

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Bachelor of Technology				Branch/Spec.	CIVIL Engineering			
Semester	VI				Version	2.0.0.0			
Effective from Academic Year	2019-20				Effective for the batch Admitted in	2014-2015			
Subject code	2CI 605		Subject Name		<b>ENVIRONMENTAL ENGINEERING-II</b>				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total	CE	SEE	Total	
	L	TU	P	TW					
Credit	3		1		4	Theory	40	60	100
Hours	3		2		5	Practical	35	15	50
Pre-requisites:									
<b>ENVIRONMENTAL ENGINEERING-I</b>									
Learning Outcome:									
After Completion of the students aware With the Basic Knowledge of Sewage System. Also they are understand basic parameters of the Waste Water and Based on it they will design of the various water treatment Units. Also they are aware with the Solid Waste Management and Basic Air pollution.									
Theory syllabus									
Unit	Content							Hrs	
1	<b>Introduction of waste water:</b> Important terms and definition, classification of waste waters, Physical, Chemical & Biological parameters and their significance, B.O.D /C.O.D requirements							4	
2	<b>Collection and Conveyance :</b> Separate and combined sewerage systems for domestic waste-water and storm waters collections, components, appurtenances, layout and planning of sewerage systems, quantity of sewage & storm waters, design of sewers, maintenance of sewerage systems.							4	
3	<b>Waste-water Treatments :</b> Objectives of waste-water treatment, primary and secondary treatment systems, Basic Design consideration for wastewater treatment, Design Of Sump well and pump of pumping station, design of conventional treatments units like screen & grit chambers & PST, ASP, trickling filter, SST, UASB etc for domestic waste-water.							15	
4	<b>Sludge Handling :</b> Quantity and quality of sludge, sludge digestion methods, sludge drying beds and disposal of sludges.							4	
5	<b>Waste-water disposal :</b> Alternative disposal methods like disposal by dilution by irrigation, on land etc. Standards for disposal alternatives, natural purification of polluted streams.							4	

6	<b>Solid Waste Management:</b> Types and Sources, refuse collection and disposal techniques	4
7	<b>Air Pollution:</b> Definition, causes and Effects of air pollution, classification and sources of air pollutants, metrological aspects of air pollution dispersion	4
Practical content		
<b>Based on Syllabus Content</b>		
Text Books		
1	Dr. B.C.Punamia, "Waste water engineering", Laxmi publication.	
2	S.K.Garg, "Sewage Disposal and Air Pollution" Khanna Publication.	
Reference Books		
1	Metcalf and Eddy, "Wastewater Engineering" : Treatment, Disposal Reuse" , Tata McGraw Hill Ed. New Delhi. (1995)	
2	Birdie. G.S, "Water supply and sanitary Engineering ",DhanpatRai and Sons, New Delhi (1995	
3	Manual on Sewerage and Sewage Treatment, CPH and EE Organisation, Ministry of works and housing Govt. of India, New Delhi. (1991)	