



**Bhubanananda Orissa School of Engineering,
Cuttack
Department of Humanities and Science**

LESSON PLAN
Academic Session: 2024-25 (winter)

Semester: 1st SEM

Branch: MECHANICAL Sec: G

Subject: ENVIRONMENTAL SCIENCE (Theory)

Prepared by: SANJEET KUMAR PARIDA

Discipline: MECHANICAL	Semester:1st		Name Of the Teaching Faculty: SANJEET KUMAR PARIDA (Faculty in Applied Chemistry and EVS)
Sec: G	No. Of Days /Per Week Class Alloted:4P (MON, TUE, WED AND SAT)		Semester From: Date:16/08/2024 to 10/12/2024
Subject:	Week	Class Days	Dates
			Theory Topics
	1.	19/08/2024	Introduction, Syllabus discussion and previous years related study discussion
	2.	20/08/2024	UNIT - I: Ecosystem Introduction, scope and application of Environmental Science, why we study EVS
	3.	21/08/2024	Introduction, definition of ecosystem and its classification
	4.	24/08/2024	Structure of Ecosystem (Biotic & Abiotic components)
	5.	27/08/2024	Function of Ecosystem (Food chain)
	6.	28/08/2024	Question discussion, Food web, (Lentic and Lotic) and terrestrial ecosystem
	7.	31/08/2024	Previous Class discussion, Intro and definition of different type of biogeochemical cycle (Carbon cycle)
	8.	02/09/2024	Previous Class discussion, Q & A and Nitrogen cycle
	9.	03/09/2024	Previous Class discussion, Q & A and Sulphur cycle
	10.	04/09/2024	Previous Class discussion, Q & A and Phosphorus cycle
	11.	10/09/2024	Previous Class discussion, Q & A
	12.	14/09/2024	Class Test-1 and Q & A discussion
	13.	17/09/2024	Introduction and definition of greenhouse gas effect and greenhouse gas and its impact
	14.	18/09/2024	Introduction and definition of global warming and it's causes
	15.	21/09/2024	Previous Class discussion, Q & A and effects of global warming
	16.	23/09/2024	Previous Class discussion, Q & A and Measure of control of global warming

	17.	24/09/2024	Unit Test-1
	18.	25/09/2024	Previous Class discussion, Q & A and Introduction of ozone depletion causes and its effect
	19.	27/09/2024	Previous Class discussion, Q & A and ozone depletion causes, effect and control
	20.	30/09/2024	All topics up to ending discussion, Q & A practices
	21.	01/10/2024	Unit Test-1
	22.	05/10/2024	Unit-2: Air and, Noise Pollution Definition of pollution and pollutant, Natural and man-made sources of air pollution (Refrigerants, I.C., Boiler)
	23.	07/10/2024	Previous Class discussion, Air Pollutants: Types, Particulate Pollutants: Effects and control (Bag filter, Cyclone separator, Electrostatic Precipitator)
	24.	14/10/2024	Gaseous Pollution Control: Absorber, Catalytic Converter, Effects of air pollution due to Refrigerants, I.C., Boiler
	25.	15/10/2024	Noise pollution: sources of pollution, measurement of pollution level
	26.	16/10/2024	Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000
	27.	19/10/2024	All topics up to ending discussion, Q & A practices
	28.	21/10/2024	Unit Test-2
	29.	22/10/2024	Unit-3: Water and Soil Pollution Sources of water pollution, Types of water pollutants, Characteristics of water pollutants Turbidity, pH,
	30.	23/10/2024	Previous Class discussion, Characteristics of water pollutants: total suspended solids, total solids BOD and COD: Definition, calculation
	31.	26/10/2024-30/10/2024	1 st Internal Assessment

	32.	02/11/2024	Previous Class discussion, Trickling filter, Bioreactor, Tertiary Method: Membrane separation technology, RO (reverse osmosis).
	33.	04/11/2024	Causes, Effects and Preventive measures of Soil Pollution: Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-Waste.
	34.	05/11/2024	Unit Test-3
	35.	06/11/2024	Unit-4: Renewable sources of Energy Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air). Theory of flat plate collector
	36.	09/11/2024	Importance of coating. Advanced collector. Solar pond. Solar water heater, solar dryer. Solar stills.
	37.	11/11/2024	Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion.
	38.	12/11/2024	Biogas production mechanism. Utilization and storage of biogas.
	39.	13/11/2024	Wind energy: Current status and future prospects of wind energy. Wind energy in India.
	40.	16/11/2024	Environmental benefits and problem of wind energy.
	41.	18/11/2024	New Energy Sources: Need of new sources. Different types new energy sources.
	42.	19/11/2024	Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion).
	43.	20/11/2024	Concept, origin and power plants of geothermal energy
	44.	23/11/2024	Unit Test-4
	45.	25/11/2024-30/11/2024	2nd Internal Assessment
	46.	02/12/2024	Unit-5: Solid Waste Management, ISO 14000 & Environmental Management Solid waste generation- Sources and characteristics of: Municipal solid waste, E- waste, bio- medical waste.

	47.	03/12/2024	Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries.
	48.	04/12/2024	Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous waste.
	49.	07/12/2024	Air quality act 2004, air pollution control act 1981 and water pollution and control act 1996. Structure and role of Central and state pollution control board.
	50.	09/12/2024	Concept of Carbon Credit, Carbon Footprint. Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits.
	51.	10/12/2024	Unit Test-5, All topics up to ending discussion, Q & A practices
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