

**DEPARTMENT OF HYDROLOGY
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: **33** **P.G. Diploma/M.Tech. (Surface Water Hydrology)**
 Department: **HY** **Hydrology**
 Year: **I**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
Semester- I (Autumn)														
1.	HYN-516	Channel and fluvial hydraulics	PCC	4	3	1	2/2	3	-	20	20	20	40	-
2.	HYN-526	Deterministic hydrology	PCC	4	3	1	-	3	-	25	-	25	50	-
3.		Programme Elective Course -I	PEC	4	-	-	-	-	-	-	-	-	-	-
4.		Programme Elective Course -II	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Programme Elective Course -III	PEC	2/4*	-	-	-	-	-	-	-	-	-	-
		Total		18/20	6	2	1							
Semester-II (Spring)														
1.	HYN-522	Stochastic hydrology	PCC	4	3	1	-	3	-	25	-	25	50	-
2.	HYN-523	Surface water modeling and simulation	PCC	4	2	1	2	2	-	15	25	20	40	-
3.	HYN-532	Environmental planning and assessment of projects	PCC	4	3	1	-	3	-	25	-	25	50	-
4.	HYN-700	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-
5.		Programme Elective Course -I	PEC	4	-	-	-	-	-	-	-	-	-	-
6.		Programme Elective Course -II	PEC	4/2*	-	-	-	-	-	-	-	-	-	-
		Total		22/20	8	3	2							

*Credit requirement for PG Diploma/ Ist year M.Tech is 40 credits. Only one 2 credit elective course is permitted in any of the semesters.

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 Year: **II**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
Semester- I (Autumn)														
1.	HYN-701A	Dissertation Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.														
Semester-II (Spring)														
1.	HYN-701B	Dissertation Stage-II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

Summary				
Semester	1	2	3	4
Semester-wise Total Credits	18/20	22/20	12	18
Total Credits	70			

Program Elective Courses (Surface Water)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	HYN-540	Water Resources Economics	PEC	4	3	1	-	3	-	25	-	25	50	-
2.	HYN-525	Water Resources systems	PEC	4	3	1	-	3	-	25	-	25	50	-
3.	HYN-512	Computer Programming	PEC	2	1	-	2	1	-	15	25	20	40	-
4.	HYN-543	Flood forecasting	PEC	4	3	1	-	3	-	25	-	25	50	-
5.	HYN-535	Environmental quality	PEC	4	3	1	2/2	3	-	20	20	20	40	-
6.	HYN-538	Hydrological data collection, processing and analysis	PEC	4	3	1	2/2	3	-	20	20	20	40	-
7.	HYN-537	Remote sensing and GIS applications	PEC	4	3	1	2	3	-	15	25	20	40	-
8.	HYN-551	Physical Hydrology	PEC	4	3	1	-	3	-	25	-	25	50	-
9.	HYN-545	Surface Water quality modeling	PEC	4	3	1	-	3	-	25	-	25	50	-
10.	HYN-546	Hydroinformatics	PEC	4	3	1	2/2	3	-	20	20	20	40	-
11.	HYN-518	Water resources planning and Management	PEC	4	3	1	-	3	-	25	-	25	50	-
12.	HYN-513	Hydrometeorology and climate change	PEC	4	3	1	2/2	3	-	20	20	20	40	-
13.	HYN-527	Groundwater hydrology	PEC	4	3	1	2/2	3	-	20	20	20	40	-
14.	HYN-531	Watershed Behavior and Conservation Practices	PEC	4	3	1	-	3	-	25	-	25	50	-
15.	HYN-552	Numerical methods in hydrology	PEC	2	2	1/2	-	2	-	25	-	25	50	-
16.	HYN-553	Experimental hydrology	PEC	2	-	-	4	-	2	-	50	-	-	50
17.	HYN-542	Urban Hydrology	PEC	4	3	1	-	3	-	25	-	25	50	-
18.	HYN-554	Soil and Water Remediation	PEC	4	3	1	2/2	3	-	20	20	20	40	-
19.	HYN-511	Hydrologic elements and analysis	PEC	4	3	1	-	3	-	25	-	25	50	-
20.	HYN-555	Soft-computing techniques in hydrology	PEC	2	2	1/2	-	2	-	25	-	25	50	-
21.	HYN-556	Environmental Quality Lab	PEC	2	-	-	4	-	2	-	50	-	-	50