MECHANICAL ENGINEERING AND APPLIED MECHANICS, PHD

The PhD program is a dynamic, hands-on and research-focused degree program. Overseen by the Graduate Group in Mechanical Engineering and Applied Mechanics, students interact closely with faculty to pursue a degree tailored to their research interests. Each student’s course of study is selected with the help of their advisor and is approved by the Graduate Group Chair. Dissertation research is guided by a faculty research advisor and a small committee of faculty with interests and competence in areas related to the dissertation.

The Ph.D. requirements include the completion of a minimum of 10 course units of graduate level coursework beyond the undergraduate program with a grade-point average of at least 3.0, satisfactory performance in the PhD-related exams, presentation of a departmental seminar, completion of the teaching practicum, and the submission and successful defense of an original and significant dissertation. The milestones in the PhD program are noted in the PhD Handbook.

For more information: http://www.me.upenn.edu/prospective-students/doctoral/degree-overview.php

View the University’s Academic Rules for PhD Programs (http://catalog.upenn.edu/pennbook/academic-rules-phd/).

Required Courses
The Ph.D. requirements include the completion of a minimum of 10 course units of graduate level coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Course Units</th>
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<tbody>
<tr>
<td>ENM 5200</td>
<td>Principles and Techniques of Applied Math I</td>
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</tr>
<tr>
<td>ENM 5210</td>
<td>Principles and Techniques of Applied Math II</td>
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MEAM Core Requirements
Select three of the following:

- MEAM 5190 Elasticity and Micromechanics of Materials
- MEAM 5300 Continuum Mechanics
- MEAM 5350 Advanced Dynamics
- MEAM 5610 Thermodynamics: Foundations, Energy, Materials
- MEAM 5700 Transport Processes I
- MEAM 6200 Advanced Robotics

Depth Requirement 1
Breadth Requirement 2
Research-Related Courses 3

1 At least one graduate course in MEAM beyond the core requirements is required to fulfill the Depth Requirement.
2 At least one graduate course outside MEAM that is related to the student’s research is required to fulfill the Breadth Requirement (not including ENM 5200 Principles and Techniques of Applied Math I or ENM 5210 Principles and Techniques of Applied Math II).
3 At least three additional graduate courses that are related to the student’s research are required to fulfill the Research Requirement.

In addition to the ten course units of graduate level work, students will complete:

- Responsible Conduct of Research in Engineering workshop in the first year (EAS 9000 Responsible Conduct for Research in Engineering)
- Three semesters of Teaching Practicum (MEAM 8950 Teaching Practicum; normally taken in 3rd, 4th and 5th semesters)
- Six semesters of the MEAM Seminar (MEAM 6990 MEAM Seminar)

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2023 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.