

A.S. IN MATHEMATICS

The Associate of Science in Mathematics is designed to develop students' analytical skills and foundational understanding required for advanced studies in mathematics and fields that involve quantitative analysis. Throughout this program, students will enhance their knowledge of key mathematical concepts, including functions, calculus, linear systems, and differential equations. Emphasis is placed on cultivating the ability to communicate mathematical ideas clearly and concisely.

This degree program prepares students for transfer into upper-division mathematics programs and provides a strong academic base for disciplines that rely heavily on quantitative reasoning, such as data science, economics, physics, and computer science.

Please meet with a counselor to choose electives aligned with your transfer requirements

Learning Outcomes

A.S. Degree Level Student Learning Outcomes

Students completing the Mathematics A.S. Degree will:

1. Develop an understanding of how to use proper vocabulary and notation when describing mathematical concepts, including the ability to read books and documents and extract quantitative information.
2. Develop appropriate computational skills including numeric calculation, evaluation of expressions, analysis of data, and application of concepts.
3. Develop an understanding of the physical world, which will include the formulation of analytical skills that will aid in the process of devising questions and proposing quantitative solutions.
4. Demonstrate computational skills and an understanding of mathematical reasoning that will increase self-esteem and set each student on the path of lifelong learning.
5. Demonstrate an understanding of how to use instructional software found by navigating the Web and found in the Windows' environment.
6. Demonstrate competency at levels appropriate to a particular course, which will prepare students for the workforce, subsequent courses, and transfer to other educational institutions.

Requirements

Students receiving this degree must meet the following requirements:

1. Complete the District General Education Pattern (<https://catalog.citruscollege.edu/programs-study/graduation-requirements-associate-degree/general-education-requirements-option-i/>) or Cal-GETC (<https://catalog.citruscollege.edu/programs-study/graduation-requirements-associate-degree/general-education-requirements-transfer-calgetc-option-ii/>).
If transferring to a CSU or UC students are strongly recommended to complete the Cal-GETC General Education Pattern. Students looking to transfer to an out of state or private college should consult with a counselor for the appropriate GE pattern selection.
2. Complete with a "C" or better each course as specified by the major.

3. Maintain an overall GPA of a 2.0 or better in all degree applicable coursework.
4. Meet the 12-unit residency requirement.

Code	Title	Units
Required courses:		
MATH 190	Calculus I: Late Transcendentals ¹	5
MATH 191	Calculus II: Late Transcendentals	5
MATH 210	Calculus with Analytic Geometry III	5
MATH 211	Differential Equations	5
MATH 212	Introduction to Linear Algebra	4

Select 18-20 (eighteen-twenty) units from the following courses:

CS 225	Object Oriented Programming	3
CS 232	Programming Concepts and Methodology II	3
CS 242	Computer Architecture and Organization	3
CS 252	Discrete Structures	3
STAT C1000 or STAT C1000H	Introduction to Statistics ² Introduction to Statistics - Honors	4
ECON C2001	Principles of Microeconomics	3
ECON C2002 or ECON C2002H	Principles of Macroeconomics Principles of Macroeconomics - Honors	3
PHYS 201 or PHYS 201H	Physics A: Mechanics Physics A: Mechanics - Honors	5
PHYS 202	Physics B: Thermodynamics and Electromagnetism	5
PHYS 203	Physics C: Waves, Optics & Modern Physics	5

Total Units **42-44**

¹ MATH 190 is degree applicable with or without MATH 090. If taken with MATH 090, only the units for MATH 190 will be counted towards the degree.

² STAT 1000 is degree applicable with or without STAT 1000S. If taken with STAT 1000S, only the units for STAT 1000S will be counted towards the degree.

Career Information

Career Opportunities

There are a variety of careers you can do with this major.

To explore more about this major, schedule an appointment (<https://www.citruscollege.edu/student-services/support-services/career/counseling-appointments.html>) with a career counselor.