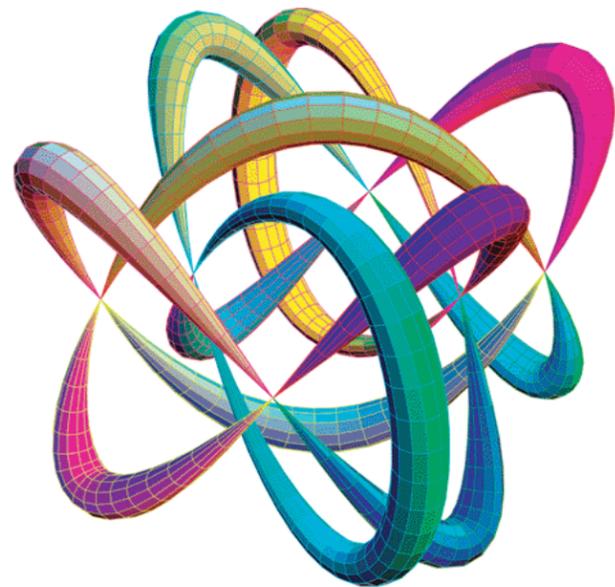


San Francisco  
State University

Department of  
Mathematics

## Master of Arts in Mathematics



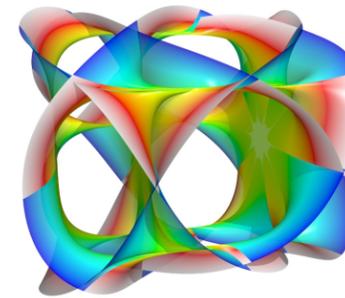
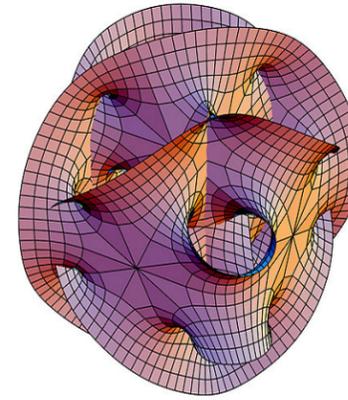
### The City's University

San Francisco State University is a comprehensive urban university enrolling more than 6,300 graduate students in 102 different Master's degree and credential programs. The campus is located in a vibrant and beautiful city with a rich intellectual and cultural life.

The mathematics graduate students mirror San Francisco's diverse population, including representative proportions of men and women and some international students. San Francisco State University is strongly committed to achieving excellence through ethnic diversity; applications are encouraged from under-represented groups.

Graduate study in Mathematics at SFSU is guided by the philosophy that graduate students should be learning to follow their own mathematical interests. As many choices as possible are provided in approved courses, including courses in other disciplines such as computer science and the physical & biological sciences.

San Francisco State University is a sponsor of the Mathematical Sciences Research Institute (MSRI) at Berkeley. Every year we nominate three or four students to attend MSRI summer schools to learn about topics at the forefront of mathematical research.



### Requirements for a Degree

The basic requirement for the MA degree is 30 units of approved coursework in Mathematics. Math 735 (Algebra II) and Math 770 (Analysis II) are the two beginning courses. It may also be waived if you have taken it before. We then choose 3 courses from the 4 course options: Math 710 (Measure Theory), Math 725 (Advanced Linear Algebra), Math 850 (Algebra III), and Math 730 (Complex Analysis) or MATH 711 (Functional Analysis).

Of the remaining units, at least 3 unpaired graduate units in mathematics must be included, and at most 9 units may be selected from approved unpaired undergraduate upper division courses. Math 730 (Complex Analysis) must be included among these 15 units unless the student had earned a B or higher grade in an undergraduate complex analysis course prior to admission. Independent study with individual instructors can count up to 6 units in these 30 units.

In addition to coursework, the MA degree requires a culminating experience, either a Master's Thesis, or an expository paper plus two comprehensive exams in two of the following areas: algebra, analysis, and statistics. Math 898 Master's Thesis, if chosen, will count 3 units toward the degree.

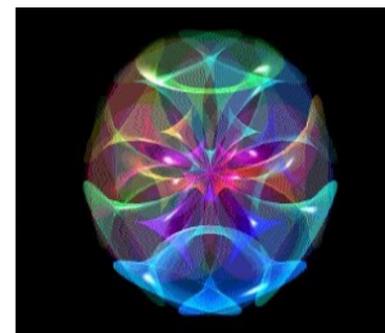
### MA in Mathematics

The Master of Arts in Mathematics at San Francisco State University offers students the opportunity to study advanced mathematics under the guidance of a diverse faculty with many research specialties. Many contemporary areas of research are represented, including algebraic geometry, algebraic K-theory, complex analysis, functional analysis, real analysis, quantitative biology, combinatorics, differential geometry, computational and discrete geometry, dynamical systems, ergodic theory, game theory, machine learning & big data analysis, mathematics education, number theory & analytic number theory, toric varieties, tropical geometry, wavelets & frames, statistics, biostatistics, and algebraic statistics. Classes are small, usually fewer than 20 students, and graduate students pursue their own mathematical interests through seminars and special projects with faculty members.

The expected completion time for the program is two to three years. Graduates either move on to doctoral programs, or begin a teaching career in local community colleges, or find employment opportunities in nearby Silicon Valley (home for many of the world's leading technology companies), in San Francisco's large financial & actuarial & insurance industries, and in a thriving biotechnology sector.

### Graduate Teaching Associates and Scholarships

Partial support for graduate students is provided through teaching positions (Graduate Teaching Associates). For many students, teaching is an important component of their career preparation. Under the guidance of a program coordinator they prepare lectures, assign homework, write examinations, and give final grades to students. Beginning graduate teaching associates are required to enroll in Math 700, Graduate Teaching Workshop. Graduate students are eligible to apply for various scholarships offered through the Department and through the University. A small number of graduate students are partially supported by research grants of faculty members.



