

MINOR IN MATHEMATICS



SACRAMENTO STATE

In Workflow

1. MATH Committee Chair (vincent.pigno@csus.edu)
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Approval Path

1. 2025-09-09T16:07:40Z
Vincent Pigno (vincent.pigno): Approved for MATH Committee Chair
2. 2025-09-09T16:12:47Z
Kimberly Elce (kelce): Approved for MATH Chair
3. 2025-09-17T00:10:54Z
Mikkel Jensen (mikkel.jensen): Rollback to Initiator
4. 2025-10-05T19:27:02Z
Vincent Pigno (vincent.pigno): Approved for MATH Committee Chair
5. 2025-10-07T23:44:11Z
Kimberly Elce (kelce): Approved for MATH Chair
6. 2025-10-17T16:21:40Z
Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
7. 2025-10-17T16:40:41Z
Chris Taylor (ctaylor): Approved for NSM Dean

History

1. May 1, 2018 by clmig-jwehrheim

Date Submitted: 2025-10-02T21:57:47Z

Viewing: Minor in Mathematics

Last approved: Tue, 01 May 2018 13:50:58 GMT

Last edit: 2025-10-17T16:21:07Z

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	916-278-5641

Type of Program:

Minor

Program Change Type:

Substantive

Delivery Format:

Fully Face to Face

Title of the Program:

Minor in Mathematics

Designation: (degree terminology)

Minor

Briefly describe the program proposal (new or change) and provide a justification:

For Option 1, we are merely making the catalog copy more user friendly by providing a list of courses that are already approved for the minor. We also added a course (Math 152) to the list of approved courses. Math 152 is a new courses going through the approval process currently.

For Option 2, we have replaced the requirement of Math 105A and 105B with the requirement of (Math 35 or 100) and Math 144 and Math 146. (Math 144 and 146 are new courses going through the approval process currently.) This change reflects an updating of the curriculum in applied mathematics as well as a response to issues with prerequisites. In particular, Math 105A/B were each four unit courses that covered some linear algebra within the course. We have now separated that into a prerequisite linear algebra course (Math 35 or Math 100) and the two new applied math courses (Math 144/146), with each course being 3 units. This change results in an addition of 1 unit to the Option 2 minor.

University Learning Goals**Undergraduate Learning Goals:**

Competence in the disciplines

Program Learning Outcomes**Program Learning Outcomes****Learning Outcome**

Apply mathematical strategies to both abstract and applied problems.

Construct, analyze, and critique mathematical arguments.

Communicate mathematical arguments in a variety of written forms, such as proofs, expository writing, or reports.

Learning Outcomes Display

Course Code	PLO 1	PLO 2	PLO 3
MATH 30			
MATH 31			
MATH 32			
MATH 35			
STAT 50			
MATH 100			
MATH 101			
MATH 102			

MATH 104			
MATH 108			
MATH 110A			
MATH 110B			
MATH 117			
MATH 121			
MATH 130A			
MATH 130B			
MATH 134			
MATH 150			
MATH 161			
MATH 162			
MATH 170			
MATH 190			
STAT 115A			
STAT 128			
STAT 129			
MATH 30			
MATH 31			
MATH 32			
MATH 45			
MATH 35			
MATH 100			

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

Please attach a Comprehensive Program Assessment Plan

MathMinor.xlsx

Please attach a Curriculum Map Matrix

MathMinor Curriculum Map.xlsx

Please attach a five-year budget projection

budget.docx

Catalog Description:

Units required for Minor: 20-24

Program Description

In today's highly technological society, the study of Mathematics takes on an increasingly important role. The Sacramento State Department of Mathematics and Statistics designs the minor with the goal of providing students with the mathematical concepts appropriate to the student's field.

All units must be taken in Mathematics or Statistics. At least 6 upper division units must be taken at Sacramento State.

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

Admission Requirements

All students planning to take MATH 30, Calculus I, must first satisfy one of the following criteria.

- Receive a score of 3 on the Calculus AB AP Exam.
- Receive a C- or better in Math 29 (or equivalent).
- Receive a score of 76+ on an ALEKS PPL proctored exam.

For more information about ALEKS PPL and placement into mathematics and statistics courses visit the department website (<https://www.csus.edu/math> (<https://www.csus.edu/math/>)).

Minimum Grade Requirements

- Prerequisites must be completed with grade "C-" or better.
- Grade "C-" or better required in all courses applied to the Mathematics minor

As defined by policy <http://www.csus.edu/umannual/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

Select **one** of the **two** following options.

Code	Title	Units
Option 1 (20-21 Units)		
MATH 30	Calculus I	4
MATH 31	Calculus II	4
Select one of the following:		3 - 4
MATH 32	Calculus III	
MATH 35	Introduction to Linear Algebra	
STAT 50	Introduction to Probability and Statistics	
Select 9 units of upper division Mathematics and/or Statistics from the list below.		9
MATH 100	Applied Linear Algebra	
MATH 101	Combinatorics	
MATH 102	Number Theory	
MATH 104	Vector Analysis	
MATH 108	Introduction to Formal Mathematics	
MATH 110A	Modern Algebra	
MATH 110B	Modern Algebra	
MATH 117	Linear Algebra	
MATH 121	College Geometry	
MATH 130A	Functions of a Real Variable	
MATH 130B	Functions of a Real Variable	
MATH 134	Functions of a Complex Variable and Applications	
MATH 150	Introduction to Numerical Analysis	
MATH 152	Computational Linear Algebra	
MATH 161	Mathematical Logic	
MATH 162	Set Theory	
MATH 170	Linear Programming	
MATH 190	History Of Mathematics	
STAT 115A	Introduction to Probability Theory	
STAT 128	Statistical Computing	
STAT 129	Analyzing and Processing Big Data	

Note 1: Only one of STAT 115A, STAT 128, STAT 129 may count toward the mathematics minor.

Note 2: Math 35 and Math 100 cannot both be counted toward the mathematics minor.

Total Units		20-21
Code	Title	Units
Option 2 (24 Units)		
MATH 30	Calculus I	4

MATH 31	Calculus II	4
MATH 32	Calculus III	4
MATH 45	Differential Equations for Science and Engineering	3
MATH 35	Introduction to Linear Algebra	3
or MATH 100	Applied Linear Algebra	
MATH 144 Applied Dynamical Systems		3
MATH 146 Partial Differential Equations		3
Total Units		24

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:

Physics majors would sometimes use our Math 105A/B to satisfy a physics requirement. That rarely happens anymore, but the physics chair was emailed just so they were aware. The physics chair expressed no concerns and said they would forward to the curriculum committee to see if they had any comments.

Attach a copy of correspondence with these units:

physicemail.docx

Provide a fiscal analysis of the proposed changes:

no change

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

no change

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

Reviewer Comments:

Mikkel Jensen (mikkel.jensen) (Wed, 17 Sep 2025 00:10:54 GMT): Rollback: Rolled back on request of author.

Key: 315