

Computer Networks

- 1.1 Course Number: CS351
 - 1.2 Contact Hours 3-0-2 Credits: 11
 - 1.3 Semester-offered: 3rd Year-Evan
 - 1.4 Prerequisite: Data structures, Computer System Organization, Operating system
 - 1.5 Syllabus Committee Member: Dr. Sushum Biswas, Dr. Daya Sagar Gupta & Dr. Gargi Srivastava
2. **Objective:** The objective of this course is to provide basic exposure to computer networks 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 networks, 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, 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.