

**DEPARTMENT OF WATER RESOURCES DEVELOPMENT AND MANAGEMENT
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code : **XXX M.Tech. (Drinking Water and Sanitation)/P.G. Diploma in Drinking Water and Sanitation**
 Department : **Department of Water Resources Development and Management**
 Year : **I**
 Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
Semester-I (Autumn)									
1.	WRC-503	Water Resource Planning and Management	PCC	4	3	1	0	3	0
2.	WRC-543	Drinking Water and Sanitation Sustainability	PCC	4	3	0	2	3	0
3.	WRC-545	Water sanitation, Hygiene, and Infrastructural Management	PCC	4	3	0	2	3	0
4.	WRC-506	Rural and Urban Water Supply	PCC	4	3	0	2	3	0
5.		Social Science Course	SSC	2	-	-	-	-	-
Total				18					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	-	-	-	-	-
2.		Program Elective-II	PEC	4	-	-	-	-	-
3.		Program Elective-III	PEC	4	-	-	-	-	-
4.		Program Elective-IV	PEC	4	-	-	-	-	-
5.		Science, Technology, and Advanced Research-tools	STAR	3	-	-	-	-	-
6.	WRC-700	Seminar	SEM	2	-	-	-	-	-
Total				21					
<i>Note: P.G. Diploma course in DWS shall be of One Year duration comprising of semesters I and II only, with a minimum credit of 39</i>									

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Program Code : **XXX M.Tech. (Drinking Water and Sanitation)/P.G. Diploma in Drinking Water and Sanitation**
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 Year : **II**
 Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
Semester-I (Autumn)									
1.	WRC-691	Internship Social Activity	ISA	4	-	-	-	-	-
2.	WRC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		14					
Semester-II (Spring)									
1.	WRC-701B	Thesis Stage-II	THESIS	14	-	-	-	-	-
		Total		14					

Summary				
Semester	1	2	3	4
Semester-wise Total Credits	18	21	14	14
Total Credits	67			

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Program Elective Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	WRL-536	Water Quality Monitoring and Modeling	PEC	4	3	1	0	3	0
2.	WRL-537	Groundwater Development and Management	PEC	4	3	1	0	3	0
3.	WRL-538	Watershed Development and Management	PEC	4	3	1	0	3	0
4.	WRL-542	Ecohydrological Modeling and Sustainability	PEC	4	3	0	2	3	0
5.	WRL-552	Drinking-Water for Low-Income Societies	PEC	4	3	1	0	3	0
6.	WRL-553	Wastewater and Fecal Sludge Management	PEC	4	3	1	0	3	0
7.	WRL-554	Resilience, Shocks, and Emergencies	PEC	4	3	1	0	3	0
8.	WRL-555	Management and Operation of Water Utilities	PEC	4	3	1	0	3	0
9.	WRL-556	Water and Wastewater Engineering	PEC	4	3	1	0	3	0
10.	WRL-558	Flow Hydraulics and Urban Drainage	PEC	4	3	1	0	3	0
11.	WRL-535	Renewable Energy System Technology	PEC	4	3	1	0	3	0
12.	WRL-560	Circular Water Economy	PEC	4	3	1	0	3	0
13.	WRL-561	Sustainable Water Resources	PEC	4	3	1	0	3	0
14.	WRL-507	River Engineering	PEC	4	3	0	2	3	0

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Science, Technology, and Advanced Research-tools Basket

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	WRT-501	Artificial Intelligence (AI) & Machine Learning (ML) for Water Resources	STAR	3	2	0	2	3	0

Social Sciences Course Basket

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	WRS-501	Water and Society	SSC	2	2	0	0	3	0