SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY)

(Established under section 3 of the UGC Act, 1956)

Re-accredited by NAAC with 'A++' Grade | Awarded Category – I by UGC

Founder: Prof. Dr. S. B. Mujumdar, M. Sc., Ph. D. (Awarded Padma Bhushan and Padma Shri by President of India)

Course Name: Computer Networks Lab

Course Code: T7482

Faculty: Engineering

Course Credit: 1

Course Level: 2

Sub-Committee (Specialization): Computer Science

Learning Objectives:

The students will be able to:

Primary objective of this course is to get familiarly the basics of networking, Internet, networking protocols and layered architecture of network

To explore and learn application layer protocols such as Domain Name Server, HTTP, FTP and SMTP.

Further investigation of TCP flow control, congestion control and congestion avoidance.

To explore and learn working of routing protocols and algorithms for wired and wireless network.

Books Recommended:

Book	Author	Publisher
An Engineering Approach to Computer Networking	Keshav S.	Addison-Wesley, 1997.
Computer Communications and networking Technologies, ISBN 8811 - 240 - 354 X.	Gallo M., Hancock W.	Thomson Brooks/Cole
Computer Networks and Internet, 2nd Edition, ISBN 81 -7808-086-9.	Comer D.	Fieatson Education
Computer Networks,4th Edition, ISBP 81 - 203 - 2175 8.	Tanenbaum A	PHI
Computing approximate blocking probabilities for a class of all-optical networks	IEEE J. Select. Areas Commun./J. Lightwave Technol., Special Issue Optical Networks	NA
Computing approximate blocking probabilities in wavelength routed all-optical networks with limited-range wavelength conversion	IEEE Journal	NA
Data Communications and Networking, 3rd edition, 2004, ISBN 0 - 07 - 058408 7.	Fourauzan B.	Tata McGtaw Hill Publications
Data Networks, 2nd Ed.	Bertsekas D. and Gallager R., Englewood Cliffs	Prentice-Hall.
Design and Analysis of Computer Communication Networks	Vijay Ahuja	McGraw Hill.
FTP Extensions for IPv6 and NATs	NA	NA
Networking - The Complete Reference	Zacker	Tata McGraw Hill.
Packet error rate analysis of ieee 802.15.4 under IEEE 802.11b interference	LNCS: Wired/Wireless Internet Communications	NA
Performance of alternate routing methods in all-optical switching networks	Proc. IEEE INFOCOM	NA
Routing and wavelength assignment in all-optical networks	IEEE/ACM Trans. Networking	NA

	Telecommunication Network Design Algorithms.	Kershenbaum A.	Tata McGraw Hill.
	Telecommunications and Information Exchange between Systems - Local and Metropolitan Area Networks - Common Specifications - Part 3: Media Access Control (MAC) Bridges	ANSI/IEEE Std 802	NA

Course Outline:

Sr. No.	Topic	Actual Teaching Hours	Contact Hours Equivalence
1	**Study of Basic elements of computer networking with details of networking devices.**	**1**	**4**
2	**Packet Analysis using a packet tracer tool with detailed analysis of Application Layer packets.**	**3**	**4**
3	**Socket Programming for Transport Layer packets (TCP and UDP)**	**2**	**4**
4	**Analysis of Application layer packet (DNS) using DNS commands & Analysis using a packet tracer tool.**	**3**	**4**
5	**Implement Sliding Window Protocols.**	**2**	**4**
6	**Implement Traffic shaping Algorithms**	**2**	**4**
7	**Implement Distance Vector Algorithm**	**2**	**4**
	Total	**15**	**28**

Pre Requisites:

None

Evaluation:

Quiz

Journal

Viva

Assignments

Practical examinations

Pedagogy:

Class Room lectures

Experiential learning