

Course code	Course Name	L-T-P-Credits	Year of Introduction
BM331	MEDICAL ELECTRONICS LAB	0-0-3-1	2016
<p>Course Objectives</p> <ul style="list-style-type: none"> To design & set up op-amp based circuits used in biomedical instruments. To design and set up circuits using biomedical transducers. To familiarize with basic biomedical instruments. 			
<p>List of Exercises/ Experiments (Minimum of 12 mandatory)</p> <ol style="list-style-type: none"> Bioamplifier Phase detector Notch filter First order and second order high pass and low pass filters Precision rectifiers (Half wave and Full wave). UJT relaxation oscillator Band pass filter DC power control using SCR. Study of IC 555 and its applications Study of IC 4051 and its applications Design of pacemaker circuits & Characterization <ol style="list-style-type: none"> Fixed type Demand type Digital to analog converter Thermistor characteristics Skin contact impedance Study of LDR & its characteristics Basic principle of biotelemetry using IC 4046. (Transmitting ECG signals) High voltage and low voltage regulators Study of medical equipments <ol style="list-style-type: none"> ECG Sphygmomanometer Analytical equipments such as colorimeter, pH meter, HB meter <p>Equipment needed: Bread boards, power supplies and electronic measuring equipments.</p>			
<p>Expected Outcome</p> <p>After the completion of the course, students should be able to</p> <ol style="list-style-type: none"> Know the basic biomedical equipments and their troubleshooting methods. Design and set up biomedical equipments 			
<p>Text Books:</p> <ol style="list-style-type: none"> Boylestead & Neshelsky, Electronic Devices & Circuit Theory, Prentice Hall of India.2003 Millman & Halkias, Electronic Devices & Circuits, Tata McGraw Hill, New Delhi.1996 Ramakant A. Gayakwad, Op-Amp and Linear Integrated Circuits”, Pearson Education Asia. 4thed. 			