## Natural Science Emphasis

**A.A. DEGREE: 60 units**

### DESCRIPTION

The Area of Emphasis for Studies in Natural Science recognizes the integrated role that Biology, Chemistry, Physics, and Mathematics play in the description and understanding of our everyday world.

### PROGRAM LEARNING OUTCOMES

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

- Employing the scientific method as a basis for evaluating theoretical and laboratory derived information, students will gain an understanding of the biological and/or physical worlds.
- Students will also gain a working familiarity with mathematics and an understanding of mathematics as it applies to modeling in the sciences and as an elegant stand-alone discipline.

### REQUIREMENTS: (18 UNITS)

Choose any combination of courses for a minimum of 18 units. You must select at least one course from Mathematics and one course from one of the Science disciplines:

<table>
<thead>
<tr>
<th>BIOLOGY</th>
<th>CHEMISTRY</th>
<th>PHYSICS</th>
<th>MATHEMATICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO8 or AH8</td>
<td>CHEM1A</td>
<td>PHYS2A</td>
<td>MATH1A</td>
</tr>
<tr>
<td>BIO9 or AH9</td>
<td>CHEM1B</td>
<td>PHYS2B</td>
<td>MATH1B</td>
</tr>
<tr>
<td>BIO15 or AH15</td>
<td>CHEM12A</td>
<td>PHYS4A</td>
<td>MATH1B</td>
</tr>
<tr>
<td>AH15</td>
<td>CHEM12B</td>
<td>PHYS4B</td>
<td>MATH1B</td>
</tr>
<tr>
<td>BIO1</td>
<td>CHEM2</td>
<td>PHYS4C</td>
<td>MATH1B</td>
</tr>
<tr>
<td>BIO4</td>
<td>CHEM3</td>
<td></td>
<td>MATH1B</td>
</tr>
<tr>
<td>BIO5</td>
<td></td>
<td></td>
<td>MATH1B</td>
</tr>
<tr>
<td>BIO7</td>
<td></td>
<td></td>
<td>MATH1B</td>
</tr>
<tr>
<td>BIO21</td>
<td></td>
<td></td>
<td>MATH1B</td>
</tr>
</tbody>
</table>

### GENERAL EDUCATION REQUIREMENTS: (35 - 39 UNITS)

A student may complete the Gavilan College A.A./A.S. general education, the CSU-GE Breadth or the IGETC pattern, plus sufficient electives to meet a 60 unit total. See a counselor for details.

**NOTE:** A course may be used to satisfy both general education and major courses. See "Double Counting Rule".

---

**MATH1A** Single-Variable Calculus and Analytic Geometry... 4
**MATH1B** Single-Variable Calculus and Analytic Geometry... 4
**MATH1C** Multivariable Calculus.......................... 4
**MATH2** Linear Algebra.................................... 3
**MATH2C** Differential Equations.......................... 3
**MATH5** Introduction to Statistics......................... 3
**MATH7** Finite Mathematics................................ 3
**MATH8A** First Half of Precalculus......................... 4
**MATH8B** Second Half of Precalculus....................... 4
**PHYS2A** General Physics I.................................. 4
**PHYS2B** General Physics II................................ 4
**PHYS4A** Physics for Scientists and Engineers - Mechanics... 4
**PHYS4B** Physics for Scientists and Engineers - Electricity and Magnetism... 4
**PHYS4C** Physics for Scientists and Engineers - Heat, Optics, Modern Physics... 4

---

**ECOL1** Conservation of Natural Resources.................. 4

**GEOL1** Introduction to Geology............................ 4

---

www.gavilan.edu