

# GUJARAT TECHNOLOGICAL UNIVERSITY

## B.E. SEMESTER : VIII

### ELECTRONICS AND TELECOMMUNICATION ENGINEERING

Subject Name: **TELECOMMUNICATION TRANSMISSION AND SWITCHING**

Sr. No.	Course Contents
1.	<b>Introduction :</b> Evolution of Telecommunications, Basic of Switching System, Simple Telephone Communication, Manual Switching System, Major Telecommunication Networks.
2.	<b>Strowger Switching System :</b> Rotary Dial Telephone, Signaling Tones, Strowger Switching Component, Step By Step Switching, Design Parameters, 100 Line Switching System, 10000 Line Exchange.
3.	<b>Crossbar Switching:</b> Principal Of Common Control, Touch Tone Dial Telephone, Principals Of Crossbar Switching, Crossbar Switching Configuration, Cross Point Technology, Crossbar Exchange Organization.
4.	<b>Electronic Space Division Switching:</b> Stored Program Control, Centralized SPC, Distributed SPC, Software Architecture, Application Software, Enhanced Services, Two-Stage Networks, Three-Stage Networks, N-Stage Networks.
5.	<b>Time Division Switching:</b> Basic Time Division Space Switching, Basic Time Division Time Switching, Time Multiplexed Space Switching, Time Multiplexed Time Switching, Combination Switching, Three-Stage Combination Switching, N-Stage Combination Switching.
6.	<b>Traffic Engineering:</b> Network Traffic Load And Parameters, Grade Of Service And Blocking Probability, Modeling Switching Systems, Incoming Traffic And Service Time Characterizations, Blocking Models And Loss Estimates, Delay Systems.
7.	<b>Telephone Networks:</b> Subscriber Loop System, Switching Hierarchy And Routing, Transmission Plan, Transmission System Numbering Plan, Charging Plan, Signaling Techniques, In-channel Signaling, Common Channel Signaling, Cellular Mobile Telephony.
8.	<b>Integrated Services Digital Networks :</b> Motivation For ISDN, New Services, Network And Protocol Architecture, Transmission Channels, User Network Interfaces, Signaling, Numbering And Addresses, Service Characterization, Interworking, ISDN Standards, Expert System In ISDN, Broadband ISDN, Voice Data Integration

#### Text Books:

1. Telecommunication Switching Systems and Networks ,Viswanathan (PHI).
2. Telecommunication Switching Traffic and Network , J.E.Flood (Pearson Education)
3. Telecommunication Transmission Systems, Robert G. Winch (McGraw Hill)
4. Telecommunications and the Computer (3rd Edition) ,James Martin(PHI)