

CHEMISTRY (B.S.)

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

Degree Requirements

Code	Title	Credits
SEEDS	General Education Requirements	24-27
	New Student Seminar	1
	Major Requirements	69
	Free Electives	26-23
Total Credits		120

Major Requirements

Code	Title	Credits
Chemistry Courses		
CHEM 120	General Chemistry I	4
CHEM 121	General Chemistry II	4
CHEM 220	Descriptive Inorganic Chemistry	3
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 341	Physical Chemistry II	3
CHEM 343	Experimental Physical Chemistry	2
CHEM 370	Biochemistry I	3
CHEM 372	Experimental Biochemistry I	2
CHEM 410	Instrumental Analysis	5
CHEM 495	The Chemical Literature	1
Laboratory Elective		
CHEM 498	Senior Laboratory	3
or CHEM 499	Undergraduate Research	
Mathematics Courses		
AMAT 120	Applied Calculus A	4
or MATH 122	Calculus I	
AMAT 220	Applied Calculus B	4
or MATH 221	Calculus II	
Physics Courses		
PHYS 191	University Physics I	4
PHYS 192	University Physics II	4
Chemistry Electives		
Select two of the following: ¹		6
CHEM 371	Biochemistry II	
CHEM 420	Advanced Inorganic Chemistry	
CHEM 421	Experimental Inorganic Chemistry	
CHEM 430	Advanced Organic Chemistry	
CHEM 440	Advanced Physical Chemistry	

CHEM 490	Special Topics in Chemistry	
Total Credits		69

¹ Students in the combined B.S./M.S. Chemistry program do not have to complete this requirement. They will complete graduate swing courses instead. See the combined program page for more details (<http://catalog.montclair.edu/programs/chemistry-bs-ms/>).

New Student Seminar

Code	Title	Credits
Students in the Adult Learner program must take GNED 100.		
Complete one course from the following. Some courses may be restricted by major. Consult with an academic advisor.		1
ADVS 198	Pathways to Success	
CHEM 190	Freshman Seminar in Chemistry	
FYS 100	First Year Seminar	
GNED 100	Adult Academic Success Seminar	
GNED 199	New Student Seminar	
HPEM 199	Freshman Seminar in Health and Physical Education	
IDS 155	Pathways to Adult Learning	
JUST 199	New Student Seminar	
MATH 102	New Student Experience for Mathematical Sciences	
MUGN 199	Freshman Seminar for Music Majors	
NURS 199	Introduction to Nursing	
POLS 199	Freshman Seminar in Political Science and Law	

SEEDS General Education Requirements

Click here for a list of courses that fulfill the SEEDS requirements. (<http://catalog.montclair.edu/programs/seeds-general-education-requirements/>)

Code	Title	Credits
Foundations		
<i>Effective Writing I</i>		
Complete one Effective Writing I course.		3
<i>Effective Writing II</i>		
Complete one Effective Writing II course.		3
<i>Interactive Communication</i>		
Complete one Interactive Communication course.		3
<i>Quantitative Reasoning</i>		
Fulfilled by AMAT 120 or MATH 122 in the major.		
<i>Political and Civic Life</i>		
Complete one Political and Civic Life course.		3
<i>World Language</i>		
Complete two sequential classes in one World Language when starting at the Beginner I or Beginner II level. Complete one class when starting at the Intermediate/Advanced Level.		3-6
Exploration		
Complete one course from four different Exploration categories:		9
<i>Analyzing Cultures and Societies</i>		
<i>Creative Expression</i>		
<i>Ethical Inquiry</i>		
<i>Historical Thinking</i>		

<i>Literary and Artistic Analysis</i>	
<i>Scientific Reasoning</i>	
Fulfilled by CHEM 120 in the major.	
Total Credits	24-27

SEEDS: Political and Civic Life	3	
	15	15
Total Credits 120		

Recommended Roadmap to Degree Completion

This recommended degree plan is provided as an outline for students to follow in order to complete their degree requirements within four years and 120 credits. This plan is a recommendation and **MUST** be used in consultation with their academic advisor. Important note: Students should be aware this plan assumes no pre-requisite coursework is required. If pre-requisite coursework is needed, students may have additional requirements to fulfill which do not appear on the plan.

First Year

Fall	Credits	Spring	Credits
CHEM 190		1 CHEM 121	4
CHEM 120 (Fulfills SEEDS: Exploration 1 - Scientific Reasoning)	4	AMAT 220 or MATH 221	4
AMAT 120 or MATH 122 (Fulfills SEEDS: Quantitative Reasoning)	4	SEEDS: Effective Writing II	3
SEEDS: Effective Writing I	3	SEEDS: Interactive Communication	3
Free Elective	3		
	15		14

Second Year

Fall	Credits	Spring	Credits
CHEM 230	3	CHEM 231	3
CHEM 232	2	CHEM 233	2
CHEM 220	3	CHEM 310	4
PHYS 191	4	PHYS 192	4
SEEDS: World Language 1	3	SEEDS: World Language 2 or Free Elective	3
	15		16

Third Year

Fall	Credits	Spring	Credits
CHEM 370	3	CHEM 499	1
CHEM 372	2	CHEM 341	3
CHEM 340	3	CHEM 343	2
CHEM 495	1	Free Elective	3
SEEDS: Exploration 2	3	Free Elective	3
Free Elective	3	SEEDS: Exploration 3	3
	15		15

Fourth Year

Fall	Credits	Spring	Credits
Chemistry Elective	3	Chemistry Elective	3
CHEM 499	1	CHEM 499	1
Free Elective	2	CHEM 410	5
Free Elective	3	Free Elective	3
SEEDS: Exploration 4	3	Free Elective	3