



**Department of Electrical and Electronics Engineering**

**Lesson Plan & Work-done Diary for AY:2024-25, EVEN Semester**

Course with Code: RENEWABLE ENERGY SOURCES _ BEE654B				Faculty: Mr. Raghavendra L			Semester & Section: VI	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
<b>MODULE-1</b>								
1	10.02.25	<b>Introduction:</b> Causes of Energy Scarcity, Solution to Energy Scarcity	PPT with Chalk and Talk ICT	1				
2	12.02.25	Factors Affecting Energy Resource Development, Energy Resources and Classification		2				
3	14.02.25	Renewable Energy – Worldwide Renewable Energy Availability, Renewable Energy in India.		3				
4	17.02.25	Energy from Sun: Sun- earth Geometric Relationship		4				
5	19.02.25	Layer of the Sun, Earth – Sun Angles and their Relationships		5				
6	21.02.25	Solar Energy Reaching the Earth’s Surface		6				
7	24.02.25	Solar Thermal Energy Applications		7				
8	28.02.25	Discussion on VTU QP /SRS Activity.		8				



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<b>MODULE-2</b>								
1	03.03.25	<b>Solar Thermal Energy Collectors:</b> Types of Solar Collectors, Configurations of Certain Practical Solar Thermal Collectors	PPT with Chalk and Talk ICT	1				
2	05.03.25	Material Aspects of Solar Collectors, Concentrating Collectors, Parabolic Dish – Stirling Engine System		2				
3	07.03.25	Working of Stirling or Brayton Heat Engine, Solar Collector Systems into Building Services		3				
4	10.03.25	Solar Water Heating Systems, Passive Solar Water Heating Systems, Applications of Solar Water Heating		4				
5	12.03.25	Active Solar Space Cooling, Solar Air Heating, Solar Dryers, Crop Drying, Space Cooling, Solar Cookers,		5				
6	14.03.25	<b>Solar Cells:</b> Components of Solar Cell System, Elements of Silicon Solar Cell, Solar Cell materials		6				
7	17.03.25	Practical Solar Cells, I – V Characteristics of Solar Cells, Efficiency of Solar Cells, Photovoltaic panels		7				
8	19.03.25	Discussion on VTU QP /SRS Activity.		8				



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<b>MODULE-3</b>								
1		<b>Hydrogen Energy:</b> Benefits of Hydrogen Energy, Hydrogen Production Technologies.	PPT with Chalk and Talk ICT	1				
2		Use of Hydrogen Energy, Advantages and Disadvantages.		2				
3		<b>Wind Energy:</b> Windmills, Wind Turbines, Wind Resources, Wind Turbine Site Selection.		3				
4		<b>Geothermal Systems,</b> Classifications, Geothermal Resource Utilization, Resource Exploration.		4				
5		Geothermal Based Electric Power Generation, Associated Problems, environmental Effects.		5				
6		Waste is Wealth, Key Issues, Waste Recovery Management Scheme		6				
7		Advantages and Disadvantages of Waste Recycling		7				
8		Sources and Types of Waste, Recycling of Plastics.		8				



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<b>MODULE-4</b>								
1		<b>Biomass</b> Production, Energy Plantation, Biomass Gasification, Theory of Gasification.	PPT with Chalk and Talk ICT	1				
2		Chemistry of Reaction Process in Gasification, Updraft, Downdraft and Cross-draft Gasifiers		2				
3		Applications of Biomass Gasifier, Cooling and Cleaning of Gasifiers		3				
4		<b>Biogas Energy:</b> Introduction, Biogas and its Composition, Anaerobic Digestion, Biogas Production		4				
5		Benefits of Biogas, Factors Affecting the Selection of a Particular Model of a Biogas Plant.		5				
6		Biogas Plant Feeds and their Characteristics.		6				
7		<b>Tidal Energy:</b> Introduction, Tidal Energy Resource, Tidal Energy Availability		7				
8		Tidal Power Basin, Turbines for Tidal Power, Advantages and Disadvantages		8				



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<b>MODULE-5</b>								
1		<b>Sea Wave Energy:</b> Introduction, Motion in the sea Waves, Power Associated with Sea Waves	PPT with Chalk and Talk	1				
2		Devices for Harnessing Wave Energy, Advantages and Disadvantages of Wave Power.		2				
3		<b>Ocean Thermal Energy:</b> Introduction, Principles of Ocean Thermal Energy Conversion (OTEC)		3				
4		Ocean Thermal Energy Conversion plants, Basic Rankine Cycle and its Working		4				
5		Closed Cycle, Open Cycle and Hybrid Cycle		5				
6		Carnot Cycle, Application of OTEC in Addition to Produce Electricity		6				
7		Advantages, Disadvantages and Benefits of OTEC.		7				
8		Discussion on VTU QP /SRS Activity.		8				



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Sl. No.	Activity	Planned	Actual	Remarks
1	Theory Classes	40		
2	Assignments/Quizzes/Self-study	3		
3	Tutorials/ Extra classes	-		
4	Internal Assessments	3		
5	ICT-based Teaching. (% of usage in Curriculum)	20		
<b>Planning</b>			<b>Execution</b>	
<b>Faculty Signature:</b>			<b>Faculty Signature:</b>	
<b>HoD Signature:</b>			<b>HoD Signature:</b>	