Application to Certify Completion of an Applied Mathematics Minor

Applicant Information

Name:_________________________________________    CUID:________________     NetID:___________

Major:______________________________    Projected Graduation Date (month/year):___________________

Courses Applying to Minor:
Please list each course you have taken, or plan to take, which will apply to the engineering minor program as
described on the reverse of this form. Include the semester/year in which you completed, or plan to complete,
each course, as well as the number of credits for each.

NOTE: The minor must be offered by a department other than that which offers your engineering major(s), and
is contingent upon successful completion of Bachelor of Science degree requirements.

Course 1:__________________    Semester & Year Completed:____________     Number of Credits:______
Course 2:__________________    Semester & Year Completed:____________     Number of Credits:______
Course 3:__________________    Semester & Year Completed:____________     Number of Credits:______
Course 4:__________________    Semester & Year Completed:____________     Number of Credits:______
Course 5:__________________    Semester & Year Completed:____________     Number of Credits:______
Course 6:__________________    Semester & Year Completed:____________     Number of Credits:______

- The courses you’ve selected will be reviewed by the department and you will receive an email approval
  of your proposed plan. If at any point you need to make changes to this course plan, please contact the
  MAE undergraduate office. Revisions to your minor course plan will be submitted for review and you
  will again, receive email approval.
- Your application will go through final review after you graduate, at which point you will receive
  confirmation that completion of the minor has been submitted to the Engineering Registrar for
  processing.
- The minor will be listed on your official transcript.

Please submit this completed form to Emily Ivory or Kae-Lynn Wilson in 125 Upson Hall.
Minor in Applied Mathematics

Offered jointly by: Sibley School of Mechanical and Aerospace Engineering and the Department of Mathematics

Contact: Professor Richard Rand, 535 Malott Hall, 255-7145, rhr2@cornell.edu. Submit minor form to Kae-Lynn in 125 Upson Hall.

Eligibility: Engineering undergraduates affiliated with all Engineering Majors are eligible to participate in the Applied Mathematics minor.

Educational Objectives: This minor is aimed at providing a focus for students who are interested in applied mathematics.

Requirements: To complete the minor, students must take MATH 2930, MATH 2940, and at least six (6) courses beyond MATH 2940, to be chosen as follows:

a) At most one course may be chosen from each of groups 1 – 4 (see sample program below)

b) At least three courses must be chosen from groups 5 and 6.

c) At most one 2000-level course may be chosen.

d) At most one course may be chosen that is offered by the student’s Major department.

**Note: Students will not receive credit for MATH 4200 (Group 1) and MAE 5790/MATH 4210 (Group 6) if both are taken.

Academic Standards: A grade of C or better in each course.

SAMPLE PROGRAM:

<table>
<thead>
<tr>
<th>Group 1: Analysis</th>
<th>Group 2: Computational Methods</th>
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<tbody>
<tr>
<td>MAE 3100 (Group 1)</td>
<td>MAE 4730/5730 (Group 5)</td>
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<tr>
<td>ENGRD 3200 (Group 2)</td>
<td>MAE 6810 (Group 5)</td>
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<td>ENGRD 2700 (Group 3)</td>
<td>MATH 3320 (Group 6)</td>
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Only one of the following may be chosen:

ECE 4110: Random Signals in Communications and Signal Processing
ORIE 3510: Intro. to Engineering Stochastic Processes I

Also, you may choose from:

CS 4810: Introduction to Theory of Computing
CS 4220: Numerical Analysis: Linear and Nonlinear Problems
CS 4820: Introduction to Analysis of Algorithms
ORIE 3310: Optimization II
ORIE 4330: Discrete Models
ORIE 4350: Introduction to Game Theory
ORIE 4520: Introduction to Engineering Stochastic Processes II
ORIE 5600: Financial Engineering with Stochastic Calculus I
ORIE 5610: Financial Engineering with Stochastic Calculus II
MAE 4730/5730: Intermediate Dynamics and Vibrations
MAE 5790/MATH 4210: Nonlinear Dynamics and Chaos**
MAE 6700: Advanced Dynamics
MAE 6810: Methods of Applied Mathematics I
MAE 6820: Methods of Applied Mathematics II
MAE 6840: Asymptotics and Perturbation Methods

Group 4: Applications:

<table>
<thead>
<tr>
<th>Group 5: Advanced Courses:</th>
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<tbody>
<tr>
<td>AEP 3330: Mechanics of Particles and Solid Bodies</td>
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<tr>
<td>CEE 3310: Fluid Mechanics</td>
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<tr>
<td>CEE 3710: Structural Modeling and Behavior</td>
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<tr>
<td>CHEME 3230: Fluid Mechanics</td>
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<tr>
<td>CS 2800: Discrete Structures</td>
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<td>CS 2850: Networks</td>
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<td>ECE 3200: Networks and Systems</td>
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<td>ECE 4250: Digital Signal and Image Processing</td>
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<tr>
<td>MATH 3620: Introductory Fluid Mechanics</td>
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<td>MSE 3030: Thermodynamics of Condensed Systems</td>
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<td>MATH 3610: Mathematical Modeling</td>
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Group 6: Mathematics Courses:

Any 3000+ level course offered by the Mathematics Department in algebra, analysis, probability/statistics, geometry, or logic, with the following exceptions:

(I) MATH 3230 or MATH 4200, if any course from group 1 is chosen.

(ii) MATH 4710, if any course from group 3 is chosen.

(iii) MATH 4220, if AEP 4220 is chosen from group 5.

(iv) Only one of the following may be chosen:

MATH 3320: Introduction to Number Theory
MATH 3360: Applicable Algebra

Rev. 1/25/19 eft24