



GUJARAT TECHNOLOGICAL UNIVERSITY
Syllabus for Bachelor of Vocation (B.Voc), 6th Semester
Branch: Solar & Renewable Energy
Subject Name: Testing and Commissioning of Solar and Wind Power Plant
Subject Code: 1160705

Type of course: Core

Prerequisite: None

Rationale: The practical sessions develop hands-on skills in **testing, troubleshooting, and maintaining** essential components used in solar and wind power systems. Students will learn to ensure **safety, measure key parameters, and diagnose faults** in transformers, motors, and circuit breakers, preparing them for technical roles in the renewable energy sector.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
0	0	4	2	0	0	30	20	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Sr. No.	Practical / Hands on Exercise	Teaching Hrs.
1	Introduction to IE rules For Safety.	2
2	Measurement of earth Resistance	2
3	To study Phase Shifting in Transformer	2
4	Trouble Shooting of Induction Motor	2
5	To Determine The Dielectric Strength of Transformer Oil.	2
6	Trouble Shooting And Maintenance of Transformer	2
7	Trouble shooting of Synchronous machine	2
8	To Measure Insulation Resistance of Electrical Machines And Cables	2
9	Trouble Shooting And Maintenance of Circuit Breaker	2
10	Trouble Shooting And Maintenance of ACDB & DCDB	2
	Total	20



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Course Outcome:

Sr. No.	CO Statement	Marks %Weightage
CO-1	Apply safety standards during electrical equipment testing and maintenance.	15
CO-2	Measure earth resistance, insulation resistance, and transformer oil dielectric strength.	30
CO-3	Troubleshoot and maintain transformers, motors, and other electrical machines.	40
CO-4	Detect and diagnose faults in cables and circuit breakers using modern tools.	15

Major Equipment: Transformer Oil Testing Kit, Induction Motor Transformer and Synchronous motor test bench, Megger, Earth Resistance Tester, Cable fault locator, tools and accessories.

List of Open Source Software/learning website:

1. www.vlab.co.in
2. www.nptel.ac.in