Ph.D. in Engineering
Engineering Education Concentration
Recommended Plan of Study (2/2012)

Degree Codes:  ES PhD ENGR

Contact: Kelly Crittenden

General Core Courses
Take the following 3 courses (9 SCH)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 620</td>
<td>Theory of Probability</td>
</tr>
<tr>
<td>STAT 621</td>
<td>Theory of Statistics</td>
</tr>
</tbody>
</table>

Choose ONE course from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENGR 641</td>
<td>Formulation of Solutions to Engineering Problems</td>
</tr>
<tr>
<td>MATH 574</td>
<td>Numerical Solutions to PDEs</td>
</tr>
</tbody>
</table>

Engineering Education Core
Take the following 3 courses (9 SCH)

1. ENGR 601 Foundations in Engineering Education

2. Choose TWO courses from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGR 510</td>
<td>Research Methods</td>
</tr>
<tr>
<td>PSYC 502</td>
<td>Cognitive Psychology</td>
</tr>
<tr>
<td>PSYC 618</td>
<td>Motivation</td>
</tr>
<tr>
<td>PSYC 543</td>
<td>Psychometric Theory</td>
</tr>
<tr>
<td>PSYC 743</td>
<td>Advanced Psychometric Theory</td>
</tr>
</tbody>
</table>

Engineering Discipline Core*
Take any 6 courses (18 SCH total) from a core MS/ENGR area of concentration.

Courses chosen from the core MS/ENGR area of concentration as listed in the relevant MS/ENGR Curricula.

Directed Study and Special Topics (9 SCH total)
At least one Doctoral level Special Topics (ENGR 657) and two Doctoral Independent Study (ENGR 650) courses as part of the required course work for the degree. Independent Study can be a preparation for the research leading to the dissertation.

Qualifying Examinations

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENGR 685</td>
<td>Doctoral Qualifying Examination</td>
</tr>
<tr>
<td>ENGR 686</td>
<td>Oral Comprehensive Examination</td>
</tr>
</tbody>
</table>

Doctoral Seminar: 3 SCH
All students are automatically enrolled in the Doctoral Seminar course (ENGR 610) each Fall quarter. 3 SCH of the seminar may be counted towards the degree.

Research and Dissertation
Minimum 18 hours (ENGR 651).
3, 6 or 9 hours per quarter. Maximum total allowed is 30 hours.

Total: 48 SCH of courses + 18 SCH of Research & Dissertation = 66 SCH.

*All PhD students in this track must earn an MS in Engineering. The 18 Semester Credit Hours chosen in the Engineering Discipline Core should be chosen in consultation with the student’s Dissertation committee so that they will serve as courses on the MS in Engineering Plan of Study.