

Buddha Institute of Technology

Gorakhpur

(RENEWABLE ENERGY RESOURCES)

KOE-074

(LESSON PLAN)

Class: ME VII-B

Lecture #	Module#	Topics	RBT Levels	Course Outcome Mapping	Planned Date	Actual Date	Reference	Faculty Sign	Remarks
1	1	Introduction	L2	CO1	08/08/22				
2		Conventional energy resources			09/08/22				
3		Various Non-conventional energy resources			10/08/22				
4		Availability			11/08/22				
		Tutorial			16/08/22				
5		Classification			17/08/22				
6		Relative merits and demerits			18/08/22				
7		Solar Cells: Theory of solar cells.			22/08/22				
8		Solar cell materials			23/08/22				
	Tutorial	24/08/22							
9	2	Solar cell array	L2	CO2	25/08/22				
10		Solar cell power plant			26/08/22				
11		Solar cell power plant limitation			29/08/22				
12		Solar Thermal Energy			30/08/22				
		Tutorial			01/09/22				
13		Solar radiation			02/09/22				
14		Flat plate collectors and their materials			05/09/22				
15		Performance			06/09/22				
16		Focussing of collectors and their materials			07/09/22				
		Tutorial			08/09/22				
17		Focussing of collectors application & performance			09/09/22				
18		Solar thermal power plants			12/09/22				
19	Thermal energy storage	13/09/22							
20	Solar heating and cooling, limitations	14/09/22							
	Tutorial	15/09/22							

21	3	Resources of geothermal energy	L2	CO3	16/09/22				
22		Resources of geothermal energy			22/09/22				
23		Thermodynamics of geo-thermal energy			23/09/22				
24		Electrical conversion			26/09/22				
		Tutorial			27/09/22				
25		Non-electrical conversion			28/09/22				
26		Environmental considerations			29/09/22				
27		Principle of working of MHD Power plant			30/09/22				
28		Performance and limitations MHD Power plant			03/10/22				
		Tutorial			06/10/22				
29		Principle of working of various types of fuel cells			07/10/22				
30		Principle of working of various types of fuel cells			10/10/22				
31		Performance and limitations of Fuel cells			11/10/22				
32		Performance and limitations of Fuel cells			12/10/22				
		Tutorial			13/10/22				
33	4	Thermo-electrical Conversion	L2	CO4	14/10/22				
34		Principle of working			17/10/22				
35		Performance and limitations			18/10/22				
36		Wind power			19/10/22				
		Tutorial			20/10/22				
37		Wind power Sources			21/10/22				
38		Wind power site selection			31/10/22				
39		Wind power criterion			01/11/22				
40		Momentum theory			02/11/22				
		Tutorial			03/11/22				
41		Classification of rotors			04/11/22				
42		Concentrations and augments			07/11/22				
43		Wind characteristics			08/11/22				
44		limitations of energy conversion systems			09/11/22				
		Tutorial			10/11/22				
45	5	Bio-mass, Availability of bio-mass	L2	CO5	14/11/22				
46		Bio mass conversion theory			15/11/22				
47		Ocean Thermal Energy Conversion (OTEC)			16/11/22				
48		(OTEC) working principle non-electrical conversion			17/11/22				
		Tutorial			18/11/22				
49	Tidal Wave: Principle of Working	21/11/22							

50	Tidal Wave: performance and limitations	22/11/22				
51	Waste Recycling Plants	23/11/22				
52	Waste Recycling Plants	24/11/22				
	Tutorial	25/11/22				

***L1 - Remembering; L2 - Understanding; L3 - Applying; L4 - Analysing; L5 - Evaluating; L6 - Creating**

Literature:

Text Books:

T. D.S. Chauhan, "Non-conventional Energy Resources" New Age International.

Reference Book: S. Hasan Saeed , "Non-conventional Energy Resources" Publisher: Kataria, S. K., & Sons"

Sample Questions:

Question No.	Questions
1	Explain the term energy classified various energy sources.
2	What do you understand by primary and secondary resources.
3	Name at least three green houses gases responsible for global warming.
4	Differentiate between renewable and non renewable sources.
5	Explain solar cell and different type of solar cell.
6	What is photovoltaic effect? How solar energy converted to electric energy by this method.
7	Explain the solar thermal energy.
8	What is concentrating type and Non concentrating type collector.
9	What is beam and diffuse solar radiation.
10	What do you understand by Flat plate collector?

11	Explain the resources of the geothermal energy.
12	Explain the principle of working of the MHD power plant.
13	Explain the focussing of collector.
14	Explain the solar thermal power plants.
15	What is solar photovoltaic system?
16	What are advantage and disadvantage of wind energy system.
17	Explain the modes of wind power generation.
18	What are the semiconductor materials used for solar cells? Explain
19	Explain the geo thermal resources. How the electric power can be developed from geothermal resources.
20	What is the principle of wave energy plant?
21	What are the types of fuel cells? Explain
22	Define Bio-mass and its conversion theory.
23	Explain in detail Ocean Thermal Energy Conversion and its working principle.
24	Explain the theory and working principle of the wave & tidal wave.
25	Define waste Recycling plants.