



# GOVERNMENT POLYTECHNIC, BALASORE

Government of Odisha

ସରକାରୀ ବହୁବୃତ୍ତି ଅନୁଷ୍ଠାନ, ବାଲେଶ୍ଵର

## LESSON PLAN

No. of classes available per week-4

Class duration-1 Hour

1st Semester(2024-25)

Department: Math & Science	Semester:1 <sup>st</sup>	Name Of the Teaching Faculty: GAYATRI PARIDA(Lecturer in Chemistry)
Subject: Environment studies(EVS)	No. Of Days Per Week ClassAlloted:4P	Semester From: Date:16/08/2024
Week	Class Day	Theory Topics
1ST	1 <sup>ST</sup>	Introduction, Syllabus discussion and previous years relatedstudy discussion
	2 <sup>ND</sup>	UNIT – I: Ecosystem Introduction, scope and application of EnvironmentalScience, why we study EVS
	3 <sup>RD</sup>	Introduction, definition of ecosystem and its classification
	4 <sup>TH</sup>	Structure of Ecosystem (Biotic & Abiotic components)
2ND	1 <sup>ST</sup>	Function of Ecosystem (Food chain)
	2 <sup>ND</sup>	Previous class revision and test
	3 <sup>RD</sup>	Question discussion, Food web, (Lentic and Lotic) andterrestrial ecosystem
	4 <sup>TH</sup>	Previous Class discussion, Intro and definition of differenttype of biogeochemical cycle (Carbon cycle)
3RD	1ST	Previous Class discussion, Q & A and Nitrogen cycle
	2ND	Previous Class discussion, Q & A and Sulphur cycle
	3RD	Previous Class discussion, Q & A and Phosphorus cycle
	4TH	Previous Class discussion, Q & A
4TH	1ST	Class Test-1 and Q & A discussion
	2ND	Introduction and definition of greenhouse gas effect andgreenhouse gas and its impact
	3RD	Introduction and definition of global warming and it'scauses
	4TH	Previous Class discussion, Q & A and effects of globalwarming

5TH	1ST	Previous Class discussion, Q & A and Measure of control of global warming
	2ND	Previous Class discussion, Q & A and Introduction of ozone depletion causes and its effect
	3RD	Previous Class discussion, Q & A and ozone depletion causes, effect and control
	4TH	All topics up to ending discussion, Q & A practices
6TH	1ST	Unit Test-1
	2ND	<b>Unit-2: Air and, Noise Pollution</b> Definition of pollution and pollutant, Natural and man-made sources of air pollution (Refrigerants, I.C., Boiler)
	3RD	, Air Pollutants: Types, Particulate Pollutants: Effects and control (Bag filter,
	4TH	Previous Class discussion, Cyclone separator, Electrostatic Precipitator)
7TH	1ST	Gaseous Pollution Control: Absorber, Catalytic Converter, Effects of air pollution due to Refrigerants, I.C., Boiler
	2ND	Noise pollution: sources of pollution, measurement of pollution level
	3RD	Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000
	4TH	All topics up to ending discussion, Q & A practices
8TH	1ST	Unit Test-2
	2ND	<b>Unit-3: Water and Soil Pollution</b> Sources of water pollution, Types of water pollutants, Characteristics of water pollutants Turbidity, pH,
	3RD	Previous Class discussion, Characteristics of water pollutants: total suspended solids,
	4TH	total solids BOD and COD: Definition, calculation
9TH	1ST	Waste Water Treatment: Primary methods: sedimentation, froth floatation
	2ND	Secondary methods: Activated sludge treatment
	3RD	Previous Class discussion, Trickling filter, Bioreactor,
	4TH	Tertiary Method: Membrane separation technology, RO (reverse osmosis).
10TH	1ST	Causes, Effects and Preventive measures of Soil Pollution:
	2ND	Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-Waste.
	3RD	All topics up to ending discussion, Q & A practices
	4TH	Unit Test-3
11TH	1ST	<b>Unit-4: Renewable sources of Energy</b> Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air). Theory of flat plate collector
	2ND	Importance of coating. Advanced collector. Solar pond. Solar water heater, solar dryer. Solar stills.
	3RD	Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion.

12TH	1ST	Wind energy: Current status and future prospects of wind energy. Wind energy in India.
	2ND	Environmental benefits and problem of wind energy.
	3RD	New Energy Sources: Need of new sources. Different types new energy sources.
	4TH	Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion).
13TH	1ST	Concept, origin and power plants of geothermal energy
	2ND	All topics up to ending discussion, Q & A practices
	3RD	Unit test -4
	4TH	<b>Unit-5: Solid Waste Management, ISO 14000 &amp; Environmental Management</b>  Solid waste generation- Sources and characteristics of: 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 (3R, principles, energy recovery, sanitary landfill), Hazardous waste.
	3RD	Air quality act 2004, air pollution control act 1981 and water pollution and control act 1996.
	4TH	Structure and role of Central and state pollution control board.
15TH	1ST	Concept of Carbon Credit, Carbon Footprint. Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits.
	2ND	All topics up to ending discussion, Q & A practices
	3RD	Unit Test-5
	4TH	Probable questions discussion.

*Gayatri Parida*  
Signature of Faculty