



**K L Deemed to be University**  
**CSE-4 -- KLVZA**  
**Course Handout**  
**2025-2026, Odd Sem**

Course Title	: COMPUTER NETWORKS
Course Code	: 24CS2202
L-T-P-S Structure	: 3-0-2-0
Pre-requisite	:
Credits	: 4
Course Coordinator	: Tushar Kanti DE
Team of Instructors	:
Teaching Associates	:

**Syllabus :**Module 1 (CO 1): Introduction to computer networks: Use of Computer Networks, Network Hardware, Network software, networks topologies, LANs, MAN, WANs, Reference models: OSI reference model, TCP/IP protocol stack, switching techniques, encoding, Physical Layer: Guided and Unguided Transmission Media, Data Link layer: data Link layer services, error detection and correction, Sliding Window, Stop and Wait protocols. Module 2 (CO2): MAC sub-layer: Aloha, CSMA, CSMA/CD, CSMA/CA protocols. Ethernet, including Gigabit Ethernet, Network layer: Design issues of Network layer, VLANS, addressing: IP addressing IPV4 & IPV6, subnetting; NAT, ARP, Port Address Translation (PAT), Tunnelling, DHCP Module 3 (CO3): Routing algorithms: static routing & dynamic routing: Shortest path, flooding, multicasting, broadcasting, Distance vector: RIP, Internetworking, Link state: OSPF, BGP, Hierarchical, Access Control list for IPV4, Transport Layer: Process to Process Delivery; ports, elements of transport protocols, UDP; TCP; Congestion Control: Open Loop, Closed Loop, Choke Packets; Quality of Service, Techniques to Improve QoS: Leaky bucket algorithm, Token bucket algorithm, Module 4 (CO4): Application Layer: WWW, HTTP, DNS, Telnet, SMTP, Wireless Communication: advantages, limitations, applications, wireless media, types of wireless networks: Adhoc (MANET, VANET, WSN, WRSN), emerging wireless technologies and standards, WiFi (802.11), Bluetooth, Introduction to Mobile Communications: Introduction to Cell technologies, Basic Architecture in GSM, handoff, cellular capacity.

**Text Books :**1. Behrouz A. Forouzan , “Data Communication and Networking”, TMH, 6th Edition ,(2012). 2. A.S. Tanenbaum, David J. Wetheral “Computer Networks” Pearson, 5th –Edition-(2011). 3. Jochen Schiller, “Mobile Communications”, Addison-Wesley (Pearson Education), 2nd Edition-(2003)

**Reference Books :**1. Peterson, LL and Davie BS “Computer Networks -- A Systems Approach”, Morgan Kaufmann, 2. William Stallings, “Cryptography and Network Security”, Pearson Education, 6th Edition, 2015. 3. Kurose, J and Ross, K Computer Networking: A Top-Down Approach Addison-Wesley- 6th edition-(2012).

**Web Links :**1. <https://www.udemy.com/course/comptia-network-n10-008> 2. <https://www.linkedin.com/learning/paths/getting-started-with-network-administration> 3. <https://www.linkedin.com/learning/networking-foundations-networking-basics> 4. <https://www.udemy.com/course/introduction-to-networking-for-complete-beginners> 5. [www.netacad.com](http://www.netacad.com)

**MOOCS :**1. <http://www.my-mac.com/en/mooc/computer-networking--ud436> 2. <https://www.coursera.org/learn/computer-networking> 3. <https://www.linkedin.com/learning/introduction-to-network-routing> 4. <https://www.linkedin.com/learning/paths/getting-started-with-network-administration> 5. <https://www.udemy.com/computer-networks-course-networking-basics/> 6. [https://lagunita.stanford.edu/register?course\\_id=Engineering%2FNetworkingSP%2FSelFpaced&enrollment\\_action=enrol](https://lagunita.stanford.edu/register?course_id=Engineering%2FNetworkingSP%2FSelFpaced&enrollment_action=enrol)

**Course Rationale :**This course provides a comprehensive foundation in computer and wireless networks, enabling students to understand layered architectures, communication protocols, addressing schemes, routing strategies, and the operation of modern wired and wireless systems. It prepares learners to design, analyze, and troubleshoot network infrastructures and explore emerging technologies in data and mobile communication.

**Course Objectives :** The objective of this course is to provide students with a comprehensive understanding of computer networks and wireless communication. It covers the fundamental concepts of network architectures, hardware, software, topologies, and layered models such as OSI and TCP/IP. Students will learn about data transmission, switching, encoding, and error control techniques at the physical and data link layers. The course also introduces MAC protocols, IP addressing, subnetting, VLANs, and various routing algorithms. Additionally, it explores transport protocols, congestion control, and quality of service mechanisms. In the final module, students gain insight into application-layer protocols and emerging wireless technologies including Wi-Fi, Bluetooth, MANET, and mobile communications, preparing them for modern networking environments.

