Progress Toward Completion of the Mathematics Major

Economics 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.

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<tr>
<th>Student's Name</th>
<th>Net ID</th>
<th>Faculty Advisor</th>
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Courses needed to complete the major

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<tr>
<th>Course Code</th>
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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 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

   ___ MATH 3360* Applicable Algebra
   ___ MATH 4315* Linear Algebra with Supplements

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 Economics. (___ transfer credit applied, see below)

Five additional courses from (vii), (viii) and (ix) below.

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


(viii) At least three ECON courses with significant mathematical content.

___ ECON 3130*  Statistics and Probability or ECON 6190 Econometrics I
___ ECON 3140  Econometrics or ECON 6200 Econometrics II
___ ECON 3810  Decision Theory
___ ECON 3825  Networks II: Market Design [also CS 4852, INFO 4220; co-meets with INFO 6220]
___ ECON 4020  Game Theory
___ ECON 4050  Intertemporal Economics
___ ECON 4070  Equilibrium and Welfare Economics
___ ECON 4110  Cross Section and Panel Econometrics
___ ECON 4907  The Economics of Asymmetric Information and Contracts
___ ECON 6090  Microeconomic Theory I
___ ECON 6100  Microeconomic Theory II
___ ECON 6130  Macroeconomics I
___ ECON 6140  Macroeconomics II

NOTE: Undergraduate enrollment in ECON graduate courses requires permission of instructor.

(ix) Courses in ORIE with significant mathematical content dealing with material of interest in economics.

___ ORIE 3300 Optimization I
___ ORIE 3310 Optimization II
___ ORIE 4320 Nonlinear Optimization
___ ORIE 4350 Introduction to Game Theory
___ ORIE 4600 Introduction to Financial Engineering
___ ORIE 4710 Applied Linear Statistical Models (half course)
___ ORIE 4712 Regression (half course)
___ ORIE 4740 Statistical Data Mining I
___ ORIE 5600 Financial Engineering with Stochastic Calculus I
___ ORIE 5610 Financial Engineering with Stochastic Calculus II

(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>
<th>Requirement</th>
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(7) MATH 4310, 4315, 4330; (8) MATH 4710, ECON 3130, BTRY 3080; (9) MATH 4720, ECON 3130, BTRY 4090; (10) MATH 4810, 4860.