

UG TANK AND PUMP ROOM PLAN

SECTION AA

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UNIT 1: WATER AND WASTEWATER ENGINEERING									
Sl. No.	Topic	Unit Objectives	Learning Objectives	Learning Outcomes	Assessment Methods	Estimated Time (Hours)	Practical/Field Work	Reference Books	Notes
1	Water and Wastewater Engineering: Introduction	Understand the scope and importance of water and wastewater engineering.	Define water and wastewater engineering, and its role in public health and the environment.	Identify the various components of water and wastewater engineering.	Written Exam, Assignment, Project	10		1. <i>Water and Wastewater Engineering: Principles and Practice</i> by R. S. Khosla	
2	Water Quality Parameters and Standards	Understand the various water quality parameters and standards.	Define water quality parameters such as pH, DO, BOD, COD, TSS, etc.	Explain the importance of water quality standards for drinking water and effluent discharge.	Written Exam, Assignment, Project	10		1. <i>Water Quality Engineering</i> by G. A. Rezaei	
3	Water Supply Engineering	Understand the various aspects of water supply engineering.	Define water supply engineering, and its role in providing clean water to the population.	Identify the various components of water supply engineering.	Written Exam, Assignment, Project	10		1. <i>Water Supply Engineering</i> by R. S. Khosla	
4	Wastewater Engineering	Understand the various aspects of wastewater engineering.	Define wastewater engineering, and its role in treating and disposing of wastewater.	Identify the various components of wastewater engineering.	Written Exam, Assignment, Project	10		1. <i>Wastewater Engineering: Principles and Practice</i> by R. S. Khosla	
5	Water Pollution and Control	Understand the various aspects of water pollution and control.	Define water pollution, and its sources and effects.	Explain the importance of water pollution control measures.	Written Exam, Assignment, Project	10		1. <i>Water Pollution Engineering</i> by G. A. Rezaei	
6	Water Resources Engineering	Understand the various aspects of water resources engineering.	Define water resources engineering, and its role in managing water resources.	Identify the various components of water resources engineering.	Written Exam, Assignment, Project	10		1. <i>Water Resources Engineering</i> by R. S. Khosla	
7	Water Distribution Engineering	Understand the various aspects of water distribution engineering.	Define water distribution engineering, and its role in distributing water to the population.	Identify the various components of water distribution engineering.	Written Exam, Assignment, Project	10		1. <i>Water Distribution Engineering</i> by R. S. Khosla	
8	Wastewater Collection and Treatment	Understand the various aspects of wastewater collection and treatment.	Define wastewater collection and treatment, and its role in treating and disposing of wastewater.	Identify the various components of wastewater collection and treatment.	Written Exam, Assignment, Project	10		1. <i>Wastewater Collection and Treatment</i> by R. S. Khosla	
9	Water Pollution Control Engineering	Understand the various aspects of water pollution control engineering.	Define water pollution control engineering, and its role in managing water resources.	Identify the various components of water pollution control engineering.	Written Exam, Assignment, Project	10		1. <i>Water Pollution Control Engineering</i> by R. S. Khosla	
10	Water Resources Engineering	Understand the various aspects of water resources engineering.	Define water resources engineering, and its role in managing water resources.	Identify the various components of water resources engineering.	Written Exam, Assignment, Project	10		1. <i>Water Resources Engineering</i> by R. S. Khosla	
11	Water Distribution Engineering	Understand the various aspects of water distribution engineering.	Define water distribution engineering, and its role in distributing water to the population.	Identify the various components of water distribution engineering.	Written Exam, Assignment, Project	10		1. <i>Water Distribution Engineering</i> by R. S. Khosla	
12	Wastewater Collection and Treatment	Understand the various aspects of wastewater collection and treatment.	Define wastewater collection and treatment, and its role in treating and disposing of wastewater.	Identify the various components of wastewater collection and treatment.	Written Exam, Assignment, Project	10		1. <i>Wastewater Collection and Treatment</i> by R. S. Khosla	
13	Water Pollution Control Engineering	Understand the various aspects of water pollution control engineering.	Define water pollution control engineering, and its role in managing water resources.	Identify the various components of water pollution control engineering.	Written Exam, Assignment, Project	10		1. <i>Water Pollution Control Engineering</i> by R. S. Khosla	
14	Water Resources Engineering	Understand the various aspects of water resources engineering.	Define water resources engineering, and its role in managing water resources.	Identify the various components of water resources engineering.	Written Exam, Assignment, Project	10		1. <i>Water Resources Engineering</i> by R. S. Khosla	
15	Water Distribution Engineering	Understand the various aspects of water distribution engineering.	Define water distribution engineering, and its role in distributing water to the population.	Identify the various components of water distribution engineering.	Written Exam, Assignment, Project	10		1. <i>Water Distribution Engineering</i> by R. S. Khosla	
16	Wastewater Collection and Treatment	Understand the various aspects of wastewater collection and treatment.	Define wastewater collection and treatment, and its role in treating and disposing of wastewater.	Identify the various components of wastewater collection and treatment.	Written Exam, Assignment, Project	10		1. <i>Wastewater Collection and Treatment</i> by R. S. Khosla	
17	Water Pollution Control Engineering	Understand the various aspects of water pollution control engineering.	Define water pollution control engineering, and its role in managing water resources.	Identify the various components of water pollution control engineering.	Written Exam, Assignment, Project	10		1. <i>Water Pollution Control Engineering</i> by R. S. Khosla	
18	Water Resources Engineering	Understand the various aspects of water resources engineering.	Define water resources engineering, and its role in managing water resources.	Identify the various components of water resources engineering.	Written Exam, Assignment, Project	10		1. <i>Water Resources Engineering</i> by R. S. Khosla	
19	Water Distribution Engineering	Understand the various aspects of water distribution engineering.	Define water distribution engineering, and its role in distributing water to the population.	Identify the various components of water distribution engineering.	Written Exam, Assignment, Project	10		1. <i>Water Distribution Engineering</i> by R. S. Khosla	
20	Wastewater Collection and Treatment	Understand the various aspects of wastewater collection and treatment.	Define wastewater collection and treatment, and its role in treating and disposing of wastewater.	Identify the various components of wastewater collection and treatment.	Written Exam, Assignment, Project	10		1. <i>Wastewater Collection and Treatment</i> by R. S. Khosla	