MS IN MATHEMATICS

In Workflow

1. MATH Committee Chair (vincent.pigno@csus.edu)
2. MATH Chair (kelce@skymail.csus.edu)
3. NSM College Committee Chair (mikkel.jensen@csus.edu)
4. NSM Dean (datwyler@csus.edu)
5. Academic Services (catalog@csus.edu)
6. Senate Curriculum Subcommittee Chair (curriculum@csus.edu)
7. Dean of Undergraduate and Graduate (s.storms@csus.edu)
8. Catalog Editor (catalog@csus.edu)
9. Graduate Studies (jdsmall@csus.edu; mxiong@csus.edu)
10. Registrar's Office (k.mcfarland@csus.edu)

Approval Path

1. 2025-10-23T23:51:36Z
   Vincent Pigno (vincent.pigno): Approved for MATH Committee Chair
2. 2025-10-23T23:52:44Z
   Kimberly Elce (kelce): Approved for MATH Chair
3. 2025-10-24T16:58:41Z
   Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
4. 2025-10-24T17:07:56Z
   Chris Taylor (ctaylor): Approved for NSM Dean

History

1. May 3, 2018 by clmig-jwehrheim
2. Feb 20, 2023 by Kimberly Elce (kelce)
3. Mar 7, 2023 by 212408496
4. Apr 17, 2023 by Katie Dickson (katiedickson)
5. Sep 25, 2023 by Janett Torset (torsetj)
6. Oct 22, 2025 by Matthew Krauel (krauel)

Date Submitted: 2025-10-23T23:42:40Z

Viewing: MS in Mathematics

Last approved: 2025-10-22T20:52:37Z

Last edit: 2025-10-23T23:42:39Z

Changes proposed by: Kimberly Elce (101052896)

Academic Group: (College)

Natural Sciences & Mathematics

Academic Organization: (Department)

Mathematics & Statistics

Catalog Year Effective:

2026-2027 Catalog

Individual(s) primarily responsible for drafting the proposed degree major program:

Name (First Last)	Email	Phone 999-999-9999
Kimberly Elce	kelce@csus.edu	8-5641

Type of Program:
Major

Program Change Type:
Non-Substantive

Delivery Format:
Fully Face to Face

Title of the Program:
MS in Mathematics

Designation: (degree terminology)
Master of Science

Briefly describe the program proposal (new or change) and provide a justification:
We have a set of new classes going through curriculum (MATH 201, 204, 217, 271, 293ABCD), and we would like them added to the elective list. We have recently begun offering Math 500 so we would like to add that to the elective list as well.

University Learning Goals

Graduate (Masters) Learning Goals:

Disciplinary knowledge
Communication
Critical thinking/analysis
Information literacy
Professionalism
Intercultural/Global perspectives

Program Learning Outcomes

Program Learning Outcomes

Learning Outcome
Understand deeply the fundamental theorems and techniques in both abstract algebra and real analysis, including the development of these disciplines from first principles.
Apply their understand to problems they have not seen before and in contexts that they have not seen before in a mathematically sophisticated way, including demonstration of being a mathematically sophisticated thinker by creatively applying this basic knowledge.
Speak the language of mathematics fluently, to reason with impeccable mathematical rigor, and to do this by designing proofs of mathematical results.
Appreciate the variety of major modern areas of mathematics study and of mathematical applications.

Learning Outcomes Display

Course Code	PLO 1	PLO 2	PLO 3	PLO 4
MATH 210A				
MATH 210B				
MATH 230A				
MATH 230B				
MATH 201				
MATH 202				
MATH 204				

MATH 217				
MATH 220				
MATH 234				
MATH 241				
MATH 248				
MATH 271				
STAT 215				
MATH 117				
MATH 161				
MATH 162				
MATH 293A				
MATH 293B				
MATH 293C				
MATH 293D				
MATH 299				
MATH 500				
STAT 115A				
STAT 115B				
STAT 299				

Will this program be required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

Catalog Description:

Total units required for MS: 30, including at least 24 units of approved 200-level courses

Program Description

The Department of Mathematics and Statistics offers a Master of Science degree in Mathematics. The MS program is designed to provide qualified students with an opportunity to increase the breadth and depth of their mathematical knowledge and understanding. Beyond assuring that successful candidates are proficient in the basic areas of mathematics, the program is sufficiently flexible to permit graduates to pursue individual professional and mathematical interests ranging from teaching at the secondary or community college level to a career in the private sector, to preparation for graduate study beyond the master's degree. Graduate courses are usually offered in the late afternoon.

Admission Requirements: Course prerequisites and other criteria for admission of students to the degree major program, and for their continuation in it.

Admission Requirements

Admission as a classified graduate student in Mathematics requires:

- an undergraduate major in Mathematics which includes one year each of Abstract/Modern Algebra and Real Analysis or an undergraduate major in a related field together with one year each of Abstract/Modern Algebra and Real Analysis;
- a minimum 2.5 GPA; and
- a minimum 2.5 GPA in the last 60 units attempted and a 3.0 GPA in Mathematics coursework.

