

# B.S. IN CHEMISTRY WITH A CONCENTRATION IN ADVANCED CHEMISTRY (AMERICAN CHEMICAL SOCIETY CERTIFIED PROGRAM) (CE.ACS.BS)

Code	Title	Credits
<b>Major Requirements/Chemistry (55 credits)<sup>1, 2</sup></b>		
CE-111	General Chemistry I	3
CE-111R	General Chemistry I Recitation	1
CE-111L	General Chemistry I Laboratory	1
CE-112	General Chemistry II	3
CE-112R	General Chemistry II Recitation	1
CE-112L	General Chemistry II Laboratory	1
CE-221	Analytical Chemistry I Quantitative Analysis	3
CE-221L	Analytical Chemistry I Laboratory Quantitative Analysis	1
CE-241	Organic Chemistry I	3
CE-241L	Organic Chemistry I Laboratory	1
CE-242	Organic Chemistry II	3
CE-242L	Organic Chemistry II Laboratory	1
CE-314	Chemical Literature and Seminar	3
<i>(Satisfies Reasoned Oral Discourse in General Education)</i>		
CE-322	Analytical Chemistry II	3
CE-322L	Analytical Chemistry II Laboratory	2
CE-333	Biochemistry	3
CE-333L	Biochemistry Laboratory	1
CE-350	Research in Chemistry	3
CE-381	Physical Chemistry I	3
CE-381L	Physical Chemistry I Laboratory	1
CE-382	Physical Chemistry II	3
CE-382L	Physical Chemistry II Laboratory	1
CE-401	Advanced Inorganic Chemistry	3
CE-401L	Advanced Inorganic Chemistry Laboratory	1
<i>(Chemistry courses satisfy Natural Science (NS) in General Education)</i>		
Select two courses from the following list:		6
CE-325	NMR Spectroscopy	
CE-360	Biophysical Chemistry	
CE-405	Methods of Inorganic Chemistry	
CE-432	Advanced Analytical Chemistry	
CE-452	Advanced Organic Chemistry	
CE-454	Advanced Biochemistry	
CE-475	Computational Chemistry and Molecular Modeling	
CE-486	Medicinal Chemistry	
<b>Interdisciplinary Requirements (14 credits)</b>		

MA-116	Calculus for the Biological Sciences	3
or MA-125	Calculus with Analytic Geometry I	
MA-151	Statistics with Applications	3
or MA-126	Calculus with Analytic Geometry II	
<i>(MA-116, MA-125, MA-126 or MA-151 satisfies Mathematics in General Education)</i>		
PH-211	General Physics with Calculus I	3
PH-211L	General Physics with Calculus I Laboratory	1
PH-212	General Physics with Calculus II	3
PH-212L	General Physics with Calculus II Laboratory	1
<b>Free Electives (18 credits)<sup>2</sup></b>		
Select up to 18 free elective credits <sup>2</sup>		18
<b>General Education Requirements (33 credits)<sup>3</sup></b>		
Complete 33 credits as outlined on the General Education table. <sup>3</sup>		33
<b>Total Credits</b>		<b>120</b>

<sup>1</sup> Students who major in this concentration cannot also major in the Biochemistry concentration.

<sup>2</sup> Please consult with your advisor regarding the required number of free elective credits that must be completed.

<sup>3</sup> The General Education curriculum requires the completion of 45 credits. However, students may be able to share credits from within their major or interdisciplinary requirements. Please consult with your advisor to determine which General Education (<https://catalog.monmouth.edu/undergraduate-catalog/academic-programs-support-services-regulations/general-education-requirements/>) courses must be completed

## Notes

- 54 credits must be completed at the 200 level or higher.

## B.S. in Chemistry with a Concentration in Advanced Chemistry (American Chemical Society Approved Program) Sequence Chart

First Year			
Fall	Credits	Spring	Credits
CE-111 General Chemistry I	3	CE-112 General Chemistry II	3
CE-111R General Chemistry I Recitation	1	CE-112R General Chemistry II Recitation	1
CE-111L General Chemistry I Laboratory	1	CE-112L General Chemistry II Laboratory	1
IT-102 Information Technology for Scientists	3	MA-151 Statistics with Applications or 126	3
MA-116 Calculus for the Biological Sciences or 125	3	EN-102 College Composition II	3
EN-101 College Composition I	3	Gen*Ed Historical Perspectives	3
<b>Semester Credits</b>		<b>14 Semester Credits</b>	
<b>Second Year</b>			
Fall	Credits	Spring	Credits
CE-241 Organic Chemistry I	3	CE-242 Organic Chemistry II	3
CE-241L Organic Chemistry I Laboratory	1	CE-242L Organic Chemistry II Laboratory	1
PH-211 General Physics with Calculus I	3	CE-221 Analytical Chemistry I Quantitative Analysis	3

PH-211L General Physics with Calculus I Laboratory	1	CE-221L Analytical Chemistry I Laboratory Quantitative Analysis	1
Gen*Ed Social Science	3	PH-212 General Physics with Calculus II	3
Gen*Ed Aesthetics	3	PH-212L General Physics with Calculus II Laboratory	1
		Gen*Ed Historical or Social Science Persp.	3
<b>Semester Credits</b>		<b>14 Semester Credits</b>	
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CE-314 Chemical Literature and Seminar	3	CE-350 Research in Chemistry	3
CE-333 Biochemistry	3	CE-382 Physical Chemistry II	3
CE-333L Biochemistry Laboratory	1	CE-382L Physical Chemistry II Laboratory	1
CE-381 Physical Chemistry I	3	Gen*Ed Cultural Diversity or Global Understanding	3
CE-381L Physical Chemistry I Laboratory	1	Gen*Ed Literature	3
CE-401 Advanced Inorganic Chemistry	3	Free Electives	3
CE-401L Advanced Inorganic Chemistry Laboratory	1		
<b>Semester Credits</b>		<b>15 Semester Credits</b>	
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CE-322 Analytical Chemistry II	3	Chemistry Elective (see curriculum chart)	3
CE-322L Analytical Chemistry II Laboratory	2	Gen*Ed Interdisciplinary Perspectives	3
Chemistry Elective (see Curriculum chart)	3	Free Electives	9
Gen*Ed World Language	3		
Free Electives	6		
<b>Semester Credits</b>		<b>17 Semester Credits</b>	
<b>Total Credits 120</b>			