

## Department of Electrical and Electronics Engineering

### Lesson Plan & Work-done Diary for AY:2023-24, EVEN Semester

Course with Code: RENEWABLE ENERGY SOURCES_BETCK205E				Faculty: Maria Sushma S		Semester & Section: II sem	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
<b>MODULE-1</b>							
1.		<b>Introduction:</b> Principles of renewable energy	ICT				
2.		sustainable development of renewable energy	ICT				
3.		Fundamentals and social implications of renewable energy	ICT				
4.		Worldwide renewable energy availability and also in India,	ICT				
5.		Brief descriptions on solar energy, wind energy, tidal energy	ICT				
6.		Brief descriptions on wave energy, ocean thermal energy, biomass energy, geothermal energy	ICT				
7.		Introduction to the Internet of energy (IOE)	Chalk and Talk				
8.		Summary of Module-1 and Quiz on Module-1	ICT				

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MODULE 2							
9.		<b>Solar Energy:</b> Fundamentals; Solar Radiation	ICT				
10.		Estimation of solar radiation on horizontal and inclined surfaces	ICT				
11.		Solar radiation Measurements- Pyrhemometers, Pyrometer, Sunshine Recorder	ICT				
12.		Solar Thermal systems: Flat plate collector,	ICT				
13.		Solar distillation; Solar Pond electric power plant.	ICT				
14.		<b>Solar electric power generation-</b> Principle of Solar cell, Photovoltaic system for electric power generation	ICT				
15.		Advantages, Disadvantages and Applications of Solar Power System	Chalk and Talk				
16.		Summary of Module-2 and Quiz on Module-2	ICT				

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MODULE 3							
17.		<b>Wind Energy:</b> Properties of wind, availability of wind energy in India	Chalk and Talk				
18.		Wind velocity and power from wind; major problems associated with wind power	ICT				
19.		Basic components of wind energy conversion system (WECS)	ICT				
20.		Classification of WECS	ICT				
21.		<b>Biomass Energy:</b> Introduction; Photosynthesis Process; Biofuels	Chalk and Talk				
22.		Biomass conversion technologies-Fixed Dome	ICT				
23.		Urban waste to energy conversion; Biomass gasification (Downdraft	ICT				
24.		Summary of Module-3 and Quiz on Module-3	ICT				

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MODULE 4							
25.		<b>Tidal Power:</b> Tides and waves as energy suppliers and their mechanics	Chalk and Talk				
26.		Fundamental characteristics of tidal power	ICT				
27.		Harnessing tidal energy, its merits and limitations	Chalk and Talk				
28.		<b>Ocean Thermal Energy Conversion:</b> Principle of working	ICT				
29.		OTEC power stations in the world	ICT				
30.		Problems associated with OTEC	Chalk and Talk				
31.		Problems associatedwith OTEC	Chalk and Talk				
32.		Summary of Module-4 and Quiz on Module-4	ICT				

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MODULE 5							
33.		<b>Green Energy:</b> Introduction, types of Fuel cells	ICT				
34.		Classification of fuel cells – H <sub>2</sub>	ICT				
35.		Operating principles, Zero energy Concepts	ICT				
36.		Benefits of hydrogen energy	Chalk and Talk				
37.		Hydrogen production technologies	ICT				
38.		Hydrogen energy storage and its applications of hydrogen energy	ICT				
39.		Problem associated with hydrogen energy	ICT				
40.		Summary of Module-5 and Quiz on Module-5	ICT				

	Activity	Planned	Actual	Remarks
1	Theory Classes	40		
2	Assignments/Quizzes/ Self study	Assignment-2, Quiz-5		
3	Tutorials/ Extra classes			
4	Internal Assessments	3		
5	ICT based Teaching (% of usage in Curriculum)	80%		
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	

