

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**SCHOOL OF COMPUTING**  
**COURSE PLAN**

**Course Code** : 18CSS202J  
**Course Title** : COMPUTER COMMUNICATIONS  
**Semester** : IV  
**Course Time** : JANUARY - MAY 2023  
**Slot** : E

Day	BATCH			
	BATCH1		BATCH 2	
	Hour	Timing	Hour	Timing
Day Order 1				
Day Order 2				
Day Order 3				
Day Order 4	10	4:00 to 04:50 pm	5	11:35 to 12:25 pm
Day Order 5	1,2	8:00 to 9:40 am	6,7	12:30 to 2:15 pm

### Reference Books

1. Behrouz A. Forouzan, "Data Communications and Networking" 5th ed., 2010
2. Bhushan Trivedi, "Data Communication and Networks" 2016
3. William Stallings, Data and Computer Communications, 9th ed., 2010
4. Todd Lammle, CCNA Study Guide, 7th ed. 2011

**Prerequisite** : NIL

### Course Objectives

1. Understand the basic services and concepts related to Internetwork
2. Understand the layered network architecture
3. Acquire knowledge in IP addressing
4. Exploring the services and techniques in physical layer
5. Understand the functions of Data Link layer
6. Implement and analyze the different Routing Protocols

### Test Schedule

S.No.	DATE	TEST	TOPICS	DURATION
1	07/02/2023 onwards	Cycle Test – I	Unit I	1 Hour
2	20/03/2023 onwards	Cycle Test – II	Unit II, III	2 Hours
3	02/05/2023 onwards	Cycle Test – III	Unit IV, Unit V	2 Hours

### Assessment

Cycle Test – I	:	25 Marks
Cycle Test – II	:	50 Marks
Cycle Test – III	:	50 Marks

## QUESTION PATTERN & MARK DISTRIBUTION FOR CLA TEST

CIA TESTS	MARKS	TEST
Cycle Test (CT I)	PART A: (MCQ) $\rightarrow 5 \times 1 = 5$ PART –B (Descriptive/Scenario) $\rightarrow 2 \times 10 = 20$ <b>Total Marks <math>\rightarrow 25</math></b>	Physical Written Exam
Cycle Test (CT II)	PART A: (MCQ) $\rightarrow 10 \times 1 = 10$ PART B : 2Marks $\rightarrow 5 \times 2 = 10$ PART –C (Descriptive/Scenario) $\rightarrow 2 \times 15 = 30$ <b>Total Marks <math>\rightarrow 50</math></b>	Physical Written Exam
Cycle Test (CT III)	PART –A Higher Order Thinking (Descriptive/Scenario) $\rightarrow 2 \times 25 = 50$ <b>Total Marks <math>\rightarrow 50</math></b> <b>NOTE :</b> Weightage (3/7.5 marks) will be given for Students who completes International Certification course Like CISCO, CCNA, Network+, Juniper Networks Certifications, VMware Certifications, Microsoft Certifications, Google Certifications, etc.)	OPEN BOOK EXAM

### HACKATHON CONTEST – CLAT-4 (5 Marks)

- Will be Conducted on April 2<sup>nd</sup> week
- Mandatory For Every Student to Participate in the contest as a Team From their class
- Maximum Team Size 5 members
- Weightage 5Marks For CLAT-4 Component

### MINI PROJECT

- Domain and Title should be in Network and Communication Related problem
- Maximum Team Size 5 members
- Mini project report should be submitted at the end of CLAP-3 (Abstract, introduction, problem statement, survey, design, Implementation etc).
- Two or Three reviews will be conducted for evaluating the mini project marks.
- Weightage (CLAP-3 – 5 marks) along with Viva voce

S.NO	Date of Review 1	Date of Review 2
1	23/01/2023 to 31/1/2023.	24/04/22 to 30/04/2023

### MARK DISTRIBUTIONS FOR LAB COMPONENTS (CLAP)

CLA COMPONENTS	MARKS	RULES
CLAP-1	<p>Lab Exercises Completion (Ex : 1 to 4) → 2 Marks</p> <p>Viva Marks → 3 Marks</p> <p><b>Total Marks -&gt; 5 Marks</b></p>	<ul style="list-style-type: none"> <li>Students must maintain Observation Hand written in Neat and Proper Order</li> <li>Observation to be signed before CLAT1</li> <li>Students will be evaluated based on the viva questions and experiment completion</li> </ul>
CLAP-2	<p>Lab Exercises Completion (Ex : 5 to 9) → 3 Marks</p> <p>Viva Marks → 4.5 Marks</p> <p><b>Total Marks -&gt; 7.5 Marks</b></p>	<ul style="list-style-type: none"> <li>Students must maintain Observation Hand written in Neat and Proper Order</li> <li>Observation to be signed before CLAT2</li> <li>Students will be evaluated based on the viva questions and experiment completion</li> </ul>
CLAP-3	<p>Lab Exercises Completion (Ex : 10 to 13) → 2.5 Marks</p> <p>Mini Project &amp; Viva Marks → 5 Marks</p> <p><b>Total Marks -&gt; 7.5 Marks</b></p>	<ul style="list-style-type: none"> <li>Students must maintain Observation Hand written in Neat and Proper Order</li> <li>Observation to be signed before CLAT3</li> <li>Mini Project Review will be conducted at the end of every month. Consolidated score will be taken</li> <li>Students will be evaluated based on the viva questions, experiment completion and Mini Project</li> </ul>
CLAP-4	<p>Model exam → 3Marks</p> <p>Viva &amp; Observation submission → 2Marks</p> <p><b>Total Marks -&gt; 5 Marks</b></p>	<ul style="list-style-type: none"> <li>Students will be evaluated based on the Model Exam, viva questions, experiment completion</li> </ul>

