



Mathematics 2013-2014

Mathematics and related subjects play important dual roles in our culture. On the one hand, mathematics is a study in its own right; on the other hand it is an indispensable tool for expressing and understanding ideas in the sciences, engineering, and an increasing number of other fields.

Program Learning Outcomes:

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

Career Opportunities:

Employment opportunities for persons with training in mathematics have been expanding in recent years. The courses offered are designed to develop the skills and competencies that not only support the skill areas needed in engineering, physical and biological sciences, but also satisfy the necessary course requirements for the first two years of a baccalaureate program.

Units required for Major: 45

Associate Degree Requirements:

- English proficiency: ENGL 1A, 1AH, 1S & 1T, ESLL 26 or equivalent.
- Mathematics proficiency: MATH 57, 105, 108 or equivalent.

A minimum of 90 units is required* to include:

- All Foothill General Education requirements (30 Units)
- Core courses (45 Units)

*Additional elective course work may be necessary to meet the 90-unit minimum requirement for the associate degree.

NOTE: All courses pertaining to the major must be taken for a letter grade and the student must receive a grade of "C" or higher in these courses.

Program Type:

AS = Associate in Science Degree.

Additional Information:

NOTE: Check transfer institution for required level of physics. Applied Mathematics majors should enroll in the PHYS 4 series. The PHYS 5A, 5B & 5C sequence is equivalent to PHYS 4A & 4B.

Optional Recommended Courses

- MATH 10 Elementary Statistics (5 units)
- MATH 11 Finite Mathematics (5 units)

Core Courses: 45 Unit(s)

- MATH 1A Calculus (5 units)
- MATH 1B Calculus (5 units)
- MATH 1C Calculus (5 units)
- MATH 1D Calculus (5 units)
- MATH 2A Differential Equations (5 units)
- MATH 2B Linear Algebra (5 units)
- MATH 22 Discrete Mathematics (5 units)

And TWO courses from ONE of the following options:

Option 1:

- PHYS 2A General Physics (5 units)
- PHYS 2B General Physics (5 units)
- PHYS 2C General Physics (5 units)

Option 2:

- PHYS 4A General Physics (Calculus) (6 units)
- PHYS 4B General Physics (Calculus) (6 units)
- PHYS 4C General Physics (Calculus) (6 units)
- PHYS 5A* General Physics (Calculus) Extended (5 units)
- PHYS 5B* General Physics (Calculus) Extended (5 units)
- PHYS 5C* General Physics (Calculus) Extended (5 units)

Option 3:

- CHEM 1A General Chemistry (5 units)
- CHEM 1B General Chemistry (5 units)
- CHEM 1C General Chemistry & Qualitative Analysis (5 units)

Option 4:

- C S 1A Object-Oriented Programming Methodologies in Java (5 units)
- C S 1B Intermediate Software Design in Java (5 units)
- C S 1C Advanced Data Structures & Algorithms in Java (5 units)
- C S 2A Object-Oriented Programming Methodologies in C++ (5 units)
- C S 2B Intermediate Software Design in C++ (5 units)
- C S 2C Advanced Data Structures & Algorithms in C++ (5 units)

* The PHYS 5A, 5B & 5C sequence is equivalent to PHYS 4A & 4B.