#### COURSE OUTCOMES (COs):

CO NO	Course Outcome (CO)	PO/PSO	Blooms Taxonomy Level (BTL)
CO1	Understand and applying the concepts of computer networks and functions of physical layer and datalink layer	PO1,PO2,PO3,PSO2	3
CO2	Analyzing the MAC protocols and apply IP addressing concepts to subnet a network.	PO2,PO3,PSO2	4
CO3	Analyze static and dynamic routing algorithms, transport layer protocols and congestion control techniques.	PO2,PO3,PSO2	4
CO4	Analyze Application layer protocols and emerging wireless technologies.	PO2,PO3,PSO2	4
CO5	Applying and Analyzing the functionality of the network using different protocols.	PO2,PO5,PSO2	4

#### COURSE OUTCOME INDICATORS (COIs)::

Outcome No.	Highest BTL	COI-1	COI-2	COI-3	COI-4
CO1	3	<b>Btl-1</b> Remember the basic knowledge required for Computer communication	<b>Btl-2</b> Understand the theory of data communication and basic terminology in Physical and Data Link Layer	<b>Btl-3</b> Demonstrate the operation of different network topologies and employ physical and data link-layer protocols	
CO2	4	<b>Btl-1</b> Understanding the concepts of MAC sub-layer protocols, Ethernet technologies, and network layer addressing schemes.	<b>Btl-2</b> Understand the working of different devices and the design issues of network layer.	<b>Btl-3</b> Apply the knowledge of IP addressing to construct different networks.	<b>Btl-4</b> Analyze and compare MAC sub-layer protocols, Ethernet technologies, and network layer addressing and tunneling mechanisms to determine optimal configurations and performance trade-offs in varied network scenarios.

CO3	4	<b>Btl-1</b> Remember the functions of routing Algorithms and Transport layer.	<b>Btl-2</b> Understanding the principles of routing algorithms, transport layer functions, congestion control techniques, and QoS mechanisms used in computer networks.	<b>Btl-3</b> Apply the knowledge of the Routing algorithm for efficient Networks and transport layer to analyze different transport layer protocols	<b>Btl-4</b> Analyze and compare the effectiveness of routing protocols, transport-layer mechanisms, congestion control strategies, and QoS algorithms to determine optimal network performance under varied traffic scenarios.
CO4	4	<b>Btl-1</b> Understanding the key application-layer protocols, wireless network types and media, and basic mobile communication components such as GSM architecture and handoff.	<b>Btl-2</b> Understanding the functions and workflows of application-layer protocols and comparing different wireless network types and mobile communication components to illustrate their roles and constraints in networked environments.	<b>Btl-3</b> Demonstrate the configuration and use of application-layer services and applying basic wireless and mobile communication setups.	<b>Btl-4</b> Analyze and compare application-layer protocols and wireless/mobile communication technologies to evaluate their performance, scalability, and suitability across varied network scenarios.
CO5	4	<b>Btl-1</b> Understand the basic terminologies in network protocols.	<b>Btl-2</b> Learning the working of different network devices	<b>Btl-3</b> Applying the knowledge of different network protocols and implementing them in cisco packet tracer	<b>Btl-4</b> Analyze different protocols with different topologies in networks using cisco packet tracer.

**PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES (POs/PSOs)**

Po No.	Program Outcome	

**Lecture Course DELIVERY Plan:**

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
1	CO1	COI-1	Course Handout, Introduction to CN, Uses of CN, classification of CN	T1-CH1-page13	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
2	CO1	COI-1	Network Hardware, Network software	T1-CH1-page 13	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
						Assignment,MOOCs Review,SEM-EXAM1
3	CO1	COI-1	Network Hardware, Networks topologies, connectors	T1-CH1-page 13	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
4	CO1	COI-1	OSI reference model	T1-CH2-page 33	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
5	CO1	COI-1	TCP/IP protocol stack	T1-CH2-page 42	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
6	CO1	COI-1	Guided & Un-guided media	T1-CH 4-page 101	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
7	CO1	COI-1	Switching techniques, encoding signal	T1-CH7-page 192	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
8	CO1	COI-2	Data link layer services, DLL design issues	T1-CH 10-page 267	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
9	CO1	COI-3	Error Detection and Correction	T1-CH 10-page 269	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
10	CO1	COI-3	Error Detection and Correction	T1-CH 10-page 269	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
11	CO1	COI-3	Sliding Window protocols, stop & wait protocols	T1-CH 11-page 340	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
12	CO1	COI-3	Go-Back-N protocols, Selective Repeat Protocol	T1-CH 11-page 340	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
						Assignment,MOOCs Review,SEM-EXAM1
13	CO2	COI-3	Aloha, CSMA, CSMA/CD	T1-CH 12-page 363	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
14	CO2	COI-2	CSMA/CA protocols, Ethernet, including Gigabit Ethernet	T1-CH 12-page 363	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
15	CO2	COI-2	Design issues of Network layer, VLANS	T1-CH 19-page 549, T1-CH 15-page 445	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
16	CO2	COI-3	IP addressing, IPV4 & IPV6, Subnetting	T1-CH 20-page 579	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
17	CO2	COI-4	Subnetting	T1-CH 19 - page 554	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
18	CO2	COI-4	NAT. Port Address Translation (PAT)	T1-CH 19-page 563	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
19	CO2	COI-4	ARP, DHCP, Tunneling	T1-CH 19-page 563	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM1
20	CO3	COI-2	static routing & dynamic routing: Shortest path, flooding	T1-CH 22-page 647	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
21	CO3	COI-2	Unicasting, multicasting, broadcasting	T1-CH 22-page 647	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
22	CO3	COI-3	Distance vector: RIP, Hierarchical	T1-CH 22-page 647	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
						Assignment,MOOCs Review,SEM-EXAM2
23	CO3	COI-3	Internetworking, Link state routing	T1-CH 22-page 647	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
24	CO3	COI-3	OSPF, BGP	T1-CH 22-page 647	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
25	CO3	COI-3	Access Control list for IPV4	T1-CH 20-page 606	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
26	CO3	COI-3	Process to Process Delivery; ports, elements of transport protocols	T1-CH 23-page 703	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
27	CO3	COI-3	Flow control, TCP, UDP	T1-CH 23-page 703	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
28	CO3	COI-3	Congestion control- Open Loop, Closed Loop, Choke Packets	T1-CH 24-page 786	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
29	CO3	COI-3	Techniques to Improve QoS: Leaky bucket algorithm, Token bucket algorithm	T1-CH 24-page 775	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
30	CO3	COI-4	Timer management, TCP congestion control	T1-CH 24-page 775	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
31	CO4	COI-2	WWW, HTTP	T1-CH 27-page 851	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
32	CO4	COI-2	DNS, Telnet	T1-CH 28-page 877	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
						Assignment,MOOCs Review,SEM-EXAM2
33	CO4	COI-2	Email, SMTP	T1-CH 28-page 877	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
34	CO4	COI-2	Wireless Communication: advantages, limitations, applications, wireless media	T1-CH 14-page 421	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
35	CO4	COI-3	wireless networks: Adhoc (MANET, VANET)	T3-CH 8-page 330	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
36	CO4	COI-3	Adhoc (WSN, WRSN)	T3-CH 8-page 330	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
37	CO4	COI-4	Emerging wireless technologies and standards, WiFi (802.11), Bluetooth	T1-CH 14-page 421, T1-CH 14-page 434	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
38	CO4	COI-4	Introduction to Cellular technologies, Basic Architecture in GSM	T3-CH 2-page 61, T3-CH 4-page 96	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2
39	CO4	COI-4	handoff, cellular capacity	T3-CH 5-page 176	Chalk,LTC,PPT,Talk	ALM,End Semester Exam,Home Assignment,MOOCs Review,SEM-EXAM2

### Lecture Session wise Teaching – Learning Plan

**SESSION NUMBER : 1**

**Session Outcome: 1** Introduction to Computer Networks(CN)

**Session Outcome: 2** Uses of CN, classification of CN

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

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20	Introduction to Computer Networks(CN)	2	PPT	--- NOT APPLICABLE ---
20	Uses of Computer Networks	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 2****Session Outcome:** 1 Network Hardware, Network software

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Network Hardware, Network software	2	PPT	--- NOT APPLICABLE ---
20	Network Hardware, Network software	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 3****Session Outcome:** 1 Network Hardware, Networks topologies, connectors

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Network Hardware, Networks topologies, connectors	2	PPT	--- NOT APPLICABLE ---
20	Network Hardware, Networks topologies, connectors	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 4****Session Outcome:** 1 OSI reference model

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	OSI reference model	2	PPT	One minute paper
20	OSI reference model	2	PPT	One minute paper
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 5****Session Outcome:** 1 TCP/IP protocol stack

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	TCP/IP protocol stack	2	PPT	--- NOT APPLICABLE ---
20	TCP/IP protocol stack	2	PPT	--- NOT APPLICABLE ---
5	Recap	2	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 6****Session Outcome:** 1 Guided & Un-guided media

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Guided & Un-guided media	2	PPT	--- NOT APPLICABLE ---
20	Guided & Un-guided media	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 7****Session Outcome: 1** Switching techniques**Session Outcome: 2** Encoding signal

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Switching techniques	2	PPT	--- NOT APPLICABLE ---
20	Encoding signal	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 8****Session Outcome: 1** Data link layer services**Session Outcome: 2** DLL design issues

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Data link layer services	2	PPT	Quiz/Test Questions
20	DLL design issues	2	PPT	Quiz/Test Questions
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 9****Session Outcome: 1** Error Detection

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Error Detection	3	PPT	--- NOT APPLICABLE ---

5	Recap	1	Talk	--- NOT APPLICABLE ---
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**SESSION NUMBER : 10****Session Outcome: 1** Error Correction

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Error Correction	3	PPT	Group Discussion
5	Recap	3	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 11****Session Outcome: 1** Sliding Window protocols**Session Outcome: 2** Stop & wait protocols

