MATHEMATICS

Requirements

Any student not pursuing a major or second major in either mathematics or in biomathematics may obtain a minor in mathematics by taking 10 or more mathematics courses as follows:

- **Six courses in foundational mathematics:**

Code	Title	Hours
Calculus, Matrix Algebra and Differential Equations, Introduction to Proofs		
MA 111	Calculus I	5
MA 112	Calculus II	5
MA 113	Calculus III	5
MA 221	Matrix Algebra & Differential Equations I	4
MA 222	Matrix Algebra & Differential Equations II	4
or MA 276	Introduction to Proofs	
Introductory Statistics or Probability		
MA 223	Engineering Statistics	4
or MA 381	Introduction to Probability with Applications to Statistics	

- **Sixteen additional credit hours of "upper division" courses:**
  - Courses selected from MA 222 Matrix Algebra & Differential Equations II, MA 223 Engineering Statistics, MA 276 Introduction to Proofs, all MA courses numbered 300 or higher (except MA351-356 and MA 450 Mathematics Seminar, MA492-494, and MA496-498), all BMTH courses numbered 300 or higher (except BMTH 496-498), or other MA courses approved by the minor advisor for mathematics. Computer Science majors cannot use either MA 473 Design & Analysis of Algorithms or MA 474 Theory of Computation to satisfy both their computer science major requirements and the requirements of the mathematics minor.

Approval and Math Minor Form:

All minors must be approved by the minor advisor and the student's advisor. The department has a form for the planning and approval of a mathematics minor.

Notes and Limitations on Requirements:

- Almost all students are required to take six foundational courses as a requirement for their major; therefore only four "extra courses" are required for most students.
- Only MA 111 Calculus I, MA 112 Calculus II, MA 113 Calculus III, MA 221 Matrix Algebra & Differential Equations I, MA 222 Matrix Algebra & Differential Equations II and one of MA 223 Engineering Statistics, MA 381 Introduction to Probability with Applications to Statistics, or MA 382 Introduction to Statistics with Probability can be counted towards any combination of the multiple minors offered by the mathematics department.
- No student can take both MA 371 Linear Algebra I and MA 373 Applied Linear Algebra for Engineers for credit.
- No student can take both MA 223 Engineering Statistics and MA 382 Introduction to Statistics with Probability for credit
- Except as noted above, if MA 381 Introduction to Probability with Applications to Statistics is being counted towards the four additional courses then, MA 223 Engineering Statistics may be taken and counted towards the Introductory Statistics and Probability.
- Science and engineering, especially the most recent "high tech" developments, have sophisticated mathematical and statistical concepts and methodologies as their foundation. Thus a well-chosen set of courses for a mathematics minor (or a second major in mathematics) will greatly enhance a student's analytical and computational skills. Students thinking of going on to graduate school should especially give consideration to this option.