

# THE SCHOOL OF NATURAL SCIENCES AND MATHEMATICS

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

## 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 and 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 electives

#### 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 w/lab (4)  
CHEM 3350 Biochemical Lab Methods (4)  
CHEM 3520/3025 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 or Cognate \_\_\_\_\_ (4)  
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ENVL or Cognate \_\_\_\_\_ (4)  
ENVL or Cognate 3/4 \_\_\_\_\_ (4)  
ENVL or Cognate 3/4 \_\_\_\_\_ (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)**  
MARS 1300 Introduction to Oceanography (4)

**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)

## APPLIED 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)

## MATHEMATICS

### Minimum Credits 23

#### Required courses:

MATH 2215 Calculus 1 (5)  
MATH 2216 Calculus II (5)  
MATH 2217 Calculus III (5)  
MATH 3323 Linear Algebra (4)  
MATH 3000 Level or greater

## GEOLOGY

### Minimum Credits 22

#### Required courses: 10 credits

GEOL 2101/05 Physical Geology w/lab  
GEOL 2102/06 Historical Geology w/lab

#### At least 8 credits from the following:

GEOL 3000 - 4999  
BIOL/GEOL 3242 Vertebrate Paleontology (4)  
ENVL/GEOL 3430 Geomorphology (4)

#### No more than 6 credits from the following:

GEOL 4391 Field Studies: Selected Area (4-6)  
ENVL 3432 Soil Science (4)

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## GEOGRAPHIC INFORMATION SYSTEMS GIS CERTIFICATE PROGRAM

### 17-18 Credits

*Prerequisites for non-ENVL majors:*

GNM 1242 Mapping the World's Natural Resources

ENVL 2400 Intro to Statistics and Computers (4)

### Common Core (10 credits)

ENVL 3302 Geographic Information Systems (Fall) (3-4)

ENVL 3303 Advanced GIS (Spring) (4)

ENVL 4622 Global Positioning Systems for GIS (Fall) (2)

### Select ONE or TWO from following courses (4 credits)

ENVL 3304 Remote Sensing (Spring) (4)

ENVL 3307 Geodatabase (Spring) (4)

ENVL 4201 Spatial Statistics (Spring ) (2)

CSIS 3222 Database Systems (4)

GIS Sr. Project or Internship (4)

ENVL 48/4900 GIS Project (4)

## ENERGY CERTIFICATE PROGRAM

### Common Core (21 credits)

CHEM 2110/15 Chemistry 1 w/lab (5)

Energy-related Senior Project / Internship (4)

### Choose TWO of the following courses (8 credits)

PHYS/ENVL 3343 Energy Planning (4)

PHYS/ENVL 3444 Energy Management (4)

PHYS Energy Phys. (Independent Study) (4)

PHYS Alternate Energy Sources (Independent Study) (4)

### Choose ONE emphasis from the following (14-22 credits)

Environmental Sciences (14)

PHYS 2110/15 Physics for Life Sciences I w/lab (5)

PHYS 2120/25 Physics for Life Sciences II w/lab (5)

Energy-related elective (4)

Physical Science (22)

MATH 2215 Calculus I (5)

MATH 2216 Calculus II (5)

PHYS 2220/25 Physics I w/lab (6)

PHYS 2230/35 Physics II w/lab (6)