



UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

DISCIPLINE: Electronics & Telecommunication	SEMESTER: 6TH Sem	NAME OF THE TEACHING FACULTY: Er. YARJILA RAJNI		
SUBJECT: ENERGY SOURCES	No of Days/Per week class allotted: 4 Class P/W (60)	Semester From Date: 16/01/2024 To Date: 26/04/2024 No. Of Weeks: 15		
WEEK	CLASS DAY	THEORY TOPICS	REMARKS	
1 st	1 st	Energy Situation and Renewable Energy Sources: Renewable and Non-renewable Energy Sources		Dean/Principal
	2 nd	Energy and Environment		
	3 rd	Origin of Renewable Energy Sources		
	4 th	Potential of Renewable Energy Sources		
2 nd	1 st	Direct-use Technology		
	2 nd	Solar Radiation Through Atmosphere		
	3 rd	Terrestrial Solar Radiation		
	4 th	Measurement of Solar Radiation		
3 rd	1 st	Classification of Solar Radiation Instruments		
	2 nd	Flat Plate Collectors		
	3 rd	Optical Characteristics		

	4 th	Low-Temperature Applications of Solar Energy. : Swimming Pool Heating		
4 th	1 st	Solar water Heating Systems		
	2 nd	Solar water Heating Systems		
	3 rd	Natural Convection water Heating Systems		
	4 th	Solar Drying		
5 th	1 st	Solar Pond		
	2 nd	Passive Space Conditioning & Collectors: Principle Space conditioning		
	3 rd	Passive building concepts-Heating, Direct gain		
	4 th	Passive building concepts Indirect Gain		
6 th	1 st	Passive building concepts Passive Cooling,		
	2 nd	Passive building concepts- Shading, Paints, Collings		
	3 rd	Construction of Concentrator		
	4 th	Energy losses		
7 th	1 st	Solar Thermal Power Plants: Introduction		
	2 nd	Solar Collection System		
	3 rd	Thermal Storage for Solar Power Plants		
	4 th	Thermal Storage for Solar Power Plants		
	1 st	Capacity Factor and Solar Multiple		

8th	2 nd	CapacityFactorand Solar Multiple		
	3 rd	EnergyConversion		
	4 th	REVISSION		
9th	1 st	BandTheoryofSolids, PhysicalProcessesina Solar Cell		
	2 nd	SolarCell Characteristics		
	3 rd	Equivalent Circuit DiagramofSolarCells		
	4 th	Cell Types - Crystalline SiliconSolarCell,Solar CellsforConcentrating Photovoltaic Systems , Dye –sensitized Solar Cell (DSC)		
10th	1 st	Solar Module		
	2 nd	Further System Components -Solar inverters ,Mounting Systems,Storage Batteries ,Other SystemComponents		
	3 rd	Grid-independent Systems -System Configuration		
	4 th	Grid-connected Systems -Small Roof TopSystems,Medium- scale PV Generator ,CentralizedSystem		
11th	1 st	WindFlowandWind Direction 7.2 Wind Measurements		
	2 nd	Measurementof PressureHead		

	3 rd	HotwireAnemometer		
	4 th	CupAnemometer (Robinson's Anemometer)		
12th	1 st	Wind Direction Indicators		
	2 nd	Wind Energy Converters, Historical Development		
	3 rd	AerodynamicofRotor Blade -Wind Stream Profile		
	4 th	BuoyancyCoefficient and the Drag Coefficient		
13th	1 st	ComponentsofaWind Power Plant -Wind Turbine		
	2 nd	Tower-Electric Generators – Foundation		
	3 rd	PowerControl-Slow Rotors;		
	4 th	PoorControl Mechanism-Controlof Fast Rotors		
14th	1 st	REVISSION		
	2 nd	Energyeconomics: Presentworth, Life cyclecosting(LCC)		
	3 rd	AnnualLife cycle costing(ALCC)		
	4 th	Annual savings. calculationsforSolar thermal system		
15th	1 st	ASSIGNMENT		
	2 nd	SolarPV system		
	3 rd	Windsystem, Biomass system		
	4 th	DOUBT CLASS		

Jyotiprakash Swain

HOD

Chittaranjan Parida

DEAN

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PRINCIPAL