



National Institute of Technology - Tiruchirappalli

Department of Computer Applications

COURSE PLAN

1. Course Outline			
Course Title	Computer Networks		
Course Code	CAS766		
Department	CA	No. of Credits	3
Pre-requisites Course Code	-	Faculty Name	Dr. N. P. Gopalan
Course Co-ordinator			
E-mail	npgopalan@nitt.edu	Telephone No.	0431 - 2503733
Course Type	Core Course		

2. Course Overview

Computer Networks course provides an overview of basic networking concepts, network architectural models and protocols with their various standards. It also deals with Error and flow control techniques coherently via various mechanisms. Congestion control mechanisms and avoidance strategies are conferred by Network Layer here. Application Layer involved in DNS, SMTP, HTTP etc.

3. Course Objectives

- To be familiar with existing state-of-the-art in network protocols, architectures and applications.
- To gain Comprehensive knowledge about the layered Communication architectures and its functionalities.
- To understand the principles, key protocols, design issues and significance of various layers.

4. Course Outcomes (CO)

Students will be able to:

- Understand basic network theory and layered communication architectures.
- Use and apply current technical concepts and practices in computer network installation.

5. Course Outcome (CO)	Aligned Programme Outcome (PO)		
	PO1	PO2	PO3
Understand basic network theory and layered communication architectures	M	H	M
Use and apply current technical concepts and practices in computer network installation	H	H	H

6. Course Teaching and Learning Activities			
Week	No.of Classes	Topics covered	Mode of Delivery
1.	Class-I	Building a network ,Requirements	Chalk and Talk
	Class-II	Network Architecture, OSI & Internet	Chalk and Talk
	Class-III		Power Point Presentation
2.	Class-I	Direct Link Networks	Chalk and Talk , Power Point Presentation
	Class-II	LAN Technology,Architecture	Chalk and Talk , Power Point Presentation
	Class-III		
3.	Class-I	Network Topologies (BUS/Tree, Ring, Star and Token Rings)	Chalk and Talk , Power Point Presentation
	Class-II		
	Class-III		
4.	Class-I	Wireless Networks	Chalk and Talk, Power Point Presentation
	Class-II	Error Detection and Correction – (LRC, CRC and Checksum)	Power Point Presentation, Chalk and Talk
	Class-III		
5.	Class-I	Hamming Distance for Error Correction	Chalk and Talk
	Class-II	Simulator Development to capture various packets flowing in the Data Link Layer	Power Point Presentation
	Class-III		
6.	Class-I	Flow control & Error control	Chalk and Talk
	Class-II	Stop and Wait, Go back-N ARQ	Chalk and Talk
	Class-III		

Week	No.of Classes	Topics covered	Mode of Delivery
7.	Class-I	Selective Repeat ARQ & Sliding Window Protocol	Power Point Presentation
	Class-II	Switching: Packet Switching, Switching & Forwarding	Power Point Presentation
	Class-III	Bridges and LAN switches, Internetworking	Power Point Presentation
8.	Class-I	Simple Internetworking, Packet switching & Datagram approach	Power Point Presentation
	Class-II	IP Addressing Methods	Power Point Presentation
	Class-III	IP version 4 and 6, Routing	Chalk and Talk , Power Point Presentation
9.	Class-I	Selective routing protocol specification	Chalk and Talk , Power Point Presentation
	Class-II	TCP, UDP, TCP Congestion Control	Chalk and Talk , Power Point Presentation
	Class-III	Congestion Avoidance Mechanisms, Streaming Protocol	Power Point Presentation
10.	Class-I	Domain Name Service, Email, SMTP, MIME	Power Point Presentation
	Class-II		
	Class-III	HTTP, SNMP, FTP & TELNET	Power Point Presentation

7. Course Assessment Methods – Theory				
Sl.No.	Mode of Assessment	Week/Date	Duration	Weightage (%)
1.	Cycle Test – 1	6 th week	60 Mins	20
2.	Cycle Test – 2	12 th week	60 Mins	20
3.	Assignment	7 th week, 10 th week		10
4.	End Semester Exam	-	180 Mins	50
Total				100

8. Essential Readings (Textbooks, Reference books, Websites, Journals, etc.)

REFERENCES:

1. Behrouzb. A . Forouzan, “Data Communications and Networking”, 4th Edition, McGraw-Hill, 2004.
2. William Stallings, “Data and Computer Communications”, 9th Edition, Pearson, 2011.
3. Larry L. Peterson and Bruce S. Davie, “Computer Networks – A Systems Approach”, 5th Edition, Harcourt Asia/Morgan Kaufmann, 2011.
4. James F. Kurose and Keith W. Ross, “Computer Networking – A Top Down Approach”, 5th Edition, Addison Wesley, 2009.
5. Andrew S. Tanenbaum, “Computer Networks”, 5th Edition, Prentice Hall, 2012.

9. Course Exit Survey (mention the ways by which the feedback about the course is assessed and indicate the attainment level)

- The students through the class rep may give their feedback at any time to the course co-ordinator which will be duly addressed.
- The students may also give their feedback during Class Committee meeting.
- ‘Course Outcome Survey’ form will be distributed on the last working day to all the students and the feedback on various rubrics will be analyzed.
- The COs will be computed after arriving at the final marks.

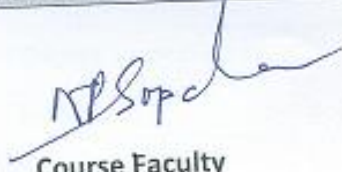
10. Course Policy (including plagiarism, academic honesty, attendance, etc.)

- **Plagiarism**
The students are expected to come out with their original code for problems given assignments during the class work, and tests/examinations. If found to copy from internet/other students, zero marks will be assigned.
- **Attendance**
100% is a must. However, relaxation will be given for leave on emergency requirements (medical, death, etc.) and representing institute events. Minimum 75% is required.
- **Academic Honesty**
 - i) Possession of any electronic device, if any, found during the test or exam, the student will be debarred for 3 years from appearing for the exam and this will be printed in the Grade statement/Transcript.
 - ii) Tampering of MIS records, if any, found, then the results of the student will be with held and the student will not be allowed to appear for the Placement interviews conducted by the Office of Training & Placement, besides (i).

11. Additional Course Information

- The students can get their doubts clarified at any time with their faculty member with prior appointment.

For Senate's Consideration



Course Faculty
(Dr.N.P. Gopalan)



Class Committee Chairperson
(Mrs. K. Bakiya)



HoD
(Dr.S.R.BalaSundaram)