Biological Sciences: General Biology GENB (0404C)

A minimum of 120 credits earned, and a 2.0 cumulative GPA is needed to meet University graduation requirements. Major courses (Basic, Supporting, and Advanced) require a C- or better in each and a 2.0 average GPA.

Basic Program: 14-16 credits

Credits	Basic Program Courses
3	BSCI160 Ecology and Evolution [1]
3	BSCI170 Molecular and Cellular Biology [1]
1-2	BSCI180 Principles of Biology Lab [1] **OR** BSCI161 **AND** BSCI171 [1]
3	BSCI207 Organismal Biology [2]
4	BSCI222 Principles of Genetics [2, 3]
1-2	CMNS100 [4] **OR** UNIV100 **OR** HLSC100 **OR** HACS100 **OR** HDCC105 **OR** HHUM105

Supporting Courses: 32 credits

Credits	Supporting Courses
3	CHEM131 General Chemistry I Lecture [1]
1	CHEM132 General Chemistry I Lab [1]
3	CHEM231 Organic Chemistry I Lecture [1]
1	CHEM232 Organic Chemistry I Lab [1]
3	CHEM241 Organic Chemistry II Lecture [2]
1	CHEM242 Organic Chemistry II Lab [2]
2	CHEM271 General Chemistry II Lecture [2]
2	CHEM272 General Chemistry II Lab [2]
8	MATH135 Discrete Mathematics [1] (4) **AND** MATH136 **OR** MATH140 Calculus [2] (4)
	OR MATH140 Calculus I [1] (4) **AND** MATH141 Calculus II [2] (4)
4	PHYS131 Physics I
4	PHYS132 Physics II

General Education Requirements: 40 credits minimum

For more information on General Education visit gened.umd.edu. Courses may double or triple count among DS, SC, and DV.

Fundamental Studies (FS)	Course
Math (MA)	MATH135 **OR** 140
Analytic Reasoning (AR)	MATH135 **OR** 140
Natural Sciences (NS)	BSCI160 **OR** 170
Natural Sciences Lab (NL)	BSCI180 w/ BSCI160 **OR** 170
Academic Writing (AW)	
Professional Writing (PW)	
Oral Communication (OC)	

Distributive Studies (DS)	Course
History and Social Sciences (HS)	
History and Social Sciences (HS)	
Humanities (HU)	
Humanities (HU)	
Scholarship in Practice (SP) [5]	
Scholarship in Practice (SP) outside of major	

Signature Courses (SC)	Course
Big Question (IS) [5]	
Big Question (IS)	

Diversity (DV)	Course
Understanding Plural Societies (UP)	
DVUP **OR** Cultural Competence (CC)	

General Biology Advanced Program: 27 credits minimum

A minimum of 27 credits including required courses (6-7 credits) and area courses (20-21 credits). At least two courses designated as Lab must be taken. Please see page two for a list of area courses.

Required courses: 6 - 7 credits

Credits	Biochemistry
3	BCHM461 Biochemistry **OR** BCHM463 Biochemistry of Physiology

Credits	Quantitative Course: one from below
3	BIOM301 Introduction to Biometrics
4	BSCI374 Mathematical Modeling in Biology w/**Lab**
4	BSCI435 Quantitative and Computational Biology w/**Lab**
3	STAT400 Applied Probability & Statistics
3	STAT464 Introduction to Biostatistics
3–4	MATH240 or higher w/ advisor approval

GENB Area Courses: 20 - 21 credits

20-21 credits including at least one course (3 credits) from each of categories 1, 2, and 3. See page 2 for course options.
NOTE: The curriculum in Biological Sciences changes as our faculty improve the program. Any questions can be referred to your academic advisor or the Undergraduate Academic Programs Office by emailing BSCIque@umd.edu or calling 301-405-6892.

[1] Part of Benchmark One, see bsci.umd.edu/benchmarks
[2] Part of Benchmark Two, see bsci.umd.edu/benchmarks
[3] Students in ILS Honors should take HLSC322 instead of BSCI222.
[4] All BSCI majors must take CMNS100 or another approved freshman seminar during their first semester.
[5] Some BSCI courses have been approved to fulfill this Gen Ed requirement. See page 2 for details.

General Biology GENB (0404C) Area Courses

20-21 credits, including at least one from each of categories 1, 2, and 3 and at least two courses designated as **Lab** [6].

