Table 1: List of approved required courses

<table>
<thead>
<tr>
<th>Area</th>
<th>Approved Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Math</td>
<td>MAE 200A, 200B, or a Math course outside the MAE department with the approval of the Graduate Advisor</td>
</tr>
<tr>
<td>Dynamics &amp; Control</td>
<td>MAE 206, 241, 270A, 274, 275, 276</td>
</tr>
<tr>
<td>Transport &amp; Thermal Sciences</td>
<td>MAE 216, 217, 220, 221, 224</td>
</tr>
</tbody>
</table>

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

Last Updated: July 19, 2010

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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### Courses Related to Major

<table>
<thead>
<tr>
<th>Courses</th>
<th>Units</th>
<th>Grade</th>
<th>Qtr/Yr</th>
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### Elective Courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Units</th>
<th>Grade</th>
<th>Qtr/Yr</th>
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### Research Courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Units</th>
<th>Grade</th>
<th>Qtr/Yr</th>
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</table>

### THESIS OPTION

- A minimum of 8 technical or science, non-research, graduate courses, 3 Seminar (MAE 298) and 12 MS thesis (MAE 296) are required. **At least 4 courses must be from the MAE department.**

  **Applied Math Course:** at least one course from the approved Applied Math area is required.

### COMPREHENSIVE EXAM OPTION

- A minimum of 11 technical or science, non-research, graduate courses, 3 Seminar (MAE 298) are required. Up to two of the required courses may be replaced by an equivalent number of units of MS Project (MAE 294). At least 6 courses must be from the MAE department.

  **Applied Math Course:** at least one course from the approved Applied Math area is required.

### 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

- **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 undergraduate 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.

- **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 undergraduate 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

- **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.

- **MAE 298:** 3 units are required.
Approved Courses

**Applied Math**
- MAE200A Engineering Analysis I
- MAE200B Engineering Analysis II

**Dynamics & Control Major**
- MAE206 Nonlinear Optimization Methods
- MAE241 Dynamics
- MAE270A Linear Systems I
- 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/09-10Catalogue.pdf](http://www.editor.uci.edu/catalogue/09-10Catalogue.pdf)