

BASIC ELECTRICAL ENGINEERING LABORATORY			
[As per Choice Based Credit System (CBCS) scheme]			
SEMESTER – I/II			
Course Code	18ELEL17/18ELEL2	CIA Marks	40
Number of Lecture Hours/Week	2P	SEE Marks	60
Total Number of Lecture Hours	32	Exam Hours	03
Credits – 01			
Course Objectives:			
<ul style="list-style-type: none"> <li>• To provide exposure to common electrical components such as Resistors, capacitors and inductors, types of wires and measuring instruments.</li> <li>• To measure power and power factor measurement of different types of lamps and three phase circuits.</li> <li>• To explain measurement of impedance for R-L and R-C circuits.</li> <li>• To determine power consumed in a 3 phase load.</li> <li>• To explain methods of controlling a lamp from different places.</li> </ul>			
Orientation class for an exposure to:			
<ul style="list-style-type: none"> <li>• Resistors, capacitors, inductors, rheostats, diodes, transistors, types of wires, measuring instruments – voltmeter, ammeter, wattmeter, multi-meter, Regulated power supply, Function generator, oscilloscope, transformer, dc motor, synchronous generator, three phase induction motor etc.</li> <li>• Basic safety precautions while dealing with electricity.</li> </ul>			
LIST OF EXPERIMENTS			
1	Verification of KCL and KVL for DC circuits.		
2	Measurement of current, power and power factor of incandescent lamp, fluorescent lamp, and LED lamp.		
3	Measurement of resistance and inductance of a choke coil using 3 voltmeter method.		
4	Determination of phase and line quantities in three phase star and delta connected loads.		
5	Measurement of three phase power using two wattmeter method.		
6	Two way and three way control of lamp and formation of truth table.		
7	Experiments beyond syllabus	Verification of Maximum power transfer theorem.	
8		Measurement of energy using single phase energy meter	
<b>Demonstration Experiments (for CIE only):</b>			
1	Demonstration of fuse and MCB separately by creating a fault.		

2	Demonstration of cut-out sections of electrical machines (DC machines, Induction machines and synchronous machines).
Revised Bloom's Taxonomy Levels	L <sub>1</sub> - Remembering, L <sub>2</sub> - Understanding, L <sub>3</sub> – Applying, L <sub>4</sub> – Analysing
<p>Course Outcomes: At the end of the course the student will be able to:</p> <ul style="list-style-type: none"> <li>• Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory.</li> <li>• Compare powerfactor of lamps.</li> <li>• Determine impedance of an electrical circuit and power consumed in a 3 phase load.</li> <li>• Understand two way and three way control of lamps.</li> </ul>	
<p><b>Graduate Attributes (As per NBA):</b> Engineering Knowledge, Problem Analysis, Individual and Team work, Communication</p>	
<p><b>Conduct of Practical Examination:</b></p> <ol style="list-style-type: none"> <li>1. All laboratory experiments are to be included for practical examination.</li> <li>2. Breakup of marks and the instructions printed on the cover page of answer script to be strictly adhered by the examiners.</li> <li>3. Students can pick one experiment from the questions lot prepared by the examiners.</li> <li>4. Change of experiment is allowed only once and 15% Marks allotted to the procedure part to be made zero.</li> </ol>	