

**SARDAR RAJA COLLEGES
SARDAR RAJA COLLEGE OF ENGINEERING,
ALANGULAM**

DEPARTMENT OF CIVIL ENGINEERING

MICRO LESSON PLAN



SUBJECT : ENVIRONMENTAL ENGINEERING- II

CODE : CE2354

YEAR/SEMESTER : III Year / VI SEM

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DEPT. OF CIVIL ENGG**

OBJECTIVES AND DESCRIPTION

The main objective this course is to make the civil Engineering student know about the reduce the waste water generation and utilization of waste water for irrigation purposes.

To educate the students on the principles and design of Sewage Collection, Conveyance, treatment and disposal.

MICRO LESSON PLAN

HOURS	LECTURE TOPICS	READING
UNIT I PLANNING FOR SEWERAGE SYSTEMS		
1	Sources of wastewater generation	T1
2	Effects, Estimation of sanitary sewage flow.	T1
3	Estimation of storm runoff	T1
4	Factors affecting Characteristics	T1
5	composition of sewage and their significance (AV CLASS)	T1
6	Effluent standards.	T1
7	Effluent standards.	T1
8	Legislation requirements.	T1
9	Legislation requirements.	T1
UNIT II SEWER DESIGN		
10	Sewerage	T1
11	Hydraulics of flow in sewers.	T1
12	Objectives , Design period	T1
13	Design of sanitary and storm sewers, Small bore systems , Computer applications	T1
14	Laying, joining & testing of sewers (AV CLASS)	T1
15	appurtenances ,Pumps	T1
16	selection of pumps and pipe Drainage	T1
17	Plumbing System for Buildings	T1
18	One pipe and two pipe system.	T1
UNIT III PRIMARY TREATMENT OF SEWAGE		
19	Objective , Unit Operation and Processes	T1
20	Selection of treatment processes	T1

21	Onsite sanitation	T1
22	Septic tank, Grey water harvesting (AV CLASS)	T1
23	Primary treatment	T1
24	Principles, functions design and drawing of screen, grit chamber	T1
25	primary sedimentation tank	T1
26	Operation and Maintenance aspects.	T1
27	Operation and Maintenance aspects	T1
UNIT IV SECONDARY TREATMENT OF SEWAGE		
28	Objective Selection of Treatment Methods	T1
29	Principles, Functions, Design and Drawing of Units	T1
30	Activated Sludge Process and Trickling filter	T1
31	Other treatment methods	T1
32	Oxidation ditches, UASB (AV CLASS)	T1
33	Waste Stabilization Ponds	T1
34	Reclamation and Reuse of sewage	T1
35	Recent Advances in Sewage Treatment	T1
36	Construction and Operation & Maintenance of Sewage Treatment Plants.	T1
UNIT V - DISPOSAL OF SEWAGE AND SLUDGE		
37	Standards for Disposal , Methods , dilution	T1
38	Self purification of surface water bodies , Oxygen sag curve , Land disposal	T1
39	Sewage farming, Deep well injection , Soil dispersion system .	T1
40	Sludge characterization, Thickening	T1
41	Sludge digestion (AV CLASS)	T1
42	Biogas recovery	T1
43	Sludge Conditioning and Dewatering	T1
44	disposal	T1
45	Advances in Sludge Treatment and disposal.	T1