of COURSE COORDINATOR

(Radhika Rani Chintala)

Signature of Department Prof. Incharge Academics & Vetting Team Member

Department Of CSE-Honors

HEAD OF DEPARTMENT:

Approval from: DEAN-ACADEMICS
(Sign with Office Seal) [object HTMLDivElement]