

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

Program Code:     **33**     **P.G. Diploma/M.Tech. (Ground 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
<b>Semester- I (Autumn)</b>														
1.	HYN-527	Groundwater hydrology	PCC	4	3	1	2/2	3	-	20	20	20	40	-
2.	HYN-529	Geophysical investigations	PCC	4	3	1	2/2	3	-	20	20	20	40	-
3.	HYN-535	Environmental quality	PCC	4	3	1	2/2	3	-	20	20	20	40	-
4.		Programme Elective Course -II	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Programme Elective Course -III	PEC	2/4*	-	-	-	-	-	-	-	-	-	-
		Total		18/20	9	3	3							
<b>Semester-II (Spring)</b>														
1.	HYN-528	Groundwater systems analysis	PCC	4	3	1	-	3	-	25	-	25	50	-
2.	HYN-560	Soil and groundwater contamination modelling	PCC	4	3	1	2/2	3	-	20	20	20	40	-
3.	HYN-700	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-
4.		Programme Elective Course -I	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Programme Elective Course -II	PEC	4	-	-	-	-	-	-	-	-	-	-
6.		Programme Elective Course -III	PEC	4/2*	-	-	-	-	-	-	-	-	-	-
		Total		22/20	6	2	1							

\* Credit requirement for PG Diploma/ I<sup>st</sup> year M.Tech is 40 credits. Only one 2 credit elective course is permitted in any of the semesters.

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Program Code:     **33**     **P.G. Diploma/M.Tech. (Ground Water Hydrology)**  
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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
<b>Semester- I (Autumn)</b>														
1.	HYN-701A	Dissertation Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
<b>Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.</b>														
<b>Semester-II (Spring)</b>														
1.	HYN-701B	Dissertation Stage-II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

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

**Program Elective Courses (Ground 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-514	Hydrogeology	PEC	4	3	1	2/2	3	-	20	20	20	40	-
2.	HYN-561	Multi-phase flow through porous media	PEC	4	3	1	2/2	3	-	20	20	20	40	-
3.	HYN-539	Isotope hydrology	PEC	4	3	1	2/2	3	-	20	20	20	40	-
4.	HYN-544	Hydrogeology of hard rocks	PEC	4	3	1	-	3	-	25	-	25	50	-
5.	HYN-522	Stochastic hydrology	PEC	4	3	1	-	3	-	25	-	25	50	-
6.	HYN-537	Remote sensing and GIS applications	PEC	4	3	1	2	3	-	15	25	20	40	-
7.	HYN-562	Irrigation and drainage engineering	PEC	4	3	1	2/2	3	-	20	20	20	40	-
8.	HYN-545	Surface Water quality modeling	PEC	4	3	1	-	3	-	25	-	25	50	-
9.	HYN-546	Hydroinformatics	PEC	4	3	1	2/2	3	-	20	20	20	40	-
10.	HYN-518	Water resources planning and Management	PEC	4	3	1	-	3	-	25	-	25	50	-
11.	HYN-513	Hydrometeorology and climate change	PEC	4	3	1	2/2	3	-	20	20	20	40	-
12.	HYN-563	Vadose zone hydrology	PEC	4	3	1	2/2	3	-	20	20	20	40	-
13.	HYN-552	Numerical methods in hydrology	PEC	2	2	1/2	-	2	-	25	-	25	50	-
14.	HYN-553	Experimental hydrology	PEC	2	-	-	4	-	2	-	50	-	-	50
15.	HYN-566	Groundwater protection and regulation	PEC	2	2	1/2	-	2	-	25	-	25	50	-
16.	HYN-554	Soil and Water Remediation	PEC	4	3	1	2/2	3	-	20	20	20	40	-
17.	HYN-511	Hydrologic elements and analysis	PEC	4	3	1	-	3	-	25	-	25	50	-
18.	HYN-538	Hydrological data collection, processing and analysis	PEC	4	3	1	2/2	3	-	20	20	20	40	-
19.	HYN-555	Soft-computing techniques in hydrology	PEC	2	2	1/2	-	2	-	25	-	25	50	-
20.	HYN-556	Environmental Quality Lab	PEC	2	-	-	4	-	2	-	50	-	-	50
21.	AH-516	Hydro Mechanical Equipment	PCC	4	3	1	2/2	3	-	20	20	20	40	-