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. Visit math.cornell.edu/major for more information.

<table>
<thead>
<tr>
<th>Student's Name</th>
<th>Net ID</th>
<th>Faculty Advisor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Courses needed to complete the major</th>
<th>initials</th>
<th>date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 I
- ECON 3825 Networks II: Market Design [also CS 4852, INFO 4220; co-meets with INFO 6220]
- ECON 4020 Game Theory
- 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 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)

---

**Transfer Credit / Study Abroad Courses Applied to the Major**

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

*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.*