

# GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Semester: I

## Signal Processing and VLSI Technology(EC)

Subject Name: **Computer Communication and Networking  
(Interdisciplinary Elective- I)**

Sr.No	Course content
1.	<b>Introduction To Computer Communication And Networking:</b> Data Communication, Networks, Network Models, Protocols And Standards
2.	<b>Physical Layer:</b> Analog Signals, Digital Signals, Analog versus Digital, Analog And Digital Modulation, Guided Media, Unguided Media
3.	<b>Data Link Layer:</b> Data Link Layer Design Issues, Error Detection And Correction, Elementary Data Link Protocols, Sliding Window Protocols, HDLC, PPP
4.	<b>Medium Access Control Sub Layer:</b> Channel Allocation Problem, Multiple Access Protocols, Ethernet, Wireless LAN, Broadband Wireless, Bluetooth, Cellular Telephony
5.	<b>Network Layer:</b> Network Layer Design Issues, Routing Algorithms, Internetworking, Network Layer Protocols
6.	<b>Transport Layer:</b> User Datagram Protocol (UDP), Transmission Control Protocol (TCP)
7.	<b>Application Layer:</b> Domain Name Space (DNS), Electronic Mail, Http, Worldwide Web
8.	<b>Network Security:</b> Symmetric Key Cryptography, Public Key Cryptography
9.	Introduction to Wireless ad hoc Networks and Wireless Sensor Networks and applications

### Reference Books:

1. Data Communication And Networking , Behrouz Forouzan, 4<sup>rd</sup> Edition, TMH.
2. Computer Networks, Andrew Tanenbaum, 4<sup>th</sup> Edition, Pearson Education.
3. Adhoc Mobile Wireless network, C.K.Toh Pearson