

Name:

BU ID:

Specialization in Cell Biology, Molecular Biology & Genetics

Boston University College of Arts & Sciences
Department of Biology

REQUIREMENTS

- ✓ 128 credits including 11 biology courses; 8 related chemistry, math/computer science, and physics courses; second language proficiency; and 26 Hub units.
- ✓ C or higher is required for credit in all biology, math/computer science, and physics courses; C- or higher is necessary for credit in all required chemistry courses.
- ✓ Excluding Introductory Biology courses: a) at least three biology courses must have a laboratory component; b) at least three biology courses must be at the 300+ level; and c) at least five biology courses must be taken in the BU Biology Department.

INTRODUCTORY BIOLOGY

BI 107 BI 108 or BI 116

FOUNDATION COURSES

BI 213* or BI 203 or (BI 218 ♦)

BI 216* or BI 206

BI 552

* Recommended course

BREADTH REQUIREMENTS

Choose one course from each area of biology. Courses fulfilling breadth requirements may not also fulfill elective requirements.

Physiology & Neurobiology (PN)

BI 310 ♦

BI 315 ♦

BI 325

♦ Course will count toward the three-lab requirement.

Ecology, Behavior & Evolution (EBE)

BI 225

BI 303 ♦

BI 309

BI 260

BI 306 ♦

BI 407 ♦

CMG ELECTIVES

See **Courses by Semester, Non-Departmental Courses, and Optional Programs** on SIDE II.

1 _____	3 _____
2 _____	4 _____

CHEMISTRY COURSES

See **Chemistry Requirements** on SIDE II.

1 _____	3 _____
2 _____	4 _____

MATH & COMPUTER SCIENCE COURSES

See **Math & Computer Science Requirements** on SIDE II.

1 _____	2 _____
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PHYSICS COURSES

See **Physics Requirements** on SIDE II.

1 _____	2 _____
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GENERAL EDUCATION REQUIREMENTS

For more details visit the [CAS Degree Overview](#) page.

CAS 2nd Language Requirement:

Proficiency through the fourth semester: I II III IV

BU Hub Units:

PLM	SI1	QR1	IIC	FYW	CRT
AEX	SO1	QR2	GCI	WRI	RIL
HCO	SI2/ SO2		ETR	WIN	TWC
				OSC	CRI
				DME	

	FALL	SPRING
FIRST YEAR	1 _____	1 _____
	2 _____	2 _____
	3 _____	3 _____
	4 _____	4 _____
	SUM1 _____	SUM2 _____
SOPHOMORE YEAR	FALL	SPRING
	1 _____	1 _____
	2 _____	2 _____
	3 _____	3 _____
	4 _____	4 _____
	SUM1 _____	SUM2 _____
JUNIOR YEAR	FALL	SPRING
	1 _____	1 _____
	2 _____	2 _____
	3 _____	3 _____
	4 _____	4 _____
	SUM1 _____	SUM2 _____
SENIOR YEAR	FALL	SPRING
	1 _____	1 _____
	2 _____	2 _____
	3 _____	3 _____
	4 _____	4 _____
	SUM1 _____	SUM2 _____

Biology courses above with a lab component (excluding BI 107/108/116):

1 _____	2 _____	3 _____
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Biology courses above that are 300+:

1 _____	2 _____	3 _____
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Advisor Name: _____

Advisor Signature & Date: _____

Notes/Comments: _____

BIOLOGY COURSES BY SEMESTER

Note: Semester offerings may change. See the [Course Directory](#) and [StudentLink](#) for updated info. Courses cross-listed with those below are accepted.

Fall Semester Courses

Introductory Courses

BI 107 Biology 1

Foundation Courses

BI 203 Cell Biology
BI 213 Intensive Cell Biology
BI 218 Cell Biology with ISE Lab ♦
BI 552 Molecular Biology 1

Breadth Courses

BI 225 Behavioral Biology
BI 306 Bio. of Global Change ♦
BI 309 Evolution
BI 310 Human Structure & Function ♦
BI 315 Systems Physiology ♦
BI 325 Princ. of Neurosci.
BI 407 Animal Behavior ♦

