Details of course: Basics of Electronics and Communication Engineering

Course Title	Course Structure			Pre-Requisite
	L	T	P	
Basics of Electronics and Communication Engineering	3	0	2	NA

Course Objective:
To familiarize the students with the fundamentals of analog electronic devices and circuits, digital circuits and schemes for analog and digital communications.

Course Outcome(CO):

1. Explain the principles of operation of semiconductor devices such as diode, BJT, JFET and MOSFET.
2. Design and analysis of CE-amplifier using small signal hybrid-pi model.
3. Simplify logic expression using Boolean law, Skills to minimize logic expression using k-map and design of various combinational and sequential logic circuits.
4. Explain the concepts of various Analog modulation schemes.
5. Illustrate the concepts of various Digital modulation schemes.

S. No.	Content	Contact Hours
Unit 1	PN junction diode, V-I characteristics, Half wave and full wave rectifiers, Clipping and Clamping circuits, Zener diode as a voltage regulator.	06
Unit 2	Bipolar Junction Transistor: Physical operation, CB, CC, CE Characteristics, operating point, load line, DC biasing circuit: Self Bias. Common emitter amplifier: Small signal model (Hybrid Pi-model), Current gain, voltage gain, input/output Impedance. Introduction to JFET and MOSFET: Structure and Characteristics.	12
Unit 3	Digital circuits: Boolean algebra, Logic gates, K map up to 4 variables, Binary Adder and subtractor, MUX and DMUX, Flip flops: SR, JK, D, T.	10
Unit 4	Basic Block Diagram of Analog Communication system, type of noise, Concepts of Analog modulation Schemes: AM, FM, PM.	06
Unit 5	Basic Block Diagram of Digital Communication system, Concepts of Sampling, Pulse code modulation, Concepts of Digital modulation Schemes: ASK, FSK, PSK.	08
	Total	42

Books:-

S.No.	Name of Books/Authors/Publisher
1.	Electronic Devices and Circuit Theory, 7th Edition, Robert Boylestad, Louis Nashelsky. Prentice Hall.
2.	Digital Design, 4th Edition, M. Morris Mano, Pearson Education.

3.	Modern Analog and Digital Communication, 3rd Edition, B.P. Lathi, Oxford.
4.	Communication Systems, 4th Edition, Haykin, Simon, John Wiley & Sons.