

### LESSON PLAN

Program Name	Civil Engineering
Subject Name	Environment Science
Subject Code	AU102
Semester	2 <sup>nd</sup>
Subject Teacher Name	Mr. Kailash Singh

#### Evaluation Scheme

Sr. No.	Subject Name	Study scheme (Hrs/Week)		Marks in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1.	Environment Science	2	-	40	-	40	60	-	100
Reference Books		(i) Environmental Studies by S.C. Sharma & M.P. Poonia. (ii) Environmental Pollution Control and Engineering by C.S. Rao.							

#### Course Outcomes (COs)

CO-1	To learn the fundamentals of technicians working in industries or elsewhere essentially require the knowledge of environmental science so as to enable them to work and produce most efficient, economical and eco-friendly finished products.
CO-2	To Solve various engineering problems applying ecosystem to produce eco-friendly products
CO-3	To understand the Use relevant air and noise control method to solve domestic and industrial problems.
CO-4	To understand the Use relevant water and soil control method to solve domestic and industrial problems
CO-5	To recognize relevant energy sources required for domestic, industrial applications, Solve local solid and e-waste problems

#### Teaching Plan

Unit No.	Name of Topic	Proposed Date	Actual Date	Remarks
1	Structure of ecosystem, Biotic & Abiotic components	29/01/2024		
	Food chain and food web Aquatic (Lentic and Lotic) and terrestrial ecosystem	31/01/2024		
	Carbon, Nitrogen, Sulphur, Phosphorus cycle	05/02/2024		
	Global warming -Causes, effects, process, Green House Effect, Ozone depletion, Quick Revision of topics.	07/02/2024		
2	Definition of pollution and pollutant, Natural and manmade sources of air pollution	12/02/2024		

*K Singh*  
(Kailash Singh)

	Air Pollutants: Types, Particulate Pollutants: Effects and control	14/02/2024		
	Gaseous Pollution Control: Absorber, Catalytic Converter, Effects of air pollution due to Refrigerants, I.C., Boiler.	19/02/2024		
	Noise pollution: sources of pollution, measurement of pollution level, Effects of Noise pollution, Noise pollution (Regulation and Control) Rules, 2000. Quick Revision of topics	21/02/2024		
3	Sources of water pollution, Types of water pollutants, Characteristics of water pollutants, Turbidity, pH, total suspended solids, total solids.	26/02/2024		
	BOD and COD: Definition, calculation. 62 Waste Water Treatment: Primary methods: sedimentation, froth floatation,	28/02/2024		
	Secondary methods: Activated sludge treatment, Trickling filter, Bioreactor,	04/03/2024		
	Tertiary Method: Membrane separation technology, RO (reverse osmosis).	06/03/2024		
	Causes, Effects and Preventive measures of Soil Pollution: Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-Waste, Quick Revision of topics	11/03/2024		
	Class test-1(As per HPTSB Schedule)	13/03/2024		
4	Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air). Theory of flat plate col-lector	18/03/2024		
	Importance of coating. Advanced collector. Solar pond. Solar water heater, solar dryer. solar stills	20/03/2024		
	Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion.	27/03/2024		
	Biogas production mechanism. Utilization and storage of biogas.	08/04/2024		
	Wind energy: Current status and future prospects of wind energy. Wind energy in India. Environmental benefits and problem of wind energy	10/04/2024		
	New Energy Sources: Need of new sources. Different types new energy sources.	22/04/2024		
	Class Test - 2 (As per HPTSB Schedule)	24/04/2024		
	Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion.) Concept, origin and power plants of geothermal energy. Quick Revision of topics	29/04/2024		
5	Solid waste generation- Sources and characteristics of Municipal solid waste, E-	01/05/2024		

*K Singh*  
(Kailash Singh)

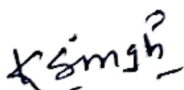
waste, bio-medical waste.			
Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous.	06/05/2024		
Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries	08/05/2024		
House Test (As per HPTSB Schedule)	13/05/2024		
Waste Air quality act 2004, air pollution control act 1981 and water pollution and control act 1996	15/05/2024		
Structure and role of Central and state pollution control board. Concept of Carbon Credit, Carbon Footprint.	20/05/2024		
Environmental management in fabrication industry. ISO 14000: Implementation in industries, Benefits. Revision of important topics	22/05/2024		

### Assignments

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1 and Unit-2	04/03/2024		
A-2	Unit-3 and Unit-4	29/04/2024		
A-3	Unit-5	15/05/2024		


### House Test/Class Test

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
Class Test -1	Unit-1 and Unit-2	As per HPTSB Academic Schedule		
Class Test -2	Unit-3 and Unit-4			
House Test - 1	Unit-1, Unit-2, Unit-3 and Unit-4			

  
(Signature of Teacher)

  
(Signature of HOD)

Approved

  
S. Principal  
Govt. Polytechnic for Women Rehan