

**ACADEMIC AFFAIRS OFFICE
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
Roorkee – 247667**

No. Acd./40 /Senate-89

Dated: January 06, 2022

Subject: Renaming of existing M.Tech. program on 'Alternate Hydro Energy System' as "Renewable and Hydro Energy" and revision in its structure (Item No. 89.5)

The Senate in its 89th meeting held on 09.12.2021 approved the proposal of Department of Hydro and Renewable Energy to rename the existing M.Tech. program on 'Alternate Hydro Energy System' as "Renewable and Hydro Energy" and to revise its structure.

The revised structure is attached as **Appendix-A**.


Assistant Registrar (Curriculum)

Copy to (through e-mail):-

1. Chairman Senate & Director
2. All faculty
3. Head of all Departments/ Centres / School
4. Dean, Academic Affairs
5. ADoAA (IT Systems & Admission)/ (Curriculum)/ (Evaluation)
6. Meeting Section
7. Channel i / AIS (Acad. Portal) / Academic webpage of iitr.ac.in

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	-