

Name: \_\_\_\_\_

BU ID: \_\_\_\_\_

## BA in Biochemistry & Molecular Biology

Boston University College of Arts & Sciences  
Program in Biochemistry & Molecular Biology

### REQUIREMENTS

- ✓ 128 credits including 18-19 science and math courses; second language proficiency; and 26 Hub units.
- ✓ Of the Core Courses, BMB Electives, and Advanced Lab Elective, five of these courses must be taken at Boston University.
- ✓ A grade of C or higher is required in all courses taken for credit in the major.

### FOUNDATION COURSES

Biology	Chemistry
BI 108	CH 109*
BI 213*	CH 110*
BI 216*	CH 203*
	CH 214*

\*Or alternative course(s). See **Foundation Requirements** on SIDE II for alternative course sequences.

### CORE COURSES

BI/CH 421	BI 552
BI/CH 422	CH 525

### BMB ELECTIVES

See **Courses by Semester** and **Undergraduate Research** on SIDE II.

1 \_\_\_\_\_ 2 \_\_\_\_\_

### ADVANCED LAB ELECTIVE

Select one option.

BI 513	BB 401 and 402	See <b>Undergraduate Research</b> on SIDE II.
BB 522	Any 2 of BB 450-453	

### MATH & COMPUTER SCIENCE COURSES

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

1 \_\_\_\_\_ 2 \_\_\_\_\_

### PHYSICS COURSES

See **Physics Requirements** on SIDE II.

1 \_\_\_\_\_ 2 \_\_\_\_\_

### GENERAL EDUCATION REQUIREMENTS

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

#### CAS 2<sup>nd</sup> Language Requirement:

Proficiency through the fourth semester:    I    II    III    IV

#### BU Hub Units:

PLM	S11	QR1	IIC	FYW	CRT
AEX	SO1	QR2	GCI	WRI	RIL
HCO	S12/ 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 _____

Advisor Name: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Notes/Comments: \_\_\_\_\_

## COURSES BY SEMESTER

**Note:** Course offerings are accurate as of 3/9/2022 and are subject to change. Please check the [Student Link](#) for the most updated semester information. Courses cross-listed with those below are accepted.

### Fall Semester Courses

#### Foundation Courses

BI 203 Cell Biology  
 BI 213 Intensive Cell Biology  
 BI 218 Cell Biology with ISE Lab ♦  
 CH 101 General Chemistry 1 ♦  
 CH 102 General Chemistry 2 ♦  
 CH 109 Gen. & Quant. Chem. ♦  
 CH 111 Int. Gen. & Quant. Chem. ♦  
 CH 203 Organic Chemistry ♦  
 CH 211 Int. Organic Chemistry ♦

#### Core Courses

BI/CH 421 Biochemistry 1 ♦  
 BI 552 Molecular Biology 1

- ♦ Lab course
- ❖ Course typically offered every other year
- (IRR) Course offered irregularly.

#### Electives

BI 311 General Microbiology ♦  
 BI 315 Systems Physiology ♦  
 BI 410 Developmental Biology  
 BI 445 Cell & Mol. Neurophysiology ♦  
 BI 455 Developmental Neurobiology  
 BI 510 Inst. Racism in Health&Science  
 BI 513 Genetics Lab ♦  
 BI 525 Bio. Neurodegen. Diseases  
 BI 535 Trans. Research in Alzheimer's  
 BI 551 Stem Cells  
 BI 556 Drug Discovery in Neuroscience  
 BI 560 Systems Biology  
 BI 561 Proteostasis Bio. Neuro. Disease ♦  
 BI 572 Advanced Genetics ❖  
 BI 589 Neural Impacts on Tumorigenesis  
 GMS BI 751 Biochem. and Cell Bio.  
 GRS BI 753 Advanced Molecular Bio.  
 GRS CH 626 Epigenetics  
 GRS CH 634 Metallobiochemistry  
 GRS CH 721 Special Topics in Biochem.

### Spring Semester Courses

#### Foundation Courses

BI 108 Biology 2 ♦  
 BI 203 Cell Biology  
 BI 206 Genetics  
 BI 216 Intensive Genetics  
 CH 101 General Chemistry 1 ♦  
 CH 102 General Chemistry 2 ♦  
 CH 110 Gen. & Quant. Chem. ♦  
 CH 112 Int. Gen. & Quant. Chem. ♦  
 CH 201 Quant. Analytic. Ch. Lab ♦  
 CH 204 Organic Chemistry 2 ♦  
 CH 212 Int. Organic Chemistry ♦  
 CH 214 Org. Chem. w/ Qual. ♦  
 CH 220 Org. Chem. Lab w/ Qual. ♦

#### Core Courses

BI/CH 422 Biochemistry 2 ♦  
 CH 525 Physical Biochemistry

#### Electives

BI 315 Systems Physiology ♦  
 BI 385 Immunology  
 BI 411 Microbiome  
 BI 413 Microbial Ecology (IRR)  
 BI 481 Molecular Bio. of the Neuron  
 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 565 Functional Genomics  
 BI 576 Carcinogenesis  
 BI 577 Quant. Approaches in Mol. Bio.  
 ENG BF 571 Dyn.&Evol. of Bio. Networks  
 GMS BT 432 Basic Pathology  
 GRS BI 735 Advanced Cell Biology  
 GRS CH 625 Enzymology  
 GRS CH 634 Metallobiochemistry  
 GRS CH 648 Contemp. Drug Disc.  
 GRS CH 721 Spec. Topics in Biochem.  
 GRS MB 722 Advanced Biochemistry

## FOUNDATION REQUIREMENTS

### Biology

BI 108  
 BI 213 (recommended) or BI 203 or BI 218  
 BI 216 (recommended) or BI 206

### Chemistry

Choose one sequence from each category.

#### General Chemistry

CH 109 and CH 110 (recommended)  
 CH 111 and CH 112  
 CH 101 and CH 102 and CH 201

#### Organic Chemistry

CH 203<sup>^</sup> and CH 214 (recommended)  
 CH 211 and CH 212  
 CH 203<sup>^</sup> and CH 204 and CH 220

<sup>^</sup> Or CH 218

## 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

## OPTIONAL PROGRAMS (Application Required)

### Undergraduate Research

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

**BB 401 & 402** Honors Research in BMB (4 cr/semester)  
**BB 497 & 498** Honors Research in BMB Seminar (1 cr/semester)

- A 3.0 BMB GPA is required for Undergraduate Research in BMB and a 3.5 overall and BMB GPA is required for Honors Research in BMB.
- Students can use one semester of four-credit research to fulfill a BMB elective if not using Undergraduate Research or Honors Research for the advanced lab elective.
- A min. of 6 hrs/wk is required for 2-credit research and a min. of 12 hrs/wk is required for 4-credit research in fall/spring.

Visit [bu.edu/bmb](http://bu.edu/bmb) for specific requirements and applications for Undergraduate Research.

### Science Abroad - Madrid, Spain

- 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](http://www.bu.edu/abroad)

## ADDITIONAL RESOURCES

- **BMB Website** ([www.bu.edu/bmb](http://www.bu.edu/bmb))
- **BMB Director**, Dr. Celenza, ([celenza@bu.edu](mailto:celenza@bu.edu))
- **Undergraduate Program Specialist** Ben Bradbury-Koster ([bradkost@bu.edu](mailto:bradkost@bu.edu); 617-353-2432)

Please note: The **Bulletin** is the authority on all requirements and policies. For official tracking of your academic progress, visit <https://degree-advice.bu.edu>