Progress Toward Completion of the Mathematics Major
Mathematics 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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<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 4330 Honors Linear Algebra
 _____ MATH 4320 Introduction to Algebra / _____ 4340 Honors Introduction to 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 4140 Honors Introduction to 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 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 Mathematics.  

____ transfer credit applied (see below)

(i) Four additional MATH course numbered 3000 or above:

____  __________________________________________________

____  __________________________________________________

____  __________________________________________________

At least one of the four courses must be among the geometry/topology courses. Eligible courses include: MATH 3210, 3560, 4500, 4520, 4530, 4540, 4550.

(ii) One course dealing with mathematical models.

Any course from outside mathematics with serious mathematical content and dealing with scientific matters. Serious mathematical content includes, but is not limited to, extensive use of calculus or linear algebra.

Any course from another department that would satisfy one of the other concentrations may be used:

____  __________________________________________________

or one of the following:

_____ CS 2110 Object-Oriented Programming and Data Structures [also ENGRD 2110]
_____ MATH 3610 Mathematical Modeling
_____ PHYS 1116 Physics I: Mechanics and Special Relativity
_____ PHYS 2208 Fundamentals of Physics II
_____ PHYS 2213 Physics II: Electromagnetism
_____ PHYS 2217 Physics II: Electricity and Magnetism [also AEP 2170]

Other 1000-level physics course and PHYS 2207 may not be used, but some courses in other fields may be accepted. AP credit may not be used.

____  _________________________________________________________ (approved by faculty advisor)

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.*