

All Bachelor Programs require a minimum of 128 credits and a 2.00 cumulative average.

## SCHOOL OF NATURAL SCIENCES AND MATHEMATICS MINORS

Courses for a minor must be earned with a grade of **C** or better.

**Academic Year**

**Fall 2019-Fall 2020**

### **BIOLOGY**

**Minimum 22 credits excluding CHEM**

BIOL 1200/05 Cells & Molecules w/lab (5)  
 CHEM 2110/15 General Chemistry I w/lab (5)  
 BIOL 1400/05 Biodiversity & Evolution (5)  
 CHEM 2120/25 Chemistry II Organic w/lab (5)  
 BIOL 2110/15 Genetics w/lab (4)  
 BIOL 4600 Biology Seminar (1)  
 BIOL Elective 3000 level \_\_\_\_\_  
 BIOL Elective 3000 level \_\_\_\_\_

### **CHEMISTRY**

**Minimum 26 credits excluding CHEM**

Introductory Core: (18 credits)  
 CHEM 2110/15 Chemistry I w/lab (5)  
 CHEM 2120/25 Chemistry II w/lab (5)  
 CHEM 2130 Chemistry III w/lab (4)  
 CHEM 2140/45 Chemistry IV w/lab (4)

**Choose ONE of the following laboratory intensive courses (4 credits)**

CHEM 3035 Survey of Instrumentation (4)  
 CHEM 3110 Inorganic Chemistry (4)  
 CHEM 3310 Laboratory methods I (4)  
 CHEM 3120 Lab Methods II (4)  
 CHEM 3420/3425 Physical Chemistry III /lab (4)  
 CHEM 3350 Biochemical Lab Methods (4)  
 CHEM 3520 Advanced Organic Chemistry w/lab (4)

**Elective: One, 4 credit CHEM course at the 3000 or 4000 level**

Appropriate elective courses for the CHEM minor are: Inorganic, Physical, Environmental or Biochemistry, Laboratory Methods II, and topics in Chemistry or in Chemistry or Independent Study offerings

**Intermediate/advanced Elective (4 credits)**

CHEM acronym independent studies and/or internships may be used to satisfy this requirement.

Transfer students must complete credits beyond the introductory core at Stockton.

### **ENVIRONMENTAL STUDIES**

**Minimum Credits 24. All courses must be selected in consultation with an ENVL faculty member and must be approved in advance.**

ENVL \_\_\_\_\_(4)  
 ENVL \_\_\_\_\_(4)  
 ENVL \_\_\_\_\_(4)  
 ENVL \_\_\_\_\_(4)  
 ENVL \_\_\_\_\_(4)  
 ENVL \_\_\_\_\_(4)

### **MARINE SCIENCE**

**Minimum Credits 20. Required courses: 8 credits**

MARS 1100 Survey of Ocean Life **OR** MARS 1200 Introduction to Marine Biology (4) **Student may not take both**

**Electives:** At least 12 MARS credits, 8 of which **MUST** be at the 3000 or 4000 level. Students **MUST** complete all prerequisites for any MARS electives.

MARS \_\_\_\_\_(4)  
 MARS 3000 level or greater (4)  
 MARS 3000 level or greater (4)

### **PHYSICS**

**Minimum Credits 22. Required courses: 14-16 credits**

PHYS 2220/25 Physics I w/lab (6) **OR**  
 PHYS 2110/15 Physics for Life Sciences I w/lab (5)  
 PHYS 2230/35 Physics II w/lab (6) **OR**  
 PHYS 2120/25 Physics for Life Sciences II w/lab (5)  
 PHYS 3010 Physics III (4)  
 A choice of any two 3000 level physics courses (8 credits)  
 PHYS 3000 level \_\_\_\_\_(4)  
 PHYS 3000 level \_\_\_\_\_(4)

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|---|---|
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| <b>Academic Year</b>  | <b>Fall 2019-Fall 2020</b>  |
| <b>MATHEMATICS</b>  | <b>ENERGY CERTIFICATE PROGRAM</b>   |
| <b>Minimum 22 credits excluding CHEM</b><br>MATH 2215 Calculus I (5)<br>MATH 2216 Calculus II (5)<br>MATH 2217 Calculus III (5)<br>MATH 3323 Linear Algebra (4)<br>MATH 3000 Level or greater | <b>Common Core (21 credits)</b><br>CHEM 2110/15 Chemistry I w/lab (5)<br>Energy-related senior project / internship (4)   |
| <b>GEOLOGY</b>  | <b>Choose TWO of the following courses (8 credits)</b>  |
| <b>Minimum 22 credits Required courses: 10 credits</b><br>GEOL 2101/05 Physical Geology w/lab<br>GEOL 2102/06 Historical Geology w/lab  | PHYS/ENVL 3343 Energy Planning (4)<br>PHYS/ENVL 3444 Energy Management (4)<br>PHYS Energy Phys. (Independent Study) (4)<br>PHYS Alternate Energy Sources (Independent Study) (4)                                    |
| <b>At least 8 credits from the following:</b>   | <b>Choose ONE emphasis from the following (14-22 credits)</b>   |
| GEOL 3000-4999<br>BIOL/GEOL 3242 Vertebrate Paleontology (4)<br>ENVL/GEOL 3430 Geomorphology (4)  | Environmental Sciences (14)<br>PHYS 2110/15 Physics for Life Sciences I w/lab (5)<br>PHYS 2120/25 Physics for Life Sciences II w/lab (5)<br>Energy-related senior project / internship (4)<br>Physical Science (22) |
| <b>No more than 6 credits from the following:</b>   | <b>MATH 2215 Calculus I (5)</b>   |
| GEOL 4391 Field Studies: Selected Area (4-6)<br>ENVL 3432 Soil Science (4)  | <b>MATH 2216 Calculus II (5)</b><br><b>PHYS 2220/25 Physics I w/lab (6)</b><br><b>PHYS 2230/35 Physics II w/lab (6)</b>   |
| <b>GEOGRAPHIC INFORMATION SYSTEMS GIS CERTIFICATE PROGRAM</b>   |   |
| 17-18 Credits<br><i>Prerequisites for non-ENVL majors:</i><br>GNM 1242 Mapping the World's Natural Resources<br>ENVL 2400 Intro to Statistics and Computers (4)                               |   |
| <b>Common Core (10 credits)</b>   |   |
| ENVL 3302 Geographic Information Systems (Fall) (3-4)<br>ENVL 3303 Advanced GIS (Spring) (4)<br>ENVL 4622 Global Positioning Systems for GIS (Fall) (2)                                       |   |
| <b>Select ONE or TWO from the following courses (4 credits)</b>   |   |
| ENVL 3304 Remote Sensing<br>ENVL 3307 Geodatabase (Spring) (4)<br>CSIS 3222 Database System (4)<br>GIS Sr. Project or Internship (4)<br>ENVL 48/4900 GIS Project (4)                          |   |

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