

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 1

Instrumentation and Control Engineering
(Applied Instrumentation)

Subject Name: INDUSTRIAL DATA COMMUNICATION

Sr.No	Course content
1.	INTRODUCTION Uses of Computer Networks, Network Hardware ,Network Software, Reference Models, Example Networks, Network Standardization
2.	THE PHYSICAL LAYER The Theoretical Basis For Data Communication, Guided Transmission Media Wireless Transmission, Communication Satellites, The Public Switched Telephone Network, The Mobile Telephone System, Cable Television
3.	THE DATA LINK LAYER Data Link Layer Design Issues, Error Detection And Correction , Elementary Data Link Protocols , Sliding Window Protocols Protocol Verification , Example Data Link Protocols
4.	THE MEDIUM ACCESS SUBLAYER The Channel Allocation Problem, Multiple Access Protocols , Ethernet , Wireless LANs , Broadband Wireless , Bluetooth , Data Link Layer Switching
5.	THE NETWORK LAYER Network Layer Design Issues, Routing Algorithms, Congestion Control Algorithms ,Quality Of Service ,Internetworking ,The Network Layer In The Internet
6.	THE TRANSPORT LAYER The Transport Service ,Elements of Transport Protocols ,A Simple Transport Protocol ,The Internet Transport Protocols: UDP ,The Internet Transport Protocols: TCP ,Performance Issues
7.	THE APPLICATION LAYER DNS--Domain Name System ,Electronic Mail ,The World Wide Web Multimedia

Reference Books:

1. Computer networks by Andrew Tanenbaum , 4th Edition , PHI