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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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

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:

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(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 I
________ 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

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

________ ORIE 3300 Optimization I
________ ORIE 3310 Optimization II
________ ORIE 4350 Introduction to Game Theory
________ 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

________ (approved by faculty advisor)

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**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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