Program : **Diploma in Electrical and Electronics Engineering**	
Course Code : **4039**	Course Title : **Professional Practice Laboratory**
Semester : **3**	Credits : **No Credit**
Course Category : **Program Core**	
Periods per week:**3 (L: 0 T: 0 P:3)**	Periods per semester :**45**

Course Objectives:

- To practice how to write a visiting report of proper functioning of an electrical transmission and distribution system.
- To familiarize maintenance procedure and rectification of electrical installations in a real situation.
- To practice how to manage the energy conservation techniques in real applications.

Course Prerequisites:

Topic	Course code	Course name	Semester
Electrical workshop practices		Electrical Workshop Practice	3

Course Outcomes:

On completion of the course, the students will be able to:-

COn	Description	Duration (Hours)	Cognitive Level
CO1	Interpret the normal operation of the electric transmission and distribution systems.	12	Applying
CO2	Discover and maintain the functioning of the low voltage AC distribution system and repair faulty machines	9	Applying

CO3	Apply energy conservation techniques in electrical installations	9	Applying
CO4	Prepare, estimate and implement the electrical installation works.	9	Applying
	Lab Exam	6	

CO-PO Mapping

Corse Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3						
CO2	3			3			
CO3	3		3	3	3		
CO4			3	3			

3-Strongly mapped, 2-Moderately mapped, 1-Weakly mapped

Course Outline:

Module Outcome	Name of Experiment	Duration (Hours)	Cognitive Level
CO1	**Interpret the normal operation of the electric transmission and distribution systems.**		
M 1.01	Following are the suggested student-related co-curricular activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students can conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews: a. Prepare a report based on transmission line network in Kerala. b. Collect the information on components of transmission line. c. Evaluate transmission line performance parameters of a given line. d. Library/ Internet survey of electrical high voltage line and HVDC lines. e. Visit to 33/11 KV and 11KV/400V Distribution Substation and write a report	12	Applying

CO2	**Discover and maintain the functioning of the low voltage AC distribution system and repair faulty machines.**		
M 2.01	Collect information on: i. A.C Distribution System adjacent to your institute. ii. Draw a layout diagram of 11KV/400 V substation in your campus/ adjacent substation.	6	Applying
M 2.02	Solve the faults of motors used in residence/ institute and prepare a report.	3	
	Lab Exam 1	3	
CO3	**Apply energy conservation techniques in electrical installations.**		
M 3.01	Collect the electricity bill of the institute (or similar) and suggest suitable means for conservation and reduction of the energy bill.	6	Applying
M 3.02	Determine the reduction in power consumption in star mode operation of Induction motor compared to delta mode.	3	
CO4	**Prepare estimate and implement the electrical installation works.**		
M 4.01	Design residential installation scheme and estimate the material required and draw the details required for installation on A4 size sheet.	6	Applying
M 4.02	Practice wiring works in new installation and prepares a report on wiring materials used in particular site.	3	
	Lab Exam 2	3	

Text / Reference:

T/ R	Book Title/Author
T1	V.K. Mehta, Rohit Mehta, Principles of Power System, S. Chand and Co. New Delhi

R1	Rao, B V S Asia Club House, First Reprint, 2011, Operation and Maintenance of Electrical Equipment Vol-I, ISBN No 8185099022
R2	Gupta, J.B. S.K. Kataria and Sons Reprint Edition, A Course in Electrical Installation Estimating and Costing ISBN 10: 935014279113: 978-9350142790.

Student Activity

Suggested Open-ended Experiments:

Students can do open ended experiments as a group of 3-5. There is no duplication in experiments in between groups. This is mainly for the purpose of continuous internal evaluation and a score of 15 marks. Students should prepare a separate report on open ended experiment of their choice.

The student can do online courses listed below for improving their professional skill.

Example:

	Online courses / in house courses (Annual updating and deletion in the list)
Professional Practice	Spoken tutorial
	Courcera
	Swayam
	ASDC Programs