LESSON PLAN	
GOVERNMENT POLYTECHNIC SAMBALPUR (RENGALI)	
Name of the Faculty: Supritika Sundi	Academic Year:2024-25
Course No.: Th-5	Course Name: Environmental Science
Programme : Diploma	Branch: Civil,Mech,Electrical,ETC,Agriculture
Year/Sem: 1st Year / 1st Semester	Section: A,B,C,D,E

Sl. No.	Period	Time (min)	Topic to be Covered	Teaching Method
1.	1.	60	Structure of ecosystem, Biotic & Abiotic components	Blackboard& chalk
2.	2.	60	Food chain and food web	Blackboard& chalk
3.	3.	60	Aquatic (Lentic and Lotic) and terrestrial ecosystem	Blackboard& chalk
4.	4.	60	Carbon, Nitrogen Cycle followed by Question-and-Answer Discussion	Blackboard& chalk
5.	5.	60	Sulphur, Phosphorus cycle followed by Question-and-Answer Discussion	Blackboard& chalk
6.	6.	60	Global warming -Causes, effects, process	Blackboard& chalk
7.	7.	60	Green House Effect, Ozone depletion	Blackboard& chalk
8.	8.	60	Definition of pollution and pollutant, Natural and man made sources of air pollution (Refrigerants, I.C., Boiler)	Blackboard& chalk
9.	9.	60	Air Pollutants: Types, Particulate Pollutants: Effects and control (Bag filter)	Blackboard& chalk
10	10.	60	Air Pollutants: Types, Particulate Pollutants: Effects and control (Cyclone separator, Electrostatic Precipitator)	Blackboard& chalk
11	11.	60	Gaseous Pollution Control: Absorber, Catalytic Converter	Blackboard& chalk
12	12.	60	Effects of air pollution due to Refrigerants, I.C., Boiler followed by Question and Answer Discussion	Blackboard& chalk
13	13.	60	Noise pollution: sources of pollution, measurement of pollution level followed by Question and Answer Discussion	Blackboard& chalk
14	14.	60	Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000	Blackboard& chalk
15	15.	60	Question-and-Answer Discussion	Blackboard& chalk
16	16.	60	Question-and-Answer Discussion	Blackboard& chalk
17	17.	60	Sources of water pollution, Types of water pollutants, Characteristics of water pollutants Turbidity, pH	Blackboard& chalk
18	18.	60	, total suspended solids, total solids BOD and COD: Definition, calculation	Blackboard& chalk

19	19.	60	Waste Water Treatment: Primary methods: sedimentation, froth floatation	Blackboard& chalk
20	20.	60	Secondary methods: Activated sludge treatment, Trickling filter Question and Answer Discussion	Blackboard& chalk
21	21.	60	Bioreactor, Tertiary Method: Membrane separation technology, RO (reverse osmosis) followed by Question and Answer Discussion	Blackboard& chalk
22	22.	60	Causes, Effects and Preventive measures of Soil Pollution: Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-Waste	Blackboard& chalk
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24	24.	60	Question-and-Answer Discussion	Blackboard& chalk
25	25.	60	Question-and-Answer Discussion	Blackboard& chalk
26	26.	60	Solar Energy: Basics of Solar energy. Flat plate collector (Liquid &Air).	Blackboard& chalk
27	27.	60	Theory of flat plate collector	Blackboard& chalk
28	28.	60	. Importance of coating. Advanced collector.	Blackboard& chalk
29	29.	60	Solar pond. Solar water heater, solar dryer. Solar stills followed by Question and Answer Discussion	Blackboard& chalk
30	30.	60	Biomass: Overview of biomass as energy source followed by Question and Answer Discussion	Blackboard& chalk
31	31.	60	Thermal characteristics of biomass as fuel. Anaerobic digestion. Biogas production mechanism. Utilization and storage of biogas.	Blackboard& chalk
32	32.	60	Wind energy: Current status and future prospects of wind energy.	Blackboard& chalk
33	33.	60	Wind energy in India. Environmental benefits and problem of wind energy.	Blackboard& chalk
34	34.	60	New Energy Sources: Need of new sources. Different types new energy sources followed by Question and Answer Discussion.	Blackboard& chalk
35	35.	60	Applications of (Hydrogen energy, Ocean energy resources, followed by Question and Answer Discussion.	Blackboard& chalk
36	36.	60	Tidal energy conversion.) Concept, origin and power plants of geothermal energy	Blackboard& chalk
37	37.	60	Question-and-Answer Discussion	Blackboard& chalk
38	38.	60	Question-and-Answer Discussion	Blackboard& chalk
39	39.	60	Solid waste generation- Sources and characteristics of : Municipal solid waste	Blackboard& chalk
40	40.	60	Solid waste generation- Sources and characteristics of E- waste, biomedical waste	Blackboard& chalk
41	41.	60	Question-and-Answer Discussion	Blackboard& chalk

42	42.	60	Question-and-Answer Discussion.	Blackboard& chalk
43	43.	60	Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries	Blackboard& chalk
44	44.	60	Question-and-Answer Discussion.	Blackboard& chalk
45	45	60	Question-and-Answer Discussion.	Blackboard& chalk
46	46	60	Collection and disposal: MSW (3R, principles, energy recovery,	Blackboard& chalk
47	47	60	Collection and disposal: MSW (, sanitary landfill), Hazardous waste)	Blackboard& chalk
48	48	60	Question-and-Answer Discussion.	Blackboard& chalk
49	49	60	Question-and-Answer Discussion.	Blackboard& chalk
50	50	60	Air quality act 2004, air pollution control act 1981	Blackboard& chalk
51	51	60	water pollution and control act1996.	Blackboard& chalk
52	52	60	Structure and role of Central Pollution Board	Blackboard& chalk
53	53	60	Structure and role of State Pollution Control Board	Blackboard& chalk
54	54	60	Concept of Carbon Credit	Blackboard& chalk
55	55	60	Concept of Carbon Footprint	Blackboard& chalk
56	56	60	Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits	Blackboard& chalk
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58	58	60	Question-and-Answer Discussion.	Blackboard& chalk
59	59	60	Question-and-Answer Discussion.	Blackboard& chalk
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Supritika Sundi

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for **HOD**
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