CVE 406-L INDUSTRIAL WASTE WATER TREATMENT

Name of the Faculty : Mr. Kamaldeep Singh

Discipline : B.Tech in Civil Engineering

Semester : VIII (4th Year)

Subject : CVE 406-L, IWWT

Lesson Plan Duration : 15 Weeks

Work Load (Lecture / Tutorial) per week (in hrs.) : Lectures – 03, Tutorial-01

Week	Theory	
	Lecture day	**Topic (Including Assignment Test)**
1st	1	Industrial Waste Water - introduction
	2	Current Issues in Water and Wastewater Treatment Operations
	3	Wastewater Regulations, Parameters, and Characteristics, Wastewater Sources and Types
2nd	4	Wastewater Treatment: Basic Overview
	5	Collection Systems
	6	Preliminary Treatment, Primary Sedimentation
3rd	7	Biological Treatment
	8	Secondary Sedimentation
	9	Advanced Treatment, Wastewater Disinfection
4th	10	Discharge Effluent
	11	Methods for IWWT - Introduction
	12	Effects of industrial wastes on stream, Sewerage systems - Introduction
5th	13	Types of Sewerage systems, Design of economical diameter of sewerage pipe
	14	Wastewater treatment plant - introduction
	15	Minimizing the effects of industrial effluents on waste water treatment plants and receiving streams-conservation of water
6th	16	Pretreatment of Industrial Wastes - Introduction
	17	Pretreatment of Industrial Wastes – Unit Operations, Unit Processes
	18	Reuse of waste water, volume reduction
7th	19	**MINOR TEST I**
	20	
	21	
8th	22	Strength reduction, neutralization**,** equalization and proportioning, Population equivalent
	23	Industrial effluent standards for disposal into inland surface water sources and on land for irrigation

	24	Study of the following Industries from waste generation, quality and its treatment including brief overview of manufacturing process: Textile – manufacturing process brief introduction
9th	25	Textile wastes: Cotton textile wastes
	26	Raw Material, Manufacturing Process, Spinning, weaving and sizing
	27	Desizing, Caustic Kiering, Bleaching, Souring, Synthetic Fiber Wastes, Silk and Jute Manufacturing wastes
10th	28	Tannery - manufacturing process brief introduction
	29	Tannery - waster generation, Characteristics of waste water and its treatment
	30	Sugar Mill - manufacturing process brief introduction, waster generation and its treatment
11th	31	Distillery - manufacturing process brief introduction
	32	Distillery - waster generation and its treatment
	33	Dairy, pulp & paper - manufacturing process brief introduction, waster generation and its treatment
12th	34	Metal plating, oil refinery - manufacturing process brief introduction
	35	Metal plating, oil refinery - waster generation and its treatment
	36	Nitrogenous fertilizers - brief introduction, Ammonia Synthesis, Urea Synthesis
13th	37	Phosphoric Acid, Ammonium Sulphate, DAP
	38	Methods of treatment
	39	Thermal power plants - manufacturing process brief introduction, waster generation and its treatment
14th	40	**MINOR TEST II**
	41	
	42	
15th	43	Radio-active wastes - brief introduction
	44	Handling Radioactive Material
	45	Waster generation, Case Studies, Treatment and Management