MATHEMATICS ASSOCIATE IN SCIENCE AND CERTIFICATE OF ACHIEVEMENT

Since jobs requiring mathematical skills such as data analysis, problem solving, pattern recognition, statistics, and probability are in high demand, the mathematics major may benefit both educationally and economically from developing and pursuing an interest in mathematics. Mathematical skills and statistical methods are employed regularly by researchers testing hypotheses, by workers applying quality control in manufacturing, and by informed citizens who must evaluate information from the media in tabular, graphical, and report form in order to reach solutions. This major offers a foundation in these necessary skills. The emphasis is to prepare students for transfer to a four-year institution and/or for career preparation in a vocational or professional field.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Draw conclusions about simple and complex systems by collecting, assessing, and analyzing information.
- Communicate technical ideas in group and professional settings in both written and oral form.

Career Opportunities

Accountant[1]
Actuary[1]
Air Traffic Controller
Auditor[1]
Bank Officer[2]
Budget Analyst[1]
Computer Operator
Computer Programmer[1]
Cost Estimator[2]
Credit and Collection Manager[2]
Data Processing Manager
Economist[1]
Engineer[1]
Financial Planner[1]
Insurance Agent/Broker
Insurance Claim Examiner
Laboratory Examiner
Loan Officer
Market Research Analyst[1]
Mathematician[1]
Mathematics Teacher[1]
Securities Trader[1]
Semiconductor Technician
Statistician[1]
Surveyor
Systems Analyst[1]

[1] Bachelor Degree or higher required.

[2] Bachelor Degree normally recommended.

Associate in Science Degree Requirements

Code	Title	Units
Core Curriculum		
MATH-180	Analytic Geometry and Calculus I	5
MATH-280	Analytic Geometry and Calculus II	4
MATH-281	Multivariable Calculus	4
List A		
Select one of the following:		3
MATH-284	Linear Algebra	
MATH-285	Differential Equations	
List B		
Select one of the following:		3-5
CS-181	Introduction to C++ Programming	
ENGR-120	Engineering Computer Applications	
MATH-160	Elementary Statistics	
MATH-245	Discrete Mathematics	
PHYC-201	Mechanics and Waves	
Any course from List A not selected		
Total Units		**19-21**

Plus General Education Requirements (https://catalog.gcccd.edu/cuyamaca/degree-requirements-transfer-information/)

Recommended Electives

Students planning to transfer to four-year institutions to complete a bachelor's degree in Pure Mathematics, Applied Mathematics, or Statistics should select an emphasis in an applied discipline such as accounting, chemistry, computer science, economics, engineering, or physics. In particular, transfer students are strongly urged to elect the following physics courses:

Code	Title	Units
PHYC-201	Mechanics and Waves	5
PHYC-202	Electricity, Magnetism, and Heat	5
PHYC-203	Light, Optics, and Modern Physics	5

Students preparing for a vocational or professional career are strongly encouraged to select an emphasis in a vocational/professional discipline such as business, computer and information science, CADD technology, electronics technology, or environmental health and safety management.

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Mathematics. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.