

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

Code	Title	Credits
<b>Major Requirements/Chemistry (36 credits) <sup>1</sup></b>		
CE-111	General Chemistry I	3
CE-111L	General Chemistry Laboratory I	1
CE-112	General Chemistry II	3
CE-112L	General Chemistry Laboratory II	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 Laboratory I	2
CE-242	Organic Chemistry II	3
CE-242L	Organic Chemistry Laboratory II	2
CE-311	Chemical Literature	1
CE-322	Analytical Chemistry II Instrumental Analysis	3
CE-322L	Analytical Chemistry II Laboratory Instrumental Analysis	2
CE-341	Physical Chemistry I	3
CE-341L	Physical Chemistry I Laboratory	1
CE-410	Seminar	1
Chemistry 300+ level: Select one course from the following list		3
CE-331	Biochemistry I	
CE-325	NMR Spectroscopy	
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	3

ED-320	Teaching English Language Learners in Mainstream 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 (24 credits)</b>		
MA-125	Calculus with Analytic Geometry I	4
MA-126	Calculus with Analytic Geometry II	4
<i>(MA-125 or MA-126 satisfy Mathematics in General Education)</i>		
PH-211	General Physics with Calculus I	4
PH-211L	General Physics with Calculus Laboratory I	1
PH-212	General Physics with Calculus II	4
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-369	Methods of Teaching Science for the Secondary Teacher Part I	3
ED-370	Methods of Teaching Science for the Secondary Teacher Part II	3
<b>Free Electives (0 credits) <sup>4</sup></b>		
<i>Complete up to 0 free electives credits. <sup>4</sup></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>		
<b>Total Credits</b>		<b>123</b>

1

*Students desiring certification by the ACS should enroll in the BS CE ACS program*

2

*Minimum grade of "C" required for Education Courses*

3

*Students must complete the appropriate test requirement(s) with a passing score PRIOR to Clinical Practice.*

4

*Please consult with your advisor regarding the required number of free electives that must be completed.*

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 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
EN-101 College Composition I	3	MA-126 Calculus with Analytic Geometry II	4
MA-125 Calculus with Analytic Geometry I	4	EN-102 College Composition II	3
IT-102 Information Technology for Scientists	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	2	CE-242L Organic Chemistry Laboratory II	2
PH-211 General Physics with Calculus I	4	PH-212 General Physics with Calculus II	4
PH-211L General Physics with Calculus Laboratory I	1	PH-212L General Physics with Calculus Laboratory II	1
ED-320 Teaching English Language Learners in Mainstream 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
		CE-221L Analytical Chemistry I Laboratory Quantitative Analysis	1
<b>Semester Credits</b>	<b>16</b>	<b>Semester Credits</b>	<b>17</b>

### Third Year

Fall	Credits	Spring	Credits
CE-311 Chemical Literature	1	CE-410 Seminar	1
PH-312 Modern Physics	3	PH-311 Theoretical Physics	3
CE-341 Physical Chemistry I	3	CE-300+ Elective from list	3
CE-341L Physical Chemistry I Laboratory	1	ED-319 Content Literacy	3
Gen*Ed Historical Perspectives	3	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>17</b>	<b>Semester Credits</b>	<b>16</b>

### Fourth Year

Fall	Credits	Spring	Credits
ED-369 Methods of Teaching Science for the Secondary Teacher Part I		3 ED-416 Clinical Practice	8
ED-370 Methods of Teaching Science for the Secondary Teacher Part II		3 ED-416S Clinical Practice Seminar	1
CE-322 Analytical Chemistry II Instrumental Analysis	3		
CE-322L Analytical Chemistry II Laboratory Instrumental Analysis	2		
Gen*Ed Historical Perspectives or Social Science Survey	3		
Gen*Ed Interdisciplinary Studies	3		
<b>Semester Credits</b>	<b>17</b>	<b>Semester Credits</b>	<b>9</b>
<b>Total Credits 123</b>			