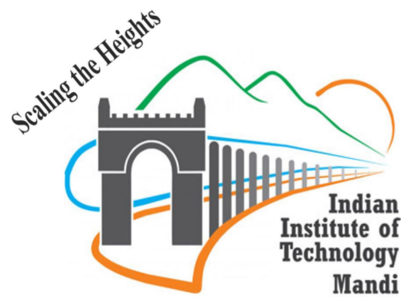


Master of Technology in Energy Engineering with specialization in Materials (EEM)



Programme Level	Post Graduate
Year of Commencement	2014
Minimum Duration	2 Years (4 Semesters)
Maximum Duration	3 Years (6 Semesters)
Senate Meeting Reference	6.5/8.6/18.5/22.7

Motivation

With ever increasing energy requirement and clear ill-effects of our dependence on fossil-fuel on the climate, impact of well-established studies on energy management is undeniable; especially the non-conventional energy sector and material development for such or existing energy systems are of national and international importance. Amongst others, a major emphasis is bestowed upon novel material synthesis and their application in renewable/non-conventional energy conversion and storage on a global scale. Over recent years there has been a steady growth in the renewable energy sector, which is vastly driven by boost of research in novel material incorporation in existing systems. The recent changes in government policies favoring non-conventional/renewable energy sectors, focused research on development of 'energy materials'/ efficient systems have clear implication on increased demand for specialists and engineers in this evolving scenario, both understanding the science and technology of material development followed by system improvement and its management for allied policy regulation. This program intends to fill the void between the two with a holistic approach of course curriculum consisting of deep understanding of the present infrastructure, policies, scope of improvement and development of new materials/technology useful for both conventional and non-conventional energy systems. Hence, M Tech EEM aims to train students who can walk both the shoes of an energy engineer/technologist and policy regulator.

Description

The M Tech program in in Energy Engineering with specialization in Materials is an amalgamation of conventional and non-conventional energy related courses focusing on policies and regulations, basics of energy engineering and especially materials development for energy related studies. The course curriculum consists of one-year course work followed by a one year of dissertation. This curriculum envisages to prepare the students for a professional or research career either in industries or academia after the completion of the course. The basic description of the course structure is as following-

Total Credits requirement: 72 (Minimum)

Dissertation: 32 Credits

Course work: 39 Credits

Industrial training: 4-6 weeks (1 Credit)

Courses	Credits
Foundation courses for specialization	9
Core courses	15
Specialization stream elective courses	3
Technical communication, Industrial visits, Research practicum, Laboratory	7
Free electives	6
Dissertation	32

Curriculum

1st Semester

Code	Course Title	Credit L-T-P-C
EN 501	F1. Foundation 1: Energy Sources and Power Plants	3-0-0-3
EN 502	F2. Foundation 2: Emerging Energy Sources	3-0-0-3
HS 540	F3. Foundation 3: Energy: Environment Policy and Law	3-0-0-3
EN 503	C1: Energy Storage Technology	2-0-2-3
EN 505P	Energy Systems Laboratory	0-0-4-2
DP 500P	Research Practicum	0-0-6-3
HS 541	Technical Communication	1-0-0-1
	Free Elective-1	3-0-0-3
	Total Credits	21

2nd Semester

Code	Course Title	Credit L-T-P-C
ME 620	C2: Modelling and Simulation	2-0-2-3
EN 611	C3: Durability Behaviour of Energy Materials	3-0-0-3
EN 612	C4: Structure- Property correlation in materials for Energy Applications	3-0-0-3
	Specialization Elective-1	3-0-0-3
	Free Elective-1	3-0-0-3
	Free Elective-2	3-0-0-3
	Summer Term	
DP 512 P	Industrial/ Research Internship	1
	Total Credits	19

3rd Semester

Code	Course Title	Credit L-T-P-C
EN 613	C5. Creep-Fatigue Interaction	3-0-0-3
ME 696P	Post Graduate Project-1	0-0-28-14
	Total Credits	17

4th Semester

Code	Course Title	Credit L-T-P-C
ME 697P	Post Graduate Project-2	0-0-36-18
	Total Credits	18