

<b>BASIC ELECTRICAL ENGINEERING LABORATORY</b>			
Course Code	21ELE17/27	CIE Marks	50
Teaching Hours/Week (L:T:P)	0:0:2	SEE Marks	50
Credits	01	Exam Hours	03
<b>Course objectives:</b>			
After studying this course, students should be able to			
1) explain how to verify KCL and KVL for DC circuit and maximum power transfer theorem.			
2) explain power and power factor measurement of different types of lamps.			
3) explain the measurement of impedance for R-L circuits.			
4) explain the measurement of power consumed in a 3-phase load.			
5) explain methods of controlling a lamp from different places.			
6) explain the effect of open and short circuits in simple circuits and the suitability of earth resistance.			
<b>Sl. NO</b>	<b>Experiments</b>		
1	Verification of KCL and KVL for DC circuits		
2	Verification of maximum power theorem.		
3	Measurement of Current, Power, and Power Factor of Incandescent Lamp, Fluorescent Lamp and LED Lamp.		
4	Measurement of Resistance and Inductance of a Choke coil using three voltmeter method.		
5	Determination of Phase and Line quantities in three-phase star and delta connected loads.		
6	Measurement of 3 - phase Power using Two Wattmeter Method.		
7	Determination of efficiency of a single-phase transformer by direct load test.		
8	Two Way and Three-Way Control of Lamp and Formation of Truth Table.		
9	Measurement of Earth Resistance		
10	Study of the effect of Open and Short circuits in simple circuits.		
<b>Course outcomes</b>			
At the end of the course the student will be able to:			
<b>C01:</b> verify KCL and KVL and maximum power transfer theorem for DC circuits.			
<b>C02:</b> compare power factors of different types of lamps.			
<b>C03:</b> demonstrate the measurement of the impedance of an electrical circuit and power consumed by a 3-phase load.			
<b>C04:</b> analyze two-way and three-way control of lamps.			
<b>C05:</b> explain the effects of open and short circuits in simple circuits.			
<b>C06:</b> interpret the suitability of earth resistance measured.			
<b>Assessment Details (both CIE and SEE)</b>			
The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks (25 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each course. The student has to secure not less than 35% (18 Marks out of 50) in the semester-end examination(SEE).			
<b>Continuous Internal Evaluation (CIE):</b>			
CIE marks for the practical course is <b>50 Marks</b> .			
The split-up of CIE marks for record/ journal and test are in the ratio <b>60:40</b> .			
<ul style="list-style-type: none"> <li>Each experiment to be evaluated for conduction with observation sheet and record write-</li> </ul>			

up. Rubrics for the evaluation of the journal/write-up for hardware/software experiments designed by the faculty who is handling the laboratory session and is made known to students at the beginning of the practical session.

- Record should contain all the specified experiments in the syllabus and each experiment write-up will be evaluated for 10 marks.
- Total marks scored by the students are scaled down to 30 marks (60% of maximum marks).
- Weightage to be given for neatness and submission of record/write-up on time.
- Department shall conduct 02 tests for 100 marks, the first test shall be conducted after the 8<sup>th</sup> week of the semester and the second test shall be conducted after the 14<sup>th</sup> week of the semester.
- In each test, test write-up, conduction of experiment, acceptable result, and procedural knowledge will carry a weightage of 60% and the rest 40% for viva-voce.
- The suitable rubrics can be designed to evaluate each student's performance and learning ability. Rubrics suggested in **Annexure-II of Regulation book**
- The average of 02 tests is scaled down to **20 marks** (40% of the maximum marks).

**The Sum of scaled-down marks scored in the report write-up/journal and average marks of two tests is the total CIE marks scored by the student.**

#### **Semester End Evaluation (SEE):**

SEE marks for the practical course is 50 Marks.

SEE shall be conducted jointly by the internal and external examiners appointed by the University

All laboratory experiments are to be included for practical examination.

(Rubrics) Breakup of marks and the instructions printed on the cover page of the answer script to be strictly adhered to by the examiners. **OR** based on the course requirement evaluation rubrics shall be decided jointly by internal and external examiners.

Students can pick one question (experiment) from the questions lot prepared by the internal /external examiners jointly.

Evaluation of test write-up/ conduction procedure and result/viva will be conducted jointly by Internal and external examiners.

General rubrics for SEE are mentioned here, writeup-20%, Conduction procedure and result in -60%, Viva-voce 20% of maximum marks. SEE for practical shall be evaluated for 100 marks and scored marks shall be scaled down to 50 marks (however, based on course type, rubrics shall be decided by the examiners)

Change of experiment is allowed only once and 15% Marks allotted to the procedure part to be made zero.

The duration of SEE is 03 hours

Rubrics suggested in **Annexure-II of Regulation book**