

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.

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 4315* Linear Algebra with Supplements

_____ 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:

(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.

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| <ul style="list-style-type: none"> _____ 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) | <ul style="list-style-type: none"> _____ 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 |
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_____ (approved by faculty advisor)

Transfer Credit / Study Abroad Courses Applied to the Major

Course Number & Title	Institution	Requirement
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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.