

## THE MATH MAJOR

(for students who declared the major before Summer 2008)

### with approved substitutions of new courses

**Credit Hour Requirement:** Each student is required to take Calculus I, Calculus II, and Calculus III, plus 24 credit hours of courses numbered 3000 or above (with 9 credit hours numbered 4000 or above), with a grade of C- or better and with a 2.000 (C) average for all attempted work in mathematics. Each student is required to adhere to one of the two plans as described below.

**Plan 1:** *There are 2 approved substitutions of new courses for Plan 1.*

1. Three semesters of Calculus (e.g., MATH 1300, 2300, and 2400)
2. MATH 3130 (Linear Algebra)
3. MATH 3000 (Intro. to Abstract Mathematics) or MATH 3200 (Intro. to Abstract Mathematics through Topology)

**Note for 3:** MATH 2001 may be substituted for either MATH 3000 or MATH 3200. MATH 2001 will also count towards the required 24 credit hours of courses numbered 3000 or above, as described above. A student may NOT count both MATH 2001 and MATH 3000, or MATH 2001 and MATH 3200, towards the major.

4. MATH 3140 (Abstract Algebra I)
5. MATH 4310 (Introduction to Analysis)

**Note for 5:** MATH 4310 will no longer be offered, but MATH 3001 may be substituted for MATH 4310. MATH 3001 will also count towards the required 9 credit hours of courses numbered 4000 or above, as described above. A student may not count both MATH 3001 and MATH 4310 towards the major.

6. An approved sequence of two upper division courses. Approved sequences are listed on page 2.

**Plan 2:** *There are no approved substitutions for Plan 2.*

1. Three semesters of Calculus (e.g., MATH 1300, 2300, and 2400)
2. MATH 3130 (Linear Algebra)
3. MATH 4430 (Ordinary Differential Equations)
4. MATH 4650 (Intermediate Numerical Analysis)
5. At least one course from the following: MATH 4510 (Probability); MATH 4470 (Partial Differential Equations); MATH 4450 (Complex Variables); MATH 4330 (Fourier Analysis); MATH 4120 (Operations Research)
6. An approved sequence of two upper division courses. Approved sequences are listed on page 2.

## Approved Sequences

Some of these sequences may be taken in either order. Some courses are offered infrequently; other courses no longer exist, and are included here to assist student who took them in the past. These lists have been updated to include new or renumbered courses introduced with the new major requirements in the summer of 2008.

### Plan 1 Sequences

MATH 4000, 4730	Foundations of Mathematics, Set Theory
MATH 4310, 4320	Intro to Analysis, Multivariable Analysis
MATH 3001, 4001	Analysis 1 and 2
MATH 4310, 4001	Intro to Analysis, Analysis 2
MATH 4310, 4330	Intro to Analysis, Fourier Analysis
MATH 3001, 4330	Analysis 1, Fourier Analysis
MATH 4310, 4450	Intro to Analysis, Complex Variables
MATH 3001, 4450	Analysis 1, Complex Variables
MATH 3140, 4140	Abstract Algebra 1 and 2
MATH 3140, 3110	Abstract Algebra 1, Number Theory
MATH 3110, 4440	Number Theory, Coding & Cryptography
MATH 3140, 4440	Abstract Algebra 1, Coding & Cryptography
MATH 4430, 4470	Ordinary Differential Equations, Partial Differential Equations
MATH 3210, 4230	Euclidean & Non-Euclidean Geometry 1, Geometry of Curves & Surfaces
MATH 3210, 4210	Euclidean & Non-Euclidean Geometry 1 and 2
MATH 4120, 4650	Operations Research, Numerical Analysis 1
MATH 3170, 4120	Combinatorics, Operations Research
MATH 4120, 4510	Operations Research, Probability
MATH 4120, 3510	Operations Research, Probability and Statistics
MATH 3170, 4510	Combinatorics, Probability
MATH 4510, 4520	Probability, Mathematical Statistics
MATH 4510, 4540	Probability, Time Series
MATH 4520, 4540	Mathematical Statistics, Time Series
MATH 4650, 4660	Numerical Analysis 1 and 2

### Plan 2 Sequences

MATH 3110, 4440	Number Theory, Coding & Cryptography
MATH 3140, 4440	Abstract Algebra 1, Coding & Cryptography
MATH 4310, 4320	Intro to Analysis, Multivariable Analysis
MATH 3001, 4001	Analysis 1 and 2
MATH 4310, 4001	Intro to Analysis, Analysis 2
MATH 4310, 4330	Intro to Analysis, Fourier Analysis
MATH 3001, 4330	Analysis 1, Fourier Analysis
MATH 4310, 4450	Intro to Analysis, Complex Variables
MATH 3001, 4450	Analysis 1, Complex Variables
MATH 4430, 4470	Ordinary Differential Equations, Partial Differential Equations
MATH 4470, 4480	Partial Differential Equations 1 and 2
MATH 4120, 4650	Operations Research, Numerical Analysis 1
MATH 3170, 4120	Combinatorics, Operations Research
MATH 4120, 4510	Operations Research, Probability
MATH 4120, 3510	Operations Research, Probability and Statistics
MATH 3170, 4510	Combinatorics, Probability
MATH 4510, 4520	Probability, Mathematical Statistics
MATH 4510, 4540	Probability, Time Series
MATH 4520, 4540	Mathematical Statistics, Time Series
MATH 4650, 4660	Numerical Analysis 1 and 2