

**Messiah College**  
**Biochemistry (B.S.)**  
**Requirements for students matriculating in 2015-2016**

		HACC Course Options	
Major requirements	Credits		Credits
<a href="#">[CHEM 105]</a> General Chemistry I	4	CHEM 101	
<a href="#">[CHEM 106]</a> General Chemistry II	4	CHEM 102	
<a href="#">[CHEM 309]</a> Organic Chemistry I	4	CHEM 203	
<a href="#">[CHEM 310]</a> Organic Chemistry II	4	CHEM 204	
<a href="#">[CHEM 410]</a> Biochemistry I	4		
<a href="#">[CHEM 412]</a> Biochemistry II	4		
<a href="#">[CHEM 221]</a> Chemical Analysis I	4		
<a href="#">[CHEM 321]</a> Chemical Analysis II	4		
<a href="#">[CHEM 437]</a> Physical Chemistry I	3.5		
<a href="#">[CHEM 390]</a> Junior Chemistry Seminar	1		
<a href="#">[CHEM 490]</a> Senior Chemistry Seminar	1		
<a href="#">[CHEM 495]</a> Capstone: Natural Sciences	3		
<a href="#">[BIOL 160]</a> Molecular and Cellular Biology	4		
<a href="#">[BIOL 260]</a> Genetics and Development	3	BIOL 215	
<a href="#">[BIOL 413]</a> Molecular Biology	4		
<i>Four credits from the following:</i> <a href="#">[BIOL 381]</a> Microbiology (4) <a href="#">[BIOL 382]</a> Microbiology for Health Professions (4) <a href="#">[BIOL 412]</a> Cell Biology (4) <a href="#">[BIOL 417]</a> Molecular Genetics (4)	4	BIOL 221	
<a href="#">[MATH 111]</a> Calculus I	4	MATH 121	
<a href="#">[MATH 112]</a> Calculus II	4	MATH 122	
<i>Three credits from the following:</i> <a href="#">[PHIL 101]</a> Problems in Philosophy (3) <a href="#">[PHIL 102]</a> History of Philosophy (3)	0*	PHIL 101	
<a href="#">[PHYS 211]</a> General Physics I	4	PHYS 211	
<a href="#">[PHYS 212]</a> General Physics II	4	PHYS 212	
<b>Experiential Learning requirement</b>			

QuEST requirements	Credits	HACC Courses	
First Year Seminar	3	ENGL 101 (if taken after high school)	3
Oral Communication	3	COMM 101 or SPCH 101	3
Created and Called for Community (W)	3	<i>Messiah Course</i>	
Mathematical Sciences (MATH 111)	met/major	-	-
Laboratory Science (BIOL 160 or CHEM 105)	met/major	-	-
Science, Technology & the World	waived	-	-

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<b>Two of the following (6 credits total):</b> Social Science European History U.S. History	6	<u>Social Science:</u> ECON 201, GP 201, 208, PSYC 101, SOCI 120, 201, 203, CJ 101  <u>European History:</u> HIST 111, 201, 202  <u>US History:</u> HIST 103, 104, 107	6
Literature	3	Any ENGL Literature 201 or higher	3
Philosophy and Religion	3*	PHIL 101	3
Arts	3	ARCH 111; ART 102, 105, 107, 121, 151, 171; MUS 102, 104, 110, 119, 210; THEA 101, 110, 111	3
First Semester of Language	3	Any Modern Language 1 <sup>st</sup> Level	3
Second Semester of Language	3	Any Modern Language 2 <sup>nd</sup> Level	3
Third Semester of Language or Cross Cultural (Messiah Course)	3	Any Modern Language Intermediate Level	3
Non-Western Studies	2 or 3	ANTH 205, 210, HIST 101, 102	2-3
Bible	3	<i>Messiah Course</i>	
Christian Beliefs	3	<i>Messiah Course</i>	
Wellness	1	Any <b>two</b> Messiah WELL 100 Equivalent Courses	2
Ethics, World Views <b>or</b> Pluralism	3	<i>Messiah Course</i>	
QuEST requirements	45-46*		34-35
Major requirements	71.5		
Free electives	7-5.5		
<b>Total</b>	<b>123</b>		

All of the courses in this major are vital to our program. If you plan to study abroad, attend the Philadelphia campus, or graduate early, you must talk to your advisor early and make plans to take the required courses when they are offered. Directed study will not be offered for any lab courses, and will only be granted in extreme circumstances for non-lab courses.

\*\*Philosophy is not counted against the curricular parameters for the major.

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