MEMORANDUM

To: MAE Students and Faculty  
From: MAE Graduate Studies Committee, Richard Kent, Professor and Chair  
Date: December 14, 2012  
Subject: Changes to MAE Graduate Degree Coursework Requirements, PhD Qualifying Examination, and Admission to PhD Candidacy

The MAE faculty voted on November 6, 2012 to change the MAE coursework requirements for graduate degrees, the PhD qualifying examination, and the requirements for admission to PhD candidacy. This memorandum describes these changes and the plan for implementing them. Note that this memo is not a comprehensive list of requirements for an MAE graduate degree. It reflects only the changes recently approved by the MAE faculty. These changes do not affect the graduate degree requirements of SEAS or of the university, which still must be satisfied (see www.seas.virginia.edu). Neither do these changes affect the requirements for research credits, which still must be satisfied.

Background

To date, the MAE graduate curriculum has been structured around three disciplines (sometimes called tracks): Solid Mechanics, Dynamical Systems & Control, and Thermofluids. Each of these has had core courses that students have been required to take. The particular combinations of courses that have satisfied the core have varied by track. Course grades have also been used by students to exempt from the written portion of the PhD qualifying exam.

New MAE Graduate Degree Coursework Requirements

Instead of three tracks, we now have two. Each track has a required core of 5 courses (15 hours). Every MS and PhD student must complete one of the tracks. No other UVA courses will be considered as replacements for the core courses, but a student may petition the MAE Graduate Studies Committee to have courses taken at another university satisfy analogous courses in the core curriculum. Any replacement course must be substantially similar to the core offering at UVA and will be considered in the calculation of composite core GPA for PhD candidacy (see below). The burden will be on the student to prove that any replacement course is substantially similar and to translate any course grade to the grading scale used at UVA. Any grade translation will require convincing documentation.

Required Core Courses in Each Track

<table>
<thead>
<tr>
<th>Mechanics Track</th>
<th>Thermofluids Track</th>
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<tbody>
<tr>
<td>MAE 6020 Continuum Mechanics</td>
<td>MAE 6100 Thermomechanics</td>
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<tr>
<td>MAE 6210 Analytical Dynamics</td>
<td>MAE 6310 Fluid Mechanics I</td>
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<td>MAE 6100 or Thermomechanics or</td>
<td>MAE 6020 or Continuum Mechanics or</td>
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<td>6310 Fluid Mechanics I</td>
<td>6210 Analytical Dynamics</td>
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<tr>
<td>MAE 6710 Finite Elements</td>
<td>MAE 6720 Computational Fluid Mechanics</td>
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The graduation requirements also include completion (satisfactory grade) of

- At least two semesters of MAE 7510 for an MS degree
- At least six semesters of MAE 8591 or MAE 7510 for a PhD degree (seminar series courses taken towards an MS degree can satisfy this requirement).

These courses can be taken for 0 credits each semester and a satisfactory grade requires attendance of at least six seminars, where at least four of these are MAE- or NIA-sponsored seminars (CAB seminars are considered MAE seminars). If the MAE or NIA seminars regularly conflict with a student’s enrollment in another course or with TA commitments, then seminars in another department may be substituted for that semester.

The required total number of course credits remains unchanged:

- ME degree: 30 hours of graduate coursework, which must include 18 credits from MAE.
- MS degree: 24 hours of graduate coursework (3 graduate courses beyond the core).
- PhD degree: 36 hours of graduate coursework (7 graduate courses beyond the core).

**New PhD Qualifying Requirements**

The oral portion of the PhD qualifying exam is unchanged. The written portion of the exam has been eliminated.

**New Core GPA Requirement for Admission to PhD Candidacy**

MAE is also initiating a new GPA requirement for admission to PhD candidacy. For admission to PhD candidacy a study must

- Have a composite GPA of at least 3.60 in his/her required core of 5 courses, and
- Have no grade lower than a B- in his/her core courses.

For the purposes of meeting this MAE core GPA requirement for PhD candidacy, students will be allowed to re-take a course as many times as necessary and the core GPA requirement will be calculated with the highest of the grades received in a course. The overall GPA on a student’s transcript will reflect coursework in accordance with university policy.

**Implementation Plan**

These graduate degree requirements are in effect immediately and apply to all students starting any MAE graduate program after the fall semester of 2012. This applies to current MAE students who change programs (e.g., if a student changes from the MS program to the PhD program the new requirements apply for the PhD program).

Current MAE students may choose either the requirements in place when they were admitted (the old requirements) or the new requirements to satisfy the requirements of their current program. By default, the old requirements will be used for current students. If a current student wishes to change to the new requirements, he/she must inform the MAE Graduate Studies Committee by sending an email to Professor Kent (rwk3c@virginia.edu) by May 1, 2013.