CMG Electives

BI 309 Evolution
BI 310 Human Structure & Function ♦
BI 311 General Microbiology ♦
BI 315 Systems Physiology ♦
BI 325/(NE 203 ♦) Princ. of Neurosci.
BI 410 Developmental Biology
BB 421 Biochemistry 1 ♦
BI 445 Cell. & Mol. Neurophysiology ♦
BI 455 Developmental Neurobiology
BI 481 Molecular Bio. of the Neuron
BI 510 Inst. Racism in Health&Science
BI 513 Genetics Lab ♦
BI 515 Population Genetics
BI 525 Bio. Neurodegen. Diseases
BI 535 Trans. Research in Alzheimer's
BI 551 Stem Cells
BI 560 Systems Biology
BI 561 Proteostasis Bio. Neuro. Disease ♦
BI 565 Functional Genomics
BI 572 Advanced Genetics ❖
BI 589 Neural Impacts on Tumorigenesis

Spring Semester Courses

Introductory Courses

BI 108 Biology 2
BI 116 Biology 2 with ISE Lab

Foundation Courses

BI 203 Cell Biology
BI 206 Genetics
BI 216 Intensive Genetics

Breadth Courses

BI 225 Behavioral Biology
BI 260 Marine Biology
BI 303 Ecology ♦
BI 306 Bio. of Global Change ♦
BI 315 Systems Physiology ♦
BI 325 Principles of Neuroscience

CMG Electives

BI 315 Systems Physiology ♦
BI 325 Principles of Neuroscience
BI 385 Immunology
BI 411 Microbiome
BI 413 Microbial Ecology (IRR)
BB 422 Biochemistry 2 ♦
BI 510 Inst. Racism in Health&Science
BB 522 Molecular Biology Lab ♦
BI 525 Bio. Neurodegen. Diseases
BI 550 Marine Genomics ♦
BI 553 Molecular Biology 2
BI 556 Drug Discovery in Neuroscience
BI 565 Functional Genomics
BI 576 Carcinogenesis
BI 577 Quant. Approaches in Mol. Bio.
BI 586 Ecological Genomics ❖❖
BI 589 Neural Impacts on Tumor.

- ♦ Course will count toward the three-lab requirement.
- ❖ Course typically offered every other year.
- (MS) Course offered in Marine Semester (application required).
- (IRR) Course offered irregularly.

CHEMISTRY REQUIREMENTS

Choose one sequence from each category.

General Chemistry

Sequence I	Sequence II	Sequence III
CH 101	CH 109	CH 111
CH 102/116	CH 110	CH 112

Organic Chemistry

Sequence I	Sequence II	Sequence III
CH 203/218	CH 203/218	CH 211
CH 204	CH 214	CH 212

Note: Pre-health students may need additional courses for medical or other professional school admission such as biochemistry BI/CH 421 or CH 373.

MATH & COMPUTER SCIENCE REQUIREMENTS

Choose two courses from the lists below. At least one course must be calculus or statistics.

Calculus	Statistics	Computer Science
MA 121 or 123	MA 115 or 213	CS 105
MA 122 or 124	MA 116 or 214	CS 108
MA 127 or 129	CDS DS 100	CS 111
MA 196		CDS DS 110

PHYSICS REQUIREMENTS

Choose one sequence.

PY 105 and PY 106	PY 211 and PY 212
PY 211 and PY 106	PY 241 and PY 242

NON-DEPARTMENTAL COURSES

A maximum of two of the following courses can be used as electives for major credit:

CAS CH 373 Principles of Biochemistry
CAS CH 525 Physical Biochemistry
ENG BF 571 Dynamics and Evolution of Biological Networks
GMS BI 751 Biochemistry & Cell Biology
GMS BT 432 Basic Pathology: Mechanisms of Disease

OPTIONAL PROGRAMS (Application Required)

Undergraduate Research

BI 140/141 Undergraduate Research in Biology 1 (2 cr)
BI 240/241 Undergraduate Research in Biology 2 (2 cr)
BI 340/341 Undergraduate Research in Biology 3 (2 cr)
BI 350-352 Undergraduate Research in Biology 3 (4 cr ♦)
BI 450-453 Undergraduate Research in Biology 4 (4 cr ♦)

BI 401/402 Honors Research in Biology (4 cr ♦)

BI 497/498 Honors Research in Biology Seminar (2 cr)

- Up to two of the above 4-credit research courses can count as electives; one of those can apply towards the three-lab requirement.
- For more info. visit www.bu.edu/biology/undergrad/research/

Science Abroad - Madrid, Spain and Grenoble, France

- Offered in the fall semester; courses taught in English.
- Targeted to sophomores in science majors/pre-med students.
- For more information, visit: www.bu.edu/abroad