

# BIOCHEMISTRY (B.S.)

120 credits of coursework is required for the baccalaureate degree with a minimum 2.0 overall GPA, and a minimum 2.0 major GPA.

## Program Requirements Overview

Code	Title	Credits
	General Education Requirements	32
	World Languages and Cultures Requirements	3-9
	Major Requirements	72
	Free Electives	13-7
<b>Total Credits</b>		<b>120</b>

## Major Requirements

Code	Title	Credits
<b>Chemistry Courses</b>		
CHEM 120	General Chemistry I	4
CHEM 121	General Chemistry II	4
CHEM 230	Organic Chemistry I	3
CHEM 231	Organic Chemistry II	3
CHEM 232	Experimental Organic Chemistry I	2
CHEM 233	Experimental Organic Chemistry II	2
CHEM 310	Analytical Chemistry	4
CHEM 340	Physical Chemistry I	3
CHEM 347	Biophysical Chemistry	3
CHEM 370	Biochemistry I	3
CHEM 371	Biochemistry II	3
CHEM 372	Experimental Biochemistry I	2
CHEM 373	Experimental Biochemistry II	4
CHEM 495	The Chemical Literature	1
<b>Biology Courses</b>		
BIOL 230	Cell and Molecular Biology	4
BIOL 350	Microbiology	4
BIOL 380	Genetics	4
BIOL 434	Molecular Biology	3
<b>Mathematics Courses</b>		
AMAT 120 or MATH 122	Applied Calculus A Calculus I	4
AMAT 220 or MATH 221	Applied Calculus B Calculus II	4
<b>Physics Courses</b>		
PHYS 191	University Physics I	4
PHYS 192	University Physics II	4
<b>Total Credits</b>		<b>72</b>

## General Education Requirements

Click here for a list of courses that fulfill General Education categories. (<http://catalog.montclair.edu/programs/general-education-requirements-ba-bs/>)

Code	Title	Credits
<b>A. New Student Seminar</b>		
	Complete a 1 credit New Student Seminar course.	1
<b>C. Communication</b>		
	1. Writing	3
	2. Literature	3
	3. Communication	3
<b>D. Fine and Performing Arts</b>		
	Complete a 3 credit Fine and Performing Arts course.	3
<b>F. Humanities</b>		
	1. Great Works and Their Influences	3
	2. Philosophical and Religious Perspectives	3
<b>G. Computer Science</b>		
	Complete a 3 credit Computer Science course.	3
<b>H. Mathematics</b>		
	Fulfilled in the major.	
	AMAT 120 Applied Calculus A or MATH 122 Calculus I	
<b>I. Natural Science Laboratory</b>		
	CHEM 120 General Chemistry I (Fulfilled in the major.)	
<b>J. Physical Education</b>		
	Complete a 1 credit Physical Education course.	1
<b>K. Social Science</b>		
	1. American and European History	3
	2. Global Cultural Perspectives	3
	3. Social Science Perspectives	3
<b>L. Interdisciplinary Studies</b>		
	PHYS 191 University Physics I (Fulfilled in the major.)	
<b>Total Credits</b>		<b>33</b>

## World Languages and Cultures Requirements

Click here for a list of courses that fulfill World Languages and Cultures categories. (<http://catalog.montclair.edu/programs/world-languages-and-cultures-requirements/>)

Code	Title	Credits
<b>World Languages</b>		
	Based on language placement exam, complete one or two sequential courses in the same language. <b>Requirement is automatically fulfilled by language major courses.</b>	3-6
<b>World Cultures</b>		
	Requirement may be fulfilled by course selected in General Education 0-3 - Social Science: Global Cultural Perspectives. Requirement may also be fulfilled by major coursework. See list of courses.	
<b>Total Credits</b>		<b>3-9</b>

## Recommended Roadmap to Degree Completion

This four-year plan is provided as an outline for students to follow in order to complete their degree requirements within four years. This plan is a recommendation and students should only use it in consultation with their academic advisor.

**First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 120		4 CHEM 121	4
CHEM 190		1 MATH 221	4
MATH 122		4 World Languages II	3
World Languages I		3 GENERAL EDUCATION: (C2) Literature	3
WRIT 105 (GENERAL EDUCATION (C1) Writing)		3 GENERAL EDUCATION (D) Fine and Performing Arts	3
	<b>15</b>		<b>17</b>

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 230		3 CHEM 231	3
CHEM 232		2 CHEM 233	2
PHYS 191		4 PHYS 192	4
CSIT 100 (GENERAL EDUCATION (G) Computer Science)		3 CMST 101 (GENERAL EDUCATION (C3) Communication)	3
CHEM 310		4 BIOL 230	4
	<b>16</b>		<b>16</b>

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 340		3 CHEM 347	3
CHEM 370		3 CHEM 371	3
CHEM 372		2 CHEM 373	4
BIOL 380		4 World Cultures	3
GENERAL EDUCATION (K3) Social Science – Social Science Perspectives		3 GENERAL EDUCATION (J) Physical Education	1
	<b>15</b>		<b>14</b>

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BIOL 350		4 CHEM 495	1
GENERAL EDUCATION (K1) Social Science – American and European History		3 BIOL 434	3
GENERAL EDUCATION (K2) Social Science – Global Cultural Perspectives		3 GENERAL EDUCATION (F1) Humanities – Great Works and Their Influences	3
GENERAL EDUCATION (L) Interdisciplinary Studies		3 GENERAL EDUCATION (F2) Humanities – Philosophical and Religious Perspectives	3
		Free Elective	4
	<b>13</b>		<b>14</b>

**Total Credits 120**