

Subject Code:1ET1000114	Subject Title: ELEMENTS OF ELECTRONICS AND COMUNICATION ENGINEERING
Pre-requisite Subject:	Knowledge of semiconductor physics, Electric and Magnetic fields, Various communication equipment.

Course Objective:

To introduce the operating and working principles of various electronic and communication systems at block diagram level and make the students aware about different areas of EC Engineering.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
4	-	2	5	70	30	-	20	120

	Signal and spectral analysis: block diagram of signal processing system, different signal processing tasks, digital communication system, line spectrum, signal bandwidth, Modulation, Sampling and Multiplexing: signal modulation & its requirements, frequency translation using product modulator, sampling and pulse modulation, multiplexing systems, Interference & noise: Interfering signals, thermal noise, white noise, SNR.		
6	Communication Systems: Electromagnetic spectrum, propagation modes, Waves, Transmission lines, Waveguides and Antenna fundamentals: types of transmission lines & waveguides, antenna types, Analog communication systems: AM,FM,PM with waveforms only, Mobile radio systems : Cellular telephone concept , Digital communication systems: PCM , Carrier Modulation by digital signals: ASK,FSK,PSK with waveforms only, Global Positioning System.	8	20

Course Outcome:

After studying the subject, student shall be able to recognize working principles of different electronic circuits used in day to day life. Student will also come to know the ideas behind working of modern communication systems.

List of Text Book:

1.Introduction to Electrical Engineering by Mulukutla S. Sarma, Oxford University Press.

List of Reference Books:

- 1.Electronics Principles by Malvino, 6th edition , TMG publication
- 2.Electronics Communications by Dennis Roody & John Coolen, 4 th edition, Pearson publication

Titles of Experiments:

1. Introduction to Integrated Circuits
2. Universal gates
3. Half adder and full adder
4. Maximum Power transfer theorem
5. Op-amp as an inverting & non-inverting amplifier
6. Op-amp as a summing & averaging amplifier
7. Flip-flops
8. Frequency modulation.
9. Sampling theorem.
10. Pulse Code Modulation
11. Computer aided circuit analysis using SPICE
12. Computer aided circuit analysis using MATLAB