

LESSON PLAN

ELECTRICAL & ELECTRONICS MEASUREMENT LAB

3rd Semester Diploma in Electrical Engineering (SCTEVT Odisha)



Name of the Faculty-

SIBANANDA PATHY

DEPARTMENT OF ELECTRICAL ENGINEERING

VISION:

To produce Electrical Engineer professionals who can contribute for socio-economic and technological development to meet global needs.

MISSION:

M1 - To strengthen academic infrastructure leading to quality professional by using modern technical tools and technologies.

M2 - To impart innovative knowledge among the students and make more industry-institution programs to make them successful professionals for serving the society.

M3 - To provide a learning environment to improve problem solving abilities, leadership abilities, ethical responsibilities and lifelong learning.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO1: Apply electrical engineering knowledge and practical skills to solve well-defined engineering problems using modern tools and techniques.

PEO2: Perform effectively in industry and society as competent junior engineer, supervisors, or entrepreneurs with ethical and sustainable engineering practices.

PEO3: Demonstrate teamwork, communication, leadership, and project management skills in professional engineering activities.

PEO4: Engage in lifelong learning and adapt to emerging technologies for career growth and higher education.

PROGRAM SPECIFIC OUTCOMES

The electrical diploma engineers will be able to:

PSO1:-Apply the fundamentals of mathematics, science and engineering knowledge to identify, formulate, design and investigate engineering problems of electric circuits, analog and digital electronics, control system, electrical machines and power system.

PSO2:- Apply the appropriate techniques and modern engineering hardware and software tools in electrical engineering to engage in life-long learning and to successfully adapt in multidisciplinary environments.

PSO3:-Work professionally in power systems engineering, Electrical machinery and electrical circuit.

Class No.	Experiment No.	Topics / Experiment to be Covered
1	—	Introduction to Laboratory, Safety Precautions, Syllabus Discussion and Familiarization with Measuring Instruments
2	1	Identify measuring instruments based on symbols on dial, type, accuracy, class, position and scale.
3	2	Identify the components of PMMC and MI instruments.
4	3	Extend the range of ammeter and voltmeter using shunt and multiplier.
5	4	Measure single-phase power using Electrodynamic Wattmeter.
6	5	Measure active and reactive power of a three-phase balanced load using the single three-phase wattmeter method.
7	6	Measure active power of a three-phase balanced load using the two-wattmeter method.
8	7	Calibrate a single-phase electronic energy meter by direct loading.
9	8	Measure low resistance using Kelvin's Double Bridge.
10	9	Measure medium resistance using the Voltmeter-Ammeter method.
11	10	Measure insulation resistance using a Megger.
12	11	Measure earth resistance using an Earth Tester.
13	12	Measure kW, kVAR and kVA of a power line using a Tri-vector Meter.
14	13	Study the resolution and sensitivity of digital measuring instruments.
15	14	Measure unknown frequency and phase angle using CRO by Lissajous figure.
16	—	Record Verification, Viva-Voce and Completion of Pending Experiments.

Faculty Signature

HOD Signature