B.S. IN CHEMISTRY (CE.BS; CE.BIO.BS; CE.IND.BS)

Code	Title	Credits
Major Requirements/Chemistry (37 credits) [1]		
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
(Satisfies Reasoned Oral Discourse (RD) in General Education.		
CE-322	Analytical Chemistry II	3
CE-322L	Analytical Chemistry II Laboratory	2
CE-381	Physical Chemistry I	3
CE-381L	Physical Chemistry I Laboratory	1
(Chemistry courses satisfy Natural Science (NS) in General Education)		
CE-300+ Elective: Select one course from the following list.		3
CE-360	Biophysical Chemistry	
CE-325	NMR Spectroscopy	
CE-333	Biochemistry	
CE-333L	Biochemistry Laboratory	
CE-401	Advanced Inorganic Chemistry	
CE-432	Advanced Analytical Chemistry	
CE-452	Advanced Organic Chemistry	
CE-475	Computational Chemistry and Molecular Modeling	
CE-486	Medicinal Chemistry	
Interdisciplinary Requirements (14 credits)		
MA-116	Calculus for the Biological Sciences	3
or MA-125	Calculus with Analytic Geometry I	
MA-151	Statistics with Applications	3
(MA-125, MA-116 or MA-151 satisfy Mathematics in General Education)		
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
Option: Biochemistry track (14 credits) [3]		
CE-333	Biochemistry	
CE-333L	Biochemistry Laboratory	
CE-360	Biophysical Chemistry	
CE-360L	Biophysical Chemistry Laboratory	
CE-454	Advanced Biochemistry	
CE-486	Medicinal Chemistry	
Option: Industry Track (13 Credits) [4]		
CE-374	Industrial Chemistry	
CE-432	Advanced Analytical Chemistry	
CE-484	Methods Development and Statistical Process Control	
And one from the following Courses (Lecture and Lab)		
CE-220	Environmental Chemistry	
CE-220L	Environmental Chemistry Laboratory	
CE-382	Physical Chemistry II	
CE-382L	Physical Chemistry II Laboratory	
CE-401	Advanced Inorganic Chemistry	
CE-401L	Advanced Inorganic Chemistry Laboratory	
Free Electives (36 credits)		
Select up to 36 credits of free electives		36
General Education Requirements (33 credits) [5]		
Complete 33 credits as outlined on the General Education table.		33
Total Credits		**120**

1 *Students desiring certification by the ACS should enroll in the CE.ACS program and consult with the department chair and academic advisor.*

2 *CE-350, Research in Chemistry, is highly recommended and may be taken as a free elective. Please consult with your advisor regarding the required number of free electives that must be completed.*

3 Students opting for the Biochemistry Track are advised to take CE-333 (and CE-333L) from the CE-300+ elective list of courses so they will take only 10 credits from the remaining track courses. This way the total number of credits required to graduate from the program remains 120.

4 Students opting for the Industry Track are advised to take CE-432 Advanced Analytical Chemistry from the list of the CE-300+ elective courses so they will need to take only 10 credits from the remaining track courses. This way the total number of credits required to graduate from the program remains 120.

5 *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 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

EN-101 College Composition I		3	EN-102 College Composition II		3
IT-102 Information Technology for Scientists		3	MA-151 Statistics with Applications		3
MA-116 Calculus for the Biological Sciences		3	Gen*Ed Social Science		3
Semester Credits		**14**	**Semester Credits**		**14**
Second Year					
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 Historical Perspectives		3	PH-212 General Physics with Calculus II		3
Free Electives		3	PH-212L General Physics with Calculus II Laboratory		1
			Free Elective Credits		3
Semester Credits		**14**	**Semester Credits**		**15**
Third Year					
Fall	**Credits**		**Spring**	**Credits**	
CE-314 Chemical Literature and Seminar		3	Gen*Ed Cultural Diversity or Global Understanding		3
CE-381 Physical Chemistry I		3	Gen*Ed Literature		3
CE-381L Physical Chemistry I Laboratory		1	Free Electives		9
CE-300+ Chemistry Elective or Free Elective		3			
Gen*Ed Historical or Social Science Persp.		3			
Gen*Ed Aesthetics & Creativity		3			
Semester Credits		**16**	**Semester Credits**		**15**
Fourth Year					
Fall	**Credits**		**Spring**	**Credits**	
CE-322 Analytical Chemistry II		3	CE-300+ Chemistry Elective (if not already taken)		3
CE-322L Analytical Chemistry II Laboratory		2	Gen*Ed Interdisc. Perspect.		3
CE-300+ Elective (See Curriculum Chart for list of options)		3	Free Electives		9
Gen*Ed World Language		3			
Free Electives		6			
Semester Credits		**17**	**Semester Credits**		**15**

Total Credits 120