

MINOR IN APPLIED MATHEMATICS AND STATISTICS

Guidelines

The minor in Applied Mathematics and Statistics should be attractive to students majoring in a variety of disciplines, in both the School of Engineering and the School of Arts and Sciences. The minor provides formal recognition of depth and strength of a student's quantitative knowledge beyond the minimal requirements of his/her major.

The requirements of the minor in Applied Mathematics and Statistics are:

1. Completion of an approved program of study containing at least 18 credits in courses coded Q. The first two courses in calculus (i.e. 110.106-107 or 110.108-109 or their equivalents elsewhere) may not be used in fulfillment of this requirement.
2. Among the courses comprising the 18 credits, there must be:
 - (a) at least four courses in the Department of Applied Mathematics and Statistics. (each of these must be a 3- or 4-credit course);
 - (b) at least three 3- or 4- credit courses at the 300-level or above, of which at least two must be in the Department of Applied Mathematics and Statistics;
 - (c) an approved semester course based on a high-level computer language (500.200, 550.385, 550.386, 550.400 taken Fall 2008 or later, 550.413 taken Fall 2009 or later, 570.210, 580.223, or 600.107), or one course which requires one of these courses as a prerequisite.
3. The grade in each course counted in fulfillment of requirements for the minor must be at least C- . All courses must be taken for a letter grade.
4. Students may not count all 3 courses, 550.310/311, 550.420, and 550.430 toward minor requirements.

A student wishing to complete a minor in Applied Mathematics and Statistics should complete the attached Program Proposal form and submit the proposal to the Applied Mathematics and Statistics Department for approval by the Academic Program Coordinator.

All Applied Mathematics and Statistics Department courses may be used in satisfaction of the requirements for the minor. The departmental approval focuses on the appropriateness of any courses outside of the Applied Mathematics and Statistics Department, particularly the computing course.

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Sample Programs

The following sample programs satisfy the requirements for the Minor in Applied Mathematics and Statistics. These are meant to be illustrative, not prescriptive. The number of credits follows.

1. Student with interest in econometrics:
 - 550.291 Linear Algebra & Differential Equations 4
 - 550.420 Introduction to Probability 4
 - 550.430 Introduction to Statistics 4
 - 550.432 Linear Statistical Models 3
 - 600.107 Programming in JAVA 3
 - 180.334 Econometrics 3
2. Student majoring in electrical engineering:
 - 550.291 Linear Algebra & Differential Equations 4
 - 550.420 Introduction to Probability 4
 - 550.430 Introduction to Statistics 4
 - 550.391 Dynamical Systems 4
 - 600.107 Programming in JAVA 3
 - 520.213 Circuits 4
3. Student majoring in computer science:
 - 550.291 Linear Algebra & Differential Equations 4
 - 550.385 Scientific Computing: Linear Algebra 4
 - 550.471 Combinatorial Analysis 4
 - 550.472 Graph Theory 4
 - 600.120 Intermediate Programming 4
 - 600.226 Data Structures 3
4. Student interested in business applications:
 - 550.291 Linear Algebra & Differential Equations 4
 - 550.310 Probability and Statistics 4
 - 550.413 Applied Statistics and Data Analysis 4
 - 550.361 Introduction to Optimization 4
 - 600.107 Programming in JAVA 3
 - 550.442 Investment Science 4
5. Student (engineering) interested in mathematical modeling:
 - 550.420 Introduction to Probability 4
 - 550.430 Introduction to Statistics 4
 - 550.361 Introduction to Optimization 4
 - 550.400 Mathematical Modeling and Consulting 4
 - 550.385 Scientific Computing: Linear Algebra 4
6. Premedical student, with an interest in medical statistics:
 - 550.291 Linear Algebra & Differential Equations 4
 - 550.311 Probability and Statistics for Biological Sciences & Eng 4
 - 550.430 Introduction to Statistics 4
 - 550.432 Linear Statistical Models 3
 - 600.107 Programming in JAVA 3
 - 550.413 Applied Statistics and Data Analysis 4
6. Student interested in finance:
 - 110.302 Differential Equations with Applications 4
 - 550.420 Introduction to Probability 4
 - 550.427 Stochastic Processes in Finance 4
 - 550.430 Introduction to Statistics 4
 - 550.444 Modeling and Analysis of Securities & Financial Markets I 4
 - 600.107 Programming in JAVA 3

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Program Proposal

Student _____

Major Department _____ e-mail: _____

Advisor _____ Expected Grad. Date _____

All courses used to meet minor requirements must be taken for a letter grade and passed with a C- or better.

I. Computing Course Requirement:

_____	_____	_____	_____
(Number)	(Title)	(Credits)	(Semester & Year)

II. 3 Q courses at 300-level or above (at least 2 in Applied Mathematics and Statistics):

_____ 550. _____	_____	_____	_____
_____ 550. _____	_____	_____	_____
_____	_____	_____	_____

III. Additional Applied Mathematics and Statistics courses:

_____ 550. _____	_____	_____	_____
_____ 550. _____	_____	_____	_____

IV. Additional Q Courses from other departments:

_____	_____	_____	_____
_____	_____	_____	_____

Total Q Credits _____ (18 required)

Total Applied Mathematics and Statistics Courses _____ (4 required)

Approval Signature:

Academic Program Coordinator _____ Date _____