

Buddha Institute of Technology

Gorakhpur

(RENEWABLE ENERGY RESOURCES)

KOE-074

(LESSON PLAN)

Class: ME VII-A

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			10/08/22				
3		Various Non-conventional energy resources			11/08/22				
4		Availability			13/08/22				
		Tutorial			17/08/22				
5		Classification			18/08/22				
6		Relative merits and demerits			20/08/22				
7		Solar Cells: Theory of solar cells.			22/08/22				
8		Solar cell materials			24/08/22				
	Tutorial	25/08/22							
9	2	Solar cell array	L2	CO2	26/08/22				
10		Solar cell power plant			27/08/22				
11		Solar cell power plant limitation			29/08/22				
12		Solar Thermal Energy			31/08/22				
		Tutorial			01/09/22				
13		Solar radiation			02/09/22				
14		Flat plate collectors and their materials			03/09/22				
15		Performance			05/09/22				
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			10/09/22				
19		Thermal energy storage			12/09/22				
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			17/09/22				
23		Thermodynamics of geo-thermal energy			22/09/22				
24		Electrical conversion			23/09/22				
		Tutorial			24/09/22				
25		Non-electrical conversion			26/09/22				
26		Environmental considerations			28/09/22				
27		Principle of working of MHD Power plant			29/09/22				
28		Performance and limitations MHD Power plant			30/09/22				
		Tutorial			01/10/22				
29		Principle of working of various types of fuel cells			03/10/22				
30		Principle of working of various types of fuel cells			06/10/22				
31		Performance and limitations of Fuel cells			07/10/22				
32		Performance and limitations of Fuel cells			08/10/22				
	Tutorial	10/10/22							
33	4	Thermo-electrical Conversion	L2	CO4	12/10/22				
34		Principle of working			13/10/22				
35		Performance and limitations			14/10/22				
36		Wind power			15/10/22				
		Tutorial			17/10/22				
37		Wind power Sources			18/10/22				
38		Wind power site selection			19/10/22				
39		Wind power criterion			20/10/22				
40		Momentum theory			21/10/22				
		Tutorial			31/10/22				
41		Classification of rotors			02/11/22				
42		Concentrations and augments			03/11/22				
43		Wind characteristics			04/11/22				
44		limitations of energy conversion systems			07/11/22				
	Tutorial	09/11/22							
45	5	Bio-mass, Availability of bio-mass	L2	CO5	10/11/22				
46		Bio mass conversion theory			14/11/22				
47		Ocean Thermal Energy Conversion (OTEC)			16/11/22				
48		(OTEC) working principle non-electrical conversion			17/11/22				
		Tutorial			16/11/22				
49	Tidal Wave: Principle of Working	17/11/22							

50	Tidal Wave: performance and limitations	18/11/22				
51	Waste Recycling Plants	19/11/22				
52	Waste Recycling Plants	21/11/22				
	Tutorial	23/11/22				
53	Revision	24/11/22				
54	Revision	25/11/22				
55	Revision	26/11/22				

***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.