ITE5004 Computer Networks

L T P J C
3 0 0 4 4

Pre-req: Nil

Objectives:

- To assist the students community for better understanding of networking.
- To facilitate the students for developing more efficient network protocols and standards.

Expected Outcomes:

On completion of this course, the students will be able to

- Make use, the correct mix of topologies and setup the dynamic network that works efficiently.
- Develop reliable, flexible and efficient routing algorithm for any complex networking scenarios in the real world.
- Sort out the issues in any given network protocols/ scenario built upon networking standards.

Module	Topics	L Hrs	SLO
1	**Foundation:** Applications – Requirements – Network Architecture – Performance.	5	2
2	**Connectivity** : Perspectives on connecting – Encoding – Framing – Error Detection – Reliable Transmission – Ethernet and Multiple Access Networks.	7	2,5
3	**Internetworking-I:** Switching and Bridging – Basics of Internetworking (IP).	7	2,5
4	**Internetworking-II:** Routing – Implementation and Performance.	7	5
5	**End – End Protocols :** Simple Demultiplexer (UDP) – Reliable Byte Stream (TCP) – Remote Procedure Call Fundamentals – Overview of Transport for Real-Time Application (RTP)	4	2,5
6	**Congestion Control And Resource Allocation:** Issues in Resource Allocation – Queuing Disciplines- TCP Congestion Control – Congestion Avoidance Mechanisms – Quality of Service.	7	2,5
7	**Applications:** Traditional Applications – Infrastructure Services – Overview of Multimedia Applications and Overlay Networks.	6	2
8	**Expert Talk on Recent Advancements in Computer Networks**	2	17
	Total Lecture Hours	**45**	

 # Mode: Flipped Class Room, [Lecture to be videotaped], Use of physical and computer models to lecture, Visit to Industry / Min of 2 lectures by industry experts

Text Book

1. Larry L Peterson and Bruce S Davie, "Computer Networks – A Systems Approach", MK Publishers, Fifth Edition, 2012

Reference Book

1. James F Kurose and Keith W Ross, "Computer Networking – A Top Down Approach", Sixth Edition, Pearson Education, 2013

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