

LESSON PLAN

SUBJECT: ENVIRONMENTAL SCIENCE (TH 5(A)) 1ST SEMESTER

Prepared by :- Dr. Shabna Patel

Mr. Irtaz Alam

Sl. No.	PERIOD S	TOPIC	CHAPTER	SUB CHAPTER
1	PERIOD-1	UNIT-1 (ECOSYSTEM)	ECOSYSTEM	Introduction, Structure of ecosystem,
2	PERIOD-2	UNIT-1	ECOSYSTEM	Biotic & Abiotic components
3	PERIOD-3	UNIT-1	ECOSYSTEM	Food chain and food web
4	PERIOD-4	UNIT-1	ECOSYSTEM	Aquatic (Lentic and Lotic)
5	PERIOD-5	UNIT-1	ECOSYSTEM	Terrestrial ecosystem
6	PERIOD-6	UNIT-1	ECOSYSTEM	Carbon cycle, Nitrogen cycle
7	PERIOD-7	UNIT-1	ECOSYSTEM	Sulphur, Phosphorus cycle
8	PERIOD-8	UNIT-1	ECOSYSTEM	Global warming -Causes, effects, process, Green House Effect, Ozone depletion
9	PERIOD-9	UNIT-2	Air and, Noise Pollution	Definition of pollution and pollutant, Natural and man made sources of air pollution (Refrigerants, I.C., Boiler)
10	PERIOD-10	UNIT-2	Air and, Noise Pollution	Air Pollutants: Types
11	PERIOD-11	UNIT-2	Air and, Noise Pollution	Particulate Pollutants: Effects and control (Bag filter)
12	PERIOD-12	UNIT-2	Air and, Noise Pollution	Cyclone separator, Electrostatic Precipitator
13	PERIOD-13	UNIT-2	Air and, Noise Pollution	Gaseous Pollution Control: Absorber, Catalytic Converter
14	PERIOD-14	UNIT-2	Air and, Noise Pollution	Effects of air pollution due to Refrigerants, I.C., Boiler
15	PERIOD-15	UNIT-2	Air and, Noise Pollution	Noise pollution: sources of pollution, measurement of pollution level
16	PERIOD-16	UNIT-2	Air and, Noise Pollution	Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000
17	PERIOD-17	UNIT-3 (Water and Soil Pollution)	Water and Soil Pollution	Sources of water pollution, Types of water pollutants
18	PERIOD-18	UNIT-3	Water and Soil Pollution	Types of water pollutants, Characteristics of water pollutants Turbidity, pH, total suspended solids, total solids

SPatel

Irtaz

19	PERIOD-19	UNIT-3	Water and Soil Pollution	Characteristics of water pollutants- BOD and COD: Definition, calculation
20	PERIOD-20	UNIT-3	Water and Soil Pollution	Waste Water Treatment: Primary methods: sedimentation, froth floatation,
21	PERIOD-21	UNIT-3	Water and Soil Pollution	Secondary methods: Activated sludge treatment, Trickling filter
22	PERIOD-22	UNIT-3	Water and Soil Pollution	Bioreactor, Tertiary Method: Membrane separation technology, RO (reverse osmosis).
23	PERIOD-23	UNIT-3	Water and Soil Pollution	Causes, Effects and Preventive measures of Soil Pollution
24	PERIOD-24	UNIT-3	Water and Soil Pollution	Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation,
25	PERIOD-25	UNIT-3	Water and Soil Pollution	E-Waste
26	PERIOD-26	UNIT-4 (Renewable sources of Energy)	Renewable sources of Energy	Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air)
27	PERIOD-27	UNIT-4	Renewable sources of Energy	Theory of flat plate collector. Importance of coating. Advanced collector
28	PERIOD-28	UNIT-4	Renewable sources of Energy	Solar pond, Solar water heater
29	PERIOD-29	UNIT-4	Renewable sources of Energy	Solar dryer, Solar stills.
30	PERIOD-30	UNIT-4	Renewable sources of Energy	Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel
31	PERIOD-31	UNIT-4	Renewable sources of Energy	Thermal characteristics of biomass as fuel Anaerobic digestion
32	PERIOD-32	UNIT-4	Renewable sources of Energy	Biogas production mechanism
33	PERIOD-33	UNIT-4	Renewable sources of Energy	Utilization and storage of biogas
34	PERIOD-34	UNIT-4	Renewable sources of Energy	Wind energy: Current status and future prospects of wind energy
35	PERIOD-35	UNIT-4	Renewable sources of Energy	Wind energy in India, Environmental benefits and problem of wind energy
36	PERIOD-36	UNIT-4	Renewable sources of Energy	New Energy Sources: Need of new sources. Different types new energy sources

Page

Intro

37	PERIOD-37	UNIT-4	Renewable sources of Energy	Applications of (Hydrogen energy, Ocean energy resources)
38	PERIOD-38	UNIT-4	Renewable sources of Energy	Applications of (Tidal energy conversion) Concept, origin and power plants of geothermal energy
39	PERIOD-39	UNIT-5	Solid Waste Management,	Solid waste generation- Sources and characteristics of : Municipal solid waste
40	PERIOD-40	UNIT-5	Solid Waste Management	E- waste
41	PERIOD-41	UNIT-5	Solid Waste Management	bio- medical waste
42	PERIOD-42	UNIT-5	Solid Waste Management	Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries.
43	PERIOD-43	UNIT-5	Solid Waste Management	Collection and disposal
44	PERIOD-44	UNIT-5	Solid Waste Management	MSW (3R, principles, energy recovery, sanitary landfill)
45	PERIOD-45	UNIT-5	Solid Waste Management	Hazardous waste
46	PERIOD-46	UNIT-5	ISO 14000 & Environmental Management	Air quality act 2004, air pollution control act 1981
47	PERIOD-47	UNIT-5	ISO 14000 & Environmental Management	Water pollution and control act 1996. Structure and role of Central and state pollution control board
48	PERIOD-48	UNIT-5	ISO 14000 & Environmental Management	Concept of Carbon Credit, Carbon Footprint
49	PERIOD-49	UNIT-5	ISO 14000 & Environmental Management	Environmental management in fabrication industry
50	PERIOD-50	UNIT-5	ISO 14000 & Environmental Management	ISO14000: Implementation in industries, Benefits
51	PERIOD-51	Revision Class	UNIT-1	Revision

CPD 2021

Index

52	PERIOD-52	Revision Class	UNIT-1	Class Test
53	PERIOD-53	Revision Class	UNIT-2	Revision
54	PERIOD-54	Revision Class	UNIT-2	Class Test
55	PERIOD-55	Revision Class	UNIT-3	Revision
56	PERIOD-56	Revision Class	UNIT-3	Class Test
57	PERIOD-57	Revision Class	UNIT-4	Revision
58	PERIOD-58	Revision Class	UNIT-4	Class Test
59	PERIOD-59	Revision Class	UNIT-5	Revision
60	PERIOD-60	Revision Class	UNIT-5	Class Test

S. Patel
Shabna Patel
Lecturer (Stage-II)
Dept. of Math & Sc
UGIE, Rourkela

Inta
Irtaz Alam
Lecturer in Chemistry
Dept. of Math & Sc.
UGIE, Rourkela