FAIRFIELD UNIVERSITY GRADUATE PROGRAMS

MASTER OF SCIENCE IN MATHEMATICS

PROGRAM DESCRIPTION

The master's program in mathematics is open to all who wish to add an interesting and useful dimension to their previous education. It offers particular appeal to middle and secondary school teachers, those in business and industry whose work is quantitative in nature, anyone considering teaching in community colleges, those seeking a solid preparation before pursuing a PhD in mathematics or other technical field, and BA/BS degree holders who wish to challenge themselves and enhance their credentials through graduate level courses without making the commitment to a PhD. Individuals who would like to take advanced courses in mathematics or statistics but do not plan to pursue an MS degree are also welcome.

COURSE OF STUDY

To earn the MS in Mathematics, students must complete 30 credits with a minimum GPA of 3.0. In consultation with a faculty advisor, each student will design an individualized program of study consisting of four required courses (12 credits) and 18 credits of electives, which includes a capstone project.

The latter is a written or oral project that is generally added to an existing course or an independent study.

Throughout the program, state-of-the-art technology will be an integral component of the curriculum, particularly in areas related to quantitative methods and statistics.

REQUIRED COURSES

- Real Analysis and Linear Algebra
- Two additional designated proof-intensive courses

ELECTIVE COURSES

- Foundations and Set Theory
- Introduction to Applied Math
- Abstract Algebra
- Complex Analysis
- Dynamical Systems
- Partial Differential Equations
- Probability
- Statistics Theory
- Geometry
- Topology
- Numerical Analysis
- Applied Statistics I
- Applied Statistics II
- Topics in Applied Statistics
- Number Theory
- Use of Technology in the Classroom
- Statistical Forecasting
- Classical Financial Mathematics
- Mathematics of Financial Derivatives
- Statistical Consulting

CAPSTONE EXPERIENCE

The capstone is an opportunity for the student to step beyond classroom learning and independently engage the material she/he has learned in the program. It is an independent project with a written or oral presentation the student plans with the guidance of a faculty mentor and the approval of the program director. It is based on the material the student learns in a specific course or courses, generally in the final semesters of the program.

TYPICAL PROGRAMS

The examples that follow illustrate three possible ways of shaping the course of study within the MS. These are suggestions only, and each student may take any combination of the two required courses and eight electives, including two proof-intensive courses, together with a capstone, as worked out with the help of an advisor.

FOR TEACHERS AND PROSPECTIVE TEACHERS

- Geometry
- Topology
- Foundations and Set Theory
- Use of Technology in the Classroom
- Number Theory

FOR BUSINESS-ORIENTED PROFESSIONALS

- Probability
- Statistics Theory
- Applied Statistics I and II
- Introduction to Applied Math
- Dynamical Systems
- Partial Differential Equations
- Classical Financial Mathematics
- Mathematics of Financial Derivatives

FOR THOSE INTERESTED IN PURE MATHEMATICS

- Geometry
- Topology
- Abstract Algebra
- Advanced Abstract Algebra
- Numerical Analysis
- Foundations and Set Theory
- Number Theory

Fairfield University

College of Arts and Sciences

GRADUATE CERTIFICATES

CERTIFICATE IN FINANCIAL MATHEMATICS

In addition to our master's degree program, we offer a certificate program designed for mathematically trained professionals and those with a background in finance. Participants acquire additional quantitative and qualitative skills important to advancing careers in investment banking, hedge funds, and financial markets. The certificate can be earned in the course of earning the MS degree or on its own.

PROGRAM COURSEWORK

(12 credits) may be applied to the requirements of the master's degree in mathematics.

REQUIRED COURSES

- Classical Financial Mathematics
- Mathematics of Financial Derivatives

Additional Courses (Select Two):

- Introduction to Applied Mathematics
- Dynamical Systems
- Partial Differential Equations

CERTIFICATE IN APPLIED STATISTICS

Fairfield University's applied statistics certificate program is designed for working professionals and graduate students interested in gaining a solid background in the fundamentals of statistics. The program blends practical and theoretical data analysis to train students in the collection, organization, analysis, interpretation, and presentation of numerical data.

Building competency in the field of applied statistics is beneficial to a wide range of careers in business, education, engineering, government, healthcare, science, and technology because it hones the data analytic skills needed to become a more valuable and efficient problem solver in the workplace.

Fairfield's applied statistics certificate program combines individual attention, a faculty deeply committed to teaching, and a focus on the whole person to meet you where you are and give you the skills you need to meet the analytic challenges you face. These skills include facts, methods, and tools, but also understanding, creative problem solving, and thinking with clarity, precision, and flexibility. Our program is designed with busy professionals in mind and is sufficiently flexible to fit into your schedule.

PROGRAM COURSEWORK

Students are required to complete four, three-credit courses for a total of 12 credit hours of approved graduate coursework, which may be applied towards an MS degree in mathematics at Fairfield University. Six of the credits are in a required core, and the other six can be chosen from a select set of relevant courses.

