

Biology Major Checklist for the Biology B.A.

Please refer to the Undergraduate Catalog for the official policy, full course options, and requirements in detail.

Foundational Courses in Related Fields

At least one semester of the two-semester sequences of required courses in calculus, organic chemistry lectures, and physics lecture/lab must be passed with a letter grade of C or higher.

General Chemistry Sequence	
General Chemistry 1A or 1B (CHE 129 or CHE 131)	
General Chemistry 1 Lab (CHE 133)	
General Chemistry 2 (CHE 132)	
General Chemistry 2 Lab (CHE 134)	

Organic Chemistry Sequence	
Organic Chemistry 1 (CHE 321)	
Organic Chemistry 2 (CHE 322)	
Organic Chemistry Lab (CHE 327)	

Statistics	
AMS 110, BIO 211 or AMS 310	

Calculus Sequence	
Calculus 1 (MAT 125, MAT 131 or AMS 151)	

Physics Sequence	
Physics 121: Physics for Life Sciences I	
Physics 122: Physics for Life Sciences II	

* Classical Physics I and II with lab is also accepted; however, please note that PHY 132 requires a pre/co-requisite of at least MAT 126 (beyond the calculus requirement for the BIO BA)

Stony Brook Curriculum Courses

BIO 458: Speak Effectively Before an Audience (SPK) (Optional)	
BIO 459: Write Effectively in Biology (WRTD)	

Students with an AP Chemistry score of 4 or 5, a calculus-level math placement, and finished OCPP objectives may complete the molecular science sequence instead of general chemistry and organic chemistry sequence.

Molecular Science Sequence	
Molecular Science 1 (CHE 152)	
Molecular Science Lab 1 (CHE 154)	
Molecular Science 2 (CHE 331)	
Molecular Science 3 (CHE 332)	
Molecular Science Lab 2 (CHE 381)	

Core Courses in Biology

Core Courses in Biology Lectures	
BIO 201: Organisms to Ecosystems	
BIO 202: Molecular and Cellular Biology	
BIO 203: Cellular and Organ Physiology	

Core Courses in Biology Laboratories	
BIO 204: Fundamentals of Scientific Inquiry 1	
BIO 205 or BIO 207: Fundamentals of Scientific Inquiry 2A or 2B	

Approved Minor within the College of Arts and Sciences of School of Communication and Journalism

Approved Minor:

Transfer students must take at least 15 credits of required core and advanced biology at Stony Brook in courses for majors at the 200 level or higher. Both advanced laboratory experiences must be taken at Stony Brook.

Advanced BIO Courses and Accepted Electives for the Biology Major

The advanced BIO courses and Accepted Electives are listed below in groupings that correspond to four broad areas of biology. The advanced courses are listed below as: Course Indicator, Course Name, Course Type (lecture or lab), and semester usually offered. Please refer to the Undergraduate Catalog for the most up-to date list including full course options, descriptions, policies, and pre-requisites in detail.

Advanced Course Requirements for the Biology B.A.

The Advanced Course Requirements for the Biology B.A. requires three BIO courses at the 300-level taken at Stony Brook in addition to an 18-24 credit, non-overlapping, approved minor.

1. One of the following courses with learning outcomes on topics in genetics and evolution
 - BIO 320 General Genetics
 - BIO 321 Ecological Genetics
 - BIO 354 Evolution
 - EBH 302 Human Genetics
2. Two Additional Advanced Biology Courses (BIO 300+)

The list of Advanced BIO Courses and Accepted Electives for the Biology BA can be found on the back of this page. Only the courses listed can be used to complete the Biology BA requirements. All courses must be passed with a letter grade of C or higher. Advanced lab courses are not required for the Biology BA but may be selected as one of the three required advanced BIO courses.

