



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc.), 5th Semester

Branch: Solar & Renewable Energy

Subject Name: Power Transmission and Distribution Lab

Subject Code: 1150706

Type of course: Core

Prerequisite: None

Rationale: The electricity is generated in bulk at remote places near to coal mines (thermal power plants, dams (hydro power) and transmitted to long distances and then distributed in cities and villages and to industry. The transmission and distribution of electric power is a complex issue which requires knowledge of different types of transmission lines and power equipment's. Technicians are required to operate and maintain the power transmission and distribution system so that electrical energy is continuously available to the consumers economically. It is therefore required that the technicians should be also able to work independently in the various area of transmission and distribution system. S/he should be able to operate various control equipment's independently in normal and abnormal conditions. Essential efforts are made in this course to develop above skills in the students. Teaching and Examination Scheme:

Teaching and Examination Scheme:

Teaching Scheme			Credits	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	DEMONSTRATION OF CONSTRUCTION OF CABLE.	2
2	DEMONSTRATION OF DIFFERENT TYPES OF INSULATORS USE IN TRANSMISSION AND DISTRUBUTION.	2
3	PREPARE A REPORT ON DIFFERENT TYPE OF TRANSMISSION TOWERS AND INSULATORS USED IN THE INDUSTRY.	2
4	PREPARE A REPORT AFTER STUDYING DISTRIBUTION SYSTEM OF A RESIDENTIAL COLONY.	2
5	INTERPRET AND EXPLAIN THE GIVEN BLUE PRINT OF A SUB-STATION.	2
6	PREPARE A REPORT ON SUBSTATION WITH ITS LAYOUT AFTER VISITING A NEARBY SUBSTATION	2
7	TO STUDY & PERFORM EARTHING SYSTEM.	2
8	TESTING OF INSULATION RESISTANCE OF CABLE.	2



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9	TESTING OF EARTHING RESISTANCE.	2
10	DEMONSTRATION OF HOW TO USE SAFETY EQUIPMENT.	2
	Total	20

Course Outcome:

Sr. No.	CO Statement	Marks %Weightage
CO-1	Understand Supply Systems.	25
CO-2	Explain mechanical design of transmission line	25
CO-3	Compare DC and AC distribution	15
CO-4	Acquire knowledge about substation equipment's & layout.	20
CO-5	Understand types of cable and its construction and methods of earthing.	15

Major Equipment:

1. Various Trainer kit.
2. Measuring instruments: Voltmeter, Ammeter, Multi-meter, Techo-meter, VFD-drive,
3. Earth tester.
4. Different type of insulators.
5. Cable Construction.

List of Open Source Software/learning website:

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