National Institute of Technology - Tiruchirappalli
Department of Computer Applications

COURSE PLAN

1. Course Outline			
Course Title	Computer Networks		
Course Code	CA727		
Department	CA	**No. of Credits**	3
Pre-requisites Course Code	CA714,CA715	**Faculty Name**	Dr.S.R.Balasundaram Dr. M.P. Anuradha
Course Co-ordinator			
E-mail	blsundar@nitt.edu mpanuradha@nitt.edu	**Telephone No.**	9994291420 0431-2504652 9994300887
Course Type	Core Course		

2. Course Overview

Computer Networks course provides an overview of basic networking concepts, including network architecture, models,protocols and standards.It affords the basis of client server applications and to put on them in various academic / industrial applications. Only with the help of computer networks can a borderless communication and information environment be built.

3. Course Objectives

- To learn various network architectures and protocols and the functions of different layers in line with IEEE standards

4. Course Outcomes (CO)

Students will be able to:

- List the functionalities of networking layers of both OSI and TCP/IP reference model
- Explain design issues of DLL and techniques to resolve it
- Describe the principles of switching and routing algorithms
- Distinguish TCP and UDP related formats, procedures.

5. Course Outcome (CO)	Aligned Programme Outcome (PO)											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
List the functionalities of networking layers of both OSI and TCP/IP reference model	H			M								
Explain design issues of DLL and techniques to resolve it			H	L	H							
Describe the principles of switching and routing algorithms	H			M			H					
Distinguish TCP and UDP related formats, procedures.	H				H		H					

6. Course Teaching and Learning Activities

Week	No.of Classes	Topics covered	Mode of Delivery
1.	Class-I	Introduction to Computer Networks	Chalk and Talk
	Class-II	Building a Network, Requirements	Power Point Presentation
	Class-III	Data Representation, Data Flow, Physical structure	Power Point Presentation
2.	Class-I	Network Models, LAN,WAN,MAN	Chalk and Talk , Power Point Presentation
	Class-II	The internet, Network Architecture	Chalk and Talk , Power Point Presentation
	Class-III	Physical layer, Data link layer - functionalities	Chalk and Talk , Power Point Presentation
3.	Class-I	Transport layer, Network layer - functionalities	Chalk and Talk , Power Point Presentation
	Class-II	Session layer, Presentation layer Application layer- functionalities	Chalk and Talk , Power Point Presentation
	Class-III	Lan Architecture – Star, Ring,Bus,Tree	Chalk and Talk , Power Point Presentation
4.	Class-I	Wireless networks	Chalk and Talk
	Class-II	Ethernet,Token ring	Power Point Presentation
	Class-III	Introduction to error deduction Techniques	Chalk and Talk

Week	No.of Classes	Topics covered	Mode of Delivery
5.	Class-I	LRC,VRC,CRC- Techniques	Chalk and Talk
	Class-II	Problem related with error detection techniques	Chalk and Talk
	Class-III	Check sum – Problem related with this technique	Chalk and Talk
6.	Class-I	Hamming distance for error correction	Chalk and Talk
	Class-II	Problem discussion – error correction techniques	Chalk and Talk
	Class-III	Switching techniques – Packet switching	Power Point Presentation
7.	Class-I	Switching and forwarding-efficiency and Delay, Bridges	Power Point Presentation
	Class-II	LAN switches, introduction to Internetworking	Power Point Presentation
	Class-III	Simple internetworking, Routing	Power Point Presentation
8.	Class-I	Selective routing protocol specification	Power Point Presentation
	Class-II	Reliable Byte Stream (TCP)	Power Point Presentation
	Class-III	TCP congestion control, simple Demultiplexer(UDP)	Chalk and Talk , Power Point Presentation
9.	Class-I	Congestion Avoidance Mechanisms	Chalk and Talk , Power Point Presentation
	Class-II	Streaming Protocol	Chalk and Talk , Power Point Presentation
	Class-III	Domain Name Service(DNS),Distribution of name space, DNS in the internet, Messages	Power Point Presentation
10.	Class-I	E-Mail, Simple Mail Transfer Protocol (SMTP)	Power Point Presentation
	Class-II	Multipurpose Internet Mail Extension (MIME),Hyper Text Transfer Protocol (HTTP)	Power Point Presentation
	Class-III	Simple Network Management Protocol (SNMP),Terminal Network(TELNET)	Power Point Presentation
11.	Class-I	File Transfer Protocol (FTP)	Power Point Presentation

7. Course Assessment Methods – Theory

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

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

REFERENCES:

1. BehrouzA.Forouzan, "Data Communications and Networking", 4thEdition,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", 5thEdition, Harcourt Asia/Morgan Kaufmann,2011.
4. James F. Kurose and Keith W. Ross, "Computer Network-A Top Down Approach", 5th Edition, Addison Wesley, 2009.
5. Andrew S. Tanenbaum, "Computer Networks",5th Edition,Prentice Hall PTR,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

S.R.Balasundaram

M.P.A — dl

(Dr.S.R.BALASUNDARAM)
(Dr.M.P.ANURADHA)
Course Faculty

(Dr.S.SURESH)
Class Committee Chairperson

19/8/16

(DR.A.VADIVEL)
HoD