

**General Regulations for Master of Science Program in Energy Conversion  
Mechanical Engineering Department, Sharif University of Technology**

**General Regulations**

The program leading to master degree in energy conversion comprises of minimum 29 credits with the maximum duration of 2 years.:

A -	Compulsory Core Courses	3 Credits
B -	Compulsory Specialized Courses	6 Credits
C -	Elective Specialized Courses	12 Credits
D -	Seminar	2 Credits
E -	Thesis	6 Credits

A - Compulsory Core Courses: Selection of Compulsory Core Course is based on Table A-1.

<i>Table A-1</i>		
Course #	Course Title	Credits
28031	Advanced Mathematics I	3

B - Compulsory Specialized Course: Selection of 6 credits of specialized course is based on Table B-1. Considering major field

<i>Table B-1</i>		
Course #	Course Title	Credits
28043	Convection Heat Transfer	3
28069	Advanced Fluid Mechanics	3
28037	Advanced Thermodynamics	3

C - Elective Specialized Courses including 12 units of all courses offered in the thermo-fluid branch

**Elective Specialized Course List**

Course	Course Title	Credits	Prerequisite
28013	Application of Solar Energy	3	---
28016	Computational Fluid Dynamics (CFD1)	3	28012
28017	Traditional Cooling Method	3	---
28018	Research Method	3	*
28028	Cryogenic	3	*

28035	Statistical Thermodynamcis	3	28031**
28037	Advanced Thrermodynamics	3	28031**
28038	Conduction Heat Transfer	3	28031**
28039	Gas Dynamics	3	---
28041	Advanced Internal Engine	3	28164
28042	Finite Element Method	3	28012
28043	Convection Heat Transfer	3	28031**
28055	Radiation Heat Transfer	3	28031**
28056	Boundary Layer1	3	28031**
28058	Direct Energy Conversion	3	*
28069	Advanced Fluid Mechanics	3	28031
28082	Two Phase Flow	3	28031
28089	Turbulence	3	28056 or 28069 or *
28093	Advanced Combustion	3	28031**
28194	Computational Fluid Dynamics (CFDII)	3	28016
28195	Advanced Hydro Aerodynamics	3	28031**
28362	Advanced Aerodynamics	3	28069 or 28195
28363	Computational Grid Generation	3	28012
28582	Viscous Flow	3	28031**
28584	Advanced Heat Exchanger Design	3	28172
28601	Parallel Processing	3	
28604	Turbulence Modeling	3	
28606	Multi Phase Flow In Porous Media	3	28033 and 28012
28607	Material Transporting and Absorbing Particles	3	

D – Seminar: It is compulsory course.

Course #	Course Title	Credits
28040	Seminar	2

E – Project (6 Credits): To prepare the proposal of M.Sc. thesis, the students should prepare their preliminary proposal and select their M.Sc. supervisor and receive the approval of energy conversion group before starting of 2<sup>nd</sup> semester. The registration for the 2<sup>nd</sup> semester is provided that the two M.Sc. thesis title and M.Sc. supervisor is selected. For more information regarding the regulations of M.Sc. thesis refer to M.Sc. program Booklet at Sharif University of Technology.

Course #	Course Title	Credit
28980	Master Thesis	6