

**Lesson Plan  
(Energy  
Management)**

**Name of Faculty**

**Ms. Priyanka**

**Discipline**

**Electrical Engineering**

**Semester**

**6<sup>th</sup>**

**Subject**

**Energy Management**

**Lesson plan duration**

**15 weeks (from January 18 to April 18)**

**Work Load(Lecture/Practical) per week : Lectures-04, Practicals-nil**

Week	Theory		Practical	
	Lecture Day	Topic(including assignment/test)	Practical day	Topic
1 <sup>st</sup>	1 <sup>st</sup> (Unit-1)	<ul style="list-style-type: none"> <li>Learning outcomes of the subject</li> </ul>		
	2 <sup>st</sup>	<ul style="list-style-type: none"> <li>Introduction of energy management</li> </ul>		
	3 <sup>rd</sup>	<ul style="list-style-type: none"> <li>Need of the energy management</li> </ul>		
	4 <sup>th</sup>	<ul style="list-style-type: none"> <li>Environmental aspects</li> </ul>		
2 <sup>nd</sup>	5 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy conversation and its need</li> </ul>		
	6 <sup>th</sup>	<ul style="list-style-type: none"> <li>Oil and coal sources crisis, alternative sources of energy</li> </ul>		
	7 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy efficiency and its significance</li> </ul>		
	8 <sup>th</sup>	<ul style="list-style-type: none"> <li>Rewind of above topics/HSBTE Question paper discussion</li> </ul>		
3 <sup>rd</sup>	9 <sup>th</sup> (UNIT-2)	<ul style="list-style-type: none"> <li>Energy conservation in domestic sector-lighting</li> </ul>		
	10 <sup>th</sup>	<ul style="list-style-type: none"> <li>EC in other home appliances</li> </ul>		
	11 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy conservation in industry sector-lighting</li> </ul>		
	12 <sup>th</sup>	<ul style="list-style-type: none"> <li>....distribution and motor pump</li> </ul>		
4 <sup>th</sup>	13 <sup>th</sup>	<ul style="list-style-type: none"> <li>EC...in fans and blowers etc.</li> </ul>	4 <sup>th</sup>	
	14 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy conservation in agriculture sector-tube well pumps etc.</li> </ul>		
	15 <sup>th</sup>	<ul style="list-style-type: none"> <li>.....Diesel gen. sets etc.</li> </ul>		
	16 <sup>th</sup>	<ul style="list-style-type: none"> <li>Macro Level approach for energy conservation at design stage</li> </ul>		

5 <sup>th</sup>	17 <sup>th</sup>	<ul style="list-style-type: none"> <li>Above topic will continue</li> </ul>	5 <sup>th</sup>	
	18 <sup>th</sup>	<ul style="list-style-type: none"> <li>Rewind for above chapter due to leave etc.</li> </ul>		
	19 <sup>th</sup>	<ul style="list-style-type: none"> <li>Board questions paper and surprise tests will be held.</li> </ul>		
	20 <sup>th</sup>	<ul style="list-style-type: none"> <li>Surprise tests will continue.</li> </ul>		
6 <sup>th</sup>	21 <sup>th</sup>	<ul style="list-style-type: none"> <li>First assignment will be given and tentative 1<sup>st</sup> sessional test/evaluation of sessional marks etc.</li> </ul>		
	22 <sup>th</sup>	<ul style="list-style-type: none"> <li>Display and analysis of sessional marks</li> </ul>		
	23 <sup>th</sup> (unit-3)	<ul style="list-style-type: none"> <li>Introduction of energy efficient devices.</li> </ul>		
	24 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy efficient technology an overview - merits, demerits, construction of LCD, LED, CFL etc.</li> </ul>		
7 <sup>th</sup>	25 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy efficient technology an overview - merits, demerits, construction of LCD, LED, CFL etc.</li> </ul>		
	26 <sup>th</sup>	<ul style="list-style-type: none"> <li>Need for energy efficient devices</li> </ul>		
	27 <sup>th</sup>	<ul style="list-style-type: none"> <li>Initial cost versus life cycle, cost analysis on life cycle basis</li> </ul>		
	28 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy efficient motors as compared to standard motors</li> </ul>		
8 <sup>th</sup>	29 <sup>th</sup>	<ul style="list-style-type: none"> <li>Revision of above topics, surprise test.</li> </ul>		
	30 <sup>th</sup>	<ul style="list-style-type: none"> <li>BIS standards for energy efficient motors, BIS salient design features,</li> </ul>		
	31 <sup>th</sup>	<ul style="list-style-type: none"> <li>Efficiency as a function of load, safety margins</li> </ul>		
	32 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy efficient lighting system different sources, lumens/watt, LEDs, role of voltage on efficiency</li> </ul>		
9 <sup>th</sup>	33 <sup>th</sup>	<ul style="list-style-type: none"> <li>Distribution system- Optimum cable size, amorphous core transformer, role of power factor, use of compensating capacitors-manual and automatic, location of capacitors</li> </ul>		
	34 <sup>th</sup>	<ul style="list-style-type: none"> <li>Calculation of size of capacitor, shunt capacitors, series capacitors</li> </ul>		
	35 <sup>th</sup>	<ul style="list-style-type: none"> <li>Construction and design characteristics of energy efficient motors. Losses in energy efficient motors.</li> </ul>		
	36 <sup>th</sup>	<ul style="list-style-type: none"> <li>Revision of above topics ,second assignment will be given and tentative 2<sup>nd</sup> sessional test/evaluation of sessional marks etc</li> </ul>		
10 <sup>th</sup>	37 <sup>th</sup>	<ul style="list-style-type: none"> <li>display and analysis of sessional marks.</li> </ul>		