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Sliding Window protocols	3	PPT	Brain storming session
20	Stop & wait protocols	3	PPT	Brain storming session
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 12****Session Outcome: 1** Go-Back-N protocols**Session Outcome: 2** Selective Repeat Protocol

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Go-Back-N protocols	3	PPT	--- NOT APPLICABLE ---

20	Selective Repeat Protocol	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 13****Session Outcome:** 1 Aloha, CSMA, CSMA/CD

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Aloha, CSMA	3	PPT	--- NOT APPLICABLE ---
20	CSMA/CD	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 14****Session Outcome:** 1 CSMA/CA protocols, Ethernet, including Gigabit Ethernet

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	CSMA/CA protocols	2	PPT	--- NOT APPLICABLE ---
20	Ethernet, including Gigabit Ethernet	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 15****Session Outcome:** 1 Design issues of Network layer, VLANS

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

5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Design issues of Network layer	2	PPT	One minute paper
20	VLANS	2	PPT	One minute paper
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 16****Session Outcome: 1** IP addressing, IPV4 & IPV6**Session Outcome: 2** Subnetting

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	IP addressing, IPV4 & IPV6	2	PPT	Quiz/Test Questions
20	Subnetting	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 17****Session Outcome: 1** Subnetting

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Subnetting	3	PPT	Problem-Based Learning
20	Subnetting	3	PPT	Problem-Based Learning
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 18****Session Outcome: 1** Network Address Translation

**Session Outcome: 2 Port Address Translation (PAT)**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Network Address Translation	3	PPT	Quiz/Test Questions
20	Port Address Translation (PAT)	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 19****Session Outcome: 1 ARP, DHCP****Session Outcome: 2 Tunneling**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	ARP, DHCP	2	PPT	Brain storming session
20	Tunneling	2	PPT	Brain storming session
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 20****Session Outcome: 1 static routing & dynamic routing: Shortest path, flooding,**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	static routing & dynamic routing	3	PPT	Problem-Based Learning
20	Shortest path, flooding	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE

**SESSION NUMBER : 21****Session Outcome: 1** Unicasting, multicasting, broadcasting

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Unicasting, multicasting, broadcasting	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 22****Session Outcome: 1** Distance vector: RIP**Session Outcome: 2** Hierarchical

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Distance vector: RIP	3	PPT	One minute paper
20	Hierarchical	3	PPT	One minute paper
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 23****Session Outcome: 1** Internetworking, Link state routing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Internetworking, Link state routing	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 24****Session Outcome: 1 OSPF****Session Outcome: 2 BGP**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	OSPF	3	PPT	Brain storming session
20	BGP	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 25****Session Outcome: 1 Access Control list for IPV4**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Access Control list for IPV4	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 26****Session Outcome: 1 Process to Process Delivery****Session Outcome: 2 Ports, elements of transport protocols**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Process to Process Delivery	2	PPT	--- NOT APPLICABLE ---
20	Ports, elements of transport protocols	2	PPT	--- NOT APPLICABLE

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5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 27****Session Outcome: 1** Flow control**Session Outcome: 2** TCP, UDP

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Flow control	2	PPT	One minute paper
20	TCP, UDP	2	PPT	One minute paper
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 28****Session Outcome: 1** Congestion control- Open Loop, Closed Loop, Choke Packets

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Congestion control- Open Loop	3	PPT	Brain storming session
20	Closed Loop, Choke Packets	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 29****Session Outcome: 1** Techniques to Improve QoS: Leaky bucket algorithm**Session Outcome: 2** Token bucket algorithm

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

				---
20	Techniques to Improve QoS: Leaky bucket algorithm	3	PPT	--- NOT APPLICABLE ---
20	Token bucket algorithm	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 30**

**Session Outcome: 1** Timer management, TCP congestion control

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Timer management, TCP congestion control	3	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 31**

**Session Outcome: 1** WWW

**Session Outcome: 2** HTTP

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	WWW	2	PPT	--- NOT APPLICABLE ---
20	HTTP	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 32**

**Session Outcome: 1** DNS

**Session Outcome: 2** Telnet

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	DNS	2	PPT	--- NOT APPLICABLE ---
20	Telnet	2	PPT	Quiz/Test Questions
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 33****Session Outcome:** 1 Email, SMTP

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Email, SMTP	2	PPT	One minute paper
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 34****Session Outcome:** 1 Wireless Communication: advantages, limitations, applications, wireless media

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Wireless Communication: advantages, limitations	2	PPT	One minute paper
20	Applications, wireless media	2	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 35****Session Outcome:** 1 wireless networks: Adhoc (MANET, VANET)

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	wireless networks: Adhoc (MANET, VANET)	3	PPT	Brain storming session
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 36****Session Outcome:** 1 Adhoc (WSN, WRSN)

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Adhoc (WSN, WRSN)	3	PPT	Quiz/Test Questions
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 37****Session Outcome:** 1 Emerging wireless technologies and standards**Session Outcome:** 2 WiFi (802.11), Bluetooth

