Maharashtra State Board of Technical Education, Mumbai

LABORATORY PRACTICAL PLANNING

Academic Year: **2025-26 (EVEN)**

Institute Code and Name: 0078- K. K. Wagh Polytechnic, Nashik   **Semester**: Fourth

Programme and Code: Information Technology (IF)   **Scheme:** K

Course: Data Communication and Computer Network   **Course Code:** 314318

Allocated Hrs.: 45   **Name of Faculty:** Ms. D. S. Katkade

CLASS: SYIF (Param)   **Batch: A/B/C**

- **TEACHING-LEARNING & ASSESSMENT SCHEME**

Course code	Course Title	Abbr	Course Category	Actual Contact Hrs/Week CL	TL	LL	SLH	NLH	Credits	Paper Duration	Theory FA-TH Max	SA-TH Max	Total Max	Min	FA-PR Max	Min	SA-PR Max	Min	SLA Max	Min	Total Marks
314318	Data Communication and Computer Network	DCN	DSC	3	-	4	1	8	4	3	30	70	100	40	25	10	25@	10	25	10	175

Total IKS Hrs for Sem.: 0 Hrs

Abbreviations: CL- Classroom Learning , TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours,FA - Formative Assessment, SA -Summative assessment, IKS - Indian Knowledge System, SLA - Self Learning Assessment Legends: @ Internal Assessment, # External Assessment, *# On Line Examination , @$ Internal Online Examination

- **COURSE LEVEL LEARNING OUTCOMES (COS)**

By learning course DCN(DCN-314318) Second Year students will be able to achieve & demonstrate the following COs on completion of course based learning.

- CO1 - Analyze the functioning of Data Communication and Computer Network.
- CO2 - Select relevant Transmission Media and Switching Techniques as per need.
- CO3 - Analyze the Transmission Errors with respect to IEEE standards.
- CO4 - Configure different TCP/IP services.
- CO5 - Implement relevant Network Topology using Networking Devices.

- **COs, Practical Laboratory Learning Outcome (LLOs) and Mapping:**

Pr. No	LLO	Practical Title	Planned Date	Performance date	Remark	Related self-learning (if any)
1	LLO 1.1	Amplitude Shift Keying(ASK) using any simulator.	A- 18/12/25 B- 15/12/25 C- 16/12/25	A- B- C-		
2	LLO 2.1	Frequency Shift Keying(FSK) using any simulator.	A- 19/12/25 B- 17/12/25 C- 23/12/25	A- B- C-		

Maharashtra State Board of Technical Education, Mumbai

LABORATORY PRACTICAL PLANNING

Academic Year: **2025-26 (EVEN)**

Institute Code and Name: 0078- K. K. Wagh Polytechnic, Nashik **Semester**: Fourth
Programme and Code: Information Technology (IF) **Scheme:** K
Course: Data Communication and Computer Network **Course Code:** 314318
Allocated Hrs.: 45 **Name of Faculty:** Ms. D. S. Katkade
CLASS: SYIF (Param) **Batch: A/B/C**

Pr. No	LLO	Practical Title	Planned Date	Performance date	Remark	Related self-learning (if any)
3	LLO3.1	Phase Shift Keying(PSK) using any open source simulation software.	A-26/12/25 B- 22/12/25 C- 24/12/25	A- B- C-		
4	LLO4.1	*Create and Test standard straight network cable(Universal Colour Code) using crimping tool	A-01/01/26 B- 24/12/25 C- 30/12/25	A- B- C-		
5	LLO5.1	Create and Test standard Cross network cable(Universal Colour Code) using crimping tool	A-02/01/26 B- 29/12/25 C- 06/01/26	A- B- C-		
6	LLO6.1 LLO6.2	Generate a Time Division Multiplexing(TDM) signal using relevant simulation software	A-08/01/26 B-05/01/26 C-13/01/26	A- B- C-		
7	LLO7.1	Create a Hybrid Network Using Bluetooth	A-15/01/26 B- 07/01/26 C- 14/01/26	A- B- C-		
8	LLO8.1 LLO8.2	Locate the error bit in the given data string by applying checksum error detection method	A-21/01/26 B- 12/01/26 C- 20/01/26	A- B- C-		
9	LLO9.1	Implement Wireless network.	A-22/01/26 B- 14/01/26 C- 21/01/26	A- B- C-		
10	LLO 11.1	Write a 'C' program for Cyclic Redundancy Check(CRC) error detection	A-29/01/26 B- 19/01/26 C- 03/02/26	A- B- C-		
11	LLO 12.1	Write a 'C' program for error correction using Hamming code	A-30/01/26 B- 21/01/26 C- 04/02/26	A- B- C-		
12	LLO 13.1	Configure static IP address in operating system along with appropriate subnet mask for given problem	A-05/02/26 B- 28/01/26 C- 10/02/26	A- B- C-		

