



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

LESSON PLAN
Academic Session: 2024-25 (winter)

Semester: 1st SEM

Branch: ELECTRICAL Sec: C

Subject: ENVIRONMENTAL SCIENCE (Theory)

Prepared by: DR.RAKESH RANJAN MAHALIK

Discipline: ELECTRICAL	Semester:1st		Name Of the Teaching Faculty: DR.RAKESH RANJAN MAHALIK (Faculty in Chemistry)
Subject:	No. Of Days /Per Week Class Alloted:4P (MON, TUE, WED AND FRI)	Semester From: Date:16/08/2024 to 10/12/2024	
Week	Class Days	Dates	Theory Topics
	1.	16/08/2024	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.	23/08/2024	Structure of Ecosystem (Biotic & Abiotic components)
	5.	27/08/2024	Function of Ecosystem (Food chain)
	6.	28/08/2024	Previous class revision and test
	7.	30/09/2024	Question discussion, Food web, (Lentic and Lotic) and terrestrial ecosystem
	8.	02/09/2024	Previous Class discussion, Intro and definition of different type of biogeochemical cycle (Carbon cycle)
	9.	03/09/2024	Previous Class discussion, Q & A and Nitrogen cycle
	10.	04/09/2024	Previous Class discussion, Q & A and Sulphur cycle
	11.	06/09/2024	Previous Class discussion, Q & A and Phosphorus cycle
	12.	10/09/2024	Previous Class discussion, Q & A
	13.	11/09/2024	Class Test-1 and Q & A discussion
	14.	13/09/2024	Introduction and definition of greenhouse gas effect and greenhouse gas and its impact
	15.	17/09/2024	Introduction and definition of global warming and it's causes
	16.	18/09/2024	Previous Class discussion, Q & A and effects of global warming

	17.	20/09/2024	Previous Class discussion, Q & A and Measure of control of global warming
	18.	23/09/2024	Previous Class discussion, Q & A and Introduction of ozone depletion causes and its effect
	19.	24/09/2024	Previous Class discussion, Q & A and ozone depletion causes, effect and control
	20.	25/09/2024	All topics up to ending discussion, Q & A practices
	21.	27/09/2024	Unit Test-1
	22.	30/09/2024	Unit-2: Air and, Noise Pollution Definition of pollution and pollutant, Natural and man-made sources of air pollution (Refrigerants, I.C., Boiler)
	23.	01/10/2024	Previous Class discussion, Air Pollutants: Types, Particulate Pollutants: Effects and control (Bag filter, Cyclone separator, Electrostatic Precipitator)
	24.	04/10/2024	Gaseous Pollution Control: Absorber, Catalytic Converter, Effects of air pollution due to Refrigerants, I.C., Boiler
	25.	14/10/2024	Noise pollution: sources of pollution, measurement of pollution level
	26.	15/10/2024	Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000
	27.	18/10/2024	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.	25/10/2024	Waste Water Treatment: Primary methods: sedimentation, froth floatation, Secondary methods: Activated sludge treatment

	32.	28/10/2024	Previous Class discussion, Trickling filter, Bioreactor, Tertiary Method: Membrane separation technology, RO (reverse osmosis).
	33.	29/10/2024	Causes, Effects and Preventive measures of Soil Pollution: Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-Waste.
	34.	30/10/2024	All topics up to ending discussion, Q & A practices
	35.	01/11/2024	Unit Test-3
	36.	04/11/2024	Unit-4: Renewable sources of Energy Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air). Theory of flat plate collector
	37.	05/11/2024	Importance of coating. Advanced collector. Solar pond. Solar water heater, solar dryer. Solar stills.
	38.	06/11/2024	Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion.
	39.	08/11/2024	Biogas production mechanism. Utilization and storage of biogas.
	40.	11/11/2024	Wind energy: Current status and future prospects of wind energy. Wind energy in India.
	41.	12/11/2024	Environmental benefits and problem of wind energy.
	42.	13/11/2024	New Energy Sources: Need of new sources. Different types new energy sources.
	43.	18/11/2024	Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion).
	44.	19/11/2024	Concept, origin and power plants of geothermal energy
	45.	20/11/2024	All topics up to ending discussion, Q & A practices
	46.	22/11/2024	Unit Test-4
	47.	25/11/2024	Unit-5: Solid Waste Management, ISO 14000 & Environmental Management Solid waste generation- Sources and characteristics of: Municipal solid waste, E- waste, bio- medical waste.
	48.	26/11/2024	Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries.

	49.	27/11/2024	Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous waste.
	50.	29/11/2024	Air quality act 2004, air pollution control act 1981 and water pollution and control act 1996.
	51.	02/12/2024	Structure and role of Central and state pollution control board.
	52.	03/12/2024	Concept of Carbon Credit, Carbon Footprint. Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits.
	53.	04/12/2024	All topics up to ending discussion, Q & A practices
	54.	06/12/2024	Unit Test-5
	55.	09/12/2024	Structure and role of Central and state pollution control board.
	56.	10/12/2024	All topics up to ending discussion, Q & A practices
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