

## Lesson Planning

Name of the Institute	: CRSSIET SILANI-KESHO, JHAJJAR
Name of the teacher	: Dr. Amarender Kadian
Department	: CIVIL ENGG.
Subject & Code	: WWT& PEC-CEEL-302-G
Branch/Semester	: CE 6 <sup>th</sup> Semester

Sr. No & Date	Lect No.	Topic Covered
	1	Module 1: Introduction
	2	Importance and Necessity of Sanitation, Terms used in sanitation- Sullage, Sewage, S
	3	Sewer and Sewerage, Sewerage Systems and their Suitability
	4	Dry Weather Flow, Factors Affecting Dry Weather Flow
	5	Flow Variations and their Effects on Design of Sewerage System.
	6	Module 2: Design of Sewers
	7	Types of Sewers and their Hydraulic Design
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	9	Types of Sewers and their Hydraulic Design
	10	Types of Sewers and their Hydraulic Design
	11	Module 3: House Drainage, Principles of House Drainage
	12	Types of Pipes used for Drainage , Classification and Functions of Traps
	13	Sanitary Fitting, System of Plumbing, House Drainage Plan and Ventilation of House Drainage. Module 4: Wastewater Chara
	14	Wastewater Characteristics
	15	Oxygen Demand, Indian Standards for Disposal of Effluents into Inland Surface Sources and on Land,
	16	Guidelines for Reuse of Treated Wastewater
	17	Module 5: Primary Sewage Treatment
	18	Objectives, Flow chart of Conventional Treatment Units and their Efficiencies,
	20	Preliminary Treatment, Screening and Grit Removal Units, Principle
	21	Module 6: Secondary Sewage Treatment
	22	Concept of Organic Matter Removal, Aerobic and Anaerobic Treatment Processes, Activated Sludge Process, Conventional and Extended Aeration System
	23	Trickling Filters, Aerated Lagoons, septic tank, Waste Stabilization Ponds,

	Oxidation Ditches
24	Up-Flow Anaerobic Sludge Blanket Process
25	Module 7: Sludge Treatment
26	Objectives, Sludge Digestion, Digestion and Disposal of Primary and Secondary Sludge
27	Factors Affecting Sludge Digestion, Thickening of Sludge, Anaerobic Digestion of Sludge
28	Sludge Digestion Tank, Sludge Conditioning and Dewatering, Sludge Drying Bed
29	Module 8: Sludge Disposal Standards of Wastewater Disposal, Modes of Disposal of Treated Sludge,
30	Self-Purification of Streams, Oxygen Sag Curve, Sewage Farming, Sodium Hazards, Soil Dispersion System
31	<b>REVISION</b>