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Emerging wireless technologies and standards	4	PPT	Brain storming session
20	WiFi (802.11), Bluetooth	4	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 38****Session Outcome:** 1 Introduction to Cellular technologies**Session Outcome:** 2 Basic Architecture in GSM

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Introduction to Cellular technologies	4	PPT	--- NOT APPLICABLE ---
20	Basic Architecture in GSM	4	PPT	--- NOT APPLICABLE ---
5	Recap	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 39**

**Session Outcome:** 1 handoff, cellular capacity

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Handoff, cellular capacity	4	PPT	Brain storming session
5	Recap	4	Talk	--- NOT APPLICABLE ---

**Tutorial Course DELIVERY Plan:** NO Delivery Plan Exists

**Tutorial Session wise Teaching – Learning Plan**

No Session Plans Exists

**Practical Course DELIVERY Plan:**

Tutorial Session no	Topics	CO-Mapping
1	Introduction to the laboratory and the tool used Cisco packet tracer	CO5
2	Execute the following networking commands like ipconfig, tracert, telnet, netsh, ping, nslookup and netstat in the command prompt with simple topology.	CO5
3	Configuration of basic switch setup using Cisco Packet Tracer	CO5
4	Construction of Different VLANS and TRUNKING using cisco packet tracer	CO5

Tutorial Session no	Topics	CO-Mapping
5	Configuration of Encapsulation dot 1Q using cisco packet tracer	CO5
6	Configuration of Network address translation in Cisco packet tracer and verify the configuration	CO5
7	Configuration of ARP and DHCP in Cisco packet tracer and verify the configuration	CO5
8	Configuration of Static Routing using Cisco network switch and verify the connectivity	CO5
9	Configuration of RIP and OSPF using Cisco network switch and verify the connectivity	CO5
10	Configure the Standard and Extended Access Control List using cisco packet tracer	CO5
11	Configuration of SMTP, FTP, DNS, HTTP in Cisco packet tracer and verify the connection	CO5
12	Implementation of Smart home using Cisco packet tracer and verify the configuration	CO5
13	Configuration of Basic wireless Settings SSID - LWR3000 Configure Wireless Linksys Routers sing Cisco Packet Tracer	CO5

### Practical Session wise Teaching – Learning Plan

**SESSION NUMBER : 1**

**Session Outcome:** 1 Introduction to the laboratory and the tool used Cisco packet tracer

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
60	Introduction to the laboratory and the tool used Cisco packet tracer	2	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 2**

**Session Outcome:** 1 Execute the following networking commands like ipconfig, tracert, telnet, netsh, ping, nslookup and netstat in the command prompt with simple topology.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
30	Explanation	3	Talk	--- NOT APPLICABLE ---
30	Execution of the experiment	3	LTC	--- NOT APPLICABLE ---
20	Inference and Analysis	4	Talk	--- NOT APPLICABLE ---
10	Results	3	LTC	--- NOT APPLICABLE ---
5	Summary and conclusion	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 3**

**Session Outcome:** 1 Configuration of basic switch setup using Cisco Packet Tracer

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configuration of basic switch setup using Cisco Packet Tracer	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 4**

**Session Outcome:** 1 Construction of Different VLANS and TRUNKING using cisco packet tracer

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Construction of Different VLANS and TRUNKING using cisco packet tracer	3	LTC	--- NOT APPLICABLE

				---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 5**

**Session Outcome:** 1 Configuration of Encapsulation dot 1Q using cisco packet tracer

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configuration of Encapsulation dot 1Q using cisco packet tracer	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 6**

**Session Outcome:** 1 Configuration of Network address translation in Cisco packet tracer and verify the configuration

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configuration of Network address translation in Cisco packet tracer and verify the configuration	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 7**

**Session Outcome:** 1 Configuration of ARP and DHCP in Cisco packet tracer and verify the configuration

Time(min)	Topic	BTL	Teaching-Learning	Active Learning

			<b>Methods</b>	<b>Methods</b>
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configuration of ARP and DHCP in Cisco packet tracer and verify the configuration	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 8**

**Session Outcome:** 1 Configuration of Static Routing using Cisco network switch and verify the connectivity

<b>Time(min)</b>	<b>Topic</b>	<b>BTL</b>	<b>Teaching-Learning Methods</b>	<b>Active Learning Methods</b>
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configuration of Static Routing using Cisco network switch and verify the connectivity	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 9**

**Session Outcome:** 1 Configuration of RIP and OSPF using Cisco network switch and verify the connectivity

<b>Time(min)</b>	<b>Topic</b>	<b>BTL</b>	<b>Teaching-Learning Methods</b>	<b>Active Learning Methods</b>
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configuration of RIP and OSPF using Cisco network switch and verify the connectivity	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 10**

**Session Outcome: 1 Configure the Standard and Extended Access Control List using cisco packet tracer**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configure the Standard and Extended Access Control List using cisco packet tracer	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voce	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 11**

