EC-311D	TELECOMMUNICATION SWITCHING SYSTEM (ELECTIVE - I)	L	T	P	C
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COURSE OBJECTIVES:

1. To understand the Switching systems and Networks
2. To understand the Signal path in time and space between two terminals
3. To understand the Signaling systems in Telephone Data Networks
4. To understand the Protocols and Data Communication Networks
5. To understand the ISDN Protocols of Network Convergence

COURSE OUTCOMES:

After successful completion of the course, the students are able to

1. demonstrate knowledge in switching system, subscriber loop systems, transmission plan, data communication protocals and networks, multiplexing technology, ISDN and DSL in home networking
2. evaluate the digital signal path in Time and Space in Traffic load switching systems
3. understand the concept of Data Link Protocals in Networks
4. analyze the concept of Multiplexing techniques
5. evaluate the inherent facilities within the system to tset some of the ISDN and digital switch Functions.

UNIT I *Text Book - 1* **(10)**

TELECOMMUNICATION SWITCHING SYSTEMS : Evolution of Telecommuni-cations Simple Telephone Communication Basics of Switching System Electronic Space Division Switching Stored Program Control Centralized SPC Distributed SPC Software Architecture Two Stage Networks Three Stage Networks Time Division Switching Basic Time Division Time Switching Combination Switching Three Stage Combination Switching.

UNIT II *Text Book - 1* **(10)**

TELEPHONE NETWORKS : Subscriber Loop Systems Switching Hierarchy and Routing Transmission Plan Signaling Techniques In-channel Signaling Common Channel Signaling Network Traffic Load and Parameters Grade Of Service and Blocking Probability.

UNIT III *Text Book - 2* **(10)**

FUNDAMENTAL CONCEPTS OF DATA COMMUNICATIONS : Data Communi-cations Codes Bar Codes Character Synchronization Data Communications Hardware Data Communications Circuits Line Control Unit Serial Interfaces.

DATA-LINK PROTOCOLS AND DATA COMMUNICATIONS NETWORKS : Introduction Data Link Protocol Functions Character- and Bit- Oriented Data Link Protocols Asynchronous Data-Link Protocols Synchronous Data-Link Protocols Synchronous Data-Link Control High-Level Data-Link Control Public Switched Data Networks Asynchronous Transfer Mode.

UNIT IV *Text Book - 2* **(10)**

DIGITAL T-CARRIERS AND MULTIPLEXING : Time-Division Multiplexing T1 Digital Carrier North American Digital Hierarchy Digital Carrier Line Coding T Carrier Systems European Digital Carrier System Digital Carrier Frame Synchronization Bit Versus Word Interleaving Statistical Time Division Multiplexing Frequency Division Multiplexing FDM Hierarchy Composite Baseband Signal Formation of a Master Group.

UNIT V *Text Book - 3* **(10)**

ISDN : What Is ISDN? ISDN Components ISDN Channel Types Basic and Primary Rate Interfaces ISDN Protocols ISDN Features Services and Applications Other ISDN Initiatives

DIALUP AND HOME NETWORKING : What Is Dialup Networking? Analog Modem Concepts DSL Service Cable Modems Home Networking Concepts and Issues. **NETWORK CONVERGENCE :** What Is Network Convergence? Networking Issues and Convergence Effects of Network Convergence on Business Convergence At Home.

LEARNING RESOURCES:

TEXT BOOK(s):

1. T Viswanathan - Telecommunication Switching Systems and Networks, PHI, 2004.
2. Wayne Tomasi - Advanced Electronic Communications Systems, 6th Edition, Pearson, 2004.
3. Machael A. Gallo and William M. Hancock - Computer Communications and Networking Tecnologies, 1st Edition,Cengage Learning, 2002.

REFERENCE BOOK(s):

1. J E Flood - Telecommunications Switching, Traffic and Networks, Person, 1999
2. Ray Horak - Communication Systems and Networks, 3rd Edition, Wiley, 2002

WEB RESOURCES:

http://nptel.iitm.ac.in/courses/