Applied Statistics Core

- MA 417 Applied Statistics I
- MA 418 Applied Statistics II

Additional Courses (Select Two):

- MA 451 Probability
- MA 452 Statistics Theory
- MA 553 Statistical Forecasting
- MA 554 Statistical Consulting

Students who have seen the material in one or more of the core courses can substitute one of the additional courses with the permission of the director of the program.

CERTIFICATE APPLICATION PROCESS

Admission to a certificate program is based on the following criteria:

- A completed online application
- A non-refundable $60 application fee
- Official undergraduate college transcript
- A personal statement

GRADUATE PROGRAM DIRECTOR

Stephen Sawin, PhD
Phone: 203-254-4000, ext. 2573
E-mail: ssawin@fairfield.edu

Professor Sawin serves as the faculty advisor for students in graduate mathematics programs and is the appropriate person to contact with questions, or to learn more.

For a complete faculty listing, visit **www.fairfield.edu/mathfaculty**.

ADMISSION REQUIREMENTS

Our programs welcome students of ability with a strong undergraduate background in mathematics or a related field such as computer science, engineering, physics, finance, economics, or certain social sciences. Students who hold a bachelor's degree in any field from a regionally accredited college or university (or the international equivalent) are encouraged to apply.

FORMAL ADMISSION PROCESS

Applications to the graduate program are accepted on a rolling basis. Applications are reviewed by the Graduate Admission Committee. Students seeking admission must complete and submit the following online:

1. A completed application (Apply online at **www.fairfield.edu/mathapp**.)
2. A non-refundable $60 application fee
3. A professional résumé
4. Personal statement describing intent for studying in the program
5. Official transcripts from all universities/colleges attended. (All foreign transcripts must be evaluated by an approved evaluating service. A list of approved evaluators is available at **www.fairfield.edu/eval**.)
6. Two recommendations, one of which must be from a current supervisor or professor, completed online
7. All international students whose native language is not English must demonstrate proficiency in the English language by taking either TOEFL or IELTS exams. For admission to the graduate school, a TOEFL composite score of 550 for the paper test, 213 for the computer-based test, 80 on the internet-based test or an IELTS score of 6.5 is strongly recommended. Scores must be sent directly from the Educational Testing Service (TOEFL) or **www.IELTS.org**. Fairfield's ETS code is 3390

Submit transcripts and any other documents that cannot be uploaded to:

Fairfield University
Office of Graduate Admission
Kelley Center
1073 North Benson Road
Fairfield, CT 06824

MANDATORY IMMUNIZATIONS

Connecticut State law requires each full-time or matriculated student to provide proof of immunity or screening against measles, mumps, rubella, varicella (chicken pox), meningitis and tuberculosis. Certain exemptions based on age and housing status apply. Matriculating students are defined as those enrolled in a degree seeking program. More detailed information and the required downloadable forms are available online at **www.fairfield.edu/immunization**. Completed forms should be submitted directly to the Student Health Center. Although this is not required to complete an application, you must provide proof of immunity/screening prior to course registration. Please consult your private health care provider to obtain the necessary immunizations. Questions may be directed to the Student Health Center: 203-254-4000, ext. 2241 or e-mail health@fairfield.edu.

TUITION/FINANCIAL AID

Academic Year 2019-20
Tuition: $800 per credit hour

A graduate education can provide countless professional and personal rewards in the future. However, the costs associated with earning a master's degree may be challenging. Many students need to look beyond their own financial resources or the resources of their employer for assistance. There are many ways to finance a graduate education, including graduate assistantships, federal direct loan programs and our Veterans Pride Program which are discussed at **www.fairfield.edu/gradfa**.

OFFICE OF FINANCIAL AID

Advisors from the Office of Financial Aid are committed to helping students find the options that best suit each of their needs. We encourage all Fairfield University graduate students to contact the Financial Aid Office with any questions or to make an appointment to speak with a counselor.

FINANCIAL AID CONTACT INFORMATION

Phone: 203-254-4125
Fax: 203-254-4008
E-mail: finaid@fairfield.edu

FINANCIAL AID OFFICE OPERATIONS

Days: Monday-Friday
Hours: 8:30 a.m.-4:30 p.m.
Location: Aloysius P. Kelley, S.J. Center

MORE INFORMATION

ADMISSION QUESTIONS

Questions about the application process should be directed to the **Office of Graduate Admission**.
Phone: 203-254-4184
Fax: 203-254-4073
E-mail: gradadmis@fairfield.edu

OFFICE OPERATIONS

Days: Monday-Friday
Hours: 8:30 a.m.-4:30 p.m.
Location: Aloysius P. Kelley, S.J. Center

COLLEGE OF ARTS AND SCIENCES WEBSITE

www.fairfield.edu/cas

MASTER'S OF SCIENCE IN MATHEMATICS WEBSITE

www.fairfield.edu/math

ONLINE CATALOG

For detailed course descriptions and other University information, please refer to our online catalog **www.fairfield.edu/catalogs**.

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