CENTRE FOR SUSTAINABLE ENERGY
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Sustainable Energy Engineering)**
Department : **Centre for Sustainable Energy**
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.	SEC-501	Sustainable Energy and Environment	PCC	4	3	1	0	3	0
2.	SEC-503	Theory and Simulation for Chemical Reactions	PCC	4	3	0	2	3	0
3.	SEC-505	Energy Conversion Technologies	PCC	4	3	0	2	3	0
4.	SEC-507	Energy Storage Technologies	PCC	4	3	0	2	3	0
5.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**18**					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	-	-	-	-	-
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.	SEC-700	Seminar	SEM	2	-	-	-	-	-
		Total		**21**					

DEPARTMENT OF CENTRE FOR SUSTAINABLE ENERGY
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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.	SEC-691	Internship Social Activity	ISA	3	-	-	-	-	-
2.	SEC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		**13**					
Semester-II (Spring)									
1.	SEC-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. (Sustainable Energy 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.	SEL-501	AI/ML for Energy Systems	PEC	4	3	1	0	3	0
2.	SEL-502	Battery: Design, Development and Deployment	PEC	4	3	1	0	3	0
3.	SEL-503	Solar Photovoltaics: Design and Developments	PEC	4	3	1	0	3	0
4.	SEL-504	Recycling and Circular Economy	PEC	4	3	1	0	3	0
5.	SEL-505	Hydrogen Economy	PEC	4	3	1	0	3	0
6.	SEL-506	Sustainable Energy Systems: Control and Protection	PEC	4	3	1	0	3	0
7.	SEL-507	Green Transportation Systems	PEC	4	3	1	0	3	0
8.	SEL-508	Energy Market Regulations and Policies	PEC	4	3	1	0	3	0
9.	SEL-509	Bioenergy and Sustainability	PEC	4	3	1	0	3	0
10.	SEL-510	Modelling and Simulation of Sustainable Energy System	PEC	4	3	1	0	3	0
11.	SEL-511	Flexible and Wearable Energy Devices	PEC	4	3	1	0	3	0
12.	SEL-512	Materials for Energy Harvesting and Storage	PEC	4	3	1	0	3	0
13.	SEL-513	Functional and Operational Aspects of Offshore Wind Energy	PEC	4	3	1	0	3	0

Social Sciences Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
1.	SES-501	Sustainable Energy: Challenges and Industrial Perspective	SSC	2	2	0	0	2	0
2.	SES-502	Sustainable Transition and Policy	SSC	2	2	0	0	2	0
3.	SES-503	Energy Economics, Policy and Planning	SSC	2	2	0	0	2	0