LESSON PLAN

Program Name	Electrical Engineering
Course Title	Energy Conservation and Audit
Course Code	EEPC305
Semester	5th
Course Teacher Name	Er.PankajSundle

Evaluation Scheme

Sr. No.	Subject Code	Subject	Study Scheme			Total Study Hours	Credits	Evaluation Scheme								Total Marks
								Internal Assessment			External Assessment					
			Th	Pr	DCS			Th	Pr	Total	Th	Hrs	Pr	Hrs	Total	
1	EEPC305	ECA	3	-	2	5	3	40	-	40	60	3	-	-	60	100

References Books/ Study Material

1. Guide Books No. 1 and 3 for National Certification Examination for Energy Managers and Energy Auditors,
Bureau of Energy Efficiency (BEE), Bureau of Energy Efficiency (A Statutory body under Ministry of Power,
Government of India) (Fourth Edition 2015).
2. O.P. Gupta, Energy Technology, Khanna Publishing House, New Delhi
3. Henderson, P. D., India - The Energy Sector, University Press, Delhi, 2016.
4. Turner, W. C., Energy Management Handbook, Fairmount Press, 2012,
5. Sharma, K. V., Venkataseshaiah; P., Energy Management and Conservation, I K International Publishing
House Pvt. Ltd

Course Outcomes (Cos)

CO-1	Interpret energy conservation policies in India.
CO-2	Implement energy conservation techniques in electrical machines.
CO-3	Apply energy conservation techniques in electrical installations.
CO-4	Use Co-generation and relevant tariff for reducing losses in facilities.
CO-5	Undertake energy audit for electrical system.

Teaching Plan

Unit No	No. of Lect. Planed	Topic to be covered	Proposed date (as per time table)	Actual Date	Remarks
	1.	**Energy conservation basics**	10/8/2026		
	2.	Energy scenario	11/8/2026		
	3.	Primary and Secondary energy	12/8/2026		
	4.	Energy demand and supply	14/8/2026		

1	5.	National scenario	17/8/2026		
	6.	Energy conservation	18/8/2026		
	7.	Energy audit	19/8/2026		
	8.	Energy conservation and audit concept and difference	21/8/2026		
	9.	Star labelling	22/8/2026		
	10.	Star labelling	24/8/2026		
	11.	Star labelling its need and benefits	25/8/2026		
	12.	**Energy conservation in electrical machines**	26/8/2026		
	13.	Need of energy conservation in induction motors	28/8/2026		
	14.	Energy conservation techniques in induction motors	29/8/2026		
	15.	Energy conservation techniques in induction motor by: Motor survey	31/8/2026		
2	16.	Matching motor to load	1/9/2026		
		Operating in star mode	2/9/2026		
	17.	Rewinding of motor	5/9/2026		
	18.	Replacement by energy efficient motor	7/9/2026		
	19.	Periodic maintenance	8/9/2026		
	20.	Energy efficient motor	9/9/2026		
	21.	Significant features and advantages	11/9/2026		
	22.	Applications and limitations	14/9/2026		
	23.	Need for energy conservation in transformer	15/9/2026		
	24.	Energy efficient transformer	16/9/2026		
	25.	Amorphous transformers	18/9/2026		
	26.	Epoxy resin cast transformer/Dry transformer	19/9/2026		
	27.	**Energy conservation in electrical installation system**	21/9/2026		
3	28.	Aggregated technical and commercial losses (atc)	22/9/2026		
	29.	Power system at state	23/9/2026		
	30.	Power system at regional	25/9/2026		

	31.	Power system at national	26/9/2026		
	32.	Power system at global level	28/9/2026		
	33.	Technical losses	29/9/2026		
	34.	Technical losses causes	30/9/2026		
	35.	Measure to reduce these technical losses(No expression only theory)	3/10/2026		
	36.	Controlling I2R losses	5/10/2026		
	37.	Optimizing distribution voltage	6/10/2026		
	38.	Balancing Phase currents	7/10/2026		
	39.	Energy conservation in lighting sources	9/10/2026		
	40.	Replacing lamp sources	12/10/2026		
4	41.	Using energy efficient luminaries	13/10/2026		
	42.	**Energy conservation through cogeneration and tariff**	14/10/2026		
	43.	Cogeneration and tariff	16/10/2026		
	44.	Significance for energy conservation cogeneration	17/10/2026		
	45.	Types of cogeneration on basis of sequence of energy use	19/10/2026		
	46.	Types of cogeneration basis of technology	21/10/2026		
	47.	Steam turbine cogeneration	23/10/2026		
5	48.	Gas turbine cogeneration	24/10/2026		
	49.	Factor governing the selection of cogeneration system	27/10/2026		
	50.	Advantage of cogeneration	28/10/2026		
	51.	Tariff types of tariff structure:	30/10/2026		
	52.	Special tariffs	31/10/2026		
	53.	Time-of-day tariff	16/11/2026		
	54.	Peak-of-day tariff and power factor tariff	17/11/2026		
	55.	Maximum demand tariff & Load factor tariff	18/11/2026		
	56.	Applications of tariff system to reduce energy bills	20/11/2026		
	57.	**Energy audit of electrical system**	21/11/2026		
	58.	Energy audit (Definition as per energy conservation act)	23/11/2026		
	59.	Energy audit instruments and their use	25/11/2026		
	60.	Questionnaire for energy audit projects	27/11/2026		
	61.	Energy flow diagram (Sankey	28/11/2026		

		diagram)			

Home Assignments

Ass. No	Contents of Syllabus Covered	Proposed date	Actual Date	Remarks
1	Unit-1&2	25-09-2025		
2	Unit-3& 4	29-10-2025		

Class /House Test

Name of Test	Syllabus Covered in Tests (Unit/Chapter Wise)	Proposed date	Actual Date	Remarks
Class Test-I	Unit-1&2	As per HPTSB Academic Calendar Schedule		
Class Test-II	Unit-3& 4			
House Test	80% of whole syllabus			

Recommend for approval Please.

Prepared by
Pankaj Sundle.

Checked by
HoD(E&E)

Approved by
Principal
ABVGIET Pragatinagar

Dairy No. 1567
Dated 01/08/2026