LESSON PLAN FOR ENVIRONMENTAL SCIENCE

Discipline : ALL	Semester: 1ST	Name of teaching faculty Amrita A. Nanda/ J. Behera / Dr. Subhakanta Dash
Subject: EVS	No's of days/ per week class allotted :4	Semester start from :09/09/2024 - 24/12/2024

WEEK	CLASS DAY	UNIT	TOPICS
1	1	1	Structure of ecosystem, Biotic & Abiotic components
	2		Food chain and food web
	3		Aquatic (Lentic and Lotic) ecosystem
	4		Terrestrial ecosystem
2	1		Carbon and Nitrogen cycle
	2		Phosphorus and Sulphur cycle.
	3		Global warming -Causes, effects, process
	4		Green House Effect
3	1		Ozone depletion
	2	2	Definition of pollution and pollutant, Natural and man made sources of air pollution (Refrigerants, I.C., Boiler)
	3		Air Pollutants: Types, Particulate Pollutants
	4		Effects and control (Bag filter)
4	1		Effects and control (Cyclone separator, Electrostatic Precipitator)
	2		Gaseous Pollution Control: Absorber, Catalytic Converter
	3		Effects of air pollution due to refrigerants and I.C., Boiler
	4		Noise pollution: sources of pollution
5	1		Measurement of pollution level, Effects of Noise pollution,
	2		Noise pollution (Regulation and Control) Rules, 2000
	3	3	Sources of water pollution, Types of water pollutants,
	4		Characteristics of water pollutants .Turbidity, pH, total suspended solids
6	1		Total solids BOD and COD: Definition, calculation
	2		Waste Water Treatment: Primary methods: sedimentation, froth floatation
	3		Secondary methods: Activated sludge treatment, Trickling filter, Bioreactor

	4		Tertiary Method: Membrane separation technology, RO (reverse osmosis)
7	1		Causes of Soil Pollution and Effects and Preventive measures of Soil Pollution
	2		Causes-Excessive use of Fertilizers, Pesticides and Insecticides
	3		Irrigation, E-Waste
	4	4	Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air
8	1		Theory of flat plate collector
	2		Importance of coating. Advanced collector. Solar pond. Solar water heater,
	3		Solar dryer and Solar stills.
	4		Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel.
9	1		Anaerobic digestion. Biogas production mechanism. Utilization and storage of biogas
	2		Wind energy: Current status and future prospects of wind energy. Wind energy in India.
	3		Environmental benefits and problem of wind energy. New Energy Sources: Need of new sources.
	4		Different types new energy sources. Applications of (Hydrogen energy, Ocean energy resources)
10	1		Energy sources and Applications of Tidal energy conversion
	2		Concept, origin and power plants of geothermal energy
	3		Solid waste generation- Sources and,
	4		Characteristics of : Municipal solid waste
11	1		E- waste, bio-medical waste
	2		Metallic wastes (lubricants, plastics, rubber) from industries
	3		Non-Metallic wastes (lubricants, plastics, rubber) from industries.
	4		Collection and disposal: MSW (3R, principles, energy recovery)
12	1	5	Collection and disposal (sanitary landfill), Hazardous waste.
	2		Air quality act 2004
	3		Air pollution control act 1981
	4		water pollution and control act1996
13	1		Concept of Carbon Credit
	2		Structure and role of Central and state pollution control board
	3		Carbon Footprint. Environmental management in fabrication industry
	4		ISO14000: Implementation in industries, Benefits
14	1		Revision
	2		Revision
	3		Revision
	4		Revision
15	1		Revision
	2		Revision
	3		Revision
	4		Revision

A. Nanda