Genetics or Evolution Course: BIO 320, BIO 321, BIO 354 or EBH 302	
Advanced Biology Course	
Advanced Biology Course	

Approved Minors for the BIO B.A.*

(* This list is subject to change)

Africana Studies
Anthropology
Art History and Criticism
Asian and Asian American Studies
China Studies
Classical Civilization
Communication and Innovation
Creative Writing
Digital Arts
English
Ethnomusicology
Film and Screen Studies
French Language and Literature
Globalization Studies and
International Relations
Health, Medicine, and Society
(Department of Sociology)

Hellenic Studies
History
History of Health, Science, and the
Environment (Department of History)
Italian American Studies
Italian Studies
Japanese Studies
Jazz Studies
Journalism
Judaic Studies
Korean Studies
Latin American and Caribbean Studies
Linguistics
Literature and Culture
Mass Communication
Medieval Studies

Middle Eastern Studies
Music
Music Theory
Music and Technology
Philosophy
Political Science
Professional Writing
Religious Studies
Russian Studies
South Asian Studies
Spanish Language and Literature
STEM in Theatre Arts
Studio Art
Women's and Gender Studies
Writing and Rhetoric

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Area I: Biochemistry, Molecular and Cellular Biology:

- BIO 310 Cell Biology (Lec)(SPRING)
- BIO 312 Bioinformatics and Computational Biology (Lec/Lab) (FALL) ♦
- BIO 314 Cancer Biology (Lec)(SPRING)
- BIO 316 Molecular Immunology (Lec)(SUMMER)
- BIO 320 General Genetics (Lec)(SPRING) ♦
- BIO 361 Biochemistry I (Lec)(FALL/SPRING)
- BIO 362 Biochemistry II (Lec)(SPRING)
- BIO 364 Laboratory Techniques in Cancer Biology (Lab)(FALL) ♦
- BIO 365 Biochemistry Laboratory (Lab)(FALL) ♦
- BIO 368 Food Microbiology Laboratory (Lec)
- EBH 302 Human Genetics (Lec)(FALL) ♦

Area II: Neurobiology and Physiology

- BIO 317 Principles of Cellular Signaling (Lec)(FALL)
- BIO 328 Mammalian Physiology (Lec)(SPRING)
- BIO 332 Computational Modeling of Physiological Sys. (Lec)(SPRING)
- BIO 333 Neurotechnology (Lec) (SPRING)
- BIO 334 Principles of Neurobiology (Lec)(SPRING)
- BIO 335 Neurobiology Laboratory (Lab)(FALL) ♦
- BIO 337 Neurotransmission and Neuromodulation (Lec)(SPRING)
- BIO 338 Selforganization of the Brain (Lec)(FALL)
- BIO 339 Neurobiology of Disease (Lec)(SPRING)
- BIO 347 Introduction to Neural Computation (Lec)(FALL)
- BIO 369 Animal Nutrition (Lec)(Spring)

Area III: Organisms

- BIO 315 Microbiology (Lec)(SPRING)
- BIO 325 Animal Development (Lec)(FALL)
- BIO 327 Developmental Genetics Laboratory (Lab)(SPRING) ♦
- BIO 341 Plant Diversity (Lec/Lab) (SPRING)
- BIO 344 Chordate Zoology (Lec/Lab) (SPRING) ♦
- BIO 348 Herpetology (Lec/Lab) (SPRING)
- BIO 366 Molecular Microbiology Laboratory (Lec/Lab) (FALL) ♦

Area IV: Ecology and Evolution

- BIO 319 Landscape Ecology Laboratory (Lab)(FALL)
- BIO 321 Ecological Genetics (Lec)(SPRING) ♦
- BIO 336 Conservation Biology (Lec)(FALL) ♦
- BIO 351 Ecology (Lec)(FALL)
- BIO 352 Ecology Laboratory (Lab)(FALL) ♦
- BIO 353 Marine Ecology (Lec)(SPRING) ♦
- BIO 354 Evolution (Lec)(FALL) ♦
- BIO 356 Applied Ecology & Conservation Biology Laboratory (Lab)(SPRING)
- BIO 358 Biology & Human Social & Sexual Behavior (Lec)(SPRING)
- BIO 367 Molecular Diversity Laboratory (Lab)(SPRING) ♦
- BIO 383 Paleobiology (Lec/Lab) (SPRING)
- BIO 384 Intermediate Statistics (Lec)(FALL)
- BIO 385 Plant Ecology (Lec)(SPRING) ♦
- BIO 386 Ecosystem Ecology & the Global Environ. (Lec)(SPRING) ♦

♦ Indicates that the upper division writing requirement can be completed in the course