LESSON PLAN OF ENVIRONMENTAL SCIENCE

DISCIPLINE : **All Branches**	SEMESTER : **2nd**	NAME OF THE TEACHING FACULTY : NAMITA BEHERA
SUBJECT : **ENVIRONMENT**	NO. OF DAYS/PER WEEK CLASS	SEMESTER FROM DATE :16/08/2024 TO DATE: 24/12/2024
WEEK :	**CLASS DAY :**	**THEORY TOPIC :**
1ST	1ST	Unit-1 Ecosystem
	2ND	Structure of ecosystem, Biotic & Abiotic components
	3RD	Food chain and food web
	4TH	Aquatic (Lentic and Lotic) and terrestrial ecosystem
2ND	1ST	Carbon and Nitrogen Cycle
	2nd	Sulphur and Phosphorus Cycle
	3rd	Global warming -Causes, effects, process
	4th	Green House Effect, Ozone depletion
3RD	1st	Unit– 2 Air and, Noise Pollution
	2nd	Definition of pollution and pollutant, Natural and man made sources of air pollution (Refrigerants, I.C., Boiler)
	3rd	Air Pollutants: Types, Particulate Pollutants
	4th	Effects and control- Bag filters, Cyclone separator
4TH	1st	Electrostatic Precipitator
	2nd	Gaseous Pollution Control: Absorber, Catalytic Converter
	3rd	Effects of air pollution due to Refrigerants, I.C. ,Boiler
	4th	Noise pollution: sources of pollution, measurement of pollution level
5TH	1ST	Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000
	2ND	Unit- 3 Water and Soil Pollution
	3RD	Sources of water pollution, Types of water pollutants,
	4TH	Characteristics of water pollutants Turbidity, pH, total suspended solids, total solids BOD and COD: Definition, calculation
6TH	1ST	Waste Water Treatment: Primary methods: sedimentation, froth floatation,
	2nd	Secondary methods: Activated sludge treatment, Trickling filter, Bioreactor

	3rd	Tertiary Method: Membrane separation technology, RO (reverse osmosis).
	4th	Causes, Effects and Preventive measures of Soil Pollution:
7TH	1st	Causes-Excessive use of Fertilizers
	2nd	Pesticides and Insecticides, Irrigation
	3rd	E-Waste.
	4th	Unit– 4 Renewable sources of Energy
8TH	1st	Solar Energy: Basics of Solar energy
	2nd	Flat plate collector (Liquid & Air)
	3rd	Theory of flat plate Collector
	4th	Theory of flat plate Collector
9TH	1ST	Importance of coating
	2ND	Advanced collector
	3RD	Solar pond
	4TH	Solar pond
10TH	1ST	Solar water heater
	2nd	Solar water heater
	3rd	solar dryer
	4th	Solar stills
11TH	1st	Biomass: Overview of biomass as energy source
	2nd	Thermal characteristics of biomass as fuel.
	3rd	Anaerobic digestion. Biogas production mechanism
	4th	Biogas production mechanism
12TH	1st	Utilization and storage of biogas.
	2nd	Wind energy: Current status and future prospects of wind energy
	3rd	Wind energy in India. Environmental benefits and problem of wind energy.
	4th	New Energy Sources: Need of new sources. Different types new energy sources

13TH	1ST	Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion.) Concept, origin and power plants of geothermal
	2ND	Unit-5 Solid Waste Management, ISO 14000 & Environmental Management
	3RD	Solid waste generation- Sources and characteristics
	4TH	Municipal solid waste, E- waste, bio- medical waste.
14TH	1ST	Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries
	2nd	Collection and disposal: MSW
	3rd	3R, principles, energy recovery, sanitary landfill
	4th	Hazardous waste, Air quality Act 2004,
15TH	1st	air pollution control act 1981 and water pollution and control act1996
	2nd	Structure and role of Central and state pollution control board
	3rd	Concept of Carbon Credit, Carbon Footprint
	4th	Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits

Namita Behera.

Signature of Faculty

Principal

Govt. polytechnic, Dhenkanal