

# MATHEMATICS, AS-T

## Program Description

Mathematics and related subjects play important dual roles in our culture. Although mathematics is a study in its own right, it is also an indispensable tool for expressing and understanding ideas in the sciences, engineering and an increasing number of other fields. Students completing this degree will be able to construct appropriate models of natural phenomena, develop those models with appropriate mathematical techniques and interpret results of those models.

The Associate in Science in Mathematics for Transfer degree will prepare students for transfer to California State Universities (CSUs). Students who complete the Associate in Science in Mathematics for Transfer degree will be ensured preferential transfer status to many CSUs as mathematics majors and/or majors in related disciplines. The Associate in Science in Mathematics for Transfer degree requirements will fulfill the lower division major requirements at many CSUs. Students are advised, however, to meet with a counselor to assess the course requirements for a specific CSU.

Learn more about the program on the [Mathematics website](#).

## Program Learning Outcomes

- Students will be able to clearly communicate mathematical ideas through graphs, tables of data, equations and verbal descriptions.
- Students will be able to construct appropriate mathematical models of natural phenomena, develop those models with appropriate mathematical techniques and interpret results of those models.

## Units Required

- Major: 29.5-31

## Associate Degree Requirements

Associate in Science in Mathematics for Transfer requires completion of a minimum of 90 units to include:

- CSU General Education Breadth Requirements **or** the Intersegmental General Education Transfer Curriculum (IGETC)<sup>1</sup> (49-58 units) (full certification is required)
- Core and support courses (29.5-31 units, of which 20-21 units may satisfy the GE requirement)
- Transferable electives necessary to meet the 90-unit minimum requirement

<sup>1</sup> **Important Note:** Although it is possible to fulfill the requirements for the Associate Degree for Transfer by completing the IGETC for UC pattern, admission to CSU requires completion of an Oral Communication course (IGETC Area 1C; CSU GE Area A-1); therefore, students who plan to transfer to CSU should complete this course as part of their GE or elective units.

**Note:** All courses pertaining to the major must be completed with a grade of "C" (or "P") or better. In addition, the student must obtain a minimum GPA of 2.0.

## Core and Support Courses

Code	Title	Units
<b>Core Courses</b>		
MATH 1A	CALCULUS	5
or MATH 1AH	HONORS CALCULUS I	
MATH 1B	CALCULUS	5
or MATH 1BH	HONORS CALCULUS II	
MATH 1C	CALCULUS	5
MATH 1D	CALCULUS	5
<b>Support Courses</b>		
Select one course each from List A and List B:		9.5-11
<i>List A</i>		
MATH 2A	DIFFERENTIAL EQUATIONS	
MATH 2B	LINEAR ALGEBRA	
<i>List B</i>		
C S 1A	OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN JAVA	
C S 1B	INTERMEDIATE SOFTWARE DESIGN IN JAVA	
C S 1C	ADVANCED DATA STRUCTURES & ALGORITHMS IN JAVA	
C S 2A	OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN C++	
C S 3A	OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN PYTHON	
MATH 2A	DIFFERENTIAL EQUATIONS <sup>1</sup>	
MATH 2B	LINEAR ALGEBRA <sup>1</sup>	
MATH 10	ELEMENTARY STATISTICS	
or MATH 17	INTEGRATED STATISTICS II	
MATH 22	DISCRETE MATHEMATICS	
or C S 18	DISCRETE MATHEMATICS	
PHYS 4A	GENERAL PHYSICS (CALCULUS)	
<b>Total Units</b>		<b>29.5-31</b>

<sup>1</sup> MATH 2A or MATH 2B may be used to satisfy List B requirement if they were not used to meet the requirement for List A.