

**INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI**  
**PROFORMA FOR NEW COURSE**

1.	Title of the Course	Computer Networks
2.	Course Number	CS3202
3.	Status of the Course	Core
4.	Structure of Credits	3-0-0-3
5.	Offered To	UG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Computer Science and Engineering
8.	To take effect from	July 2018
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	<b>Course Objective:</b> To teach the fundamental concepts of different open systems interconnection layers of network protocol stack, and provide an understanding on the factors that influence the network performance.	
12.	<b>Course Content:</b> Physical layer: Signal representation, modulation, encoding, Shannon's capacity; Link layer: Framing, medium access control, error detection and correction, and reliable service; Network layer: Address resolution protocol, forwarding, scheduling discipline, routing (including border gateway protocol), virtual local area network, Internet protocol version 4 (IPv4), a brief introduction to IPv6 and tunnelling, and network address translation; Transport layer: Reliable end-to-end protocol designs, network sockets, user datagram protocol, transmission control protocol's congestion and flow control mechanisms; Application layer: Hypertext transfer protocol, simple mail transfer protocol, client-server and peer-to-peer architectures, dynamic host configuration protocol, and domain name service; Basics of network security: Symmetric, asymmetric, and block ciphers, and firewalls.	
13.	Text book(s): 1. Kurose J and Keith R, <i>Computer Networking: A Top Down Approach</i> , Pearson (2016). 2. Peterson L L and Davie B S, <i>Computer Networks: A Systems Approach</i> , Morgan Kaufmann Series in Networking (2011).	
14.	Reference(s): 1. Bertsekas D and Gallager R, <i>Data Networks</i> , Pearson (2015). 2. Kumar A, Manjunath D and Kuri J, <i>Wireless Networking</i> , Morgan Kaufmann (2014).	