

BIOLOGICAL SCIENCE IN THE COLLEGE OF AGRICULTURE AND LIFE SCIENCES

<http://www.uvm.edu/~intbiosc/>

The Biological Science program offers a Bachelor of Science degree in Biological Science administered through the College of Agriculture and Life Sciences (CALs) but drawing from the rich spectrum of courses and faculty found in CALs, the College of Arts and Sciences, the Rubenstein School of Environment and Natural Resources, and the Larner College of Medicine.

CALS BIOLOGICAL SCIENCE MAJOR

Many of the most exciting developments with the potential to benefit society are in biological science. For example, consider how often the fields of biotechnology, medicine, ecology, and genetics are mentioned in the daily news. For students concerned about contemporary issues and who love the sciences, the Bachelor of Science program in Biological Science (BISC) offers the flexibility, rigor and comprehensiveness to prepare for a dynamic and challenging career. Veterinarian, marine biologist, physician, lab technician – these are among the several hundred careers in which CALs graduates are employed. Many use their degree as a professional stepping stone to medical, veterinary or graduate school.

BISC is the generic Bachelor of Science in Biological Science. Flexibility and quality are its biggest attractions. As a cross-college integrated major, BISC draws its expertise of faculty from several departments in the College of Agriculture and Life Sciences, the Department of Biology in the College of Arts and Science, and from other parts of the university, including the Larner College of Medicine. BISC students take two years of fundamental course work: mathematics, chemistry, introductory biology, genetics, ecology and evolution, and cell and molecular biology. During the junior and senior years, students study physics, statistics, advanced biology, and often do internships and undergraduate research working one-on-one with a professor in the student's area of interest. Students use their advanced electives to develop a rich expertise in biology or to concentrate in specialized areas such as genetics, plant biology, biochemistry, nutrition, and microbiology. Others expand their solid foundation by adding a second major or a minor in a complementary field selected from the offerings in CALs or CAS.

The wealth of faculty among the diverse biological sciences allows students to gain personal attention engaging with a professor in undergraduate research in the student's chosen field of interest. Students are encouraged to participate in the lab or field research of a UVM professor, chosen from the full range of life science disciplines at UVM. UVM has extensive teaching and research facilities, e.g., state-of-the-art laboratories and greenhouses, protected Natural Areas (from alpine tundra to Lake Champlain), Proctor Maple Research Center, Horticultural Farm, Morgan Horse Farm and Miller Research Center. Students find opportunities in biotechnology splicing genes and working on HIV; others examine how one gene may affect a cancer patient's sensitivity to chemotherapy drugs. One

student contributed to research on how drug-eluting stents affect the potential for blood clots. Another biological science student worked on a project studying how pH affects phosphorus level in streams; while another, in a biomedical engineering lab, helped design a way to simulate skiing injuries (the data to be used to manufacture a safer ski boot).

Internships, a path for students to get experience in the working world while still in college, are of growing importance on a graduate's resume. In the BISC major, a broad range of opportunities are offered to the students.

MAJORS

BIOLOGICAL SCIENCE MAJOR

Biological Science B.S. (<http://catalogue.uvm.edu/undergraduate/agricultureandlifesciences/biologicalscience/biologicalsciencebs/>)

Biological Sciences Courses

BSCI 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

BSCI 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

BSCI 096. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

BSCI 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

BSCI 191. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

BSCI 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

BSCI 196. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

BSCI 198. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion. Prerequisite: Research advisor and Department Chair permission. Credit as approved with maximum of six hours for undergraduate program.

BSCI 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

BSCI 291. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

BSCI 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

BSCI 296. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

BSCI 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion. Arrangements are made with individual faculty members and Biological Sciences Program Director approval. Pre/co-requisites: BSCI 198 or Advisor permission.

Agriculture Life Science Courses**CALS 001. Foundations:Communication Meth. 0 or 3 Credits.**

Foundational course to acclimate College of Agriculture & Life Science First-Year students to college life and develop individual and group public speaking skills through giving and critically analyzing presentations.

CALS 002. Foundation:Information Tech. 0 or 3 Credits.

Foundational course to acclimate College of Agriculture & Life Science First-Year students to college life and develop information technology skills through use of computer hardware and software and internet applications.

CALS 085. Computer Applications. 0 or 3 Credits.

Use of computer operating systems programming languages, electronic communications, word processing, spreadsheet modeling and graphics, and internet software related to the agricultural and life sciences.

CALS 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

CALS 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

CALS 095. Introductory Special Topics. 0.5-18 Credits.

See Schedule of Courses for specific titles.

CALS 096. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

CALS 125. Teaching Assistant Development. 3 Credits.

TAs develop skills in areas of leadership, group dynamics, interpersonal effectiveness, and assertiveness as group facilitators in Beginnings course. Prerequisite: Sophomore standing only; Instructor permission.

CALS 183. Communication Methods. 0 or 3 Credits.

Introduction to informational and persuasive public speaking. Developing individual and group oral communication skills through giving and critically analyzing presentations.

CALS 190. Internship. 0.5-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

CALS 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

CALS 195. Special Topics. 0.5-18 Credits.

Appropriate for interdepartmental and interdisciplinary topics in Agriculture and Life Sciences. Permission of Dean's Office.

CALS 196. Special Topics. 1-18 Credits.

Appropriate for interdepartmental and interdisciplinary topics in Agriculture and Life Sciences. Permission of Dean's Office.

CALS 197. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

CALS 198. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

CALS 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

CALS 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

CALS 296. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

CALS 297. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

CALS 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.