

3EL81: ELECTRONICS COMMUNICATION SYSTEM
CREDITS - 3 (LTP: 3,0,0)

Course Objective:

1. To introduce the basic principles and techniques used in Electronic Communications, Digital modulation techniques, Cellular Technology.
2. To introduce fundamental of networking, LAN, Wireless technologies and advance Communication systems.

Teaching and Assessment Scheme:

Teaching Scheme (Hours per Week)			Credits	Assessment Scheme				
L	T	P		C	Theory Marks		Practical Marks	
			ESE		CE	ESE	CE	
3	0	0	3	60	40	00	00	100

Course Contents:

Unit No.	Topics	Teaching Hours
1.	Introduction to Electronic Communication: The Significance of Human Communication, Communication Systems, Types of Electronic Communication, Modulation and Multiplexing, The Electromagnetic Spectrum, Bandwidth.	06
2.	Digital Communication Techniques: Digital Transmission of Data, Parallel and Serial Transmission, Data Conversion, Pulse Modulation, Digital Signal Processing.	07
	Fundamentals of Networking and LAN and Ethernet:	06
3.	Network Fundamentals, LAN Hardware, Ethernet LANs, Advanced Ethernet.	
4.	Cell Phone Technologies: Cellular Telephone Systems, A Cellular Industry Overview, 2G and 3G Digital Cell Phone Systems, Long Term Evolution and 4G Cellular Systems , Base Stations and Small Cells.	08
5.	Wireless Technologies : Wireless LAN, PANs and Bluetooth, Zigbee, WiMAX and Wireless MetropolitanArea Networks, Infrared Wireless, Ultra wideband, Additional wireless application.	08

Unit No.	Topics	Teaching Hours
6.	Satellite and Optical Communications: Satellite orbits, Satellite Communication Systems, Satellite Subsystems, Satellite Applications, Global Navigations Satellite Systems (GNSS), Optical Principals, Optical Communication System, Fiber Optic Cables, and Wave Division Multiplexing Technique.	10
Total		45

List of References:

1. Louis E. Frenzel Jr., "*Principles of Electronic Communication Systems*", Tata Mc-Graw Hill.
2. Frenzel., "*Communication electronics, principles and applications*", Tata Mc-Graw Hill.
3. George Kennedy, Bernard Davis, SRM Prasanna, "*Electronic Communication Systems*", Tata McGraw-Hill .
4. Behrouz A Forouzan, "*Data Communications and Networking*", Tata Mc-Graw Hill.

Course Outcomes (COs):

At the end of this course students will demonstrate the ability to

1. Understand the basic concept Communication system.
2. Apply network fundamentals for LAN and Ethernet.
3. Analyze Cellular Technologies.
4. Analyze advance communication systems.