



## MANIPAL UNIVERSITY JAIPUR

School of Computing and Information Technology

Department of Computer Science and Engineering  
Course Hand-out

Computer Network Protocol | CS 1602 | 4 Credits

Session: 2015-2016 | Faculty: Sandeep Joshi

**Course Outcomes:** At the end of the course, students will be able to

[1602.1] Understand and learn basic concept of TCP/IP model

[1602.2] Analysis the Routing techniques and its types

[1602.3] Demonstrate the Internet control protocols, IPV6 transitions and hence employability skill

[1602.4] Analyse the Transport Layer, Its protocols and congestion control

[1602.5] Describe the Application Layer, its protocols and Network Security

### A. SYLLABUS

Introduction: IPv4 Addresses Classfull addressing, other issues, Sub-netting Classless, addressing, variable length blocks, Sub-netting, address allocation, IP Protocol: options, checksum, Types of messages, message format, error reporting, Query, Checksum, fragmentation, IP Package, ICMP Protocol: Messages, Debugging tools, Unicasting Protocols: Unicasting routing, RIP: RIP Message Format, Requests and Responses, Timers in RIP, Introduction to OSPF and BGP, Multicasting Protocol: IGMP : Group Management, IGMP Messages, IGMP Protocol Applied to Host, IGMP Protocol Applied to Router, Role of IGMP in Forwarding ARP package & RARP: Introduction, packet format, Encapsulation, RARP: Introduction, datagram, UDP Protocol: Process to process communication, User datagram, checksum; UDP package, TCP Protocol :Introduction, TCP services, TCP features, segment, TCP connection, State transition diagram, Flow control, Error control, Congestion control, TCP timers, options, TCP package Sctp Protocol: Sctp features, packet format, association, state transition diagram, flow control, error control, congestion control.

### B. TEXT BOOKS

- i. A S Tanenbaum, Computer Networks, 5th Ed., Pearson, 2010.
- ii. B.A. Forouzan, TCP/IP Protocol Suite, 4th Ed., TMH, 2010.