**Detailed Session Plan:**

<b>UNIT I:</b>					
<b>Sessio n No.</b>	<b>Topics to be covered</b>	<b>Hours</b>	<b>Ref</b>	<b>Teaching Method</b>	<b>Testing Method</b>
1	Evolution of Computer Networks, Network categories	1	1	BB / PPT	Group discussion Quiz
2	Data Transmission Modes, Network topologies, Circuit Switching and Packet Switching	2	1	BB / PPT	Group discussion Quiz
3	Protocols and standards, Layers in the OSI model, Functions of Physical layer, data link layer	2	1	BB / PPT	Group discussion Illustration by examples
4	Functions of Network layer, Transport layer, Functions of Session, Presentation layer and Application layer	2	1	BB / PPT	Group discussion Quiz
5	TCP/IP protocol suite ,Link layer protocols, Network layer protocols	1	1	BB / PPT	Group discussion, Illustration by examples
6	Transport layer protocols, Serial and Parallel Transmissions, Addressing	1	1	BB / PPT	Group discussion, Illustration by examples
<b>Lecture Hours - 9</b>					
<b>UNIT II:</b>					
7	IPv4 Addressing, Address space, Dotted Decimal Notation. Classful Addressing	2	1	BB	Group Discussion Illustration by examples
8	Subnet Mask, Subnetting, Special Addresses	1	1	BB	Group Discussion, Illustration by examples
9	Classless Addressing, Problem Solving	2	1	BB	Group discussion
10	Private Address, NAT, Super netting	2	1	BB	Group discussion, Quiz Illustration by examples
11	Hub, Repeaters, Switch	1	1	BB	Group discussion, Illustration by examples
12	Bridge, Structure of Router	1	1	BB	Group discussion, Illustration by examples
<b>Lecture Hours - 9</b>					
<b>UNIT III:</b>					
13	Line coding: Unipolar scheme Polar schemes, Bipolar schemes	2	1	PPT	Quiz Group discussion
14	Amplitude shift keying, Frequency shift keying,	1	1	PPT	Group discussion, Illustration by examples
15	Phase shift keying, Pulse code Modulation, Delta Modulation	2	1	PPT	Group discussion , Illustration by examples
16	Multiplexing: FDM, TDM, WDM	2	1	PPT	Group discussion Illustration by examples
17	Guided Media: Twisted Pair, Coaxial Cable Fiber optic cable	1	1	PPT	Group discussion
18	Unguided media: Radio waves, Microwaves, Infrared	1	1	PPT	Quiz, Illustration by examples
<b>Lecture Hours - 9</b>					

<b>UNIT IV:</b>					
19	Framing, Flow Control Mechanisms	1	1	BB	Group discussion Quiz
20	Sender side Stop and Wait Protocol, Receiver side Stop and Wait Protocol	2	1	PPT	Group discussion Illustration by examples
22	Goback N ARQ, Selective Reject ARQ	1	1	BB	Group discussion Illustration by examples
23	CRC, Checksum, Types of Errors	1	1	PPT	Group discussion
24	Forward Error correction, CSMA, CSMA/CD	2	1	BB	Group discussion , Quiz
25	Hamming Distance, Correction Vs Detection	1	1	BB	Quiz Group discussion
26	HDLC, PPP	1	1	BB	Group discussion , Quiz
<b>Lecture Hours - 9</b>					
<b>UNIT V:</b>					
27	Forward Techniques, Forwarding Process, Routing Table	2	1	PPT	Group discussion
28	Intra domain Routing and Inter domain Routing	1	1	PPT	Group discussion
29	Static Routing and Dynamic Routing	1	1	BB	Group discussion,
30	Distance Vector Routing, Problem Solving, Link state Routing, Problem Solving	2	1	BB	Group discussion Illustration by examples
31	Path vector Routing, RIP v1,RIP v2	2	1	BB	Group discussion, Quiz
32	OSPF, EIGRP, BGP	1	1	BB	Group discussion, Illustration by examples
<b>Lecture Hours - 9</b>					

**Total Lecture hours - 45**