Progress Toward Completion of the Mathematics Major

(Economics Concentration)

Student's Name	Net ID	Faculty Advisor

Courses Needed to Complete the Major — **Filled Out By**

Initials _____

Date _____

Students must complete nine courses, as described in items 1– 3 below, under the following constraints:

- At least two of the MATH courses taken must be at the 4000 level (or above).
- A course may be counted toward the major only if it is taken for a letter grade and a grade of C– or better is received for the course.
- No course may be used to satisfy more than one requirement for the major.
- 2-credit courses count as half courses.
- MATH courses numbered between 5000 and 5999 do not count toward the major.

1. Two Courses in Algebra. Transfer Credit: _____

_____ MATH 3320 Introduction to Number Theory
_____ MATH 3360 Applicable Algebra
_____ MATH 4310 Linear Algebra / _____ 4330 Honors Linear Algebra
_____ MATH 4320 Introduction to Algebra / _____ 4340 Honors Introduction to Algebra
_____ MATH 4370 Computational Algebra
_____ MATH 4500 Matrix Groups

2. Two Courses in Analysis. Transfer Credit: _____

_____ MATH 3110* Introduction to Analysis
_____ MATH 3210 Manifolds and Differential Forms
_____ MATH 3230* Introduction to Differential Equations
_____ MATH 4130* Honors Introduction to Analysis I
_____ MATH 4140 Honors Introduction to Analysis II
_____ MATH 4180* Introduction to the Theory of Functions of One Complex Variable
_____ MATH 4200 Differential Equations and Dynamical Systems
_____ MATH 4220* Applied Complex Analysis
_____ MATH 4240 Wavelets and Fourier Series
_____ MATH 4250 Numerical Analysis and Differential Equations [also CS 4210]
_____ MATH 4260 Numerical Analysis: Linear and Nonlinear Problems [also CS 4220]
_____ MATH 4280* Introduction to Partial Differential Equations

***Overlapping content:** Students will receive credit for only one course in each group: (1) MATH 3110, 4130; (2) MATH 3230, 4280; (3) MATH 4180, 4220; (4) MATH 4310, 4330; (5) MATH 4320, 4340; (6) MATH 4710, ECON 3130 (formerly 3190), BTRY/ILRST/STSCI 3080 (formerly 4080); (7) MATH 4720, ECON 3130 (formerly 3190), BTRY 4090.

3. Concentration in Economics. Transfer Credit: _____

Five additional courses from (v), (vi) and (vii) below.

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

_____ _____

_____ _____

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

SP13 or earlier:	**FA13 or later:**	
_____ ECON 3190*	_____ ECON 3130*	Introduction to Statistics and Probability *or* ECON 6190
_____ ECON 3200	_____ ECON 3140	Econometrics *or* ECON 6200
_____ ECON 3250	_____ ECON 4110	Cross Section and Panel Econometrics
_____ ECON 3370	_____ ECON 4070	Equilibrium and Welfare Economics
_____ ECON 3680	_____ ECON 4020	Game Theory
_____ ECON 4160	_____ ECON 4050	Intertemporal Economics
_____ ECON 4190	_____ ECON 4060	Economic Decisions under Uncertainty
_____ ECON 4760	_____ ECON 3810	Decision Theory I [co-meets with ECON 6760/CS 5846]
_____ ECON 4770	_____ ECON 3820	Decision Theory II [co-meets with ECON 6770]
_____ ECON 6090	_____ ECON 6090	Microeconomic Theory I
_____ ECON 6100	_____ ECON 6100	Microeconomic Theory II
_____ ECON 6130	_____ ECON 6130	Macroeconomics I
_____ ECON 6140	_____ ECON 6140	Macroeconomics II

(vii) 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

Course Number &Title	**Institution**	**Requirement**

***Overlapping content:** Students will receive credit for only one course in each group: (1) MATH 3110, 4130; (2) MATH 3230, 4280; (3) MATH 4180, 4220; (4) MATH 4310, 4330; (5) MATH 4320, 4340; (6) MATH 4710, ECON 3130 (formerly 3190), BTRY/ILRST/STSCI 3080 (formerly 4080); (7) MATH 4720, ECON 3130 (formerly 3190), BTRY 4090.