

**DEPARTMENT OF HYDRO AND RENEWABLE ENERGY
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code : **XXX M.Tech. (Environmental Management of Rivers and Lakes)**
 Department : **Department of Hydro and Renewable Energy**
 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.	HRC-511	Integrated Management of Water Bodies	PCC	4	3	1	2/2	3	0
2.	HRC-513	Project Formulation & Implementation	PCC	3	3	0	0	3	0
3.	HRC-515	Waste Water Collection, Treatment and Disposal	PCC	3	3	0	0	3	0
4.	HRC-517	Environmental Management Lab	PCC	2	0	0	3	0	3
5.	HRC-519	Aquatic Ecology	PCC	4	3	1	2/2	3	0
6.		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	3/4	-	-	-	-	-
4.		Program Elective-IV	PEC	3/4	-	-	-	-	-
5.		Science, Technology, and Advanced Research-tools	STAR	3	-	-	-	-	-
6.	HRC-700	Seminar	SEM	2	-	-	-	-	-
		Total		19/21					

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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.	HRC-691	Internship Social Activity	ISA	3	-	-	-	-	-
2.	HRC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		13					
Semester-II (Spring)									
1.	HRC-701B	Thesis Stage-II	THESIS	14	-	-	-	-	-
		Total		14					

Summary				
Semester	1	2	3	4
Semester-wise Total Credits	18	19/21	13	14
Total Credits	64/66			

M.Tech. (Environmental Management of Rivers and Lakes)

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.	HRL-503	Environmental Planning and Management	PEC	4	3	1	0	3	0
2.	HRL-522	Energy Conservation and Management	PEC	4	3	1	0	3	0
3.	HRL-523	Climate Change and Water Resources	PEC	4	3	1	0	3	0
4.	HRL-528	Hydrology and Modeling of Water Bodies	PEC	4	3	1	0	3	0
5.	HRL-529	Environmental Laws, Public Participation and Institutional Development	PEC	4	3	1	0	3	0
6.	HRL-530	Coastal Pollution Monitoring and Impact Assessment	PEC	4	3	1	0	3	0
7.	HRL-531	Planning and Management of Environmental Facility	PEC	4	3	1	0	3	0
8.	HRL-532	Application of RS & GIS in Environment Management	PEC	4	3	1	0	3	0
9.	HRL-533	Environmental Modelling, Simulation and Computer Applications	PEC	4	3	1	2/2	3	0
10.	HRL-534	Biodiversity Conservation	PEC	3	3	0	0	3	0
11.	CEL-603	Industrial and Hazardous Waste Management	PEC	4	3	1	0	3	0
12.	CEL-604	Environment Impact and Risk Assessment	PEC	4	3	1	0	3	0
13.	CEL-605	Solid Waste Management	PEC	4	3	1	0	3	0
14.	HYC-511	Groundwater Hydrology	PEC	3	3	0	0	3	0
15.	HYC-521	Watershed Behavior and Conservation Practices	PEC	3	3	0	0	3	0
16.	HYL-502	Urban Hydrology	PEC	3	3	0	0	3	0