1. Genetics and Evolution

Credits	Category 1 Courses
3	BCHM465 Biochemistry III
3	BSCI370 Principles of Evolution
3	BSCI381 Molecular Neuroethology
3	BSCI382 Forensic Genetics
3	BSCI405 Population & Evolut. Genetics w/**Lab**
3	BSCI410 Molecular Genetics
4	BSCI411 Bioinformatics & Genomics w/ **Lab**
4	BSCI412 Microbial Genetics w/**Lab**
3	BSCI414 Recombinant DNA **Lab**
3	BSCI415 Molecular Genetics **Lab**
3	BSCI416 Human Genetics (DSSP)
3	BSCI471 Molecular Evolution

2. Cell Biology, Development, and Physiology

Credits	Category 2 Courses
3	BCHM462 Biochemistry II
3	BCHM464 Biochemistry **Lab**
3	BSCI331 Cell Biology & Physiology
1	BSCI332 Cell Biology & Physiology **Lab** [7]
3	BSCI342 Biology of Reproduction
3	BSCI343 Cellular Mech. of Aging and Disease
3	BSCI353 Cellular and Molecular Neuroscience
3	BSCI355 Neurobiology of Extraordinary Senses
3	BSCI357 Neurobiology of Chemosensory Systems
3	BSCI404 Cell Biology from a Biophysical Perspective
3	BSCI406 Membranes and Biological Interfaces
3	BSCI417 Microbial Pathogenesis
3	BSCI420 Cell Biology Lectures
3	BSCI422 Principles of Immunology
2	BSCI423 Immunology **Lab** [7]
4	BSCI424 Pathogenic Microbiology w/**Lab**
2	BSCI425 Advanced Cell Biology **Lab** [7]
3	BSCI430 Developmental Biology
3	BSCI431 Origin & Evolution of Nervous Systems
3	BSCI432 Systems View of Cell Biology
3	BSCI433 Biology of Cancer
3	BSCI436 RNA Biology and Therapeutics
3	BSCI437 General Virology
4	BSCI442 Plant Physiology w/**Lab**
3	BSCI443 Microbial Physiology
3	BSCI446 Advanced Systems Neuroscience
3	BSCI447 General Endocrinology
3	BSCI450 Mammalian Systems Physiology
2	BSCI451 Mammalian Systems Physiology **Lab** [7]
3	BSCI452 Diseases of the Nervous System
3	BSCI453 Biology of Hearing
4	BSCI455 Neuroscience **Lab** [7] (DSSP)
3	BSCI456 Advanced Cellular Neuroscience

3. Ecology, Behavior, and Organismal Biology

Credits	Category 3 Courses
4	BSCI333 Principles of Paleontology w/**Lab**
3	BSCI334 Mammalogy
1	BSCI335 Mammalogy **Lab** [7]
4	BSCI337 Biology of Insects w/**Lab**
3	BSCI360 Animal Behavior
4	BSCI361 Principles of Ecology
3	BSCI363 Biology of Conservation & Extinction
3	BSCI366 Environmental Physiology of Animals
3	BSCI392 Biology of Extinct Animals
1	BSCI393 Biology of Extinct Animals **Lab** [7]
3	BSCI400 Animal Diversity & Evolution
3	BSCI401 Animal Communication
3	BSCI403 Biology of Vision
3	BSCI426 Global Change Biology
3	BSCI462 Population Ecology
3	BSCI464 Microbial Ecology
4	BSCI467 Freshwater Biology w/**Lab**
3	BSCI473 Marine Ecology
3	BSCI476 Evolutionary Genomics
3	BSCI477 Ecology & Evolution of Infectious Disease
4	BSCI481 Insect Diversity & Classification w/**Lab**
3	BSCI483 Insects, Pathogens, & Public Health
1	BSCI484 Insects, Pathogens, & Public Health **Lab** [7]
4	BSCI487 IPM: Sustainable Pest Mngmt. w/**Lab**
3	BSCI494 Animal-Plant Interactions
4	BSCI497 Insect Pests of Ornamentals & Turf w/**Lab**

Additional Courses (Optional)

Credits	Additional courses
4	BSCI223 General Microbiology [8] **(SCIS)** **OR** BSCI283 Principles of Microbiology [8]
Var	BSCI328, 338, 339, 348, 439 Spec. Top. Courses [9]
1	BSCI378H, BSCI398H Dept Honors Seminars [10]
3	BSCI349 Research Internship [10]
3	BSCI379, BSCI389, BSCI399 Dept. Research [10,11]

[6] Multiple semesters in BSCI379, 389, or 399 research credits may fulfill one of the two required **Labs**. See ter.ps/reslabcredit for details.
[7] Requires a C- or better in the prerequisite or corequisite lecture to count as a **Lab** or to satisfy the Area category.
[8] BSCI223 or 283 may count as GENB Area but NOT as an upper-level lab.
[9] Special Topics courses allowed if specifically approved for Advanced Program in GENB. See your advisor or Testudo for applicability.
[10] The maximum number of credits in these repeatable courses that may count towards the advanced program.
[11] A maximum of eight credits may count towards one or more undergraduate degrees, any additional research credits will be included in the total earned credits and factored into the GPA but **not** applied to any undergraduate degree.