California State University, Stanislaus

[Archived Catalog]

Department of Biological Sciences

James J. Youngblom, Ph.D., Chair

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Associate Professors: Bhaduri, Fleming, Kang, Sardella
Assistant Professors: Bissonnette, Gardner, Scales

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Baccalaureate

- Biological Sciences B.A.
- Biological Sciences B.S.

Concentrations

- Biological Sciences B.S. with two optional concentrations:
  - Organismal, Ecological, and Evolutionary Biology
  - Molecular, Cellular, and Microbial Biology
- Environmental Sciences Concentration
  A student with a major in biological sciences may complete additional requirements in the sciences and mathematics to qualify for an Environmental Sciences concentration, in addition to the Bachelor of Arts or Bachelor of Science degree in Biological Sciences. This program requires study in biological sciences, chemistry, computer science, mathematics, and physical sciences, along with an environmental seminar and investigation of an environmentally related problem. Further details are found in the Environmental Sciences section of the catalog.
- Biological Sciences Concentration - Liberal Studies (Please refer to the Department of Liberal Studies section of the catalog.)

Minors

- Biological Sciences Minor

Master's

- Biological Sciences M.S.
  The Department of Biological Sciences offers a Master of Science in Biological Sciences. Please see the program catalog page or contact the Department office for further information.
- Marine Sciences M.S.
  The Department of Biological Sciences offers a Master of Science in Marine Sciences with coursework offered at Moss Landing Marine Laboratories (MLML) on the edge of Monterey Bay in Moss Landing, California. Please see the program catalog page or contact the Department office for further information.

Postbaccalaureate Options and Career Tracks

- Teaching Credential
  Majors in Biological Sciences interested in multiple subject or single subject credentials are referred to the Department of Teacher Education section of the catalog for a description of teaching credential programs. Biology students interested in pursuing this goal are recommended to select a concentration in Biology Education.

- Graduate School
  Students who intend to seek an advanced degree are encouraged to select a concentration in their area of interest and a minor in an appropriate discipline (e.g., Physical Sciences, Mathematics, Geography, Economics, etc.). A one-year sequence in college Physics and a one-year sequence in Organic Chemistry are recommended. Students interested in an advanced degree in biological sciences should elect a course in Calculus, a course in Statistics, and Biochemistry. Consultation with a faculty adviser in your area of interest is strongly recommended at the beginning of the sophomore year. In addition, students should investigate the admission requirements to potential graduate programs and seek personal contact with potential thesis or dissertation advisers in those programs.
- Food Safety Guidelines
  Students interested in careers in the Food Safety are encouraged to pursue either a BS in Biology with no concentration or BS in Biology with an optional concentration in Molecular, Cellular, and Microbial Biology
- Pre-Clinical Lab Sciences Guidelines
  Students interested in entering a Clinical Laboratory Science Training Program should pursue either a BS in Biology with no concentration or a BS in Biology with an optional concentration in Molecular, Cellular, and Microbial Biology.
- Pre-Health Professional Guidelines
  Students interested in careers in healthcare professions such as dentist, pharmacist, physician, physician assistant, or veterinarian should pursue a B.S. in Biology and to consult with your faculty advisor to build an appropriate academic plan.

Mission Statement

We, the Department of Biological Sciences, are a diverse academic community of teacher-scholars and student-scientists engaged in exploring the wonder and diversity of life at all levels of biological organization, including cells, organisms, and ecological systems. The faculty utilize evidence-based teaching strategies to provide students at Stanislaus State with a broad exposure to the concepts, processes, and approaches of the biological sciences. We offer students comprehensive academic advising, career mentoring, and research opportunities. Biology majors develop the skills to formulate and evaluate hypotheses, critically interpret data, and communicate with others. Faculty and staff are committed to fostering and empowering the development of life-long learners of science, including scientists, health professionals, educators, civic leaders, and citizens in a society that requires high levels of biological literacy. Together, the Department works to expand our collective understanding of biology and to promote a greater appreciation of the importance of biodiversity and biological processes in our society.

Goals of the Programs in Biological Sciences

1. To provide graduates with an in-depth yet broad exposure to the principal disciplines and concepts central to the biological sciences
2. To ensure that all students are exposed to investigative methods used by biologists in a variety of settings (e.g. field, laboratory, clinical)
3. To produce graduates who are versatile and possess good reasoning skills
4. To produce scientifically literate graduates

Program Learning Outcomes

Knowledge and Skills

1. Biological knowledge: Successful students will demonstrate knowledge of the basic principles and unifying themes of biology.
2. Cognitive skills: Successful students will demonstrate the ability to think critically, synthesize rather than memorize information presented to them, and use this information to formulate scientific questions, design experiments to answer these questions, and collect, analyze, interpret, and report data.
3. Research skills: Successful students will demonstrate the ability to find, evaluate, and integrate published information, and demonstrate computer literacy through the ability to use databases and information technology.
4. Communication skills: Successful students will demonstrate the ability to communicate effectively orally and in writing as professional scientists.
5. Technical/Analytical skills: Successful students will demonstrate knowledge of and the ability to use mainstream laboratory/field procedures, methods, and instrumentation to conduct biological investigations and safety issues

associated with each.

6. Teamwork skills: Successful students will demonstrate the ability to work collaboratively and solve problems in a group.

Values

7. Stewardship advocacy: Successful students will demonstrate understanding and appreciation of the relevance of biology to society, the value of knowledge and life-long learning, integrity, and the ability to identify and evaluate ethical issues.

8. Natural Resources: Successful students will have an appreciation of the inherent value of the components of the natural world and their interconnectedness.
