**KGiSL Institute of Technology**

**Department of Computer Science & Engineering**

**Lesson plan (Micro level)**

Faculty Name : R.Sureshkumar Designation : Assistant Professor

Course Name : Computer Networks Course Code :CS8591

Academic Year: 2020-2021 Sem/Year : V/III

**CO1:** Students should be able to understand the basic layers and its functions in computer networks.

**CO2:** Students should be able to evaluate the performance of a network

**CO3:** Students should be able to understand the basics of how data flows from one node to another.

**CO4:** Students should be able to Analyze and design routing algorithms.

**CO5:** Students should be able to Design protocols for various functions in the network.

**CO6:** Students should be able to understand the working of various application layer protocols.

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| **Unit I - INTRODUCTION AND PHYSICAL LAYER** | | | | | | | | | |
| **Topics** | | Planned Date | Mode of Teaching | | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Introduction on computer networks |  | PPT | | T1, W1 | CO1 |  |  |  |
| 2 | Networks – Network Types |  | PPT | | T1,R2 | CO1 |  |  |  |
| 3 | Protocol Layering – TCP/IP Protocol suite |  | C&B | | T1,R2 | CO1 |  |  |  |
| 4 | OSI Model |  | PPT | | T1,R4 | CO1 |  |  |  |
| 5 | Physical Layer: Performance |  | PPT | | T1,R4 | CO2 |  |  |  |
| 6 | Transmission media |  | PPT | | T1,R5 | CO3 |  |  |  |
| 7 | Switching |  | PPT | | T1,R3 | CO3 |  |  |  |
| 8 | Circuit-switched Networks |  | PPT | | T1,R2 | CO3 |  |  |  |
| 9 | Packet Switching |  | PPT | | T1,R2 | CO3 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **9** | | | |
| Signature of Faculty | | | | Signature of HOD | | | | | |

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| **Unit II -**  **DATA-LINK LAYER & MEDIA ACCESS** | | | | | | | | | |
| **Topics** | | Planned Date | Mode of Teaching | | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Introduction – Link-Layer Addressing |  | PPT | | T1,R2 | CO1 |  |  |  |
| 2 | DLC Services |  | PPT | | T1,R4 | CO1 |  |  |  |
| 3 | Data-Link Layer Protocols |  | PPT | | T1,R4 | CO1 |  |  |  |
| 4 | HDLC – PPP |  | PPT | | T1,R5 | CO1 |  |  |  |
| 5 | Media Access Control |  | PPT | | T1,R5 | CO3 |  |  |  |
| 6 | Wired LANs: Ethernet |  | PPT | | T1,R3 | CO3 |  |  |  |
| 7 | Wireless LANs |  | PPT | | T1,R2 | CO3 |  |  |  |
| 8 | Introduction – IEEE 802.11 |  | PPT | | T1,R5 | CO3 |  |  |  |
| 9 | Bluetooth – Connecting Devices |  | PPT | | T1,R4 | CO3 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **9** | | | |
| Signature of Faculty | | | | Signature of HOD | | | | | |

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| **Unit III -**  **NETWORK LAYER** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Network Layer Services |  | | PPT | T1,R5 | CO1 |  |  |  |
| 2 | Packet switching – Performance |  | | PPT | T1,R3 | CO2 |  |  |  |
| 3 | IPV4 Addresses |  | | PPT | T1,R2 | CO4 |  |  |  |
| 4 | Forwarding of IP Packets – Network Layer Protocols: IP |  | | PPT | T1,R5 | CO4 |  |  |  |
| 5 | ICMP v4 – Unicast Routing Algorithms |  | | PPT | T1,R4 | CO4 |  |  |  |
| 6 | Protocols |  | | PPT | T1,R5 | CO4 |  |  |  |
| 7 | Multicasting Basics |  | | C&B /PPT | T1,R3 | CO3 |  |  |  |
| 8 | IPV6 Addressing |  | | C&B /PPT | T1,R3 | CO4 |  |  |  |
| 9 | IPV6 Protocol |  | | C&B /PPT | T1,R4 | CO4 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **9** | | | |
| Signature of Faculty | | | Signature of HOD | | | | | | |

