

Progress Toward Completion of the Mathematics Major

(Mathematics Concentration)

Student's Name _____

Net ID _____

Faculty Advisor _____

Courses Needed to Complete the Major

Filled Out By

Initials _____

Date _____

Students must complete nine courses, as described in items 1– 3 below, under the following constraints:

- At least two of the MATH courses taken must be at the 4000 level (or above).
- A course may be counted toward the major only if it is taken for a letter grade and a grade of C– or better is received for the course.
- No course may be used to satisfy more than one requirement for the major.
- 2-credit courses count as half courses.
- MATH courses numbered between 5000 and 5999 do not count toward the major.

1. Two Courses in Algebra.

Transfer Credit: _____

_____ MATH 3320 Introduction to Number Theory

_____ MATH 3360 Applicable Algebra

_____ MATH 4310 Linear Algebra / _____ 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: _____

_____ 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* Introduction to the Theory of Functions of One Complex Variable

_____ MATH 4200 Differential Equations and Dynamical Systems

_____ 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]

_____ 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 (formerly 4080); (7) MATH 4720, ECON 3130 (formerly 3190), BTRY 4090.

3. Concentration in Mathematics.

Transfer Credit: _____

(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
- _____ MATH 3840 The Foundations of Mathematics [also PHIL 3300]
- _____ MATH 4810 Mathematical Logic [also PHIL 4310]
- _____ MATH 4820 Topics in Logic and the Foundations of Mathematics [also PHIL 4311]
- _____ 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]
- _____ (approved by faculty advisor)

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.

Transfer Credit / Study Abroad Courses Applied to the Major

| Course Number & Title | Institution | Requirement |
|-----------------------|-------------|-------------|
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