**Session Outcome: 1 Configuration of SMTP, FTP, DNS, HTTP in Cisco packet tracer and verify the connection**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configuration of SMTP, FTP, DNS, HTTP in Cisco packet tracer and verify the connection	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voce	1	Talk	--- NOT APPLICABLE ---

**SESSION NUMBER : 12**

**Session Outcome: 1 Implementation of Smart home using Cisco packet tracer and verify the configuration**

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Implementation of Smart home using Cisco packet tracer and verify the configuration	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---

35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---
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**SESSION NUMBER : 13**

**Session Outcome:** 1 Configuration of Basic wireless Settings SSID - LWR3000 Configure Wireless Linksys Routers sing Cisco Packet Tracer

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
40	Configuration of Basic wireless Settings SSID - LWR3000 Configure Wireless Linksys Routers sing Cisco Packet Tracer	3	LTC	--- NOT APPLICABLE ---
20	Execution & Analysis of Experiment	4	LTC	--- NOT APPLICABLE ---
35	Evaluation and Viva Voice	1	Talk	--- NOT APPLICABLE ---

**Skilling Course DELIVERY Plan:** NO Delivery Plan Exists

**Skilling Session wise Teaching – Learning Plan**

No Session Plans Exists

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

Week	Assignment Type	Assignment No	Topic	Details	co
1	Weekly Homework Assignments	1	Elementary data link protocols, Elementary data link protocols, sliding window protocols sliding window protocols	Mention the drawback of Goback-N sliding window protocol and discuss how it can be prevented by Selective Repeat protocol.	CO1
2	Weekly Homework Assignments	2	Addressing: IP addressing (IPV4 & IPV6)	Explain the addressing methods for IPv6 Addresses.	CO2
3	Weekly Homework Assignments	3	Access Control list for IPV4	Explain the designing of the Access control List. Discuss about the difference between Standard and extended control list.	CO3
4	Weekly Homework Assignments	4	Wireless Network and Bluetooth	Discuss the working principles of Bluetooth technology. Explain its architecture, protocol stack, and types of networks it supports. Identify at least	CO4


**COURSE TIME TABLE:**

	<b>Hour</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
Day	Component									
<b>Mon</b>	Theory	---	---	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107	---	---	---	- -	- -
	Tutorial	---	---	--	--	---	---	---	- -	- -
	Lab	---	---	V-S108,V-S108,V-S108,V-S109,V-S109,V-S109,V-S109,V-S110,V-S110,V-S110,V-S110,V-S111,V-S111,V-S111	V-S108,V-S108,V-S108,V-S109,V-S109,V-S109,V-S109,V-S110,V-S110,V-S110,V-S110,V-S111,V-S111,V-S111	---	---	---	- -	- -
	Skilling	---	---	--	--	---	---	---	- -	- -
<b>Tue</b>	Theory	---	---	---	---	V-S201,V-S202,V-S203,V-S204,V-S205,V-S206,V-S207	V-S201,V-S202,V-S203,V-S204,V-S205,V-S206,V-S207	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108,V-S109,V-S110,V-S111	- -	- -
	Tutorial	---	---	---	---	--	--	--	- -	- -
	Lab	---	---	---	---	V-S208,V-S208,V-S208,V-	V-S208,V-S208,V-S208,V-	--	- -	- -

					S209,V- S209,V- S209,V- S209,V- S210,V- S210,V- S210,V- S210,V- S211,V- S211,V- S211	S209,V- S209,V- S209,V- S209,V- S210,V- S210,V- S210,V- S210,V- S211,V- S211,V- S211			
	Skilling	---	---	---	---	---	---	---	---
Wed	Theory	V-S116,V-S117	V-S116,V-S117	---	---	---	---	V-S116,V-S117	---
	Tutorial	--	--	---	---	---	---	--	---
	Lab	V-S118,V-S118,V-S118	V-S118,V-S118,V-S118	---	---	---	---	--	---
	Skilling	--	--	---	---	---	---	--	---
Thu	Theory	V-S216,V-S217	V-S216,V-S217	V-S108,V-S109,V-S110,V-S111	V-S108,V-S109,V-S110,V-S111	---	---	V-S216,V-S217,V-S218	---
	Tutorial	--	--	--	--	---	---	--	---
	Lab	V-S218,V-S218,V-S218	V-S218,V-S218,V-S218	V-S101,V-S101,V-S101,V-S102,V-S102,V-S102,V-S103,V-S103,V-S103,V-S103,V-S104,V-S104,V-S104,V-S104,V-S105,V-S105,V-S105,V-S105,V-S106,V-S106,V-S106,V-S106,V-S107,V-S107,V-S107	V-S101,V-S101,V-S101,V-S102,V-S102,V-S102,V-S103,V-S103,V-S103,V-S103,V-S104,V-S104,V-S104,V-S104,V-S105,V-S105,V-S105,V-S105,V-S106,V-S106,V-S106,V-S106,V-S107,V-S107,V-S107	---	---	--	---
	Skilling	--	--	--	--	---	---	--	---

