

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

Accountant¹
 Actuary¹
 Air Traffic Controller
 Auditor¹
 Bank Officer²
 Budget Analyst¹
 Computer Operator
 Computer Programmer¹
 Cost Estimator²
 Credit and Collection Manager²
 Data Processing Manager
 Economist¹
 Engineer¹
 Financial Planner¹
 Insurance Agent/Broker
 Insurance Claim Examiner
 Laboratory Examiner
 Loan Officer
 Market Research Analyst¹
 Mathematician¹
 Mathematics Teacher¹
 Securities Trader¹
 Semiconductor Technician
 Statistician¹
 Surveyor
 Systems Analyst¹

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.