

LESSON PLAN FOR SESSION-WINTER-2025-26

FACULTY-JAGANNATH ORAM

SUB-ENVIRONMENTAL SCIENCE ,SUB CODE-TH 5(A)


SEMESTER-1ST SEM BRANCH-ELECTRICAL, COMP. ENG & IOT, IT,ETC, MECHATRONICS,MECHANICAL

WEEK	DURATION	LECTURE NO.	TOPIC TO BE COVERD
1	1 hr.	1	Ecosystem, Classification of Ecosystem
	1 hr.	2	Structure of ecosystem
	1 hr.	3	Biotic & Abiotic components
	1 hr.	4	Food chain and food web
2	1 hr.	5	Carbon cycle and its important
	1 hr.	6	Nitrogen cycle
	1 hr.	7	Sulphur Cycle
	1 hr.	8	Phosphorus cycle.
3	1 hr.	9	Global warming -Causes, effects, process, Green House Effect
	1 hr.	10	Ozone depletion-Causes, effects
	1 hr.	11	Definition of pollution and pollutant
	1 hr.	12	Natural and man made sources of air pollution
4	1 hr.	13	Air Pollutants: Types, Particulate Pollutants
	1 hr.	14	Effects and control: Bag filter
	1 hr.	15	Effects and control: Cyclone separator,
	1 hr.	16	Effects and control: Electrostatic Precipitator
5	1 hr.	17	Gaseous Pollution Control: Absorber
	1 hr.	18	Gaseous Pollution Control:Catalytic Converter
	1 hr.	19	Effects of air pollution due to Refrigerants, I.C., Boiler
	1 hr.	20	Noise pollution: sources of pollution,
6	1 hr.	21	measurement of pollution level
	1 hr.	22	Effects of Noise pollution,
	1 hr.	23	Noise pollution (Regulation and Control) Rules, 2000

	1 hr.	24	Sources of water pollution, Types of water pollutants
7	1 hr.	25	Types of water pollutants
	1 hr.	26	Characteristics of water pollutants Turbidity, pH
	1 hr.	27	Total suspended solids, total solids BOD and COD
	1 hr.	28	Waste Water Treatment: Primary methods: sedimentation, froth floatation
8	1 hr.	29	Secondary methods: Activated sludge treatment,
	1 hr.	30	Secondary methods: Trickling filter, Bioreactor
	1 hr.	31	Tertiary Method: Membrane separation technology, RO (reverse osmosis).
	1 hr.	32	Causes, Effects and Preventive measures of Soil Pollution
9	1 hr.	33	Causes-Excessive use of Fertilizers, Pesticides and Insecticides
	1 hr.	34	Irrigation, E-Waste.
	1 hr.	35	Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air).
	1 hr.	36	Flat plate collector (Liquid & Air).
10	1 hr.	37	Theory of flat plate collector.
	1 hr.	38	Importance of coating. Advanced collector.
	1 hr.	39	Solar pond. Solar water heater, solar dryer. Solar stills.
	1 hr.	40	Biomass: Overview of biomass as energy source.
11	1 hr.	41	Thermal characteristics of biomass as fuel.
	1 hr.	42	Anaerobic digestion. Biogas production mechanism
	1 hr.	43	Utilization and storage of biogas.
	1 hr.	44	Wind energy: Current status and future prospects of wind energy.
12	1 hr.	45	Wind energy in India. Environmental benefits and problem of wind energy.
	1 hr.	46	New Energy Sources: Need of new sources. Different types new energy sources
	1 hr.	47	Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion.)
	1 hr.	48	Applications of (Ocean energy resources, Tidal energy conversion.)
	1 hr.	49	Concept, origin and power plants of geothermal energy

13	1 hr.	50	Solid waste generation- Sources and characteristics of : Municipal solid waste,,
	1 hr.	51	Sources and characteristics of E- waste
	1 hr.	52	Sources and characteristics of bio- medical waste.
14	1 hr.	53	Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries
	1 hr.	54	Collection and disposal: MSW, 3R principles
	1 hr.	55	Energy recovery, sanitary landfill,
	1 hr.	56	Hazardous waste
15	1 hr.	57	Air quality act 2004, air pollution control act 1981 and water pollution and control act1996
	1 hr.	58	Structure and role of Central and state pollution control board.
	1 hr.	59	Concept of Carbon Credit, Carbon Footprint
	1 hr.	60	Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits.


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