

Lesson Plan: Environmental Science (Th.2b) 1st Sem 2024-2025

Discipline: Environmental Science		Semester-1 Winter 2024	Faculty Rabinarayan Panda (GF)	
Sl. No	Subject: Environmental Science	No. Of classes per week in a section:4	Semester From date: 02.09.2024 To date: 24.12.2024 No of weeks: 15	
	Week/Month	Class Day	Topic	Periods
1	1st week /Sept 2024	1st	Chapter 1: Ecosystem (Structure Ecosystem,Biotic and Abiotic Component, Food Chain, Food Web	1
		2nd	Types of Ecosystem (Aquatic, Terrestrial Ecosystem)	1
		3rd	Carbon Cycle	1
		4th	Nitrogen Cycle	1
2	2nd Week /Sept 2024	1st	Sulfur Cycle, Phosphorus Cycle	1
		2nd	Global Warming (Cause, Effect, Process)	1
		3rd	Green House Effect, Ozone layer Depletion	1
		4th	Chapter-2: Air Pollution Definition of pollution and pollutant, Natural and man made sources of air pollution	1
3	3rd Week/ Sept 2024	1st	Types, Particulate Pollutants: Effects and control (Bag filter)	1
		2nd	Cyclone separator	1
		3rd	Electrostatic Precipitator	1
		4th	Gaseous Pollution Control: Absorber, Catalytic Converter,	1
4	4th Week/ Sept 2024	1st	Effects of air pollution due to Refrigerants, I.C and Boiler	1
		2nd	Noise pollution: sources of pollution, measurement of pollution level, Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000	1
		3rd	Chapter-3 (Water Pollution and Soil Pollution) Sources of water pollution, Types of water pollutants	1
		4th	Characteristics of water Pollutants Turbidity, pH, total suspended solids, total solids	1
5	1st week of oct/2024	1st	BOD and COD: Definition and calculation	1
		2nd	Waste Water Treatment: Primary methods: sedimentation, froth floatation,	1
		3rd	Secondary methods: Activated sludge treatment, Trickling filter	1

		4th	Bioreactor, Tertiary Method	1
6	2nd Week/Oct 2024		Holiday	
7	3rd Week/ Oct 2024	1st	Membrane separation technology, RO (reverse osmosis)	1
		2nd	Causes, Effects and Preventive measures of Soil Pollution: Causes-Excessive use of Fertilizers,	1
		3rd	Pesticides and Insecticides, Irrigation, E-Waste.	1
		4th	Chapter-4 (Renewable source of Energy) Solar Energy: Basics of Solar energy.	1
8	4th Week/ Oct 2024	1st	Flat plate collector (Liquid&Air)	1
		2nd	Theory of Flat Plate Collector, Importance Of Coating, Advanced Collector	1
		3rd	Solar pond, Solar water heater	1
		4th	solar dryer, Solar stills.	1
9	1st Week/Nov 2024	1st	Biomass: Overview of biomass as energy source.	1
		2nd	Thermal characteristics of biomass as fuel. Anaerobic digestion	1
		3rd	Biogas production mechanism. Utilization and storage of biogas.	1
		4th	Wind energy: Current status and future prospects of wind energy. Wind energy in India	1
10	2nd Week/ Nov 2024	1st	Environmental benefits and problem of wind energy.	1
		2nd	New Energy Sources: Need of new sources. Different types new energy sources.	1
		3rd	Applications of Hydrogen energy	1
		4th	Ocean energy resources, Tidal energy conversion	1
11	3rd Week / Nov 2024	1st	Concept, origin and power plants of geothermal energy	1
		2nd	Solid waste generation- Sources and characteristics of : Municipal solid waste	1
		3rd	E- waste, bio medical waste	1
		4th	Metallic wastes ,Non-Metallic wastes (lubricants, plastics, rubber) from industries.	1
12	4th week /Nov 2024	1st	Collection and disposal, 3R principles	1
		2nd	Energy recovery, sanitary landfill	1
		3rd	Hazardous waste, Air quality act 2004,	1
		4th	Air pollution control act 1981 and water pollution and control act 1996	1
13	1st week/Dec 2024	1st	Structure and role of Central and state pollution control board.	1
		2nd	Concept of Carbon Credit, Carbon Footprint.	1

		3rd	Environmental management in fabrication industry	1
		4th	ISO14000: Implementation in industries, Benefits	1
14	2nd week/Dec 2024	1st	Revision	1
		2nd	Revision	1
		3rd	Revision	1
		4th	Revision	1
15	3rd week/Dec 2024	1st	Revision	1
		2nd	Revision	1
		3rd	Revision	1
		4th	Revision	1