SCHEME OF COURSE WORK

Course Title	Data Communications		
Course Code	: 13EC1126	L T P C	4 0 0 3
Program:	:B.Tech		
Specialization:	: Electronics and Communication Engineering		
Semester	: VI		
Prerequisites	: Digital Communications		
Courses to which it is a prerequisite			

Course Outcomes (COs):

1	Determine Probability of error, ISI and performance in Digital communication systems
2	Design Error Control Codes for communication applications
3	Describe digital multiplexing techniques such as TDM, WDM
4	Design the Communication modems.
5	Distinguish network topologies and comprehend multimedia applications.

Course Outcomes versus Program Outcomes:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO-1	S	S	M	S	S							M
CO-2	S	S	S	S	S						M	M
CO-3	S	S	S	S	S							M
CO-4	M	S	S	S	S							M
CO-5	M	M	M	S	M		M					M

S - Strongly correlated, M - Moderately correlated, Blank - No correlation

Assessment Methods:	Assignment/ Quiz/Mid Exam/Surprise test/Open book test

Week	Topic /Contents	Course Outcomes	Sample questions	Teaching-Learning Strategy	Assessment Method & Schedule
1	Baseband, Baseband pulse shaping, Review of Digital Modulation techniques	CO - 1	1.Explain the detection of FSK signal 2.Describe the generation of MSK signal	Lecture/ Problem solving	Assignment I/Quiz-I/Mid-I
2	Band width efficiency, carrier recovery, clock recovery, Bit recovery	CO - 1	1. Explain Different Carrier Recovery Mechanisms 2. Define Bandwidth Efficiency	Lecture	Assignment I/Quiz-I/Mid-I
3	Probability of error, Inter Symbol	CO-	1. What is inter symbol interference and how it can be	Lecture	Assignment I/Quiz-I/Mid-I

	Interference (ISI), Performance Analysis and Comparison	1	avoided 2. Define probability of error		
4	Error detection and correction codes (ARQ, FEC), Character Codes	CO-2	1. Explain different character codes with examples 2. what is meant by error control and list the error detection techniques	Lecture/ Problem solving	Assignment I/Quiz-I/Mid-I
5	Bar Codes, Character Synchronization.	CO-2	1. Write about character synchronization 2. Explain about code-39 3. Give the difference between UPC code and code-39	Lecture/ Problem solving	Assignment I/Quiz-I/Mid-I
6	Data Link Protocol Functions, Character and Bit - Oriented Protocols, Transmission Modes	CO–2	1. Write about line discipline techniques 2. Explain about the data link protocol functions 3. Give the difference between character oriented and bit oriented protocols	Lecture	Assignment I/Quiz-I/Mid-I
7	Data Link Protocols- Synchronous & Asynchronous, Synchronous Data Link Control, High Level Data Link Control	CO-2	1. Give the frame format of HDLC 2. Explain about the Bisync operation in synchronous data link protocol	Lecture/ Problem solving	Assignment I/Quiz-I/Mid-I
8	Time Division Multiplexing, CODECS, COMBO CHIPS	CO-3	1. 1.Distinguish between Synchronous& Asynchronous TDM 2. 2. What is CODEC?		Assignment I/Quiz-I/Mid-I
9	Mid-I				

10	Line Encoding , Frame Synchronization, Frequency Division Multiplexing	CO-3	1. What is the need of line codes 2. What is the need of frame synchronization?	Lecture/ Problem solving	Assignment II/Quiz-II/Mid-II
11	Wave length Division Multiplexing, T1 Carrier.	CO-3	1. Give the difference between WDM& DWDM 2. Explain the T1 Carrier system	Lecture/ Problem solving	Assignment II/Quiz-II/Mid-II
12	Serial and Parallel Interfaces, Voice Networks and Circuits, Digital Service Unit and Channel Service Unit.	CO-4	1. Write about digital service unit 2. Write about Channel service unit	Lecture/ Problem solving	Assignment II/Quiz-II/Mid-II
13	LCU ,Voice- Band Data Communication Modems, Asynchronous Voice Band modems	CO–4	1. What is meant by LCU? 2. Write about different data communication modems	Lecture/ Problem solving	Assignment II/Quiz-II/Mid-II
14	Synchronous Voice-Band Modems, Modem Synchronization, Cable Modems, Wireless Local loops	CO–4	1. Explain the Synchronous Voice-Band Modems 2. Write about the wireless local loops	Lecture/ Problem solving	Assignment II/Quiz-II/Mid-II/ Open book test
15	Topologies, Traditional, Fast and Giga bit Ethernet,FDDI, Public Data Networks, ISDN, B-ISDN.	CO-5	1. Draw the B-ISDN model and mention data rates 2. Differentiate the fast and Giga bit Ethernet	Lecture/ Problem solving	Assignment II/Quiz-II/Mid-II
16	Digitization of Video and Audio, Compression and Streaming	CO-5	1. Write the applications of multimedia 2. Write the need of compression	Lecture/ Problem solving	Assignment II/Quiz-II/Mid-II
17	Stored and Live Video and Audio, Real Time Interactive Video and Audio, VOD.	CO–5	1. Explain the real time interactive video 2. Write about VOD	Lecture/ Problem solving	Assignment II/Quiz-II/Mid-II
18	Mid-Test 2				
19/20	END EXAM				