NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT : TH-5 (Environmental Science)

Name Of The Faculty :- Miss. Alivajyoti Barik

Branch:- EE/EEE/CE/ME/AE

Semester :- 1ST

Academic Year : 2025-26 **Examination :-** 2025 (W)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of periods actually needed
1	Ecosystem	13
2	Air and noise pollution	14
3	Water and soil pollution	15
4	Renewable sources of energy	10
5	Solid waste management ISO 140000 & environmental management	8
	Total Period:	60

30.07.2025
Sign of faculty

30/07/2025
Sign of H.O.D

Name of the programme: EE/EEE/CE/ME/AE	Semester: 1st	**Name of the Teaching Faculty:** Miss. Alivajyoti Barik	
		Academic Year : 2025-26 **Examination :** 2025(W)	
Course Code: TH-5	**Course Year:** First Year	**No. of Classes Alloted Per Week :**	4
		Planned Classes Required to Complete the Course	60

Week	Class Day	Topics to be Covered
1st	1st	UNIT:I:-ECOSYSTEM: Introduction of EVS, Structure of ecosystem
	2nd	Biotic & Abiotic components
	3rd	Food chain and food web
	4th	Aquatic (Lentic and Lotic) and terrestrial ecosystem
2nd	1st	Carbon cycle
	2nd	Nitrogen cycle
	3rd	Sulphur cycle
	4th	Phosphorus cycle
3rd	1st	Global warming
	2nd	Causes of global warming
	3rd	Green House Effect
	4th	Effect of global warming Process of global warming
4th	1st	Ozone layer depletion
	2nd	UNIT-II:-AIR AND NOISE POLLUTION Introduction of pollution Definition of pollution and pollutant
	3rd	Natural and man-made sources of airpollution(Refrigerants, I.C., Boiler)
	4th	Air Pollutants: Types, Particulate Pollutants
5th	1st	control of air pollution (Bag filter,Cyclone separator, Electrostatic Precipitator
	2nd	Effects of air pollution (Electrostatic Precipitator)
	3rd	Effects of air pollution (Bag filter, Cyclone separator)
	4th	Gaseous Pollution Control: Absorber
6th	1st	Gaseous Pollution Control: Catalytic Converter
	2nd	Effects of air pollution due to Refrigerants
	3rd	Effects of air pollution due to I.C.Boiler
	4th	Noise pollution: sources of pollution

Week	Class Day	Topics to be Covered
7th	1st	Effects of Noise pollution
	2nd	Noise pollution (Regulation and Control) Rules, 2000
	3rd	Measurement of pollution level
	4th	UNIT-III:- WATER AND SOIL POLLUTION Sources of water pollution, Types of water pollutant
8th	1st	Characteristics of water pollutants
	2nd	Turbidity
	3rd	pH, total suspended solids
	4th	Total solids BOD and COD: Definition, calculation
9th	1st	Waste Water Treatment: Primary methods
	2nd	Sedimentation, froth floatation
	3rd	Secondary methods:Activated sludge treatment
	4th	Trickling filter,Bioreactor
10th	1st	TertiaryMethod: Membrane separation technology
	2nd	RO (reverse osmosis).Causes and Effects of Soil Pollution
	3rd	Preventive measures of Soil Pollution
	4th	Causes-Excessive use of Fertilizers
11th	1st	Pesticides and Insecticides,herbicides with example
	2nd	Irrigation, E-Waste.
	3rd	UNIT-IV:-RENEWABLE SOURCES OF ENERGY Solar Energy: Basics of Solar energy,Flat plate collector (Liquid&Air)Pesticides and Insecticides, Irrigation, E-Waste.
	4th	Theory of flat plate collector. Importance of coating. Advanced collector
12th	1st	Solar pond ,Solar water heater, solar dryer, Solar stills
	2nd	Biomass: Overview of biomass as energy source
	3rd	Thermal characteristics of biomass as fuel, Anaerobic digestion
	4th	Biogas production mechanism. Utilization and storage of biogas

Week	Class Day	Topics to be Covered
13th	1st	Wind energy: Current status and future prospects of wind energy, Wind energy in India.Environmental benefits and problem of wind energy
	2nd	New Energy Sources: Need of new sources
	3rd	Application of(Ocean energy resources,Tidal energy conversion.)
	4th	Different types new energy sources. Applications of (Hydrogen energy),Concept, origin and power plants of geothermal energy
14th	1st	MANAGEMENT Solid waste generation,Sources and characteristics of : Municipal solid waste
	2nd	Characteristics of biomedical waste,Sources of biomedical waste
	3rd	Metallic wastes and Non-Metallic wastes (lubricants,plastics, rubber) from industries
	4th	Collection and disposal :Collection and disposal: MSW (3R,principles,energy recovery, sanitary landfill)
15th	1st	Sources and characteristics of E- waste,Air quality act 2004, Hazardous waste
	2nd	Air pollution control act 1981,Water pollution and control act 1996
	3rd	Structure and role of central and state pollution control board, Concept of carbon credit, carbon footprint
	4th	Environmental management in fabrication industry ,ISO 14000 :Implementation in industries ,Benefits.

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