

Welcome Class of 2022!

We have prepared a series of short videos to help you learn about how to decide which course to take first, the placement/advisory test, our courses, majoring in biology, our foreign study program and doing research.

To view the videos, please go to the biology web page: <https://biology.dartmouth.edu/welcome-class-2022>

Beginning Your Study in Biology at Dartmouth

Prof. Tom Jack talks about how to decide which biology course to take first, including information about the Biology Placement/Advisory test.

Biology 2 – Human Biology – offered in fall 2018

Prof. Lee Witters talks about the non-majors course Biology 2.

An Introduction to Biology 11

Prof. Rob McClung talks about the principles and concepts that are covered in Biology 11 and gives an idea of typical Biology 11 offerings.

Biology 11 – Fall offering: Major Events in the History of Life and the Human Genome

Prof. Kevin Peterson gives an overview of the Biology 11 offering that he will teach in the fall of 2018.

Biology 11 – Winter offering: Emerging Infectious Diseases: How Microbes Rule the World.

Prof. Mary Lou Guerinot gives an overview of the Biology 11 offering that she and Prof. Rob McClung will teach in the winter of 2019.

Biology 11 – Spring offering: Animal Minds

Prof. Mark Laidre gives an overview of the Biology 11 offering that he and Prof. Tom Jack will teach in the spring of 2019.

The Foundation Courses

Prof. Natasha Grotz talks about the topics covered by the foundation courses, the role of these courses in the major and the schedule of offerings this year.

Biology 19 – Honors Cell Structure and Function

Prof. Magdalena Bezanilla gives an overview of her new course. It will be offered in the fall of 2018.

Majoring in Biology at Dartmouth

Prof. Sharon Bickel gives an overview of the structure of the major, including prerequisites, areas of concentration and introductory, intermediate and upper level courses.

The Biology Foreign Study Program

FSP faculty give a history and overview of the program that give students the opportunity to conduct original ecological research at field stations in Costa Rica and the Caribbean.

Independent Research for Credit

Maximilian Jentzsch '15 talks about doing research for credit (Biology 95-98).

How Do I Find a Research Lab?

Maximilian Jentzsch '15 talks about tools for finding a research lab and how he found a lab.



BIOLOGICAL SCIENCES

Introduction to the Biology Curriculum

Biological Sciences has a single major and a single minor. The major can be modified.

Within the major there are various areas of concentration a student can choose such as ecology, neurobiology, genetics, cell biology, evolutionary ecology or human biology.

There are multiple entry points into the Biology major. For many students, BIOL 11 is an appropriate starting point. BIOL 11 is offered fall, winter and spring terms in 2018-2019 with no prerequisites. BIOL 11 is designed to introduce students to the study of biology at the college level. Different offerings of BIOL 11 focus on different topics, and students should choose the offering that is most interesting to them. BIOL 11 does not have a laboratory component.

The foundation courses are numbered BIOL 12-19: BIOL 12 (Cell Structure and Function), BIOL 13 (Gene Expression and Inheritance), BIOL 14 (Physiology), BIOL 15 (Genetic Variation and Evolution), BIOL 16 (Ecology), and BIOL 19 (Honors Cell Structure and Function). The biology major requires three of these five courses. Many students will take their first foundation course after taking BIOL 11. However, students with sufficient preparation in math and science may choose to enroll directly in a foundation course without first taking BIOL 11.

To aid students in deciding which Biology course provides the best starting point, we offer the Biology Placement/Advisory test, which is available to all members of the class of 2022 via Canvas (<https://canvas.dartmouth.edu>). The result of the Biology Placement/Advisory Test is advisory, not binding; thus, the score does not appear on your placement records in Banner Student. If you are interested in studying Biology at Dartmouth, we strongly suggest that you take the Biology Placement/Advisory Test to help you decide which Biology course is most appropriate for you to begin studying Biology at Dartmouth. The Biology Placement/Advisory Test is required for admission to BIOL 19.

The Biological Sciences department offers an FSP to Central America and the Caribbean in the winter term. Students who may want to participate in this FSP during their junior year should take BIOL 16 as soon as possible. For more information, please visit our FSP web page: <http://biology.dartmouth.edu/foreign-study-program>.

