Progress Toward Completion of the Mathematics Major

Mathematical Biology 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 Mathematical Biology. (___ transfer credit applied, see below)

Five additional courses from (x) and (xi) below.

(x) Three biology courses that have mathematical content and provide background necessary for work at the interface between biology and mathematics:

_____ BIOEE 3620 - Dynamic Models in Biology [also MATH 3620]
_____ BIONB 4220 - Modeling Behavioral Evolution
_____ BME 3110 - Cellular Systems Biology
_____ BTRY 3080 - Probability Models and Inference* [also ILRST/STSCI 3080]
_____ BTRY 4090 - Theory of Statistics* [also STSCI 4090]
_____ BTRY 4820 - Statistical Genomics: Coalescent Theory and Human Population Genomics
_____ BTRY 4830 - Quantitative Genomics and Genetics
_____ BTRY 4840 - Computational Genetics and Genomics [also CS 4775]
_____ NTRES 4120 - Wildlife Population Analysis: Techniques and Models
_____ _____ (approved by faculty advisor)

(xi) Two mathematics courses numbered 3000 or above. MATH 4200 and 4710* are particularly appropriate.

_____ _____

_____ _____

Transfer Credit / Study Abroad Courses Applied to the Major

Course Number &Title	Institution	Requirement

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