



## Study the rich diversity of life in all its forms

Bachelor of Science (B.S.) in Biology

Bachelor of Science (B.S.) Biology-Biotechnology

### Contact Information:

Phone (661) 654-3089

Fax (661) 654-6956

Email [biology@csub.edu](mailto:biology@csub.edu)

Web [www.csub.edu/biology/](http://www.csub.edu/biology/)

Office Science I, Room 114

### Career Opportunities in the Biological Sciences

A degree in Biology from CSUB can be a stepping stone to many fascinating and rewarding careers. Opportunities for Biology majors abound in research, government, education, industry, and the medical professions. These are just some examples of the many exciting fields open to graduates in Biology, Biotechnology, Human Biological Sciences, Pre-Professional, or Natural Science:

- Environmental Research
- Environmental Consulting
- Water quality management
- Agricultural and Pest management
- Health Care
- Pharmaceutical Industry
- Secondary School Science Education
- Advanced Education
- Clinical Lab Sciences
- Biotechnology
- Wildlife biology
- Biochemistry
- Botany
- Ecology
- Marine biology
- Forestry
- Dentistry
- Optometry
- Veterinary medicine
- Physical Therapy

### Faculty

#### Tenured and Tenure-Track

- Anna Doty, PhD, Assistant Professor (Animal Physiological Ecology)
- Isolde Francis, PhD, Assistant Professor (Plant Pathology, Microbiology)
- Jeroen Gillard, PhD, Assistant Professor (Microbial Physiology and Genomics)
- Lucas Hall, PhD, Assistant Professor (Ecology, Conservation Biology)
- Anna L. Jacobsen, PhD, Professor (Plant Anatomy, Plant Structure-Function)
- Kane Keller, PhD, Assistant Professor (Community Ecology, Evolutionary Ecology)
- Carl T. Kloock, PhD, Professor (Behavioral Ecology, Science Education)
- Antje Lauer, PhD, Professor (Environmental Microbiology, Marine Biology)
- Rae McNeish, PhD, Assistant Professor (Aquatic Ecosystem Ecology)
- R. Brandon Pratt, PhD, Professor (Plant Physiological Ecology)
- Paul Smith, PhD, Professor & Department Chair (Entomology, Molecular Systematics)
- Amber Stokes, PhD, Associate Professor (Chemical Ecology, Animal Physiology)
- Kathleen Szick, PhD, Associate Professor (Molecular and Cellular Biology)

#### Full-Time Lecturers

- Danielle Dodenhoff, PhD
- Michele Engel, PhD
- Jordan Mead Vaughn, MS
- Robert Stark, PhD

### Scholarships

- Fairie A. Decker Memorial Scholarship
- John Reed Memorial Scholarship
- Friends of Biology Scholarship
- Math and Science Teacher Initiative
- Robert Noyce Scholarship Program



**CSU Bakersfield**  
School of Natural Sciences,  
Mathematics, and Engineering

[www.csub.edu/nsme](http://www.csub.edu/nsme)

(661) 654-3450

[nsme@csub.edu](mailto:nsme@csub.edu)

## Degree Requirements

### Bachelor of Science in Biology with a Concentration in Biotechnology:

#### Biology Courses

45 units with a minimum GPA of 2.0

- a. Core requirements
  - BIOL 2010 Intro Biology- Cells\*
  - BIOL 2110 Intro Biology-Animals
  - BIOL 2120 Intro Biology- Plants
  - BIOL 3010 General Genetics
  - BIOL 3020 General Physiology
  - BIOL 3110 General Ecology
  - BIOL 3120 Research Design & Analysis
  - BIOL 4100 Evolution
  - BIOL 4918 Senior Seminar
- b. Concentration specific requirements:
  - BIOL 3410 Microbiology
  - BIOL 4440 Molecular Genetics
- c. Electives
  - 8 units of additional upper division coursework in Biology: two 4-unit 4000-e. level classes with a lab.

#### Cognates

28 units with a minimum GPA of 2.0

- CHEM 1000 Found. of Chemistry
- CHEM 1001 Found. of Chemistry Laboratory
- CHEM 1100 Found. of Analytical Chemistry
- CHEM 2300 Found. of Organic Chemistry
- CHEM 2400 Found. of Biochemistry
- CHEM 3300 Organic Chemistry
- CHEM 3301 Organic Chemistry Laboratory
- MATH 2010 Calculus for the Biological & Chemical Sciences or equiv.
- PHYS 2110 College Physics I
- PHYS 2120 College Physics II

A minimum GPA for these 73 units is 2.0

#### General Education Information

Students should read the CSUB catalog and be familiar with the curriculum. Faculty advisors are available to consult for specific questions related to the major. Specific information related to general education requirements is available in the catalog.

#### Biology-specific general education information

General education Area A4 is satisfied by required courses within the biology major.

General education Areas B1-B2 are satisfied by required courses within the biology major

Total General Education: 39 units

Additional university-wide elective units:  
15 units for BS in Biology  
6 units for BS in Biology with Biotech Concentration



Students seeking a degree in Biology must complete the following courses:

### Bachelor of Science in Biology:

#### Biology Courses

49 units with a minimum GPA of 2.0

- a. Core requirements
  - BIOL 2010 Intro Biology- Cells\*
  - BIOL 2110 Intro Biology- Animals
  - BIOL 2120 Intro Biology- Plants
  - BIOL 3010 General Genetics
  - BIOL 3020 General Physiology
  - BIOL 3110 General Ecology
  - BIOL 3120 Research Design & Analysis
  - BIOL 4100 Evolution
  - BIOL 4918 Senior Seminar
- b. Electives
  - At least 20 units of additional upper division coursework in Biology. At least three of these courses must be 4-unit courses with lab and at least one must be at the 4000-level with a lab.

\*Note: A grade of C- or better in BIOL 2010 is required to advance into upper division biology courses.

#### Cognates

17 units with a minimum GPA of 2.0

- CHEM 1000 Found. of Chemistry
- CHEM 1001 Found. of Chemistry Laboratory
- CHEM 2300 Found. of Organic Chemistry
- MATH 1050 Precalculus or equiv.
- PHYS 2110 College Physics I

A minimum GPA for these 66 units is 2.0

