

# B.S. IN BIOCHEMISTRY/MOLECULAR BIOLOGY

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The Biochemistry/Molecular Biology major is the in-depth study of the chemical processes that underlie all living systems in the world. As a collaborative program of the Department of Biological Sciences (<https://www.bethel.edu/undergrad/academics/biology/>) and the Department of Chemistry and Biochemistry (<https://www.bethel.edu/undergrad/academics/chemistry/>), this major is an ideal choice for students in the health sciences and in pre-professional programs such as medicine, dentistry, law, and pharmacy.

Code	Title	Credits
<b>Major in Biochemistry/Molecular Biology (B.S)</b>		
BIO 124 & BIO 124D	Integrative Biology: Genes, Cells, Change and Integrative Biology: Genes, Cells, Change Lab	4
BIO 128 & BIO 128D	Integrative Biology: Metabolism, Energy, Biodiversity and Integrative Biology: Metabolism, Energy, Biodiversity Lab	4
BIO 332 & BIO 333	Genetics and Genetics Lab	4
BIO 354 & BIO 355	Cell Biology and Cell Biology Lab <sup>5</sup>	4
BIO 396 & BIO 397	Molecular Biology and Molecular Biology Lab <sup>5</sup>	4
CHE 113 & CHE 113D	General Chemistry I and General Chemistry I Lab	4
CHE 200	Laboratory Safety and Chemical Hygiene	1
CHE 214 & CHE 215	General Chemistry II and General Chemistry II Lab	4
CHE 224 & CHE 225	Organic Chemistry I and Organic Chemistry I Lab	4
CHE 226 & CHE 227	Organic Chemistry II and Organic Chemistry II Lab	4
CHE 312 & CHE 313	Quantitative Analysis and Quantitative Analysis Lab	4
CHE 344 & CHE 345	Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab	4
CHE 388 & CHE 389	Biochemistry I and Biochemistry I Lab	4
CHE 396 & CHE 397	Biochemistry II and Biochemistry II Lab	4
MAT 124M	Calculus 1 <sup>3</sup>	4
MAT 125	Calculus 2	4
Choose one of the following sequences: <sup>2</sup>		8
PHY 202 & PHY 202D & PHY 206 & PHY 207	Introductory Physics I and Introductory Physics I Lab and Introductory Physics II and Introductory Physics II Lab	

or

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PHY 292  
& PHY 292D  
& PHY 296  
& PHY 297

General Physics I  
and General Physics I Lab  
and General Physics II  
and General Physics II Lab

Choose one of the following sequences: 2-6

BIO 399  
& BIO 495  
& BIO 496  
& BIO 497  
& BIO 499

Introduction to Research  
and Biology Seminar  
and Biology Research  
and Advanced Biology Research  
and Symposium

or

CHE 395  
& CHE 494

Chemistry Seminar: Research and Professional Development  
and Chemistry Seminar: Research Presentation <sup>4</sup>

and

CHE 490  
or CHE 492

Chemistry Seminar: Research  
Chemistry Seminar: Summer Research

Code	Title	Credits
Major		71-75
General Education *		40-48
Electives <sup>1</sup>		3-7
<b>Total Credits</b>		<b>122</b>

<sup>1</sup> BIO 234 is recommended.

<sup>2</sup> Students planning to attend graduate school are strongly encouraged to take PHY 292/PHY 292D and PHY 296/PHY 297.

<sup>3</sup> Placement at MAT 124M on the Math and Computer Science department placement exam; MAT 121M, concurrent enrollment in MAT 122, or equivalent high school or college course(s) is a prerequisite for this course.

<sup>4</sup> Biochemistry/Molecular Biology students who select Chemistry Seminar will qualify for the ACS-accredited degree by completing CHE 364 in addition to those required by the major.

<sup>5</sup> This is a designated research course.

\* Courses whose number is followed by a letter fulfill a General Education requirements. Students may not declare a B.S. in Biochemistry/Molecular Biology and a B.A. in Biochemistry. Students may not declare a B.S. in Biochemistry/Molecular Biology and a Minor in Biology. Students may not declare a B.S. in Biochemistry/Molecular Biology and a Minor in Chemistry.