Other Information About Courses and Course Sequences

- BIOL 11-16 are large classes often with 50 to 80 students. Students must realize that regular class attendance, steady work, and developed study skills are critical to success in these classes.
- The foundation courses (BIOL 12-19) involve problem-solving skills, including the use of high-school algebra to solve word problems about quantitative aspects of biology.
- The foundation courses are not sequenced and can be taken in any order (i.e. BIOL 12 does not have to be taken before BIOL 13).
- The foundation courses demand the mastery of large amounts of information. Students concerned about the transition to college may be advised to wait until they have developed their study skills before they enroll.
- Intermediate-level courses (numbered 20-49) can be taken once students have taken the appropriate foundation course as a prerequisite. Students may enroll in appropriate intermediate-level courses prior to completing all of their foundation courses.

Information About the Biology Major

Requirements for the Biology Major

Prerequisites: CHEM 5 and CHEM 6 (or equivalent), and one quantitative course from among BIOL 5/MATH 5, BIOL 29, COSC 1, COSC 5, ENGS 20, EARS 17, QSS 15.01, MATH 4, MATH 8 (or above) or MATH 10 (or equivalent). Students who elect to include BIOL 29 in their area of concentration (see below) must fulfill the quantitative prerequisite with one of the other courses listed above. Some upper-level biology courses such as BIOL 40 (Biochemistry) also require CHEM 51-52 (or equivalent). Therefore, students who are serious about pursuing a Biology Major are advised to begin their math and chemistry requirements early in their college careers.

Foundation Courses: For the major, students will complete three of the five Foundation courses (numbered BIOL 12-19).

Area of Concentration: Students will complete seven additional courses that emphasize a particular “area of concentration,” including two Biology courses numbered 50-97. In addition, to facilitate interdisciplinary learning, two of these seven courses may be advanced courses from other departments that are appropriate for a student’s chosen area of concentration.

Fall 2018 Course offerings for First-year Students

- Biology 02 – Human Biology (Prof. Witters) (DOES NOT COUNT FOR MAJOR CREDIT)
- Biology 05 – Fundamental Applied Mathematics for the Sciences (Prof. McPeck and Prof. Rockmore)
- Biology 11 – Major Events in the History of Life and the Human Genome (Prof. Peterson)
- Biology 12 – Cell Structure and Function (Prof. Grotz or Prof. Sloboda)
- Biology 14 – Physiology (Prof. ter Hofstede)
- Biology 16 – Ecology (Prof. Pries)
- Biology 19 – Honors Cell Structure and Function (Prof. Bezanilla)

Winter 2019 BIOL 11 and Foundation Courses Offerings

- Biology 11 – Emerging Infectious Diseases (Prof. Guerinot and Prof. McClung)
- Biology 13 – Gene Expression and Inheritance (Prof. Dolph or Prof. Griffin)
- Biology 14 – Physiology (Prof. Hill and Prof. Maue)
- Biology 15 – Genetic Variation and Evolution (Prof. Zhaxybayeva)

Spring 2019 BIOL 11 and Foundation Courses Offerings

- Biology 11 – Animal Minds (Prof. Jack and Prof. Laidre)
- Biology 12 – Cell Structure and Function (Prof. Bickel or Prof. He)
- Biology 16 – Ecology (Prof. Ayres)

Information for Pre-Health Students

For information on requirements for medical, dental, and veterinary school, please see Dartmouth’s Health Professions Program website: <http://www.dartmouth.edu/prehealth/applying/>

Undergraduate Research in Biology

Biology students at Dartmouth are fortunate to have many research opportunities in the Department of Biological Sciences and the Geisel School of Medicine. Majors are strongly encouraged to do independent research and to seriously consider the research-based honors program. Undergraduate students have access to several funding opportunities at Dartmouth. <http://www.dartmouth.edu/~ugar/undergrad/programs.html>

There are many programs to support undergraduate students interested in life sciences research!

Formal Opportunities

WISP (primarily 1st year women)

The Biology FSP is focused mostly on research (often junior year)

Independent Study - Biology 95 (junior and senior majors and minors)**

Honors Research – Biology 97 (senior majors)**

**Independent and Honors research in a Dartmouth laboratory outside of the Biology Department is possible but requires a Biology Faculty Sponsor.

Other Possibilities

Work study

Paid research intern

Volunteer

The best way to begin learning about the research interests of faculty is by spending some time online

Biology Department

<http://biology.dartmouth.edu/people/faculty>

Geisel School of Medicine Departments

<http://geiselmed.dartmouth.edu/research/basic/>

Most faculty LOVE to talk to you about their research! When you see something that looks interesting, contact the professor by email to meet and to find out more about undergraduate research opportunities.

Additional information about independent research is available at:

<http://biology.dartmouth.edu/undergraduate/research-opportunities>