	numerical methods for solving a problem, locate and use good mathematical software, get the accuracy you need from the computer, assess the reliability of the numerical results, and determine the effect of round off error or loss of significance. Solve a linear system of equations using an appropriate numerical method	

Course Code: ELC 102 **Title of the Course: ELECTRONICS PRACTICALS –I**

Number of Credits: 4

Prerequisites for the course:	Should have studied graduate level basic level electronic subject. It is assumed that students have a working knowledge of passive and active components and digital circuits.	
Objective:	The hardware experiments give a student hands-on experience to design the basic digital and analog circuits, usually found in house hold appliances. The simulations experiments give understanding of the digital communications having various modulation techniques and also data correction and detection in general communication system.	
Content:	Hardware experiments 1. Design of variable voltage supply @ 2 Amps. 2. Temperature Controller using 741. 3. Design of Function Generator. 4. Design of 4-bit UP-DOWN Counter. 5. Design of Power Amplifier 10 Watts. 6. Design of Stepper driver using Monoshot & 555 Timer. Software Simulations 7. Implementation of MSK modulation and demodulation. 8. ASK, FSK, QPSK, modulation & demodulation. 9. QPSK, modulation & demodulation 10. DS-CDMA simulation. 11. Channel Coding methods. a. Convolution b. Block code 12. Error detection and correction Algorithm a. CRC b. Hamming code	
	Total	96
Pedagogy:	Presentations /assignments/self-study	
Learning Outcomes	The student will understand and should be able to handle basic equipment in house hold. Also, he will thoroughly understand the basics of communication system for modulation, data coding , error coding channel coding methods.	