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| **Unit IV -**  **TRANSPORT LAYER** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Introduction on **TRANSPORT LAYER** |  | | PPT | T1,R4 | CO1 |  |  |  |
| 2 | Transport Layer Protocols |  | | PPT | T1,R4 | CO1 |  |  |  |
| 3 | Services |  | | PPT | T1,R4 | CO1 |  |  |  |
| 4 | Port Numbers |  | | PPT | T1,R5 | CO5 |  |  |  |
| 5 | User Datagram Protocol |  | | PPT | T1,R3 | CO5 |  |  |  |
| 6 | Transmission Control Protocol |  | | PPT | T1,R2 | CO5 |  |  |  |
| 7 | SCTP |  | | PPT | T1,R5 | CO5 |  |  |  |
| 8 | Implementation/simulation of the protocols |  | | C&B/PPT | T1,R5 | CO5 |  |  |  |
| 9 | Current Network Simulators |  | | PPT | T1,R5 | CO5 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **9** | | | |
| Signature of Faculty | | | Signature of HOD | | | | | | |

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| **Unit V -**  **APPLICATION LAYER** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Introduction on Application layer |  | | PPT | T1,R3 | CO5 |  |  |  |
| 2 | WWW |  | | PPT | T1,R2 | CO5 |  |  |  |
| 3 | HTTP |  | | PPT | T1,R5 | CO5 |  |  |  |
| 4 | FTP |  | | PPT | T1,R5 | CO5 |  |  |  |
| 5 | Email |  | | PPT | T1, R4 | CO5 |  |  |  |
| 6 | Telnet |  | | PPT | T1,R4 | CO5 |  |  |  |
| 7 | SSH |  | | PPT | T1,R5 | CO5 |  |  |  |
| 8 | DNS |  | | PPT | T1,R3 | CO5 |  |  |  |
| 9 | SNMP |  | | PPT | T1,W2 | CO5 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 9 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **9** | | | |
| Signature of Faculty | | | Signature of HOD | | | | | | |
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| **TEXT BOOKS:**  T1. Behrouz A. Forouzan, Data Communications and Networking, Fifth Edition TMH, 2013. | | | | | | | | | |
| **REFERENCE BOOKS:**  R1. Larry L. Peterson, Bruce S. Davie, Computer Networks: A Systems Approach, Fifth Edition, Morgan Kaufmann Publishers Inc., 2012.  R2. William Stallings, Data and Computer Communications, Tenth Edition, Pearson Education, 2013.  R3. Nader F. Mir, Computer and Communication Networks, Second Edition, Prentice Hall, 2014.  R4. Ying-Dar Lin, Ren-Hung Hwang and Fred Baker, Computer Networks: An Open Source Approach, McGraw Hill Publisher, 2011.  R5. James F. Kurose, Keith W. Ross, Computer Networking ,A Top-Down Approach Featuring the Internet, Sixth Edition, Pearson Education, 2013. | | | | | | | | | |
| **WEB REFERENCES:**  W1. https://onlinecourses.nptel.ac.in  W2. <https://nptel.ac.in/courses/106105080/>  W3: <https://nptel.ac.in/courses/106105081/>  W4: <https://nptel.ac.in/courses/106106091/> | | | | | | | | | |
| **MODE OF TEACHING:**  **C&B**- Chalk & Board  **PPT-**Power Point Presentation  **VC**-Video clipping | | | | | | | | | |
| **CONTENT BEYOND SYLLABUS (CBS)**  1. Implementation/simulation of the protocols & Current Network Simulators | | | | | | | | | |

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| **Total No. of Hours prescribed by Anna University for Completion of the Course** | | | **45** |
| **Total No. of Hours Required as per Lesson Plan to complete the Course** | | | **45** |
| No. of Hours Required for covering Content Beyond Syllabus | | | **1** |
| **Total No. of Lecture Hours for Completion of the Course** | | | **46** |
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| **Prepared by** | Name : R.Sureshkumar  Designation : AP/CSE | Sign | |
| **Approved by** | Name :  Designation : | Sign | |