DEPARTMENT OF HYDRO AND RENEWABLE ENERGY
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code: **12 M.Tech. (Renewable and Hydro Energy)**
Department: **HRE Department of Hydro and Renewable Energy**
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.	AHN-510	Hydropower Planning and Management	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2.	AHN-513	Renewable Energy Resources Development Technology	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
3.		Program Elective-I	PEC	4	-	-	-	-	-	-	-	-	-	-
4.		Program Elective-II	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Program Elective-III	PEC	4	-	-	-	-	-	-	-	-	-	-
		Total		**20**										
Semester-II (Spring)														
1.	AHN-583	Grid Integration of Renewable Energy	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
2.	AHN-584	Finance, Policy and Regulations for Renewable Energy	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
3.	AHN-700	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-
4.		Program Elective-IV	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Program Elective-V	PEC	4	-	-	-	-	-	-	-	-	-	-
		Total		**18**										

DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code: **12 M.Tech. (Renewable and Hydro Energy)**
Department: **HRE Department of Hydro and Renewable Energy**
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.	AHN-701A	Thesis 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.	AHN-701B	Thesis Stage-II (continued from III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		**18**										

Summary				
Semester	**1**	**2**	**3**	**4**
Semester-wise Total Credits	20	18	12	18
Total Credits	**68**			

Program Elective Courses M.Tech. (Renewable and Hydro Energy)

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.	AHN-514	Hydro Electric Equipment	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
2.	AHN-515	Design of Hydropower Structures	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
3.	AHN-516	Hydro mechanical Equipment	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
4.	AHN-517A	Modelling, Simulation & Computer Applications	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
5.	AHN-518	Environmental Planning and Management	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
6.	AHN-522	Wind Energy Application Technology	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
7.	AHN-526	Instrumentation for Hydro Power Plants	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
8.	AHN-528	Rural Electrical Energy System Planning and Design	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
9.	AHN-532	Remote Sensing and GIS for Renewable Energy Planning	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
10.	AHN-534	Construction Planning and Management	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
11.	AHN-536	Biomass Production and Utilisation	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
12.	AHN-540	Solar Photo-Voltaic Design and Application	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
13.	AHN-542	Energy Conservation and Management	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
14.	AHN-580	Climate Change and water Resources	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
15.	AHN-581	Energy-water-food nexus	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
16.	AHN-582	Electric Vehicular Technology	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
17.	AHN-585	Energy Storage Systems	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
18.	AHN-586	Hydrogen Economy	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-