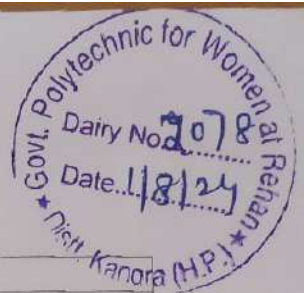


Department of Civil Engg.
Govt. Polytechnic for Women Rehan
Distt. - Kangra (H.P.) - 176022



LESSON PLAN

Program Name	Civil Engineering
Subject Name	Industrial Water Treatment
Subject Code	ASOE30
Semester	Fifth
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.	Industrial Water Treatment	4	-	40	-	40	60	-	60
Reference Books		Industrial Water Treatment Process Technology, P. Pal, Elsevier Science Groundwater Arsenic Remediation: Treatment Technology and Scale Up, P.Pal, Elsevier Science							

Course Outcomes (COs)

CO - 1	To Understand Water Quality Standard, sources and Classification of pollutants
CO - 2	To Understand coagulation-precipitation, neutralization used in chemical treatment technology
CO - 3	To Understand membrane based processes used for water treatment.
CO - 4	To Understand specific treatment used for industrial waste water
CO - 5	To Understand the use of modern water treatment technology

Teaching Plan

Unit No.	Name of Topic	Proposed Date	Actual Date	Remarks
1	Introduction to water resource management	14-08-2024 & 16-08-2024		
	issues, access to safe drinking water	17-08-2024 & 21-08-2024		
	river pollution	22-08-2024 23-08-2024 24-08-2024		
	water quality standards	28-08-2024 & 29-08-2024		
	sources and classification of pollutants	30-08-2024 & 31-08-2024		
	2	Chemical Treatment Technology	04-09-2024 & 05-09-2024	
aeration, chemical coagulation-precipitation		06-09-2024 & 07-09-2024		

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	Class Test-I	11-09-2024		
	neutralization, chemical oxidation	12-09-2024 & 13-09-2024		
	adsorption, ion-exchange	18-09-2024 & 19-09-2024		
	advanced oxidation	20-09-2024 & 21-09-2024		
	disinfection of water	25-09-2024 & 26-09-2024		
	Water treatment by membrane technology:	27-09-2024 & 28-09-2024		
	Membrane-based processes	03-10-2024 & 04-10-2024		
	membrane modules	05-10-2024 & 09-10-2024		
3	membrane distillation in water treatment	10-10-2024 & 11-10-2024		
	Forward osmosis	16-10-2024 & 18-10-2024		
	DCS	19-10-2024 & 23-10-2024		
	Class Test-II	24-10-2024		
	Industry-specific treatment of water	25-10-2024 & 26-10-2024		
	Coke oven wastewater treatment	01-11-2024 & 02-11-2024		
4	Pharmaceutical wastewater treatment	06-11-2024 & 07-11-2024		
	House Test	08-11-2024		
	tannery wastewater treatment	13-11-2024 & 14-11-2024		
	petroleum refinery wastewater treatment	16-11-2024 & 20-11-2024		
5	pulp and paper industry wastewater treatment	21-11-2024		
	Nanotechnology in water treatment	22-11-2024		
	Hybrid Water Treatment Technologies	23-11-2024		

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Chemical/biological, biological-membrane,	27-11-2024
membrane-c chemical hybrid treatment technologies in water treatment	28-11-2024
sustainable water treatment	29-11-2024
ethics, compliance of regulations	30-11-2024

Assignments

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1 and Unit-2	26-09-2024		
A-2	Unit-3 and Unit-4	21-11-2024		
A-3	Unit-5	30-11-2024		

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		
Class Test -2	Unit-3 and Unit-4	HPTSIB		
House Test	Unit-1, Unit-2, Unit-3 and Unit-4	Academic Schedule		

K Singh
(Signature of Teacher)

[Signature]
(Signature of HOD)

Approved

[Signature]
Principal

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