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. Applications are available in 310A Malott Hall.

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<tr>
<th>Student’s Name</th>
<th>Net ID</th>
<th>Faculty Advisor</th>
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Courses needed to complete the major

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Math majors must complete 9 courses for the major, as described in items 1–3 below, with a minimum grade of C–. Two-credit courses count as half courses. No course may be used to satisfy more than one requirement for the major. MATH courses numbered between 5000 and 5999 do not count toward the major.

_____ 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 3360 Applicable Algebra
   ____ MATH 4310* Introduction to Analysis
   ____ MATH 4130* Honors Introduction to Analysis I
   ____ MATH 4320 Introduction to Algebra / _____ 4330 Honors Linear Algebra
   ____ MATH 4370 Computational Algebra
   ____ MATH 4500 Matrix Groups

2. Two Courses in Analysis.

   _____ transfer credit applied (see reverse)
   
   ____ 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 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 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; co-meets w/CS 5223]
   ____ 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; (7) MATH 4720, ECON 3130 (formerly 3190), BTRY 4090; (8) MATH 4810, 4860.
3. Concentration in Mathematical Biology.  

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
- 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 [co-meets with BTRY 6820]
- BTRY 4830 Quantitative Genomics and Genetics [co-meets with BTRY 6830]
- BTRY 4840 Computational Genetics and Genomics [also CS 4775; co-meets with BTRY 6840]
- NTRES 4110 Quantitative Ecology and Management of Fisheries Resources

(____) _________________________________________________________ (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

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<th>Course Number &amp;Title</th>
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*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; (7) MATH 4720, ECON 3130 (formerly 3190), BTRY 4090; (8) MATH 4810, 4860.