DEPARTMENT OF CIVIL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Hydraulics Engineering)**
Department : **Department of Civil Engineering**
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.	CEC-531	Advanced Hydrology	PCC	3	3	0	0	3	0
2.	CEC-533	Advanced Fluid Mechanics	PCC	4	3	0	2	3	0
3.	CEC-535	Free Surface Flows	PCC	3	3	0	0	3	0
4.	CEC-537	Modelling, Simulation and Optimization	PCC	3	2	0	2	3	0
5.	CEC-539	Ground Water Engineering	PCC	3	3	0	0	3	0
6.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**18**					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	3	0	2	-	-
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.	CEC-700	Seminar	SEM	2	-	-	-	-	-
		Total		**21**					

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Program Code : **XXX M.Tech. (Hydraulics Engineering)**
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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.	CEC-691	Internship Social Activity	ISA	3	-	-	-	-	-
2.	CEC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		**13**					
Semester-II (Spring)									
1.	CEC-701B	Thesis Stage-II	THESIS	14	-	-	-	-	-
		Total		**14**					

Summary				
Semester	**1**	**2**	**3**	**4**
Semester-wise Total Credits	18	21	13	14
Total Credits	**66**			

M.Tech. (Hydraulics Engineering)

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.	CEL-614	Theory and Applications of GIS	PEC	4	3	0	2	3	0
2.	CEL-528	Advanced Numerical Analysis	PEC	4	3	0	2	3	0
3.	CEL-529	Environmental Hydraulics	PEC	4	3	1	0	3	0
4.	CEL-530	Climate Change and its Impact on Water Resources	PEC	4	3	1	0	3	0
5.	CEL-532	Fluvial Hydraulics	PEC	4	3	1	0	3	0
6.	CEL-632	Hydraulic Structures	PEC	4	3	1	0	3	0
7.	CEL-507	Systems Engineering	PEC	4	3	1	0	3	0
8.	CEL-535	Water Resources Systems Planning	PEC	4	3	1	0	3	0
9.	CEL-536	Irrigation and Drainage	PEC	4	3	1	0	3	0
10.	CEL-636	Hydro Power Engineering	PEC	4	3	1	0	3	0
11.	CEL-537	Computational Methods in Fluid Mechanics	PEC	4	3	1	0	3	0
Note: Students should opt for PECs in such a way that they earn 03 credits from practical components in the entire programme.									