

# LESSON PLAN

Receipt No. 2074/18/1  
Dated 17-7-18  
17/11  
Sh. Byomkesh  
J.C.  
17/11/18

NAME OF FACULTY	SAVINDER MALIK
DISCIPLINE	ELECTRICAL ENGINEERING
SEMESTER	4TH
SUBJECT	ENERGY SOURCES AND MANAGEMENT OF ELECTRICAL ENERGY
LESSON PLAN DURATION	15 WEEKS (FROM JANUARY 2018 - APRIL 2018)

## THEORY

WEEK	LECTURE DAY	TOPIC	WEEK	LECTURE DAY	TOPIC
1st	1	Introduction: Various energy sources	6th	1	Geo-thermal and Tidal Energy: Geo-thermal sources
	2	Importance of non conventional sources of energy		2	Ocean thermal electric conversion
	3	Present scenario		3	Open cycles
	4	Future prospects and economic criteria		4	Closed cycles
	5	Problems		5	Hybrid cycles
2nd	1	Solar Energy: Principle of conversion of solar radiation into heat	7th	1	Prime movers for geo-thermal energy conversion
	2	Photo-voltaic cell		2	Steam Generation and electricity generation.
	3	Electricity generation		3	Problems
	4	Application of solar energy like solar water heaters		4	Problems
	5	Solar furnaces		5	Magneto hydro dynamic power generation
3rd	1	Solar cookers,	8th	1	MHD
	2	Solar lighting,		2	Problems
	3	Solar pumping.		3	Chemical Energy Sources: Design and operating principles of a fuel cell
	4	Problems		4	Conversion efficiency
	5	Bio-mass conversion technologies- wet process		5	Work output of fuel cell
4th	1	Dry processes.	9th	1	E.M.F of fuel cells
	2	Methods for obtaining energy from biomass.		2	Applications of fuel cell
	3	Power generation by using gasifiers		3	Energy Conservation and Management
	4	Problems		4	a) Need for energy conservation with brief description of oil and coal crisis.
	5	Wind Energy: Wind energy conversion		5	b) Environmental aspects
5th	1	Windmills	10th	1	c) Energy efficiency- its significance
	2	Electricity generation from wind- mill		2	d) Energy efficient technology an overview
	3	Types of wind mills		3	e) Energy conservation in Domestic sector- Lighting, home appliances
	4	Local control, energy storage		4	f) Need for energy efficient devices
	5	Problems		5	g) Energy conservation in Industrial sector- Motors

11th	1	Industrial Lighting	14th	1	Principle of conversion of solar radiation into heat, photo-voltaic cell
	2	Distribution system		2	Electricity generation
	3	Pumps, Fans, Blowers etc.,		3	Application of solar energy
	4	h) Energy conservation in Agriculture sector		4	Ocean thermal electric conversion
	5	Tube-well pumps		5	Open, closed & hybrid cycles
12th	1	diesel-generating sets	15th	1	Prime movers for geo-thermal energy conversion
	2	Standby energy sources..		2	Steam Generation and electricity generation.
	3	i) Macro Level approach for energy conservation at design stage		3	Chemical Energy Sources: Design and operating principles of a fuel cell & Conversion efficiency
	4	Problem Solving day		4	Applications of fuel cell
	5	Problem Solving day		5	Work output of fuel cell & E.M.F of fuel cells
13th	1	Bio-mass conversion technologies- wet process	<i>Manish</i> <i>16 Jan. 18</i>		
	2	Dry processes.			
	3	Methods for obtaining energy from biomass.			
	4	Power generation by using gasifiers			
	5	MHD			