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.

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<th>Student's Name</th>
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<th>Faculty Advisor</th>
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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:

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(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

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<tr>
<th>Course Number &amp; Title</th>
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*See course descriptions at math.cornell.edu/upper-level-courses for information on **forbidden overlaps**.*