

THE UNIVERSITY OF SCRANTON
COLLEGE OF ARTS & SCIENCES

BIOCHEMISTRY, CELL & MOLECULAR BIOLOGY

About the Program

BCMB at Scranton includes the cutting-edge topics of genomics (study of an organism's entire genetic make-up), proteomics (study of the structure and functions of proteins) and bioinformatics (using technology to store and evaluate biological data). The major is an interdisciplinary course of study within both the biology and chemistry departments.



admissions.scranton.edu/bcmb

Outcomes & Opportunities

- The BCMB major provides an exceptional background for students planning to apply to medical school or other health professions schools.
- BCMB students are prepared for graduate programs in the fields of genetics, microbiology, molecular biology, cell biology, biochemistry and biotechnology.
- With an unparalleled background in undergraduate research and academics, graduates are ready to hit the ground running if interested in full-time employment in the biotech industry.
- BCMB students have interned in projects related to their major at Princeton, Cornell and Rockefeller, to name a few, broadening the research experience they have to offer their future pursuits.
- BCMB students have earned national recognition as the recipients of the Goldwater, Fulbright and George Mitchell Scholarships.
- Some of the prestigious medical and graduate schools that have admitted recent BCMB graduates include Temple, Thomas Jefferson, Georgetown, Drexel, Harvard, Columbia and the University of Pennsylvania.

Ranked #8 nationally
for “Best Science Labs”
by The Princeton Review



SUCCESS AHEAD

CONTACT INFORMATION

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BIOCHEMISTRY, CELL & MOLECULAR BIOLOGY CURRICULUM

MAJOR ELECTIVES

Choose one of the following:

BIOL 250 - Microbiology • BIOL 344 - Principles of Immunology • BIOL 350 - (W,EPW: lab only) Cellular Biology

Choose two of the following:

BCMB 464 - Molecular Biology of Cancer
 BCMB 493 - Undergraduate Research
 (may be an internship if approved by BCMB Advisory Board)
 BIOL 245 - (W,EPW: lab only) General Physiology
 BIOL 250 - Microbiology
 BIOL 344 - Principles of Immunology
 BIOL 350 - (W,EPW: lab only) Cellular Biology

BIOL 351 - Developmental Biology
 BIOL 358 - Cellular & Molecular Neurobiology
 BIOL 364 - Virology
 CHEM 455 - Chemical Toxicology
 CHEM 360 - Biophysical Chemistry I
 CHEM 370 - Instrumental Analysis

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
FIRST YEAR			
MAJOR (GE NSCI)	CHEM 112-113 - (E) General and Analytical Chemistry/CHEM 112L-113L	4.5	4.5
MAJOR	BIOL 141 - (E) (FYOC, FYDT Lab only) General Biology with Lab ¹ - BIOL 142 - (E) (FYOC, FYDT Lab only) General Biology with Lab ¹	4.5	4.5
COGNATE	MATH 114 - (Q) Calculus I	4	4
GE WRTG	WRTG 107 - (FYW) Composition	3	
GE FSEM	First Year Seminar ⁶		
MAJOR	BCMB 290 - Seminar ²		1
GE FREE	FREE ELECT	3	
		15	14

SECOND YEAR

MAJOR	CHEM 232 - (E) Organic Chemistry/CHEM 232L - CHEM 233 - (E) Organic Chemistry/CHEM 233L	4.5	4.5
MAJOR	BIOL 361 - Molecular Biology I		5
MAJOR	BCMB 290 - Seminar ²		1
MAJOR	BIOL ELECT - Biology Elective ³	3-5	
GE T/RS	T/RS 121 - Theology I: Introduction to the Bible		3
GE PHIL	PHIL 120 - Introduction to Philosophy		3
GE HUMN	HUMN ELECT - Humanities Elective	3	
GE S/BH	S/BH ELECT - Social/Behavioral Elective	3	
GE FREE	FREE ELECT - Free Elective	3	
		16-18.5	16.5

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
THIRD YEAR			
MAJOR	CHEM 450 - Biochemistry I - CHEM 451 - Biochemistry II or CHEM 350 - General Biochemistry I - CHEM 351 - General Biochemistry II	3	3
MAJOR	BIOL/CHEM ELECT - Biology/Chemistry Elective ⁴	3-4.5	
COGNATE	PHYS 120/PHYS 120L - (E) General Physics I - PHYS 121/PHYS 121L - (E) General Physics II	4	4
GE T/RS - PHIL	T/RS 122 - Theology II: Introduction to Christian Theology - PHIL 210 - Ethics	3	3
GE S/BH	S/BH ELECT - Social Behavioral Elective		3
GE HUMN	HUMN ELECT - Humanities Elective		3
COGNATE ELECT	COGNATE ELECT - Cognate Elective ⁵	3	
		16-17.5	16

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
FOURTH YEAR			
MAJOR	BCMB 490 - Biochemistry, Cell & Molecular Biology Capstone		3
MAJOR	BCMB 440 - Proteomics		3
MAJOR	BIOL 362 - (W: lab only) Molecular Biology II	5	
MAJOR	BIOL/CHEM ELECT - Biology/Chemistry Elective ³		3-5
GE HUMN	HUMN ELECT - Humanities Elective	3	3
GE PHIL or T/RS	PHIL ELECT - Philosophy or T/RS ELECT - T/RS Elective	3	
GE ELECT	FREE ELECT - Free Elective	6	
		17	12-14

Total: 123-128.5 Credits

1.888.SCRANTON or visit admissions.scranton.edu

¹ Successful completion of BIOL 141 and 142 satisfies the EP requirement.

² BCMB 290 is required twice; suggest taken Freshman and Sophomore years. (Junior year for transfer students is still an option.)

³ BIOL 250, BIOL 344 or BIOL 350.

⁴ In the third and fourth years, students must complete two of the following courses: BCMB 493; BIOL 245, BIOL 250, BIOL 344, BIOL 350, BIOL 351, BIOL 358, BIOL 364; CHEM 455, CHEM 360, CHEM 370.

⁵ Cognate elective will be chosen from the following: BIOL 379, MATH 204, MATH 310, MATH 463.

⁶ The selection of a First Year Seminar is likely to fulfill requirements both for the First Year Seminar and a General Education Requirement. Thus, the First Year Seminar will not add to the total credits for the semester. Talk with your advisor if you have any questions.

*Students taking CHEM 350 must take CHEM 351 and those taking CHEM 450 must take CHEM 451.