### Admissions

Admission to the MA degree program requires an undergraduate degree but not necessarily one in mathematics. Many students with minors in mathematics have succeeded in graduate study at SFSU. Applicants should have completed three semesters of calculus, linear algebra, plus three upper division mathematics courses with a grade of B or better in modern algebra or real analysis. Applications are submitted on-line at

<https://www2.calstate.edu/apply>

Applicants must contact all colleges and universities where they have enrolled and order official transcripts to be sent to the SFSU Graduate Division. In addition to transcripts, applicants are also required to have GRE scores sent to the Mathematics Department and the SFSU Graduate Division. These documents may arrive after the application deadline.

Applicants must arrange to have at least two letters of recommendation sent to the Department. These letters may be from academic supervisors, past employers or anyone else who can address the applicant's qualifications for graduate studies and promise in teaching.

## Tenure-line Faculty

<b>Federico Ardila</b> <i>Massachusetts Inst. Technology</i>	Combinatorics
<b>David Bao</b> <i>Univ. of California, Berkeley</i>	Differential Geometry
<b>Mathias Beck</b> <i>Temple University</i>	Analytic Number Theory, Discrete Geometry
<b>Henry Boateng</b> <i>University of Michigan</i>	Scientific Computing, Computational Chemistry, Applied Mathematics
<b>Emily Clader</b> <i>University of Michigan</i>	Algebraic Geometry
<b>Luella Fu</b> <i>Univ. of Southern California</i>	Large-scale statistics
<b>Arek Goetz</b> <i>Univ. of Illinois at Chicago</i>	Dynamical Systems
<b>Joseph Gubeladze</b> <i>St. Petersburg State University</i>	Algebraic Combinatorics, K-Theory
<b>Tao He</b> <i>Michigan State University</i>	Statistics, Quantitative Biology
<b>Shandy Hauk</b> <i>UC Irvine</i>	Mathematics & Statistics Education, Dynamical Systems
<b>Serkan Hosten</b> <i>Cornell University</i>	Algebraic Statistics, Combinatorics
<b>Eric Hsu</b> <i>Univ. of California, Berkeley</i>	Mathematics Education
<b>Mohammad Kafai</b> <i>Univ. of California, Santa Barbara</i>	Statistics
<b>Gerianne Krause</b> <i>Illinois Institute of Technology</i>	Discrete Mathematics
<b>Judy Kysh</b> <i>Univ. of California, Davis</i>	Mathematics Education
<b>Chun-Kit Lai</b> <i>Chinese U. of Hong Kong</i>	Harmonic Analysis, Fractal Geometry

## Tenure-line Faculty (continued)

<b>Jean-Pierre Langlois</b> <i>Univ. of California, Berkeley</i>	Game Theory
<b>Shidong Li</b> <i>University of Maryland</i>	Applied Computational Harmonic Analysis
<b>Ornella Mattei</b> <i>University of Brescia</i>	Applied Mathematics, Mathematical Modeling
<b>Alexandra Piryatinska</b> <i>Kiev Univ, Case Western Univ.</i>	Statistics
<b>Dusty Ross</b> <i>Colorado State University</i>	Algebraic Geometry, Combinatorics
<b>Alexander Schuster</b> <i>University of Michigan</i>	Complex Analysis
<b>Kimberly Seashore</b> <i>Univ. of California, Berkeley</i>	Mathematics Education

## Courses (700 or higher are graduate level)

MATH 300	History of Mathematics
MATH 301	Exploration and Proof
MATH 310	Elementary Number Theory
MATH 324	Probability and Stats with Computing
MATH 325	Linear Algebra
MATH 335	Modern Algebra
MATH 338	Intro to SAS
MATH 350	Geometry
MATH 370	Real Analysis I
MATH 375	Field Study for Secondary Teachers
MATH 376	Ordinary Differential Equations
MATH 380	Intro to Functions of a Complex Variable
MATH 400	Numerical Analysis

MATH 420/720	Combinatorics
MATH 424	Intro to Linear Models
MATH 430	Mathematics of Optimization
MATH 435/735	Modern Algebra II
MATH 440	Probability and Statistics I
MATH 441/741	Probability and Statistics II
MATH 447	Design of Experiments
MATH 448	Statistical Learning & Data Mining
MATH 449	Categorical Data Analysis
MATH 450	Topology
MATH 451	Elementary Differential Geometry
MATH 452	Algebraic Topology
MATH 460	Mathematical Modeling
MATH 470/770	Real Analysis II
MATH 471/771	Fourier & Wavelet Analysis
MATH 475	Capstone for Secondary Teachers
MATH 477/777	Partial Differential Equations
MATH 491	Game Theory
MATH 710	Real Analysis
MATH 711	Functional Analysis
MATH 725	Advanced Linear Algebra
MATH 729	Communicating Mathematics
MATH 730	Functions of a Complex Variable
MATH 850	Algebra
MATH 852	Algebraic Topology
MATH 883	Polytopes and Varieties
MATH 884	Algebraic Geometry
MATH 887	Analysis on Manifolds
MATH 895	Frames and Wavelets

## For more information contact

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Website: [http://math.sfsu.edu/grad\\_program.php](http://math.sfsu.edu/grad_program.php)

General information about graduate studies at San Francisco State University can be obtained from the University web page <http://www.sfsu.edu/~gradstudy/> or by calling (415)-338-2234. International students should contact the Office of International Programs at (415)-338-1293 or on-line at <http://www.sfsu.edu/~oip>

