Master of Science Program of Study
Department of Mechanical & Aerospace Engineering
The Henry Samueli School of Engineering
University of California, Irvine

Student Information

<table>
<thead>
<tr>
<th>Last name:</th>
<th>First name:</th>
<th>Faculty Advisor:</th>
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<tr>
<th>Home phone:</th>
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<tr>
<th>Major area of study:</th>
<th>M.S. degree requirements to be completed by:</th>
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Table 1: List of approved required courses

<table>
<thead>
<tr>
<th>Area</th>
<th>Approved Courses</th>
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<tbody>
<tr>
<td>Applied Mathematics</td>
<td>MAE 200A, 200B, or a Math course outside the MAE department with the approval of the Graduate Advisor</td>
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<tr>
<td>Design Engineering*</td>
<td>MAE 244, 245, 247, 249, 250, 253</td>
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<tr>
<td>Dynamics &amp; Control</td>
<td>MAE 206, 241, 270A, 273, 274, 275, 276</td>
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<tr>
<td>Transport &amp; Thermal Sciences</td>
<td>MAE 216, 217, 220, 221, 224</td>
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*This area is only for a terminal MS. There is no PhD Preliminary Exam in this area.

Signature of the Candidate _______________________________________________________ Date: ________________

First Approval Signature _______________________________________________________ Date: ________________

Faculty Advisor

Second Approval Signature _______________________________________________________ Date: ________________

Graduate Advisor

Third Approval Signature _______________________________________________________ Date: ________________

Department Chair or Associate Chair for Academic Affairs

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1 See page three for course names.
### Required Courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Units</th>
<th>Grade</th>
<th>Qtr/Yr</th>
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#### Applied Math Course
- At least one course from the approved Applied Math area is required.

#### CME Course
- At least one course from the approved CME area is required.

### Courses Related to Major

<table>
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<tr>
<th>Courses</th>
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#### Major Area of Study
- At least three courses from the approved list of courses in one of the four MAE major areas are required.

### Elective Courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Units</th>
<th>Grade</th>
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#### At least 4 elective courses are required.

- Any technical or science non-research graduate course not used for the above requirements qualifies for use here.
- The approval of the Graduate advisor is required for courses outside the MAE department to ensure that essentially different courses are selected.
- With the approval of the Graduate Advisor, one upper division technical graduate course in MAE may be used to replace one of the elective courses; this substitution cannot be a core (required) course for the equivalent UCI program that the student received his/her undergraduate degree.

#### At least 5 to 7 elective courses are required.

- Any technical or science non-research graduate course not used for the above requirements qualifies for use here.
- The approval of the Graduate advisor is required for courses outside the MAE department to ensure that essentially different courses are selected.
- With the approval of the Graduate Advisor, one upper division technical graduate course in MAE may be used to replace one of the elective courses; this substitution cannot be a core (required) course for the equivalent UCI program that the student received his/her undergraduate degree.

### Research Courses

<table>
<thead>
<tr>
<th>Courses</th>
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<th>Grade</th>
<th>Qtr/Yr</th>
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- MAE 296: 12 units are required.
- MAE 298: 3 units are required.
- MAE 294: up to 8 units of MAE 294 including documentation of a research project are allowed in lieu of elective courses with 4 units of MAE 294 replacing an elective course.
Approved Courses

**Applied Mathematics**
MAE200A Engineering Analysis I
MAE200B Engineering Analysis II

**Design Engineering**
MAE244 Theoretical Kinematics
MAE245 Spatial Mechanism Design
MAE247 Micro-System Design
MAE249 Micro-Sensors and Actuators
MAE250 Biorobotics
MAE253 BioMEMS

**Dynamics & Control Major**
MAE206 Nonlinear Optimization Methods
MAE241 Dynamics
MAE270A Linear Systems I
MAE273 Control of Robot Systems
MAE274 Optimal Control
MAE275 Nonlinear Feedback Systems
MAE276 Geometric Nonlinear Control

**Fluid Dynamics Major**
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

**Solid / Structural /Material Mechanics Major**
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

**Transport & Thermal Sciences Major**
MAE216 Statistical Thermodynamics
MAE217 Generalized Thermodynamics
MAE220 Conduction Heat Transfer
MAE221 Convective Heat Transfer
MAE224 Convective Mass Transfer

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2 Course descriptions can be found at the following link: http://www.editor.uci.edu/catalogue/12-13Catalogue.pdf