



BHUBANANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK

DEPARTMENT: HUMANITIES AND SCIENCES

LESSON PLAN

SUBJECT: - ENVIRONMENTAL SCIENCE (THEORY)

ACADEMIC SESSION:-2025-26

SEMESTER: - 1ST SEM (WINTER-2025)

SECTION: - G BRANCH:- MECHANICAL

Prepared by Miss Supritika Sundi

(Lecturer Stage-II in Chemistry)

<u>Lesson Plan</u>			
Discipline : Mechanical Sec G		Semester : 1st	Name of Faculty : Ms Supritika Sundi
Subject: Environmental Science	No. of days per week Class allotted: 4P (Tue, Wed, Fri, Sat)		Semester From Date: 06-08-2025 to 04-12-2025
Week	Class Day	Dates	Theory Topics
1st	1	06-08-2025	Introduction to the Subject, Syllabus and Course Outcomes
	2	08-08-2025	Unit-1 Ecosystem Structure of ecosystem
	3	12-08-2025	Biotic & Abiotic components
	4	13-08-2025	Define Food chain with examples
2nd	5	16-08-2025	Define food web with examples
	6	16-08-2025	Aquatic (Lentic and Lotic) ecosystem
	7	19-08-2025	terrestrial ecosystem
	8	20-08-2025	Carbon, Nitrogen Cycles
3rd	9	22-08-2025	Sulphur, Phosphorus cycle.
	10	26-08-2025	Global warming -Causes, effects, process
	11	30-08-2025	Green House Effect, Ozone depletion
	12	30-08-2025	Doubt Clear Class and Question Answer Discussions
4th	13	02-09-2025	Unit– 2 Air and, Noise Pollution Definition of pollution and pollutant, Natural and man made sources of air pollution (Refrigerants, I.C., Boiler)
	14	03-09-2025	Air Pollutants: Types, Particulate Pollutants:
	15	06-09-2025	Air Pollutants Effects and control (Bag filter, Cyclone separator,)
	16	06-09-2025	Electrostatic Precipitator
5th	17	09-09-2025	Gaseous Pollution Control: Absorber, Catalytic Converter
	18	10-09-2025	Effects of air pollution due to Refrigerants, I.C., Boiler
	19	12-09-2025	Noise pollution: sources of pollution
	20	13-09-2025	measurement of pollution level, Effects of Noise pollution
6th	21	13-09-2025	Noise pollution (Regulation and Control) Rules, 2000
	22	16-09-2025	Doubt Clear Class and Question Answer Discussions
	23	17-09-2025	Unit- 3 Water and Soil Pollution Sources of water pollution, Types of water pollutants
	24	19-09-2025	Characteristics of water pollutants Turbidity, pH, total suspended solids
7th	25	20-09-2025	total solids BOD and COD: Definition, calculation
	26	20-09-2025	Waste Water Treatment: Primary methods: sedimentation
	27	23-09-2025	Waste Water Treatment: Primary methods : froth floatation
	28	24-09-2025	Secondary methods: Activated sludge treatment
8th	29	26-09-2025	Secondary methods: Trickling filter
	30	03-10-2025	Secondary methods:Bioreactor
	31	04-10-2025	Tertiary Method: Membrane separation technology,
	32	04-10-2025	Tertiary Method:RO (reverse osmosis).
9th	33	08-10-2025	Causes, Effects and Preventive measures of Soil Pollution
	34	10-10-2025	Causes-Excessive use of Fertilizers,
	35	14-10-2025	Pesticides and Insecticides
	36	15-10-2025	Irrigation, E-Waste.
10th	37	17-10-2025	Doubt Clear Class and Question Answer Discussions
	38	18-10-2025	Unit– 4 Renewable sources of Energy Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air).
	39	18-10-2025	Theory of flat plate collector. Importance of coating. Advanced collector
	40	22-10-2025	Solar pond. Solar water heater

Week	Class Day	Dates	Theory Topics
11th	41	24-10-2025	solar dryer. Solar stills
	42	28-10-2025	Biomass: Overview of biomass as energy source
	43	29-10-2025	Thermal characteristics of biomass as fuel
	44	31-10-2025	Anaerobic digestion. Biogas production mechanism
12th	45	01-11-2025	Utilization and storage of biogas.
	46	01-11-2025	Wind energy: Current status and future prospects of wind energy.
	47	04-11-2025	Wind energy in India. Environmental benefits and problem of wind energy.
	48	07-11-2025	New Energy Sources: Need of new sources.
13th	49	11-11-2025	Different types new energy sources
	50	12-11-2025	Applications of (Hydrogen energy)
	51	14-11-2025	Applications of (Ocean energy resources)
	52	15-11-2025	Tidal energy conversion
14th	53	15-11-2025	Concept, origin and power plants of geothermal energy
	54	18-11-2025	Doubt Clear Class and Question Answer Discussions
	55	19-11-2025	Unit-5 Solid Waste Management, ISO 14000 & Environmental Management Solid waste generation- Sources and characteristics of : Municipal solid waste, Sources and characteristics of E- waste, bio- medical waste
	56	21-11-2025	Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries.
15th	57	25-11-2025	Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous waste.
	58	26-11-2025	Air quality act 2004, air pollution control act 1981 and water pollution and control act 1996.
	59	28-11-2025	Structure and role of Central and state pollution control board.
	60	29-11-2025	Concept of Carbon Credit, Carbon Footprint. Environmental management in fabrication industry. ISO14000: Implementation in industries, Benefits.
	61	29-11-2025	Doubt Clear Class and Question Answer Discussions
	62	02-12-2025	Very Similar Test
	63	03-12-2025	Discussion on VST

BOOK REFERENCE:

- 1 Environmental Science (English) by Dr. Subrat Roy
- 2 O.P. Gupta, Elements of Environmental Pollution Control, Khanna Publishing House, New Delhi
- 3 S.C. Sharma & M.P. Poonia, Environmental Studies, Khanna Publishing House, New Delhi

Concerned faculty:
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