



Maharaja Agrasen Institute of Technology

(Approved by AICTE & Affiliated to GGSIP University, New Delhi)
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Department of Electrical & Electronics Engineering Electrical Energy Conservation (ETEE-416)

ACADEMIC PLAN FOR SEMESTER-VIII 2022-2023

LESSON PLAN

Paper Code: ETEE-416

L:3; T:0; C:3

	UNIT-I	L	CO
1	Energy policies of India and their development	1	CO1
2	Central and estate Policies on the consumption and wastage of energy,	2	
3	Need of renewable energy in India, Energy efficiency	2	
4	Energy accounting, monitoring and control	1	
5	Electricity audit and related instruments	1	
6	Energy consumption models, Specific Energy Consumption,	1	
7	ECO assessment and Evaluation methods	1	
8	Energy conservation schemes, Investment in energy saving equipments, subsidies and tax rebates	1	
9	Development of Energy Management System	2	
	UNIT-II		CO2
10	Electric loads of air conditioning and refrigeration	1	
11	Energy conservation	1	
12	Power consumption in compressors	2	
13	Energy conservation measures	1	
14	Electrolytic process, Electric heating, Furnace operation and scheduling	1	
15	Transformer loading ,efficiency analysis, Feeder loss evaluation	2	
16	Reactive Power, Power factor and its improvement	1	
17	Capacitor sizing, Capacitor losses, location,	1	

18	Capacitor placement and maintenance, Case studies.	2	
UNIT III			
19	Types and operating characteristics of electric motors	1	CO3
20	Energy efficient control and starting	1	
21	Load matching, Selection of motors	2	
22	Efficiency and load analysis, Energy efficiency, High efficiency motors	1	
23	Industrial drives, Control schemes	1	
24	Variable speed drives and Energy conservation schemes, Pumps and fans	1	
25	Efficient control strategies, Over-sizing Case studies.	2	
UNIT-IV			
26	Energy Conservation in Buildings Air conditioning, monitoring and control	2	CO4
27	Principle of Energy efficient building design water heading system	1	
28	Photovoltaic systems and Energy conservation in lighting schemes,	2	
29	Energy efficient light sources, Domestic, commercial and industrial lighting	2	
30	Lighting controls, Luminaries	2	
Total:		42	

Course Objectives

C.416.1	To impart knowledge on Electrical energy conservation, energy auditing
C.416.2	To Understand basics of power quality and transformer loading analysis
C.416.3	To understand types and operating characteristics of electric motors
C.416.4	To learn principle and design of illumination system