

Computer Networks

- 1.1 Course Number: CS351
- 1.2 Contact Hours 3-0-2 Credits: 11
- 1.3 Semester-offered: 6th Sem, for CSE, IT, CSE-IDD, CSD, M&C
- 1.4 Prerequisite: Data structures, Computer System Organization, Operating System
- 1.5 Syllabus Committee Member: Dr. Akash Yadav, Dr. Gargi Srivastava, Dr. Susham Biswas

2. **Objective:** The objective of this course is to provide basic exposure to computer network theory and implementations

3. **Course Content:**

Unit-wise distribution of content and number of lectures

Unit	Topics	Sub-topic	Lectures
1	Introduction	Uses of networks, hardware, software, classification, reference, models, and examples, and standardization.	4
2	Physical layer	Theoretical basis, guided transmission medium, wireless transmission, communication satellites, PSTN, mobile telecom system.	6
3	Data link layer	Design issues, error detection and correction, and protocols. Medium access control sublayer- channel allocation, multiple access protocols, Ethernet, wireless LANs, broadband wireless, Bluetooth, switching.	10
4	Network layer	Internet Protocol, Routing algorithms, congestion control, QoS, internet working.	10
5	Transport and Application layer	UDP, TCP, performance issues, service models, remote procedure call, real time transport protocol, DNS, E-mail, world wide web, HTTP, multimedia. Network security-basic concepts. Selected Topics in Computer Networks	10
		Total	40

4. **Readings**

4.1 Textbook:

i. *“Computer Networks”, 4th ed., A.S. Tanenbaum, PHI.*

ii. *“Data communication and Networking”, Behrouz A. Forouzan*

4.2 Reference books: As prescribed by Instructor

5 **Outcome of the Course:** After completing this course/subject the students will be able to understand the concepts of computer networks.