Progress Toward Completion of the Mathematics Major

Operations Research Concentration

Arts and Sciences students may be admitted to the math major after successfully completing a semester of multivariable calculus, a semester of linear algebra, and a 3- or 4-credit computer programming course. Applications are available in 310A Malott Hall.

Student's Name

Net ID

Faculty Advisor

Courses needed to complete the major

initials

date

Math majors must complete 9 courses for the major, as described in items 1–3 below, with a minimum grade of C−. MATH courses numbered 5000–5999 do not count. No course may be used to satisfy more than one requirement.

At least two of the MATH courses taken must be at the 4000 level (or above).

1. Two Courses in Algebra. ( ___ transfer credit applied, see reverse)
   - MATH 3320 Introduction to Number Theory
   - MATH 3340* Abstract Algebra
   - MATH 3360* Applicable Algebra
   - MATH 4310* Linear Algebra
   - MATH 4330* Honors Linear Algebra
   - MATH 4340* Honors Introduction to Algebra
   - MATH 4370 Computational Algebra
   - MATH 4500 Matrix Groups
   - MATH 4560 Geometry of Discrete Groups

2. Two Courses in Analysis. ( ___ transfer credit applied, see reverse)
   - MATH 3110* Introduction to Analysis
   - MATH 3210 Manifolds & Differential Forms
   - MATH 3230* Introduction to Differential Equations
   - MATH 4130* Honors Intro Analysis I
   - MATH 4140 Honors Intro Analysis II
   - MATH 4180* Complex Analysis
   - MATH 4200* Differential Equations and Dynamical Systems
   - MATH 4210* Nonlinear Dynamics and Chaos [also MAE 5790]
   - MATH 4220* Applied Complex Analysis
   - MATH 4250 Numerical Analysis and Differential Equations [also CS 4210]
   - MATH 4260 Numerical Analysis: Linear & Nonlinear Equations [also CS 4220; co-meets w/CS 5223]
   - MATH 4280* Introduction to Partial Differential Equations

*Forbidden Overlaps: Due to an overlap in content, students will receive credit for only one course in each group:
(1) MATH 3110, 4130; (2) MATH 3230, 4280; (3) MATH 3340, 3360; (4) MATH 3340, 4340; (5) MATH 4180, 4220; (6) MATH 4200, 4210; (7) MATH 4310, 4315, 4330; (8) MATH 4710, ECON 3130, BTRY 3080; (9) MATH 4720, ECON 3130, BTRY 4090; (10) MATH 4810, 4860.
3. Concentration in Operations Research. ( ___ transfer credit applied, see below)

Five additional courses from (xiv) and (xv) below.

(xiv) At least one MATH course numbered 3000 or above:

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(xv) At least three courses in ORIE in which the primary focus involves mathematical techniques:

_____ ORIE 3300 Optimization I [co-meets w/ORIE 5300]
_____ ORIE 3310 Optimization II [co-meets w/ORIE 5310]
_____ ORIE 3500 Engineering Probability and Statistics II [co-meets w/ORIE 5500]
_____ ORIE 3510 Introduction to Engineering Stochastic Processes I

[also STSCI 3510; co-meets w/ORIE 5510]

_____ ORIE 4150 Economic Analysis of Engineering Systems [co-meets w/ORIE 5150]
_____ ORIE 4300 Optimization Modeling
_____ ORIE 4330 Discrete Models
_____ ORIE 4350 Introduction to Game Theory
_____ ORIE 4360 A Mathematical Examination of Fair Representation
_____ ORIE 4520 Introduction to Engineering Stochastic Processes II
_____ ORIE 4600 Introduction to Financial Engineering
_____ ORIE 4740 Statistical Data Mining I
_____ ORIE 5600 Financial Engineering with Stochastic Calculus I
_____ ORIE 5610 Financial Engineering with Stochastic Calculus II
_____ ORIE 5640 Statistics for Financial Engineering [also STSCI 5640]

________________________ (approved by faculty advisor)

Transfer Credit / Study Abroad Courses Applied to the Major

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<tr>
<th>Course Number &amp;Title</th>
<th>Institution</th>
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