	Theory	---	---	---	---	V-S118	V-S118	---	- -
	Tutorial	---	---	---	---	--	--	---	- -
<b>Fri</b>	Lab	---	---	---	---	V-S116,V-S116,V-S116,V-S116,V-S117,V-S117,V-S117,V-S117	V-S116,V-S116,V-S116,V-S116,V-S117,V-S117,V-S117,V-S117	---	- -
	Skilling	---	---	---	---	--	--	---	- -
	Theory	---	---	V-S208,V-S209,V-S210,V-S211	V-S208,V-S209,V-S210,V-S211	V-S218	V-S218	V-S201,V-S202,V-S203,V-S204,V-S205,V-S206,V-S207,V-S208,V-S209,V-S210,V-S211	- -
	Tutorial	---	---	--	--	--	--	--	- -
<b>Sat</b>	Lab	---	---	V-S201,V-S201,V-S201,V-S202,V-S202,V-S202,V-S203,V-S203,V-S203,V-S203,V-S203,V-S204,V-S204,V-S204,V-S205,V-S205,V-S205,V-S206,V-S206,V-S206,V-S207,V-S207,V-S207,V-S207	V-S201,V-S201,V-S201,V-S202,V-S202,V-S202,V-S203,V-S203,V-S203,V-S204,V-S204,V-S204,V-S205,V-S205,V-S205,V-S206,V-S206,V-S206,V-S207,V-S207,V-S207,V-S207	V-S216,V-S216,V-S216,V-S216,V-S217,V-S217,V-S217,V-S217	V-S216,V-S216,V-S216,V-S216,V-S217,V-S217,V-S217,V-S217	--	- -
	Skilling	---	---	--	--	--	--	--	- -
<b>Sun</b>	Theory	--	--	--	--	--	--	--	- -

Tutorial	--	--	--	--	--	--	--	--	- -
Lab	--	--	--	--	--	--	--	--	- -
Skilling	--	--	--	--	--	--	--	--	- -

**REMEDIAL CLASSES:**

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

**SELF-LEARNING:**

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

S.no	Topics	CO	ALM	References/MOOCs
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**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
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**EVALUATION PLAN:**

Evaluation Type	Evaluation Component	Weightage/Marks		Assessment Dates	Duration (Hours)	CO1	CO2	CO3	CO4	CO5
End Semester Summative Evaluation Total= 40 %	Lab End Semester Exam	Weightage	16		100					16
		Max Marks	50							50
	End Semester Exam	Weightage	24		180	6	6	6	6	
		Max Marks	100			25	25	25	25	
In Semester Formative Evaluation Total= 24 %	MOOCs Review	Weightage	5		120	1.25	1.25	1.25	1.25	
		Max Marks	100			25	25	25	25	
	Continuous Evaluation - Lab Exercise	Weightage	8		120					8
		Max Marks	50							50
	Home Assignment and Textbook	Weightage	5		120	1.25	1.25	1.25	1.25	
		Max Marks	80			20	20	20	20	
In Semester Summative Evaluation Total= 36 %	ALM	Weightage	6		120	1.5	1.5	1.5	1.5	
		Max Marks	80			20	20	20	20	
	Lab In Semester Exam	Weightage	8		100					8
		Max Marks	50							50
	Semester in Exam-II	Weightage	14		90			7	7	
		Max Marks	50					25	25	

	<b>Semester in Exam-I</b>	Weightage	14		90	7	7			
		Max Marks	50			25	25			

**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:
Pavan Kumar Thummala	L	201-MA	-	-	-	-
Pavan Kumar Thummala	P	201-A	-	-	-	-
Venkata Praveen Krishna Anne	L	202-MA	-	-	-	-
Venkata Praveen Krishna Anne	P	202-A	-	-	-	-
Satish Babu Jampani	L	107-MA,204-MA	-	-	-	-
Satish Babu Jampani	P	107-A,204-A	-	-	-	-
Swetha Kolachana	L	103-MA,207-MA	-	-	-	-
Swetha Kolachana	P	103-A,207-A	-	-	-	-
Gandharba Swain	L	203-MA	-	-	-	-
Gandharba Swain	P	203-A	-	-	-	-
Madhavarapu Chandan	L	102-MA	-	-	-	-
Madhavarapu Chandan	P	102-A,202-B	-	-	-	-
Ramaiah Challa	L	104-MA	-	-	-	-

