

# B.S. IN CHEMISTRY AND EDUCATION WITH ENDORSEMENT IN SECONDARY EDUCATION IN PHYSICAL SCIENCE (CE.CP.EDS.BS)

Code	Title	Credits
<b>Major Requirements/Chemistry (37 credits) <sup>1</sup></b>		
CE-111	General Chemistry I	3
CE-111L	General Chemistry Laboratory I	1
CE-111R	General Chemistry I Recitation	1
CE-112	General Chemistry II	3
CE-112L	General Chemistry Laboratory II	1
CE-112R	General Chemistry II Recitation	1
CE-314	Chemical Literature and Seminar	3
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 Laboratory I	1
CE-242	Organic Chemistry II	3
CE-242L	Organic Chemistry Laboratory II	1
CE-322	Analytical Chemistry II Instrumental Analysis	3
CE-322L	Analytical Chemistry II Laboratory	2
CE-341	Physical Chemistry I	3
CE-341L	Physical Chemistry I Laboratory	1
Chemistry 300+ level: Select one course from the following list		3
CE-325	NMR Spectroscopy	
CE-333	Biochemistry	
CE-333L	Biochemistry Laboratory	
CE-342	Physical Chemistry II	
CE-401	Advanced Inorganic Chemistry	
CE-452	Advanced Organic Chemistry	
CE-475	Computational Chemistry and Molecular Modeling	
CE-486	Medicinal Chemistry	
<i>(CE courses satisfy Natural Science (NS) requirement in General Education)</i>		
<b>Major Requirements/Education (24 credits) <sup>2</sup></b>		
ED-250	Psychological and Philosophical Foundations of Education	3
EDS-330	Foundations of Special Education: Child & Adolescent Development and Transition to Adulthood	3
EDS-336	Classroom Management	3
ED-319	Content Literacy and Assessment	3

ED-320	Teaching Emergent Multilinguals in an Inclusive Classroom	3
<i>(Satisfies Reasoned Oral Discourse (RD) in General Education)</i>		
Select 9 credits as follows: <sup>3</sup>		
ED-416 & 416S	Clinical Practice and Clinical Practice Seminar	9
<b>Interdisciplinary Requirements/Chemistry (21 credits)</b>		
MA-125 or MA-116	Calculus with Analytic Geometry I or Calculus for the Biological Sciences	4
MA-151	Statistics with Applications	3
<i>(MA-125, MA-116 or MA-151 satisfy Mathematics in General Education)</i>		
PH-211	General Physics with Calculus I	3
PH-211L	General Physics with Calculus Laboratory I	1
PH-212	General Physics with Calculus II	3
PH-212L	General Physics with Calculus Laboratory II	1
PH-311	Theoretical Physics	3
PH-312	Modern Physics	3
<b>Education Methods Requirements (6 credits)</b>		
ED-315	Digital Media and Instructional Technology Skills for Teachers	3
ED-369	Methods of Teaching Science at the Secondary Level	3
<b>Free Electives (0 credits) <sup>4</sup></b>		<b>0</b>
<i>Complete up to 0 free electives credits. <sup>4</sup></i>		<i>0</i>
<b>General Education Requirements (33 credits) <sup>5</sup></b>		
<i>Complete 33 credits as outlined on the General Education table. <sup>5</sup></i>		<i>33</i>
<b>Total Credits</b>		<b>121</b>

<sup>1</sup> Students desiring certification by the ACS should enroll in the BS CE ACS program

<sup>2</sup> Minimum grade of "C" required for Education Courses

<sup>3</sup> Students must complete the appropriate test requirement(s) with a passing score PRIOR to Clinical Practice.

<sup>4</sup> Please consult with your advisor regarding the required number of free electives that must be completed.

<sup>5</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 courses (<http://catalog.monmouth.edu/undergraduate-catalog/academic-programs-support-services-regulations/general-education-requirements/>) must be completed.

## Additional Endorsements Available

- TSD - Teacher of Students with Disabilities - Secondary
- ESL - English as a Second Language - Secondary

## Notes

- 54 credits must be completed at the 200 level or higher.
- Education majors are required to have an overall GPA of 3.00 for State Certification.

- By state regulation, all Education Majors seeking content area endorsement must complete 30 content credits (12+ credits at the 300+ level).

## B.S. in Chemistry and Education with Endorsement in Secondary Education in Physical Sciences Sequence Chart

First Year			
Fall	Credits	Spring	Credits
CE-111 General Chemistry I		3 CE-112 General Chemistry II	3
CE-111L General Chemistry Laboratory I	1	CE-112L General Chemistry Laboratory II	1
CE-111R General Chemistry I Recitation	1	CE-112R General Chemistry II Recitation	1
EN-101 College Composition I	3	MA-151 Statistics with Applications	3
IT-102 Information Technology for Scientists	3	EN-102 College Composition II	3
MA-116 Calculus for the Biological Sciences or 125	3	Gen*Ed Social Science Survey	3
		ED-250 Psychological and Philosophical Foundations of Education	3
<b>Semester Credits</b>	<b>14</b>	<b>Semester Credits</b>	<b>17</b>
Second Year			
Fall	Credits	Spring	Credits
CE-241 Organic Chemistry I		3 CE-242 Organic Chemistry II	3
CE-241L Organic Chemistry Laboratory I	1	CE-242L Organic Chemistry Laboratory II	1
PH-211 General Physics with Calculus I	3	PH-212 General Physics with Calculus II	3
PH-211L General Physics with Calculus Laboratory I	1	PH-212L General Physics with Calculus Laboratory II	1
ED-320 Teaching Emergent Multilinguals in an Inclusive Classroom	3	EDS-330 Foundations of Special Education: Child & Adolescent Development and Transition to Adulthood	3
Gen*Ed Aesthetics	3	CE-221 Analytical Chemistry I Quantitative Analysis	3
Gen*Ed Historical Perspectives	3	CE-221L Analytical Chemistry I Laboratory Quantitative Analysis	1
<b>Semester Credits</b>	<b>17</b>	<b>Semester Credits</b>	<b>15</b>
Third Year			
Fall	Credits	Spring	Credits
PH-312 Modern Physics		3 PH-311 Theoretical Physics	3
CE-314 Chemical Literature and Seminar	3	CE-300+ Elective from list	3
CE-341 Physical Chemistry I	3	ED-319 Content Literacy and Assessment	3
CE-341L Physical Chemistry I Laboratory	1	Gen*Ed Literature	3
EDS-336 Classroom Management	3	Gen*Ed World Language	3
Gen*Ed Cultural Diversity or Global Understanding	3		
<b>Semester Credits</b>	<b>16</b>	<b>Semester Credits</b>	<b>15</b>
Fourth Year			
Fall	Credits	Spring	Credits
ED-315 Digital Media and Instructional Technology Skills for Teachers		3 ED-416 Clinical Practice	8
ED-369 Methods of Teaching Science at the Secondary Level	3	ED-416S Clinical Practice Seminar	1

CE-322 Analytical Chemistry II Instrumental Analysis	3
CE-322L Analytical Chemistry II Laboratory	2
Gen*Ed Historical Perspectives or Social Science Survey	3
Gen*Ed Interdisciplinary Studies	3
<b>Semester Credits</b>	<b>17 Semester Credits</b>
<b>Total Credits</b>	<b>120</b>