Course code	Course Name	L-T-P -Credits	Year of Introduction
EE468	Computer Networks	3-0-0-3	2016

Prerequisite: Nil

Course Objectives

- To impart the mode of operation of different types of computer networks that are used to interconnect a distributed community of computers and various interfacing standards and protocols

Syllabus

Introduction on Computer Networks, Network Hardware, Protocol architecture, functionalities, MAC protocols, Network layer, Transport layer, Application Layer

Expected Outcome.

The students will be able to:

i. Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies.
ii. Specify and identify deficiencies in existing protocols, and then go onto formulate new and better protocols.
iii. Analyze, specify and design the topological and routing strategies for an IP based networking infrastructure.

Text Book:

1. Jim Kurose and Keith Ross, ``Computer Networking: A Top-Down Approach," 5th Edition, Pearson Education, 2012
2. Larry L. Peterson and Bruce S. Davie , ``Computer Networks: A Systems Approach," Morgan Kaufmann, 5/e, 2011

References:

1. Andrew S, Computer Networks by Tanenbaum, Prentice Hall of India, New Delhi
2. Foronzan, Data Communications and Networking, Tata McGraw Hill, New Delhi
3. Neil Jenkins, Understanding Local area Network, SAMS Publishers
4. Peter Hudson, Local area Networks by, Thomson Learning

Course Plan

Module	Contents	Hours	Sem.ExamMarks
I	Introduction-Uses of Computer Networks, Network Hardware, Network Software, Reference Models, Example Networks,	6	15%
II	Network Standardization. The Medium Access Control Sublayer- The Channel Allocation Problem, Multiple Access Protocols, Ethernet, Wireless LANs, Broadband Wireless, Bluetooth.	7	15%
	FIRST INTERNAL EXAMINATION		
III	The Network Layer- Network Layer Design Issues, Routing Algorithms, Congestion Control Algorithms, Quality of Service, Internetworking, The Network Layer in the Internet	7	15%

IV	The Transport Layer- The Transport Service, Elements of Transport Protocols, A Simple Transport Protocol,	7	15%
SECOND INTERNAL EXAMINATION			
V	The Internet Transport Protocols: UDP, The Internet Transport Protocols: TCP, Performance Issues.	7	20%
VI	The Application Layer- DNS-The Domain Name System, Electronic Mail, The World Wide Web, Multimedia	8	20%
END SEMESTER EXAM			

QUESTION PAPER PATTERN:

Maximum Marks: 100 Exam Duration: 3Hourrs.

Part A: 8 compulsory questions.

One question from each module of Modules I - IV; and two each from Module V & VI.

Student has to answer all questions. (8 x5)=40

Part B: 3 questions uniformly covering Modules I & II. Student has to answer any 2 from the 3 questions: (2 x 10) =20. Each question can have maximum of 4 sub questions (a,b,c,d), if needed.

Part C: 3 questions uniformly covering Modules III & IV. Student has to answer any 2 from the 3 questions: (2 x 10) =20. Each question can have maximum of 4 sub questions (a,b,c,d), if needed.

Part D: 3 questions uniformly covering Modules V & VI. Student has to answer any 2 from the 3 questions: (2 x 10) =20. Each question can have maximum of 4 sub questions (a,b,c,d), if needed.