

Master of Science Program of Study

Department of Mechanical & Aerospace Engineering
The Henry Samueli School of Engineering
University of California, Irvine

Student Information		
Last name:	First name:	Faculty Advisor:
Address:		
Home phone:	Office phone:	Email:
Major area of study:	Minor area of study:	M.S. degree requirements to be completed by:

Table 1: List of approved required courses.

Area	Approved Courses
Applied Math	MAE 200A, 200B
Synthesis and Integration	MAE 210, 214, 215, 223A, 236, 237, 238, 242, 245, 247, 249, 250, 252, 253, MAE 260, 261, 273

Table 2: List of approved major and minor courses for all fundamental areas.

Area	Approved Major Courses	Approved Minor Courses
Fluid Dynamics	MAE 230A, 230B, 230C, 230D, 231, 233, 236	MAE 230A, 230B
Solid / Structural / Material Mechanics	MAE 207, 254, 255 MSE 256A, 256B CEE 247, 250	MAE 207, 254, 255 MSE 256A, 256B CEE 247, 250
Dynamics & Control	MAE 206, 241, 270A, 274, 275, 276	MAE 206, 241, 270A, 274
Transport & Thermal Sciences	MAE 216, 217, 220, 221, 224, 236	MAE 216, 217, 220, 221, 222, 224

See page three for course names.

Signature of the Candidate		Date:	
First Approval Signature		Date:	
	<i>Faculty Advisor</i>		
Second Approval Signature		Date:	
	<i>Graduate Advisor</i>		
Third Approval Signature		Date:	
	<i>Department Chair or Associate Chair for Academic Affairs</i>		

Required Courses				THESIS OPTION <input type="checkbox"/>	COMPREHENSIVE EXAM OPTION <input type="checkbox"/>
				A minimum of 8 graduate courses numbered MAE 200-289 are required. Seminar and research units complete the required 47 units.	11 graduate courses numbered MAE 200-289 are required. 3 units of MAE 298 are required. Up to 8 units of MAE 294 could be added to bring the total to 47 units.
Required Courses	Units	Grade	Qtr/Yr		
1.				Applied Math Course: at least one course from the approved Applied Math area is required.	Applied Math Course: at least one course from the approved Applied Math area is required.
2.				Synthesis and Integration Course: at least one course from the approved Synthesis and Integration area is required.	Synthesis and Integration Course: at least one course from the approved Synthesis and Integration area is required.
Courses Related to Major					
Major Courses	Units	Grade	Qtr/Yr		
3.					
4.				Major Area of Study: at least three courses from the approved list of courses in the major area are required.	Major Area of Study: at least three courses from the approved list of courses in the major area are required.
5.					
Courses Related to Minor					
Minor Courses	Units	Grade	Qtr/Yr		
6.				Minor Area of Study: at least one course from the approved list of courses in the minor area is required.	Minor Area of Study: at least one course from the approved list of courses in the minor area is required.
Research Courses					
Lecture Courses	Units	Grade	Qtr/Yr		
7.				MAE 296: 12 units are required.	MAE 294: up to 8 units of MAE 294 including documentation of a research project in are allowed in lieu of 8 units of MAE 200-289
8.				MAE 298: 3 units are required.	MAE 298: 3 units are required.
8.					
9.					
Elective Courses					
Research Courses	Units	Grade	Qtr/Yr		
10.				At least 2 elective courses are required.	3 to 5 elective courses are required.
11.				Any course numbered MAE 200-289 not used for the above requirements qualifies for use here.	Any course numbered MAE 200-289 not used for the above requirements qualifies for use here.
12.				With the approval of the Graduate Advisor, 2 courses in MAE 200-289 may be replaced by grad tech electives in other departments.	With the approval of the Graduate Advisor, 2 courses in MAE 200-289 may be replaced by grad tech electives in other departments.
13.				One senior-level technical elective (non-required) UG course in MAE may be used to replace a course numbered 200-289.	One senior-level technical elective (non-required) UG course in MAE may be used to replace a course numbered 200-289.
14.					
			TOTAL UNITS		

Table 1:

Applied Mat- Approved Courses

MAE200A Engineering Analysis I

MAE200B Engineering Analysis II

Synthesis and Integration - Approved Courses

MAE210 Advanced Fundamentals of Combustion

MAE214 Fuel-Cell Fundamentals and Technology

MAE215 Advanced Combustion Technology

MAE223A Numerical Methods in Heat, Mass, and Momentum Transport (Laminar Flows) I

MAE226 Special Topics in Fluid and Thermal Sciences

MAE236 Nonequilibrium Gas Dynamics

MAE237 Computational Fluid Dynamics

MAE238 Experimental Fluid Dynamics

MAE242 Robotics

MAE245 Spatial Mechanism Design

MAE247 Micro-System Design

MAE249 Micro-Sensors and Actuators

MAE250 Biorobotics

MAE252 Fundamentals of Microfabrication

MAE253 BIOMEMS

MAE260 Current Issues Related to Tropospheric and Stratospheric Processes

MAE261 Air Quality Modeling

MAE273 Control of Robot Systems

Table 2:

Fluid Dynamics – Approved Major Courses

MAE230A Inviscid Incompressible Fluid Mechanics I

MAE230B Viscous Incompressible Fluid Dynamics II

MAE230C Compressible Fluid Dynamics

MAE230D Theoretical Foundations of Fluid Mechanics

MAE231 Fundamentals of Turbulence

MAE233 Turbulent Free Shear Flows

MAE236 Nonequilibrium Gas Dynamics

Fluid Dynamics – Approved Minor Courses

MAE230A Inviscid Incompressible Fluid Mechanics I

MAE230B Viscous Incompressible Fluid Dynamics II

Solid / Structural /Material Mechanics – Approved Major and Minor Courses

MAE207 Methods of Computer Modeling in Engineering and the Sciences

MAE254 Mechanics of Solids and Structures

MAE255 Composite Materials and Structures

MSE256A Mechanical Behavior of Engineering Materials

MSE256B Fracture of Engineering Materials

CEE247 Structural Dynamics

CEE250 The Finite Element Method in Structural Engineering

Dynamics & Control - Approved Major Courses

MAE206 Nonlinear Optimization Methods

MAE241 Dynamics

MAE270A Linear Systems I

MAE274 Optimal Control

MAE275 Nonlinear Feedback Systems

MAE276 Geometric Nonlinear Control

Dynamics & Control - Approved Minor Courses

MAE206 Nonlinear Optimization Methods

MAE241 Dynamics

MAE270A Linear Systems I

MAE274 Optimal Control

Transport & Thermal Sciences- Approved Major and Minor Courses

MAE216 Statistical Thermodynamics

MAE217 Generalized Thermodynamics

MAE220 Conduction Heat Transfer

MAE221 Convective Heat Transfer

MAE224 Convective Mass Transfer

MAE236 Nonequilibrium Gas Dynamics

* Courses MAE 222, 225, MSE 256C no longer offered.

Last Updated: October 9, 2009