K2-A

Maharashtra State Board of Technical Education, Mumbai

LABORATORY PRACTICAL PLANNING

Academic Year: **2025-26 (EVEN)**

Institute Code and Name: 0078- K. K. Wagh Polytechnic, Nashik   **Semester**: Fourth

Programme and Code: Information Technology (IF)   **Scheme:** K

Course: Data Communication and Computer Network   **Course Code:** 314318

Allocated Hrs.: 45   **Name of Faculty:** Ms. D. S. Katkade

CLASS: SYIF (Param)   **Batch: A/B/C**

Pr. No	LLO	Practical Title	Planned Date	Performance date	Remark	Related self-learning (if any)
13	LLO 14.1	Implement Classful Address in a given network node i)Identify range of IP Address in various classes ii)Justify the reason to choose various IP address classes for creating given network	A- 06/02/26 B- 04/02/26 C- 11/02/26	A- B- C-		
14	LLO 15.1	Execute TCP/IP network commands: ipconfig, ping, tracert	A-12/02/26 B- 09/02/26 C- 17/02/26	A- B- C-		
15	LLO 16.1	Execute TCP/IP network commands: netstat, pathping, route	A-20/02/26 B- 09/02/26 C- 18/02/26	A- B- C-		
16	LLO 17.1	*1) Install Wireshark and configure as packet sniffer- i)Capture IP,TELNET, FTP packets using Wireshark	A- 25/02/26 B- 11/02/26 C- 23/02/26	A- B- C-		
17	LLO 20.1	Install Operating System Linux/Windows/Any other Server	A-05/03/26 B- 16/02/26 C- 04/03/26	A- B- C-		
18	LLO 21.1	Use FTP protocol to transfer file from one system to another system	A-06/03/26 B- 18/02/26 C- 10/03/26	A- B- C-		
19	LLO 23.1	Create HTTP server	A-11/03/26 B- 23/02/26 C- 10/03/26	A- B- C-		
20	LLO 24.1	Create computers using Star topology with wired media	A-12/03/26 B- 04/03/26 C- 17/03/26	A- B- C-		
21	LLO 26.1	Configure TELNET for remote login	A-18/03/26 B- 11/03/26 C- 18/03/26	A- B- C-		

Maharashtra State Board of Technical Education, Mumbai

LABORATORY PRACTICAL PLANNING

Academic Year: **2025-26 (EVEN)**

Institute Code and Name: 0078- K. K. Wagh Polytechnic, Nashik   **Semester**: Fourth
Programme and Code: Information Technology (IF)   **Scheme:** K
Course: Data Communication and Computer Network   **Course Code:** 314318
Allocated Hrs.: 45   **Name of Faculty:** Ms. D. S. Katkade
CLASS: SYIF (Param)   **Batch: A/B/C**

Pr. No	LLO	Practical Title	Planned Date	Performance date	Remark	Related self-learning (if any)
22	LLO 27.1	Visit your computer laboratory i)Identify the type of topology ii)Identify types of connecting devices with specifications iii)Identify types of cables with specifications iv)List the type of network applications commonly	A-20/03/26 B- 16/03/26 C-18/03/26	A- B- C-		
23	LLO 28.1	Share folder and printer in a network	A-20/03/26 B- 18/03/26 C-23/03/26	A- B- C-		

- **ASSESSMENT METHODOLOGIES/TOOLS**

A. Formative assessment (Assessment for Learning)

- Continuous assessment based on process and product related performance indicators.
- Each practical will be assessed considering
    - 60% weightage to process
    - 40% weightage to product.
- A continuous assessment based term work.

B. Summative Assessment (Assessment of Learning)

- End semester examination, Lab performance, Viva-voce

Maharashtra State Board of Technical Education, Mumbai

LABORATORY PRACTICAL PLANNING

Academic Year: **2025-26 (EVEN)**

Institute Code and Name: 0078- K. K. Wagh Polytechnic, Nashik   **Semester**: Fourth
Programme and Code: Information Technology (IF)   **Scheme:** K
Course: Data Communication and Computer Network   **Course Code:** 314318
Allocated Hrs.: 45   **Name of Faculty:** Ms. D. S. Katkade
CLASS: SYIF (Param)   **Batch: A/B/C**

C. **Suggested Micro Project / Assignment/ Activities for Specific Learning /Skills Development (Self Learning)**

Assignment

- Solve an assignment on any relevant topic given by the Teacher
- For a trading firm an organization with 10users, draw network architecture design of wireless LAN.
- Identify appropriate network topology and network connecting devices for following requirement. Draw network design for proposed network. An organization having its office in a building of 5 floor. Each floor it needs 20 machines. There is one File server. Each floor has 2 print servers to facilitate printer capacity using Tree topology.

Micro project

- Install and configure NIC and find MAC Address of Device
- Design a network using any topology and do fault identification
- Create a tool that monitors network bandwidth usage in real-time

Ms. D. S. Katkade   **Ms. M. S. Karande**
(Name & Signature of Staff)   **(Name & Signature of HOD)**