

# MATH/SCIENCE

Science has to do with the tested and proven laws concerning the universe and how physical items function and interact. Applying scientific principles and knowledge often involves mathematical skills.

## Career Opportunities

While not all math-based careers involve science, many careers in the sciences require the use of math. Some careers that involve both math and science are postsecondary computer science teachers, pharmacists, forensic science technicians, chemical engineers, and hazardous materials removal workers.

## Transfer

The Associate in Science degree in Math/Science is often a degree earned by students who are pursuing a bachelor's degree in transfer majors such as Biology, Chemistry, Engineering, Environmental Studies, Geology, Mathematics, and Physics. It is also commonly earned by students planning to enter a Nursing program. To explore a bachelor's degree in these fields, visit [assist.org](https://www.assist.org) (<https://www.assist.org>). Please stop by the Transfer Center in Building 23 or make an appointment with a counselor if you have questions.

## Math/Science, AS (04976)

To earn this degree, complete the major coursework with "C" grades or better and all of the following graduation requirements: 60 minimum degree-applicable units (including a maximum 4 units of activity); 2.0 minimum overall GPA; 12 degree-applicable units through VVC; Information Competency; Global Citizenship; Kinesiology, and the VVC General Education ([catalog.vvc.edu/degrees-certificates/vvcge/#vvcge](http://catalog.vvc.edu/degrees-certificates/vvcge/#vvcge)) pattern. Courses may count in one area only, either in the major or in a general education category. Courses counted in one AA/AS major may not be used in another AA/AS major.

The Math/Science major requires 18 units from any of the following courses.

### Mathematics

ELCT 57 Technical Mathematics for Electronics I, ELCT 58 Technical Math for Electronics II, ELCT 59 Technical Calculus for Electronics I, ELCT 60 Technical Calculus for Electronics II, MATH 104 Trigonometry, MATH 105 College Algebra/MATH 105H Honors College Algebra, MATH 120 Introduction to Statistics/MATH 120H Honors Introduction to Statistics, MATH 120S Introduction to Statistics With Skills Support, MATH 129 Independent Study, MATH 132 The Ideas of Math, MATH 226 Analytic Geometry and Calculus I/MATH 226H Honors Analytic Geometry and Calculus I, MATH 227 Analytic Geometry and Calculus II/MATH 227H Honors Analytic Geometry and Calculus II, MATH 228 Analytic Geometry and Calculus III/MATH 228H Honors Analytic Geometry and Calculus III, MATH 231 Linear Algebra, MATH 270 Differential Equations, PSYC 215 Introduction to Statistics in Social and Behavioral Sciences

### Life Sciences

AGNR 123 Introduction to Plant Science, ANTH 101 Introduction to Physical Anthropology, ANTH 101L Physical Anthropology Laboratory, BIOL 100 General Biology, BIOL 107 Introduction to Human Biology, BIOL 110 Introduction to Human Nutrition, BIOL 118 Principles of Heredity, BIOL 201 Biology of Cells, BIOL 202 Biology of Organisms, BIOL 203 Population and Environmental Biology, BIOL 211

Human Anatomy, BIOL 213 Sexually Transmitted Diseases, BIOL 215 Human Gross Anatomy, BIOL 221 General Microbiology, BIOL 231 Human Physiology, BIOL 233 Pathophysiology, HLTH 102 Contemporary Problems in Personal and Community Health

## Physical Sciences

AGNR 131 Introduction to Soil Science, AGNR 170 Environmental Science and Sustainability, ASTR 101 Descriptive Astronomy, CHEM 100 Introductory Chemistry, CHEM 201 General Chemistry, CHEM 202 General Chemistry, CHEM 206 Introductory Chemistry II: Organic Chemistry, CHEM 207 Introductory Chemistry III: Biochemistry, CHEM 281 Organic Chemistry, CHEM 282 Organic Chemistry II, GEOG 101 Introduction to Physical Geography, GEOG 101L Geography 1 Laboratory, GEOG 103 Geography of California, GEOG 130 Introduction to Weather and Climate, GEOL 101 Physical Geology, OCEA 101 Oceanography, PSCI 101 Principles of Physical Science, PHYS 100 Introductory Physics, PHYS 201 Engineering Physics I-Mechanics, PHYS 202 Engineering Physics II - Fluids, Sound, and Thermodynamics, PHYS 203 Engineering Physics III Electricity And Magnetism, PHYS 204 Engineering Physics IV-Optics and Modern Physics, PHYS 221 General Physics I, PHYS 222 General Physics II

## Program Learning Outcomes

Program Learning Outcomes (PLOs) are statements of the kind of learning a program hopes a student will achieve. The PLOs describe the knowledge, skills, problem-solving, communication and values that apply to all certificates and/or degrees within that program. For the IGETC program, PLOs link to the college's Institutional Learning Outcomes (ILOs).

Upon completion of this program, students should be able to:

- 1. Communication:** Read and write analytically including evaluation, synthesis, and research; deliver focused and coherent presentations.
- 2. Computation:** Apply complex problem-solving skills using technology, computer proficiency, decision analysis (synthesis and evaluation), applications of mathematical concepts and reasoning, and the analysis and use of numerical data.
- 3. Creative, Critical and Analytical Thinking:** Apply procedures for sound reasoning in the exercise of judgment and decision making; demonstrate intellectual curiosity and a respect for learning; solve problems through analysis, synthesis, evaluation and creativity; identify, evaluate and appropriate use of multiple sources of information.
- 4. Social and Personal Responsibility:** Evaluate the relationship between natural, social and economic systems and the significance of sustainability; demonstrate responsible attitudes toward cultural diversity, citizenship, personal contribution to local and international communities, and the effect of human actions on the environment.
- 5. Information Competency:** Students demonstrate information competency and critical thinking skills through their ability to effectively locate, retrieve, evaluate and utilize use library and information resources within the guidelines of academic standards to meet collegiate and personal information needs.

**Forthcoming, 6: Health and Human Flourishing:** Synthesize educational aims into a holistic approach to the many facets of human flourishing; apply principles of physical, psychological and emotional health and fitness; demonstrate scholarly skills that support intellectual virtues for

life-long learning; embrace concepts of fiscal responsibility; and define goals that extend beyond oneself.