Master of Technology in

Mechanical Engineering with specialization in Energy Systems

Programme Level	Post Graduate
Year of Commencement	2014
Minimum Duration	2 Years (4 Semesters)
Maximum Duration	3 Years (6 Semesters)
Senate Meeting Reference	4.5/10.3/18.5

Motivation

The Masters level programme of M.Tech. in Mechanical Engineering with specialization in Energy Systems attempts to train the students about mechanical engineering aspects of energy systems including both conventional and emerging technology systems. For enabling the students to tackle energy related issues in Indian context the program is aimed to develop insight amongst students about the requirements of energy systems enabling them with skills required for analysis and design of energy systems. Innovative spirit of the students will be unleashed through group projects/ design practicum and dissertation. The practicum will address all aspects of energy resources starting from primary sources, conversion technology challenges to efficient and clean utilization methods. Thrust of the programme is the rigorous training about system design and analysis tools in order to guide students to carry out their thesis work addressing the challenges of energy technology.

Description

The M Tech program in Mechanical Engineering with specialization in Energy Systems is an amalgamation of conventional and non-conventional energy related courses focusing on policies and regulations, basics of energy engineering and vital concepts of thermal sciences, mechanics and manufacturing processes important for dealing energy technology challenges. 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/ Research training: 4-6 weeks (1 Credit)

Courses	**Credits**
Foundation courses for specialization	9
Core courses	12
Specialization stream elective courses	6
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
ME 632	Mechanics for Energy Systems	3-0-0-3
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
	Specialisation Elective-I	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
ME 631	C3: Hear Transfer and Fluid Flow in Energy Systems	3-0-0-3
ME 633	C4: Design of Energy Systems	3-0-0-3
	Specialization Elective-2	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
ME 698P	Post Graduate Project-1	0-0-28-14
	Total Credits	**14**

4th Semester

Code	Course Title	Credit L-T-P-C
ME 699P	Post Graduate Project-2	0-0-36-18
	Total Credits	**18**