

MATHEMATICS

Faculty

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General Information

The Department of Mathematics offers the degrees of bachelor of science in mathematical sciences. Option 1 of the mathematics major - “mathematics” - prepares students to pursue graduate studies. Option 2 - “applied mathematics” - is a good choice for students preparing for careers in business and industry, intending to attend graduate school in a quantitative area (such as biostatistics, economics, or operations research), or wishing to participate in a dual-degree program in engineering. Option 3 - “mathematics education” - prepares students to teach in public and private secondary schools. This option is an approved program for the Georgia Teacher’s Professional Four Year Certificate (T-4).

The department also offers a wide range of services to Armstrong Atlantic students. Several introductory courses are available to satisfy general education needs as well as prerequisites in other major programs. Intermediate level courses for non-majors are available to enhance the quantitative skills of students in a variety of disciplines. A minor in mathematics or in statistics can be designed to complement students’ major programs.

Special Programs

Dual Degree Program. Under arrangements with Georgia Tech, students may in five years of study earn simultaneously the bachelor’s degree in the mathematical sciences from Armstrong Atlantic and the bachelor’s degree in any one of a number of fields of engineering from Georgia Tech. Armstrong Atlantic participates in similar programs with other major universities. Students considering a dual degree program should contact an advisor in the Department of Mathematics as soon as possible.

Progress Requirements

To earn the bachelor’s degree in the mathematical sciences, students must complete all mathematics and computer science courses required in the program of study with a grade of C or better. In order to complete the prerequisites for a mathematics course other than MATH 2200 or MATH 2900, the prerequisite courses must be completed with a grade of C or better.

Minors

Mathematics **17 hours**

MATH 2072 - Calculus II

MATH 2083 - Calculus III

Nine additional semester hours chosen from MATH 2160 and mathematics courses numbered 3000 or higher (excluding MATH 3201, 3911, 3912, 3932, 5911U and 4960, -70, -80)

Statistics **16 hours**

MATH 2072 - Calculus I

MATH 2160 - Linear Algebra

Three courses chosen from:

STAT 3211, STAT 3222, STAT 3231, STAT 3232, STAT 3240

**PROGRAM FOR THE DEGREE OF BACHELOR OF SCIENCE IN
MATHEMATICAL SCIENCES (2005-2006 Catalog)**

A. General Requirements

Core Areas A, B, C, D, and E **42 hours**

Mathematics majors are required to take MATH 1113 in core area A and MATH 1161 in core area D.

Area F **18 hours**

One hour excess for MATH 1161 from area D

MATH 2072 - Calculus II

MATH 2083 - Calculus III

MATH 2160 - Linear Algebra

CSCI 1301 - Introduction to Programming Principles I

Two hours of approved lower division electives

Physical Education **3 hours**

Complete major field and related area requirements for one of the following options:

Option 1: Mathematics

B. Major Field Courses **27 hours**

MATH 3000 - Introduction to Mathematical Proof

MATH 3110 - Abstract Algebra

STAT 3231 - Mathematical Statistics I

MATH 3411 - Differential Equations

MATH 4011 - Advanced Calculus I

One course selected from:

MATH 3170 - Advanced Linear Algebra

MATH 4022 - Advanced Calculus II

MATH 5160 - Theory of Numbers

Nine semester hours of upper-division mathematics or statistics courses exclusive of

MATH 3201, 3911, 3912, 3932, 4960, 4970, 4980, and 5911U

C. Related Field Courses **19 hours**

Six semester hours from either a single foreign language sequence or six semester hours from computer science courses with a prerequisite of at least CSCI 1301.

Twelve semester hours chosen from courses in the College of Arts and Sciences to complete the requirement of at least 39 semester hours of upper-division courses.

Option 2: Applied Mathematics

B. Major Field Courses **21 hours**

MATH 3000 - Introduction to Mathematical Proof

STAT 3211 - Probability and Statistics Applications

MATH 3411 - Differential Equations

One course selected from:

MATH 3110 - Abstract Algebra

MATH 3170 - Advanced Linear Algebra

MATH 4011 - Advanced Calculus

MATH 5160 - Theory of Numbers

Nine additional semester hours of upper-division mathematics or statistics courses exclusive

of MATH 3201, 3911, 3912, 3932, 4960, 4970, 4980, and 5911U

C. Related Field Courses **25 hours**

CSCI 1302 - Advanced Programming Principles

Complete the prescribed courses in one of the following concentration areas.

Actuarial science:

ECON 2105 or ECON 2106

STAT 3222

MATH 3251 or 3460

MATH 4200

Two courses selected from:

ECON 3050, 3060, 3300, 3500, 3600, or 3700

- Biology:** minor in biology
- Chemistry:** minor in chemistry
- Computer science:** minor in computer science
- Economics:** minor in economic
- Engineering studies:** minor in engineering studies
- Operations research**
 - STAT 3222 – Probability and Statistics Applications II
 - MATH 3251 – Probability and Combinatorics
 - MATH 3460 – Introduction to Operations Research
 - MATH 3480 – Optimization and Graph Theory
 - MATH 4400 – Operations Research Semina
 - MATH 4610 – Numerical Analysis

Physics: minor in physics

- Statistics:**
- STAT 3222 – Probability and Statistics Applications II
 - STAT 3231 - Mathematical Statistics I
 - STAT 3232 - Mathematical Statistics II
 - STAT 3240 - Experimental Design
 - MATH 3251 - Probability and Combinatorics
 - MATH 4610 - Numerical Analysis

Additional courses to complete the requirement of at least 39 semester hours of upper-division courses. These courses may be chosen from mathematics, the concentration area, ENGL 3720, or HIST 5640.

Option 3: Mathematics Education

PROGRAM FOR THE DEGREE OF BACHELOR OF SCIENCE IN MATHEMATICS WITH TEACHING CERTIFICATION

B. Major Field Courses 24 hours

- MATH 3000 - Introduction to Mathematical Proof
- MATH 3110 - Abstract Algebra
- MATH 3211 - Probability and Mathematical Statistics
- MATH 3360 - Modern Geometry
- MATH 3932 - Teaching of Middle School/General Mathematics

One course selected from:

- MATH 5160U - Theory of Numbers
- MATH 5700U - History of Mathematics

Six additional semester hours of upper-division mathematics exclusive of MATH 3201, 3911, 3912, 4960, 4970, 4980, and 5911U

C. Related Field Courses 33 hours

- CSCI 1301 - Introduction to Programming Principles I
- CEUG1010 - Human Growth and Development
- CEUG2100 - Introduction To Students With Disabilities
- MGSE 2000 - The Professional Educator
- MGSE 3050 - Secondary School Curriculum and Methods, General
- MGSE 4412 - Secondary School Curriculum and Methods, Mathematics
- MGSE 4090 - Classroom Management
- MGSE 4750 - Student Teaching and Seminar (9 semester hours)

D. Electives 9-11 hours

Total Semester Hours: 123

E. Regents' Test and Exit Exam