

**National Institute of Technology Calicut**  
**Department of Computer Science and Engineering**

**Winter Semester 2024 – 2025**  
**Course Plan for CS3006D: Computer Networks**

**Credits: 4**                      **Class: B. Tech. (VI semester)**                      **Slot: A1 (Batch A) & A2 (Batch B)**

**Lecture & Tutorial Hours**

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|--------------------|-----------------------------|-----------------------------|
| • <b>Monday</b>    | <b>(A1: 09.00 to 09.50)</b> | <b>(A2: 04.00 to 04.50)</b> |
| • <b>Wednesday</b> | <b>(A1: 12.00 to 12.50)</b> | <b>(A2: 13.00 to 13.50)</b> |
| • <b>Thursday</b>  | <b>(A1: 11.00 to 11.50)</b> | <b>(A2: 16.00 to 16.50)</b> |
| • <b>Friday</b>    | <b>(A1: 10.00 to 10.50)</b> | <b>(A2: 15.00 to 15.50)</b> |

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**Course Objectives**

- To understand the state-of-the-art in network protocols, architectures, and applications
- To familiarize the student with the basic taxonomy and terminology of the computer networking area

**Course Outcomes**

- Describe, analyze, and evaluate datalink, network, and transport layer protocols
- Apply the theory of basic networking concepts in the performance analysis of the protocol stack
- Design and develop standard protocols in TCP/IP suite

**Brief Syllabus**

- **Module 1:** Computer Networks and Internet, The network edge, The network core, Network access, Delay and loss, Protocol layers and services, Application layer protocols, Web 2.0, Socket Programming
- **Module 2:** Transport layer services, UDP, TCP, New transport layer Protocols, Congestion control, New versions of TCP, Network layer services, Routing, IP, routing in Internet, Router, IPV6, Multicast routing
- **Module 3:** Link layer services, Error detection and correction, Multiple access protocols, ARP, Ethernet, Hubs, Bridges, Switches, MPLS, VLAN.
- **Module 4:** Wireless links, Mobility, Multimedia networking, Streaming stored audio and video, Real-time protocols, Network management

**Reference Books**

- James F. Kurose & Keith W. Ross, Computer Networking: A Top-Down Approach, 6/e, Pearson Education, 2013
- Andrew S. Tanenbaum & David J. Wetherall, Computer Networks, 5/e, Pearson Education, 2011
- Behrouz A. Forouzan, Data Communications and Networking 5/e, TMH Pvt. Ltd., 2017
- Larry L. Peterson & Bruce S. Davie, Computer Networks: A systems approach, 5/e, Elsevier, 2012

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**Tentative Evaluation Scheme with Tentative dates**

- Quizzes : 15% (3 Quizzes)
- Midterm : 30% (04-14 February 2025)
- Assignment : 15%
- End Semester : 40% (14-28 April, 2025)

**Attendance**

- As per the institute's norms

**Grading Policy**

- *Grading will be relative*
- Makeup examination for midterm will be given only in genuine cases where prior (atleast one day before the midterm exam) intimation is submitted to the course faculty for consent through the faculty advisor
- All issues regarding the valuation of the midterm exams, quizzes, and assignments must be resolved within two days after the marks are announced

**Enrollment code in Eduserver: w7c6ah** (Last date to enroll in the course is 30 January 2024)

**Standard of Conduct**

Each student is expected to adhere to high standards of ethical conduct, especially those related to cheating. Any academic dishonesty will result in zero marks in the corresponding exam or quiz and will be reported to the department council for record keeping and for permission to assign an **F** grade in the course. CSE Department policy on academic integrity is available at: <http://minerva.nitc.ac.in/cse/sites/default/files/attachments/news/Academic-Integrity.pdf>

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