	38 <sup>th</sup> (unit-4)	<ul style="list-style-type: none"> <li>introduction of energy energy audit</li> </ul>		
	39 <sup>th</sup>	<ul style="list-style-type: none"> <li>Energy audit methodology</li> </ul>		
	40 <sup>th</sup>	<ul style="list-style-type: none"> <li>Efficiency of energy conversion processes, monitoring system</li> </ul>		
11 <sup>th</sup>	41 <sup>th</sup>	<ul style="list-style-type: none"> <li>Specific energy consumption –three pronged approach, fine tuning</li> </ul>		
	42 <sup>th</sup>	<ul style="list-style-type: none"> <li>technical up gradation, avoidable losses</li> </ul>		
	43 <sup>th</sup>	<ul style="list-style-type: none"> <li>case study of energy audit of distribution system</li> </ul>		
	44 <sup>th</sup>	<ul style="list-style-type: none"> <li>case study of Industries etc.</li> </ul>		
12 <sup>th</sup>	45 <sup>th</sup>	<ul style="list-style-type: none"> <li>Any left out topic due to leave etc.</li> </ul>		
	46 <sup>th</sup>	<ul style="list-style-type: none"> <li>Same as above</li> </ul>		
	47 <sup>th</sup>	<ul style="list-style-type: none"> <li>Case study of ac motors, audit activites.</li> </ul>		
	48 <sup>th</sup>	<ul style="list-style-type: none"> <li>To help students how to fill up various audit performa etc.</li> </ul>		
13 <sup>th</sup>	49 <sup>th</sup> (unit-5)	<ul style="list-style-type: none"> <li>Introduction of EIA</li> </ul>		
	50 <sup>th</sup>	<ul style="list-style-type: none"> <li>Definition of EIA, Need of EIA.Format of assessment and its completion etc.</li> </ul>		
	51 <sup>th</sup>	<ul style="list-style-type: none"> <li>3<sup>rd</sup> assignment will be given.</li> </ul>		
	52 <sup>th</sup>	<ul style="list-style-type: none"> <li>Previous state boards question will be carried out, any other left out topic</li> </ul>		
14 <sup>th</sup>	53 <sup>th</sup>	<ul style="list-style-type: none"> <li>3<sup>rd</sup> sessional test</li> </ul>		
	54 <sup>th</sup>	<ul style="list-style-type: none"> <li>Evaluation of 3<sup>rd</sup> test</li> </ul>		
	55 <sup>th</sup>	<ul style="list-style-type: none"> <li>Display/analysis of 3<sup>rd</sup> sessional test</li> </ul>		
	56 <sup>th</sup>	<ul style="list-style-type: none"> <li>Remedial will be taken if any shortcomings found</li> </ul>		
15 <sup>th</sup>	57 <sup>th</sup>	<ul style="list-style-type: none"> <li>Seminal/group discussion as per evaluation scheme</li> </ul>		
	58 <sup>th</sup>	<ul style="list-style-type: none"> <li>-do-</li> </ul>		
	59 <sup>th</sup>	<ul style="list-style-type: none"> <li>-do-</li> </ul>		
	60 <sup>th</sup>	<ul style="list-style-type: none"> <li>-do-</li> </ul>		

16<sup>th</sup>

- Preparation of sessionals, practical award etc.