Progress Toward Completion of the Mathematics Major

Statistics 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 Statistics. (___ transfer credit applied, see below)

Five additional courses from (xvi), (xvii) and (xviii) below. No substitutions are allowed for MATH 4710 or MATH 4720. Students who have already taken a course with overlapping content should consult a member of the Math Majors Committee.

(xvi) Both: _____ MATH 4710* Basic Probability _____ MATH 4720* Statistics

(xvii) One additional MATH course numbered 3000 or above:

_____ _____

(xviii) Two courses in other departments with significant content in statistics, complementing (xvii):

_____ BTRY 4820 Statistical Genomics: Coalescent Theory and Human Population Genomics [co-meets with BTRY 6820]
_____ CS 4780 Machine Learning for Intelligent Systems [co-meets with CS 5780]
_____ CS 4786 Machine Learning for Data Science [co-meets with CS 5786]
_____ ECON 3140 Econometrics (formerly ECON 3200)
_____ ORIE 4740 Statistical Data Mining I
_____ STSCI 3100 Statistical Sampling [also BTRY 3100, ILRST 3100]
_____ STSCI 3510 Introduction to Engineering Stochastic Processes I [also ORIE 3510]
_____ STSCI 4030 Linear Models with Matrices [also BTRY 4030; co-meets with STSCI 5030]
_____ STSCI 4100 Multivariate Analysis [also BTRY 4100, ILRST 4100]
_____ STSCI 4110 Categorical Data [also BTRY 4110, ILRST 4110]
_____ STSCI 4140 Applied Design [also BTRY 4140, ILRST 4140]
_____ STSCI 4520 Statistical Computing [also BTRY 4520]
_____ STSCI 4550 Applied Time Series Analysis [also ILRST 4550, ORIE 5550]
_____ STSCI 4740 Data Mining and Machine Learning

_____ _____ (approved by faculty advisor)

Note: ORIE/STSCI 3510 may not be counted toward (xviii) if MATH 4740 is used for (xvii). At most one regression course (ECON 3140 or STSCI/BTRY4030) is allowed for (xviii). At most one of STSCI 4740, ORIE 4740, CS 4780, or CS 4786 may be used for (xviii).

Transfer Credit / Study Abroad Courses Applied to the Major

Course Number &Title	Institution	Requirement

***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.