



**Course Plan**  
**CCN (Computer and Communication Networks)**  
Institute Core (IC), Spring Semester (Jan-April 2022)  
IIIT Sri City, Chittoor.

**Institute Core**

**L-T-P-C: 3-1-0-4**

**Syllabus:**

**Unit – 1** [6 Hours]: Guided transmission media: twisted pair, coaxial cable, fibre optic cable; Multiplexing: FDM and TDM: Packet switching and circuit switching: Internet protocol stack: ISO OSI reference model, Delay, loss and throughput in packet switched networks.

**Unit – 2** [10 Hours]: The web and HTTP; FTP; Electronic mail: SMTP; Domain name systems; Peer-to-peer networks.

**Unit – 3** [10 Hours]: Transport layer services; Multiplexing and demultiplexing; Principles of reliable data transfer: Go-Back-N and Sliding window, TCP, UDP, Congestion control.

**Unit – 4** [6 Hours]: Network Layer: Services of network layer, Virtual circuit and datagram networks, Internet protocol

**Unit – 5** [6 Hours]: Link-state routing and distance vector routing. Hierarchical routing, Routing in the internet, broadcast and multicast routing. Duration:

**Unit – 6** [10 Hours]: Link layer services, Error detection and correction; Multiple access protocols: ALOHA, Slotted ALOHA, CSMA, CSMA/CD, Ethernet; WiFi. Next generation wireless networks, Intro to self optimization networks (SON).

**Text Books:**

- a) Computer Networking: A Top-Down Approach, James F. Kurose and Keith W. Ross, 6<sup>th</sup> Edition, Addison Wesley . . ISBN-13: 978-0-13-285620-1
- b) Theodore S. Rappaport, Wireless Communications: Principles and Practice, 2<sup>nd</sup> Edition pearson 2002 : ISBN:9788131731864.

**Reference Books:**

- a) Andrew Tanenbaum , Davis Wetherall, Computer Networks 5<sup>th</sup> Edition, Pearson ISBN: 978-8131770221
- b) Bobbi Sanberg, Networking the complete reference, 3<sup>rd</sup> Edition, Mc Graw Hills, ISBN: 978-0-07-182765-2

**Examination Weightage:**

SNo	Evaluation Component	%	remarks
1	Mid exam-1	15	Closed book exam
2	Mid exam-2	15	Closed book exam
2	End Exam	30	Closed book exam
3	<b>Scheduled Quizzes</b>	20	Three Quizzes
4	Mini Project	20	Group of 4 Students <b>After Mid-2 (3rd week of March)</b>
	Total	100	

**Course Instructors:**

1. Dr. Raja Vara Prasad (Sec-A)
2. Dr. Bheemappa (Sec-B)
3. Dr. Nikhil (Sec-C)