Students who have deficiencies in admission requirements that can be removed by specified additional preparation may be admitted with conditionally classified graduate status. Any such deficiencies will be noted on a written response to the admission application. No credit will be given towards the MS for the following:

Code	Title	Units
MATH 110A	Modern Algebra	3
MATH 110B	Modern Algebra	3
MATH 130A	Functions of a Real Variable	3
MATH 130B	Functions of a Real Variable	3

Admission Procedures

Students should apply to the program by the posted university application deadline for the fall or spring terms. All prospective graduate students, including Sacramento State graduates, must submit:

- an online application for admission; and
- one set of **unofficial transcripts** from all colleges and universities attended, other than Sacramento State, including transcripts from ALL community colleges attended and colleges where credit was earned as a high school student.

For more admissions information and application deadlines please visit https://www.csus.edu/graduate-studies/future-students/graduate-programs-deadlines.html. For more information about the MS in Mathematics program, please visit: https://www.csus.edu/college/natural-sciences-mathematics/mathematics-statistics/explore.html

Admission decisions are made approximately six to eight weeks after the application deadline date. Applicants will be notified of an admission decision via e-mail.

Minimum Unit and Grade Requirement for the Degree

Units required for the MS: 30 (including at least 24 units of approved 200-level courses).

Minimum Cumulative GPA: 3.0

Advancement to Candidacy

Each student must file an application for Advancement to Candidacy, indicating a proposed program of graduate study. This procedure should begin as soon as the classified graduate student has:

- removed any deficiencies in admission requirements;
- successfully completed at least 12 units in the graduate program with a minimum 3.0 GPA, including at least 12 units at the 200 level; and
- successfully completed a Graduate Writing Intensive (GWI) course in their discipline within the first two semesters of coursework at California State University, Sacramento.

Advancement to Candidacy forms are available on the Office of Graduate Studies website. The student fills out the form after planning a degree program in consultation with the MS in Mathematics graduate coordinator. The completed form is then returned to the Office of Graduate Studies for approval.

As defined by policy http://www.csus.edu/umanual/acadaff/fsm00010.htm, a change in units constitutes a substantive change to the program. If your changes constitute a substantive change, please refer back to the "Program Change Type" field above to ensure that "Substantive" is selected.

Program Requirements: (If new courses are being created as part of a new program, it will be useful to propose courses first.)

Program Requirements

Code	Title	Units
Required Core Courses (12 Units)		
MATH 210A	Algebraic Structures	3
MATH 210B	Algebraic Structures	3
MATH 230A	Real Analysis	3
MATH 230B	Real Analysis	3
Electives (18 Units)		
A minimum of 12 units must be taken from Standard Electives		
Standard Electives		12
MATH 201	Course MATH 201 Not Found	
MATH 202	Theory of Numbers	
MATH 204	Course MATH 204 Not Found	
MATH 217	Course MATH 217 Not Found	
MATH 220	Topology	
MATH 234	Complex Analysis	
MATH 241	Applied Functional Analysis	
MATH 248	Lie Theory	
MATH 271	Course MATH 271 Not Found	
MATH 296x	Any 296 Series Math Course	
STAT 215	Probability Theory	

Alternative Electives		0 - 6
MATH 117	Linear Algebra	
MATH 161	Mathematical Logic	
MATH 162	Set Theory	
MATH 293A	Course MATH 293A Not Found [2]	
MATH 293B	Course MATH 293B Not Found [2]	
MATH 293C	Course MATH 293C Not Found [2]	
MATH 293D	Course MATH 293D Not Found [2]	
MATH 299	Special Problems	
MATH 500	Culminating Experience	
STAT 115A	Introduction to Probability Theory	
STAT 115B	Introduction to Mathematical Statistics	
STAT 299	Special Problems	
Other electives in mathematics and related disciplines as approved by the graduate coordinator.		
Culminating Requirement (0 units)		**0**
Written Comprehensive Examination		0
Total Units		**30**

[1] All courses applied to the MS in Mathematics degree, including the GWI course, must be completed with a grade of "B-" or better.
[2] MATH 293A, 293B, 293C, and 293D can be repeated for credit, but at most four units from these courses may be applied to the degree.

For graduate programs, the number of declared undergraduate major and the degree production over the preceding years of the corresponding baccalaureate program:

We have about 300 undergraduate math majors and graduate between 30 and 40 each semester.

Fiscal Impact to Change an Existing Program

Indicate programmatic or fiscal impact which this change will have on other academic units' programs, and describe the consultation that has occurred with affected units:

none

Provide a fiscal analysis of the proposed changes:

These changes will not cause any new fiscal responsibilities.

How will the above changes be accommodated within the department/College existing fiscal resources?

These changes will not cause any new fiscal responsibilities.

Will the proposed changes require additional resources?

No

What additional space, equipment, operating expenses, library, computer, or media resources, clerical/technical support, or other resources will be needed?

none

Key: 216