BIOLOGY, BA

Contact

Academic Support Coordinator
114 Life Sciences Complex
biougrad@syr.edu, 315-443-9139

Faculty

Yasir Ahmed-Braimah, Abrar (Abbi) Adnan Aljiboury, David M. Althoff, Carlos A. Castañeda, Heather D. Coleman, Jen Cook, Melanie J. Decker, Steve Dorus, Scott E. Erdman, Christopher W. Fernandez, Austin M. Garner, Sarah E. Hall, Heidi Hehnly, James A. Hewett, James Hougland, Li-En Jao, Eundeok Kim, L. Jamie Lamit, Katharine Lewis, Chih Hung Lo, Sarah K. Lucas, Jessica MacDonald, Lauren Mavica, Vera McIlvain, Heather Meyer, Allison D. Oakes, Angela Oliverio, Susan E. Parks, Melissa E. Pepling, Scott Pitnick, Ramesh Raina, Surabhi Raina, Julia Snyder, Roy D. Welch, Michele G. Wheatly, and Jason R. Wiles

Students majoring in biology establish a general background in the discipline through a series of first-year/sophomore-level core courses that preview the major sub-disciplines of biology. This introductory program is followed by courses that allow the student to focus on more advanced material.

The major in biology leads to either the B.A. or the B.S. degree. The B.S. degree is intended for students interested in graduate study in biological science or the health professions (medicine, dentistry, or veterinary medicine). In addition to biology requirements, students pursuing a B.S. degree take general chemistry, organic chemistry, and calculus. Students are also encouraged to gain practical experience and academic credit through the University.

The B.A. degree is intended for students who wish to pursue technical or science-related careers that do not require a graduate or professional degree, or careers outside of biology in which a background in science may be useful, such as science writing, business, or law. Although the first-year/sophomore-level core biology course requirements for the B.A. and the B.S. degrees are similar, there are key differences. The B.A. degree requires fewer courses in chemistry, mathematics, and upper division Biology.

Student Learning Outcomes

1. By the end of their first year, students will be able to recognize and distinguish theories, concepts and principles, as defined by the Vision and Change core, from the major sub-fields of biology including molecular, cellular and developmental biology; physiology; and ecology and evolution.
2. By the end of their degree, students will be able to analyze, synthesize and apply theories, concepts and principles, as defined by the Vision and Change core, from the major sub-fields of biology listed above.
3. Apply skills in biological research and demonstrate knowledge of the nature and practice of science.
4. Apply communication/collaboration skills relevant to biological sciences
5. Apply quantitative reasoning and methods to solve problems in the biological sciences.
6. Describe the relationship between science and society; identify ways that this has had both positive and negative impacts.

Major Requirements

B.A. Degree Requirements (43-46 credits)

To Declare the B.A. Major in Biology

A student may declare the B.A. major in Biology during the admission process or anytime thereafter by contacting the Academic Coordinator of the Biology Department.

Students cannot double major in biotechnology, biochemistry or biology. They cannot complete a minor in biology in conjunction with one of those three programs.

Code	Title	Credits
Core Courses		
All core courses should be completed by the end of a student's sophomore year.		
BIO 121	General Biology I	3
BIO 122	General Biology I Laboratory	1
BIO 123	General Biology II	3
BIO 224	Integrative Biology Laboratory	2
BIO 322	Cell and Molecular Biology	4
BIO 323	Integrative Physiology and Ecology	4
BIO 324	Evolution	4
BIO 224 cannot be omitted nor substituted. No transfer credit petitions will be accepted for BIO 224.		
Upper-Division Courses		
Students in the B.A. program complete an additional 9 credits of upper-division coursework in Biology with a minimum of 3 of the 9 credits being laboratory credits. BIO 460 Research in Biology cannot be applied as a laboratory course, only as an upper-division elective.		9
Math and Chemistry Requirements		
CHE 106 & CHE 107	General Chemistry Lecture I and General Chemistry Laboratory I	4
CHE 116 & CHE 117	General Chemistry Lecture II and General Chemistry Laboratory II	4
CHE 275 & CHE 276	Organic Chemistry I and Organic Chemistry I Laboratory	5
Or MAT 285 Life Sciences Calculus I and MAT 221 Elementary Probability and Statistics I or APM 391 Prob & Stats I (6-7 credits)		
Or MAT 295 Calculus I and MAT 221 Elementary Probability and Statistics I or APM 391 Prob & Stats I (7-8 credits)		
Total Credits		**43**

Students with 8 credits of Advanced Placement

Students with 8 credits of Advanced Placement may omit the introductory Biology courses BIO 121 General Biology I/BIO 122 General Biology I Laboratory **and** BIO 123 General Biology II/BIO 124 General Biology II Laboratory. BIO 224 Integrative Biology Laboratory cannot be omitted nor substituted. No transfer credit petitions will be accepted for BIO 224 Integrative Biology Laboratory.

College of Arts and Sciences Requirements

For all Arts and Sciences|Maxwell students, successful completion of a bachelor's degree in this major requires a minimum of 120 credits, 96 of which must be Arts and Sciences|Maxwell credits, completion of the Liberal Arts Core (https://coursecatalog.syracuse.edu/undergraduate/arts-sciences/#text) requirements, and the requirements for this major (30 credits) that are listed above.

Dual Enrollments:
Students dually enrolled in **Newhouse*** and Arts and Sciences|Maxwell will complete a minimum of 122 credits, with at least 90 credits in Arts and Sciences|Maxwell coursework and an Arts and Sciences|Maxwell major.

*Students dually enrolled in the College of Arts and Sciences|Maxwell as first year students must complete the Liberal Arts Core (https://coursecatalog.syracuse.edu/undergraduate/arts-sciences/#text). Students who transfer to the dual program after their first year as singly enrolled students in the Newhouse School will satisfy general requirements for the dual degree program by completing the Newhouse Core Requirements.

Undergraduate University Requirements
The following requirements and experiences apply to all Syracuse University Undergraduate matriculated degree programs.

- IDEA Course Requirement (https://coursecatalog.syracuse.edu/undergraduate/idea-course-requirement/)
- First Year Seminar (https://coursecatalog.syracuse.edu/undergraduate/courses/fys/)