

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. To apply, visit math.cornell.edu/major.

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–**. No course may be used to satisfy more than one requirement. MATH courses numbered between 4980 and 5999 do not count.

_____ 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*

Discontinued: _____ MATH 4315*

_____ 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

Discontinued: _____ MATH 3230*

_____ MATH 3270 - Introduction to Ordinary 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*

_____ MATH 4220 - Applied Complex Analysis*

_____ MATH 4250 - Numerical Analysis and Differential Equations [also CS 4210]

_____ MATH 4260 - Numerical Analysis: Linear & Nonlinear Problems [also CS 4220]

_____ MATH 4280 - Introduction to Partial Differential Equations*

*See course descriptions at math.cornell.edu/upper-level-courses for information on **forbidden overlaps**.

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

_____ CS 4700 - Foundations of Artificial Intelligence

_____ CS 4780 - Introduction to Machine Learning

_____ CS 4786 - Machine Learning for Data Science

_____ ECON 3140 - Econometrics

_____ ECON 4110 - Cross Section and Panel Econometrics

_____ ORIE 4740 - Statistical Data Mining I

_____ ORIE 4741 - Learning with Big Messy Data

_____ 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]

_____ STSCI 4060 - Python Programming and its Applications in Statistics

_____ 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

_____ STSCI 4550 - Applied Time Series Analysis [also ILRST 4550]

_____ STSCI 4740 - Data Mining and Machine Learning

_____ STSCI 4780 - Bayesian Data Analysis: Principles and Practice

_____ (approved by faculty advisor)

Note: STSCI/ORIE 3510 may not be counted toward (xviii) if MATH 4740 is used for (xvii). At most one regression course (ECON 3140 or STSCI/BTRY 4030) 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
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