Ramaiah Challa	P	104-A	-	-	-	-	-
Chandol Mohan Kumar	P	116-B, 201-B, 209-B	-	-	-	-	-
Ravi Teja Kanakala	P	111-B	-	-	-	-	-
Surya Sasank Visamsetty	P	202-C	-	-	-	-	-
Rupesh Talewar	P	216-C	-	-	-	-	-
Cherukupalli Sowjanya	P	207-C	-	-	-	-	-
T Krishnan	P	102-C	-	-	-	-	-
Nesarani A	P	104-C	-	-	-	-	-
Ranjith Rupani	P	102-B	-	-	-	-	-
Tushar DE	L	101-MA	-	-	-	-	-
Tushar DE	P	101-A	-	-	-	-	-
Viswanathan Reddy	P	101-C	-	-	-	-	-
Yogesh Sharma	P	211-B	-	-	-	-	-
Leena Arya	L	106-MA	-	-	-	-	-
Leena Arya	P	106-A	-	-	-	-	-
M J D Ebinezer Markapurapu	P	106-B	-	-	-	-	-
Sunitha Pachala	P	111-C	-	-	-	-	-
Anita Pradhan	P	105-C	-	-	-	-	-
Nyakapu Rajender	P	101-B, 117-B, 211-C	-	-	-	-	-
Prasanthi Valluri	P	117-C	-	-	-	-	-
B V N Prasad Paruchuri	P	118-C	-	-	-	-	-
DINESH PANCHARIA	L	108-MA	-	-	-	-	-
DINESH PANCHARIA	P	108-A	-	-	-	-	-
YALLAMANDA RAJESH BABU	P	108-C	-	-	-	-	-
goli kishore	L	116-MA, 216-MA	-	-	-	-	-
goli kishore	P	116-A, 216-A	-	-	-	-	-
NATHA PRIYA	P	218-C	-	-	-	-	-
K.Sadhana Kodali	L	105-MA	-	-	-	-	-
K.Sadhana Kodali	P	105-A	-	-	-	-	-
Munish Kumar	P	109-C	-	-	-	-	-
RAJAMAHENDRAVARAPU DURGA	L	111-MA	-	-	-	-	-
RAJAMAHENDRAVARAPU DURGA	P	111-A	-	-	-	-	-
Nasaramma Kadiyam	P	106-C	-	-	-	-	-
Bala .	L	109-MA	-	-	-	-	-
Bala .	P	109-A, 116-C	-	-	-	-	-
Narasimha Lavudiya	P	118-B	-	-	-	-	-
siva yenugu	P	217-C	-	-	-	-	-

DASARI SAILAJA	P	103-B,205-C,208-C	-	-	-	-	-
Tejo Gudipalli	P	107-C,204-C,209-C	-	-	-	-	-
VENKATA RAO MADDUMALA	P	110-B	-	-	-	-	-
BALASUBRAMANI S	P	206-C	-	-	-	-	-
G Venkata Ramana Reddy	P	108-B	-	-	-	-	-
BADUGU SAMATHA	L	206-MA	-	-	-	-	-
BADUGU SAMATHA	P	206-A	-	-	-	-	-
LAKSHMANARAO BATTULA	P	206-B,217-B	-	-	-	-	-
Kedar Ragam	P	207-B	-	-	-	-	-
BANDLA NIROSHA	P	103-C	-	-	-	-	-
Sathviki Rompicherla	P	104-B	-	-	-	-	-
Jacob Ganta	L	208-MA	-	-	-	-	-
Jacob Ganta	P	208-A	-	-	-	-	-
SABENABANU ABDULKADHAR	L	117-MA,217-MA	-	-	-	-	-
SABENABANU ABDULKADHAR	P	117-A,217-A	-	-	-	-	-
BATHULA jonathan	P	203-B	-	-	-	-	-
bobba sahithee	P	201-C	-	-	-	-	-
Shalini Ramaraju	P	107-B	-	-	-	-	-
KILLI BHUSHANA RAO	L	118-MA,218-MA	-	-	-	-	-
KILLI BHUSHANA RAO	P	118-A,218-A	-	-	-	-	-
THOKALA SRIVALLI	L	205-MA	-	-	-	-	-
THOKALA SRIVALLI	P	205-A	-	-	-	-	-
JUPALLI KUMARI	L	209-MA	-	-	-	-	-
JUPALLI KUMARI	P	209-A	-	-	-	-	-
Naralasetti Neelima	L	210-MA	-	-	-	-	-
Naralasetti Neelima	P	210-A	-	-	-	-	-
SATISH KUMAR ATHMAKURI	P	105-B	-	-	-	-	-
KOTTURU PRASUNA	P	203-C	-	-	-	-	-
Spandana Mande	P	210-B	-	-	-	-	-
ASWINI TALUPURI	L	110-MA	-	-	-	-	-
ASWINI TALUPURI	P	110-A,205-B	-	-	-	-	-
LOBSANG DARGE	P	210-C	-	-	-	-	-
Alaparthi Babu	L	211-MA	-	-	-	-	-
Alaparthi Babu	P	211-A	-	-	-	-	-

Prerna Mohit	P	110-C,204-B,208-B	-	-	-	-
Gurudatta Verma	P	216-B	-	-	-	-
Rama Mulukutla	P	218-B	-	-	-	-
Rabinarayan Panda	P	109-B	-	-	-	-

### 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

(Tushar Kanti DE)

### Signature of Department Prof. Incharge Academics & Vetting Team Member

Department Of CSE-4

### HEAD OF DEPARTMENT:

### Approval from: DEAN-ACADEMICS

(Sign with Office Seal) [object HTMLDivElement]